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PLACEMENT.

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TEACHERS' PERCEPTIONS OF VARIOUS CHARACTERISTICS
OF FIRST GRADE CHILDREN AND READING GROUP PLACEMENT

Dissertation

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

By
Linda B. Amspaugh, B.Sc., M.A.

***

The Ohio State University
1974

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To my family, Peter, Ruth, and Laura Jean I dedicate this volume. Without their support, patience, and understanding, this dissertation could never have been completed.
VITA

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CHAPTER ONE

Problem Statement

When a first grade teacher meets her class for the first time, she usually has little or no knowledge about the individual children. She may have looked at a child's permanent file folder prepared by the kindergarten teacher, and found such information as how many days of school he missed, his scores on a reading readiness test, and comments about him. If a child has had no kindergarten experience, there may be no information other than some information about the family, e.g., how many children are in the family, where (or if) the parents work, or any known health problems a child might have. From this first day, when the teacher does not know individual children, she moves rather quickly to making an assessment of children and begins to make predictions about their success in school. This prediction about success in school is generally first evidenced by assigning a child to a particular room or to a particular reading group within the room.

Grouping in itself, does not imply a particular plan or policy for separating potential reading failures from those potentially successful in reading. However, given the fact that there are more students than teachers, some basis is used to assign certain pupils to specific teachers. Also, within individual classrooms, the teacher has a minimum of three alternatives
when choosing her approach to teaching. Either she teaches children (1) in a total group; (2) individually; or (3) in small groups which are formed on the basis of specific criteria. Even if a teacher does not formally group children, she generally does so informally, in her own mind.

Research by Austin & Morrison (1963) indicates that nearly 75% of the schools included in their study place children in classes on a heterogenous basis, i.e., the children are grouped mainly by age. Within classrooms, however, over 75% of the respondents reported that grouping was done on the basis of reading ability with some provision for individual differences. Being more specific, Austin and Morrison found that "with few exceptions, children were placed in groups according to reading ability as determined by test scores, teacher observation and evaluation, and previous classroom performance [p. 76]."

This initial assignment of children to a particular group, whether considering whole class placement or group placement within a particular class can be of crucial importance. Even though it is generally agreed that there should be mobility between groups, i.e., that students who progress faster than their group should be moved into the more advanced groups, the consensus among respondents in the Austin-Morrison study showed that there was actually very little mobility from reading group to reading group. In cases where there was mobility, it tended to be downward rather than upward. This lack of mobility was also observed by Browne (1971) and by Rist (1970) who found that with minor
exceptions, children remained in the same reading groups during first and second grades.

Therefore if it is true that children generally stay in the same group that they have been assigned to in first grade, then it becomes vitally important to analyze the criteria teachers use when placing children into groups in first grade. One reason for this is suggested by Daniels who analyzed "streaming" in British Primary schools. "A classes get A minded teachers and therefore A results, while C classes get C minded teachers, C educational aspirations and inevitably C results [Daniels, 1961, p. 77]."

Such a supposition is obviously closely related to the concept of the "self-fulfilling prophecy." Rosenthal & Jacobson (1968) in Pygmalion in the Classroom demonstrated that the expectations first and second grade teachers held for their students did indeed affect their achievement scores at the end of the school year. Although this study has been widely criticized because of the methodology used, (Barber & Silver, 1968; Snow, 1969; Thorndike, 1968) other research seems to indicate that the phenomenon of the "self-fulfilling prophecy" does indeed exist in some form. For example, Good & Brophy (1971) analyzed the differential treatment of children for whom high or low expectancy was held. When children for whom the teacher held a high expectancy answered a question correctly, they were more likely to be praised for it than were children for whom the teacher held a low expectancy. If a high expectancy child answered a
question incorrectly, the teacher repeated the question, rephrased it or gave him a clue 67% of the time. For the low expectancy child, the teacher did this only 38% of the time. The other 62% of the time she either answered it herself or called on another child to answer it. Thus teachers seem to demand better performance from children for whom they hold higher expectancies. Conversely, teachers seem to accept poor performance from children for whom they hold lower expectancies.

If one accepts the results of the research that seem to demonstrate that teacher expectancy is an important factor in predicting a child’s success in school (i.e., the self-fulfilling prophecy), then the necessity for examining characteristics and behavior of children upon which are based the criteria for placement into ability grouping can be clearly seen. It is especially necessary if children remain in the same "ability" groups throughout elementary school.

It is also necessary to ascertain if the characteristics that teachers say they use as criteria for reading group placement are consistent with the characteristics of children in a particular reading group that they say they have observed. Austin & Morrison (1963) reported that one of the criteria teachers used for reading group placement was their own observations and evaluations. The assumption can be made then that teachers must know, intuitively if not objectively, upon what basis these observations and evaluations were made. Therefore if teachers were asked to list the criteria that they used for reading group placement,
would these criteria be consistent with the characteristics they say they have observed in specific children who have been placed into a reading group?

It would seem that an answer to this question may have implications for both pre- and inservice teachers. First, if certain characteristics were listed as criteria for reading group placement which did not actually discriminate among the three groups, it would seem that teachers actually did not use them as criteria. Second, if there were characteristics observed that teachers did not list that actually did discriminate among the reading groups, perhaps teachers were using characteristics they did not realize they used as criteria. Perhaps some pre- and inservice teachers need assistance in deciding which characteristics of children make legitimate criteria for making reading group placements.

Brophy & Good (1971) found that teachers gave differential treatment to children for whom either a low or a high expectancy was held. It would be assumed, generally, that teachers would have a high expectancy for success in reading for those children placed in the first reading group and a low expectancy for success in reading for those children placed in the third reading group. Does the high or low expectancy held for each group generally affect teachers' evaluations of specific children in each group? In other words, might a teacher fail to recognize either a "negative" characteristic held by a child because he was in the first reading group or a "positive" characteristic held by a child because he was in the third reading group? Do teachers overgeneralize
positive characteristics for children in the first reading group and overgeneralize the negative characteristics in the third reading group? It could be that failure to evaluate the characteristics accurately would influence the interactions between teacher and pupil and thus affect subsequent achievement.

The strength of a teacher's expectancy for a particular child's potential success or failure may be dependent on several factors. One factor may be related to how a teacher sees changes taking place in the characteristics possessed by a child. For example, if she believes that a particular "negative" or "failure-associated" characteristic cannot be changed then she may interact with the child who possesses that characteristic in a negative way. On the other hand, if a child possesses a negative characteristic that could change, her interaction with that child might be different than her interaction with the first child. Therefore, the movement of children from one reading group to another may be based on the fact that teachers do see changes in the characteristics of children over a period of time.

This research will attempt to answer four main questions:

1. Are there significant differences among various characteristics of first grade children who have been placed into one of three reading groups based on the teachers' perceptions of these characteristics?

2. Are the criteria, or standards of evaluation, teachers say they use when placing children into reading groups
consistent with the characteristics they say they have observed?

3. Are the generalizations, or inferences, made by teachers which describe differences between the characteristics of children in reading groups one and three consistent with the characteristics that were found to differentiate between the children in these reading groups?

4. Do teachers perceive the characteristics of children changing over a period of time? If so, are these changes related to changes in reading group placement?

Answers to the last three questions will be sought in order to determine if (a) teachers are aware of the criteria they use—intentionally as well as unintentionally—as they evaluate children for placement in a reading group; (b) teachers can recognize the unfavorable characteristics of children in the first reading group and the favorable characteristics of children in the third reading group; (c) teachers' expectations for children change as the teachers perceive the characteristics of children changing. The answers could yield insight in determining why some children become successful readers and other children are unsuccessful.

The following procedures were used to collect the data to answer the above questions. Twenty first grade teachers were interviewed three times by the investigator. From each classroom five children were randomly selected to be studied in depth. From the information gathered during the interviews and from a questionnaire administered to the teachers, the data were gathered.
In this study "characteristics" will be defined as those special qualities that make one person different from another. It must be realized that there are different kinds of characteristics, e.g., physical and intellectual. However, these characteristics (with the exception of physical characteristics) generally must be defined by a description of specific behaviors of a child. For example, to say that a child is "shy" is to state a general characteristic that describes him but it must be defined by describing specific types of behavior. In the same way, a teacher may characterize a child as being "smart". This must be defined by describing specific intellectual behaviors. Therefore, behavior will be defined as observable responses of a child to internal and external stimuli, the sum of which may be described by the use of a specific characteristic (Random House, 1969).

There is a need for all types of characteristics and behaviors to be examined in this research. As Lavin (1965) stated:

Although ability measures are presently the best single type of predictor, they account for less than half of the variation in academic performance. Thus we are led to a consideration of nonintellective factors (p. 4).

Therefore characteristics, other than intellectual ones, will be examined. Also as will be made clear in the review of the literature, previous research has generally dealt with specific characteristics rather than with the "total" child.

Previous research also has examined characteristics and behaviors over several grade levels, so there is no description of the characteristics of children at any one grade level. This
research will concentrate only on first grade children. This is because (according to Austin & Morrison, 1963) upper grade teachers often base their expectancies primarily on the reports of previous teachers. If this is so, it seems important to know what characteristics have been first used to distinguish between children who are predicted to be successful readers and those who presumably will not be as successful. This would suggest what first grade teachers have used as a basis for their expectancies and as criteria for grouping.

The present study is described in greater detail in the following chapters. In Chapter Two a summary of past research related to various characteristics of children and their school achievement will be presented. A detailed description of the design and the methodology used to collect the data is given in Chapter Three. Chapter Four presents the statistical analyses and the results of the study. A brief summary of the study, the conclusions, the discussion and implications of the findings, and recommendations for further research are presented in Chapter Five.
CHAPTER TWO

Characteristics of Children: A Survey of the Literature

In this chapter research and theory that examined the relationships among various characteristics possessed by children and their possible association with children's success or failure in school will be reviewed. An attempt will also be made to explain how and why certain characteristics possessed by children seem to elicit either positive or negative reactions from teachers and thus serve as a basis for high or low expectancy. On the basis of this review, the characteristics to be included for examination in this study will be determined.

Appearance Characteristics

In this section, appearance will be used to describe the characteristics of children that are not based on genetic factors. For example, type of clothing, condition of clothing, condition of the hair, hair style (not color), and cleanliness obviously would be dependent on factors in the child's environment and not on his genetic inheritance.

Social psychologists have demonstrated that an individual's first impression of another person affects his subsequent relationships with that person (Brown, 1965; Hartley & Hartley, 1952;
Stotland & Canon, 1972). If this is so, what is this first impression based on?

Hartley & Hartley (1952) suggested that one begins to form the "Image of the other" on such characteristics as the person's dress or his appearance. There have been several projects (Secord, Dukes & Bevan, 1954) in which pictures or descriptions of faces were given to subjects who then listed various traits that supposedly described the persons in the pictures.

In one such project (Secord, 1958), subjects were given two descriptions of persons. The subjects were then given a list of facial characteristics to assign to either description. The facial characteristics assigned to the "warm-hearted and honest man" were quite different than those assigned to the "ruthless and brutal man". The first supposedly had neat hair, a direct gaze, wide and bright eyes, a smooth brow, and a smiling mouth. The second supposedly had slicked-down or disheveled hair, an averted gaze, narrow eyes, a knotted brow, and a turned-down mouth. Studies such as this lend credence to the belief that one's appearance may affect future relationships.

The following literature indicated a possible relationship between appearance characteristics and success or failure in school.

Research reviewed by Ermalinski & Ruscelli (1971) indicated an academic disadvantage for students who held values different from those of the adults who taught school. In their research they compared lower and middle socioeconomic class preschool boys (aged 4 years, 10.5 months) on the incorporation of five adult
middle class values. On two of these values (one was cleanliness), the lower class boys demonstrated significantly less incorporation of the values. The implications of the study stated that lower socioeconomic boys with day care experience entered school with values different from those of teachers. As a result, they may have been at an academic disadvantage because teachers may have given special encouragement and attention to the students who were perceived as having similar values.

Olsen (1971) hypothesized that "There is danger inherent in equating good health and cleanliness with positive feelings and virtuous behavior [p. 274]." Particularly for ghetto children, these norms may be outside their realm of control. If the family cannot afford soap or if they don't consider washing a necessity, the children probably will come to school dirty. If there is great emphasis on cleanliness in school, the child may develop a very damaging self concept. For example, he may learn that dirt is "bad". He is dirty, therefore he is bad. Cleanliness is a middle-class value which teachers need to recognize - otherwise they may base their expectations for a child on a characteristic over which he has no control and which may be perfectly acceptable in his culture.

Clifford (1971) found that teachers based their expectancy for success or failure in school on physical attractiveness. She gave teachers copies of report cards with one of four pictures attached—an unattractive boy, an attractive boy, an unattractive girl, or an attractive girl. The purpose of the study ostensibly
was to decide which form of report card was best. The teachers were asked to fill in an opinion sheet which indicated their best estimate of (a) the child's IQ, (b) his peer relationships, (c) the parents' interest in the school, (d) the student's potential educational attainments. Although the grades on all the report cards were equivalent, the results showed that on all four dependent measures, teacher expectations were significantly higher for the attractive child than for the unattractive child.

Zellner (1971) suggested why many teachers perceived lower class children negatively.

"It may be supposed that teachers interpret the appearance and behavior of minority group children as indicative of their inadequacies relative to middle-class children and that they genuinely experience the children as unable to learn and as discipline problems (p. 19)."

The interpretation of the conflicts that occurred in the classroom were seen as stemming from a clash in values rather than from the children's inadequacies. It was hypothesized:

... that as long as the school system reflects and promotes solely the values of white middle-class America it will be incapable of accepting, respecting, and effectively teaching children of different backgrounds. And when schools interpret nonmiddle-class appearance and behavior as "bad", their interpretation is likely to become a self-fulfilling prophecy (p. 19).

Rist (1970) made formal observations in a black, inner city, kindergarten classroom twice weekly for a school year. He found that on the eighth day of school the teacher grouped the children into three groups on the basis of how she perceived their predicted potential. After this, children sat at tables according to their
perceived potential ability. There had been no tests, formal or informal, given at this time. Rist suggested that there were four criteria upon which this teacher formed the groups: physical appearance, interactional behavior, use of language, and social factors.

The appearance factors observed were the following: clothing, body odor, and condition of hair. Differences among the tables at which the three groups sat were quite pronounced. All children at table one were dressed in clean clothes that were relatively new and pressed. The children at tables two and three (with one exception) were all quite poorly dressed. Not only were the children at these tables poorly dressed, the clothes were old and often dirty. There was also a marked difference in the hair condition of the children sitting at table one and those sitting at tables two and three. At the first table the boys all had short hair and the girls had their hair "processed" and combed. Many children at the second table and most of the children at the third table came to school with unprocessed or matted hair.

On the basis of the literature reviewed, three characteristics were included in the appearance category for this study: (a) type of clothing—new, combination, or old; (b) condition of the clothing—neat and clean or untidy and/or dirty; (c) hair—neat and clean or dirty and messy.

**Biological Characteristics**

Characteristics examined in this section are height, weight, age, sex, race, and hair color. They are based to a greater or
lesser degree on genetic inheritance. Sex and race, for example, are obviously totally dependent on genetic inheritance. Height and weight however, are dependent not only on genetic inheritance but are also dependent on environmental factors. Nonetheless, one's height and weight are largely dependent on genetic inheritance.

**Body Build (Height and Weight).** Walker (1962) investigated some relationships between children's physiques and their behavior in nursery school. He found that endomorphic (heavy) girls tended to be cooperative and conforming in nursery school. They were also extroverted and outgoing; i.e., they were social, direct in solving problems, did not daydream a lot, were free of nervous symptoms, and quickly recovered from upset. Endomorphic boys tended to be aggressive; i.e., they were self-assertive, easily angered, revengeful, and quarrelsome. They were assertively active, being daring, ambitious, noisy, competitive, and showed little concern with inner feelings.

The behavior items of mesomorphic (muscular, sturdy) boys were grouped into several interrelated clusters. A main one was aggressive assertiveness. They were seen as being easily angered, quarrelsome, revengeful, competitive, inconsiderate, and insistent. Related to this cluster were items which indicated a high activity level: energetic, daring, noisy, quick, and decisive. The mesomorphic boys were usually self-confident, open, and fearless. Mesomorphic girls were like the mesomorphic boys in that they had a high energy level, showed aggressive assertiveness, and fearlessness. However, Walker (1968) suggested that:
... mesomorphic boys are likely to channel their robust energy into physical activity and aggressive encounter while the mesomorphic girls turn it toward interpersonal activities and social success (p. 68).

Ectomorphic (thin) boys tended to be described with negatives. Primarily they were not self-assertive. They were low in overt aggressiveness in that they were not attacking, not inconsiderate, not revengeful, not quarrelsome, not easily angered. They preferred sedentary hand activities over gross motor play. They sought out the approval and assistance of adults. Because they were oriented to adult approval, they tended not to be involved with their peers. Ectomorphic girls tended to be unsocial; they were not friendly to other children, and chose solitary play activities or daydreamed. They were low in verbal interests, were somber, and irritable.

It seemed clear from this research that there were some relationships between physical status and behavioral tendencies. Also the potential relationship between the child's behavior and the teacher's judgment of his capability for academic achievement was clearly seen. For example, teachers might view endomorphic girls, mesomorphic girls, and ectomorphic boys (who had the characteristics described above) as cooperative and more receptive to learning. On the other hand, ectomorphic girls, endomorphic boys, and mesomorphic boys might be viewed as uncooperative and thus less receptive to learning. The teacher's judgment is important because once she has formed an opinion of a child's potential it is in some degree communicated to the child and
thus may influence the interaction between them (Brophy & Good, 1970).

Kagan (1966) reported three studies done in which there was an attempt to assess the relationship between body build and conceptual impulsivity. (In a problem situation, an impulsive child will choose the first hypothesis offered and it is typically incorrect. A reflective child will consider the alternatives available, evaluate their validity, and is more often correct.) Third grade boys who were of shorter but of slightly greater chest breadth were more likely to be impulsive than reflective. There was a slight tendency for shorter third grade girls to be reflective and for taller third grade girls to be impulsive. Kagan demonstrated that the children were aware of the desirability of particular body types (boys "should" be tall, girls "should" be short). Therefore, he hypothesized that impulsivity may have been caused in part from anxiety related to body type.

A similar study was run with fourth-, fifth-, and sixth-grade children. Again short, broad boys were found to be impulsive, tall thin boys were reflective. The shorter girls were found again to be reflective and the taller girls impulsive, but these results were not significant.

The third study was done with first-grade children. There was no relationship between body build and impulsivity for boys. The girls, however, showed an unusual relationship; the tall, broad girls were reflective, the short narrow girls were impulsive. Kagan suggested that perhaps sex role standards for
stature had not yet been acquired by age six—particularly by boys.

These studies on body build seem to indicate there may be a relationship between body build and behavior and/or personality factors which could affect school achievement. If a teacher made initial judgments about a child based partly on body build, this could influence her interaction with him, fulfilling her original expectation for his behavior and achievement.

The Curriculum Research Report (1959) examined gifted children in New York City Schools. It was found that in comparison with children in their age group but of lesser abilities, the intellectually superior children were:

1. taller than average for their age
2. stronger than their age group
3. healthier
4. more mature physically than their peers
5. better coordinated physically (p. 5).

Age. Jackson (1964) was one of several researchers who analyzed streaming in British junior schools. (Junior schools have four age groups: 8-, 9-, 10-, and 11-year-old children.) He used a questionnaire and made in-depth observations. Concerning the age of students in non-streamed schools, he found that birthdays were fairly evenly spread over the calendar year. However, in schools that had both an A (top) stream and a B (bottom) stream, more winter-born children (September first to December thirty-first) were found in the A stream and more summer-born children (May first to August thirty-first) were found in the B stream. Also, as the numbers of streams increased within a
school, the differences between winter-born and summer-born children increased.

In schools of three, four or five streams, the winter-born children slowly gain ground and summer-born children sink more and more into "B", "C", "D", and "E" streams (p. 25).

It also seemed to be an advantage being an older child within a year-group. It would seem that a biological factor which should have nothing to do with innate ability had an influence on a child's potential success in school.

Kurtzman (1968) described one of the few studies done in the United States which examined age as a factor of academic success or failure. In a project called "Operation Slowdown," children who were legally old enough to begin kindergarten were given the opportunity to take a number of tests of assess their readiness for school. Delayed entry was recommended if there was any reasonable doubt regarding their readiness. These children attended a pre-kindergarten for half a year. The delayed-entry group and the regular-entry group were each tested at the end of kindergarten. Results showed the delayed-entry group scored higher on all six subtests of the Harrison-Stroud Reading Readiness Profile. Results of four of the subtests were at levels of statistical significance. The author concluded that it seemed to be advantageous for a child to be slightly older than his classmates.

On the other hand, another study done in the United States indicated there was no relationship between age and academic
success. Hirst (1970) reported a three-year longitudinal study which attempted to determine, in kindergarten, the factors that were related to future academic success. Children from the lower, middle and upper socioeconomic classes were included in the study. The results indicated that age was not a significant predictor variable for academic success of first or second graders, nor was it a significant predictor variable for success on the readiness test given at the end of kindergarten.

Sex. The relationship between the sex of a child and his school achievement has been a matter of concern to educators for many years. Waetjen & Grambs (1963) stated:

Our thesis is that sex is a primary human difference, and it makes a difference in behavior generally and in learning particularly. In other words, it really makes a difference whether the student we are instructing happens to be a boy or a girl (p. 261).

There has been an enormous amount of research done on this topic. Only a few of these studies have been reviewed here.

Lincoln (1927) summarized the research on sex differences in children in relationship to achievement done prior to 1927. He found (a) girls consistently excelled in arithmetic computation, (b) boys were somewhat better in arithmetic reasoning, (c) girls were somewhat superior in reading rate, spelling, and handwriting, (d) boys were better in history, geography, and geometry.

Deutsch (1960) attempted to assess the relationship between sex, scholastic achievement, and personality variables among elementary school children. He found that girls were significantly superior in reading achievement, arithmetic achievement, and
popularity among peers. The boys had a negative self-image and negative family atmosphere. Girls differed from boys then, not only in scholastic achievement but in having more positive relationships with themselves, their peers, and their families.

Vernon (1969) compared sex differences on achievement tests for British boys and girls. He found that the boys did better on informational items and girls did better on linguistic items. Girls were relatively superior in spelling and inferior in arithmetic.

Research by Parsley, Powell, O'Connor & Deutsch (1963) indicated that for children in grades two through eight there were no significant differences between the sexes within each grade level for any of the achievement areas studied (reading, vocabulary, reading comprehension, arithmetic reasoning, arithmetic fundamentals). However, later research by the same researchers (Parsley, Powell & O'Connor, 1964) indicated that when children in grades four through eight were divided into smaller groups within each grade (under-, average-, and overachievers) there were some sex differences. Girls tended to exceed the boys in reading; the female under-achievers did not underachieve as much as male under-achievers; female average- and over-achievers achieved at higher levels than did male average- and over-achievers.

Olsen (1959) reported that in the elementary grades girls were generally better than boys in reading comprehension, vocabulary, and basic language skills. Boys tended to be superior in
arithmetic. When he compared growth curves in reading and language for boys and girls from the same family, "age for age the girls regularly exceed the boys [p. 155]." Olsen hypothesized that many of the differences between boys and girls in elementary school may have been caused by maturity differences rather than actual sex differences.

Gates (1961) disagreed however. He conducted a large scale study (over 13,000 children in 12 school systems in 10 states) to ascertain if boys or girls were the better readers. He found that on the average, the reading ability of girls exceeded that of boys at all levels, grades two through eight. The superiority was evident in the upper grades as well as the lower grades. Therefore the fact that girls mature earlier than boys could not explain the differences in achievement. Rather, Gates hypothesized that the explanation was related to the environment. Girls may have received more incentive to read; boys may have found little or no early need for learning to read.

Research by Palardy (1969) supported the hypothesis that environmental factors may indeed be a cause for sex differences in reading. This hypothesis was closely related to the phenomenon of teacher expectancy and the self-fulfilling prophecy. In December, Palardy sent questionnaires to first grade teachers. They were designed to elicit from each teacher her belief regarding probable success of first grade boys in learning to read. Group A teachers responded that they believed first grade boys were, on the average, as successful as first grade girls in
learning how to read. Group B teachers reported that they believed boys were far less successful than girls in learning how to read. Teachers from both groups were matched on several variables. In May, the students of both groups of teachers were given a standardized reading achievement test. Although there were no differences in intelligence between the boys who had Group A teachers and those who had Group B teachers, there was a significant difference on their scores on the reading achievement test. Palardy concluded:

When teachers in this study reported that they believed that boys are far less successful than girls in learning to read (when they defined a situation as real), the boys in their classes were far less successful than the girls (the situation was real in its consequences). Conversely, when teachers reported that they believed that boys are as successful as girls, the boys in their classes were as successful as girls (p. 374).

McCall (1955) stated on the basis of research which he conducted that although the sexes have the same basic mental abilities, they have them in varying degrees of strength, and tend to use them in different combinations when faced with the same problem situation (p. 57).

Research by Vernon (1969) supported McCall's hypothesis. Vernon examined the performance of British boys and girls on intelligence tests. He found that although both sexes, on the average, scored about the same, they differed on some of the sub-scores. For example, girls did better on verbal and rote memory tests. Boys did better on tests of inductive reasoning and
arithmetical ability. Waetjen & Grambs (1963) had suggested that the test performance of American children was similar.

Studies by Bailyn (1959) and Lynn (1962) indicated that girls generally were more interested in, and seemed to have a greater need for, close human companionship than did boys. Because of this greater need for affiliation, girls seemingly related more readily to others. This opened up a great potential for learning. As a girl associated with her teacher, she may have used the teacher as a model and adopted her efficient learning techniques. Boys, on the other hand, who did not affiliate easily may have used a less efficient trial-and-error method of learning.

Jackson & Lahaderne (1967) observed verbal interaction in four sixth-grade classrooms. The focus of the observations was on the flow of communication between the teacher and the individual students. Three kinds of communication were tallied: (a) instructional messages--references made to curriculum content or about educational objectives; (b) managerial messages--interpretation of classroom rules and the definition of acceptable behavior; (c) prohibitory messages--concern with keeping order and punishing misbehavior.

For the instructional messages, there was no clear pattern of sex differences. Depending on which room a boy was in, he received either (a) more than his share, (b) less than his share, or (c) his fair share of instructional messages. An examination of the managerial messages, showed that boys received more than
their share of this type of communication in three of the four classrooms. An examination of the prohibitory messages showed that in all four classrooms boys received almost all of this type of communication. For example, in Classroom A the teacher had about 24 prohibitory messages each hour. In a five-hour day, there would have been approximately 120 prohibitory messages of which 108 were received by one or another of the 17 boys in the room. The authors concluded:

The findings support the commonly held belief that boys have a more difficult time in school than do girls. If control messages are treated as crude measures of that difficulty, these sixth-grade boys as a group have eight to ten times more trouble than do their female classmates. Although it is wrong to leap to the conclusion that the boys are miserable in school and girls wild about it, the experience of going to school is clearly different for boys than for girls (p. 210-211).

In only one study was there found no significant differences between boys and girls in their levels of reading achievement. Feldhusen, Lamb, & Feldhusen (1970) found that when a basal reader series was supplemented with programmed reading instruction that all children achieved at significantly higher levels in word knowledge, word discrimination and in reading comprehension than when they were taught with the basal reader alone.

On the basis of the research it was obvious that differences between boys and girls seemed to exist in achievement, intelligence, and behavior. However, why these differences existed could not be completely explained. A different developmental rate of growth may have been one factor. However, different cultural expectations
for boys and girls seemed to play a large role in creating the differences. If teachers could be made aware of, and would teach to, individual differences, perhaps there would be more diversity and creativity in all children that would not be based on sex differences.

**Race.** In recent years, much attention has been focused on comparison of ability and achievement between white and black children. This type of study was complex because it was impossible to consider only the genetic differences between the two groups of children. For example, the psycho-cultural environment and social learning in early childhood was often vastly different for each group. The socioeconomic status of the families may have been different. These variables (among others) all may have contributed to differences in ability and achievement in school. Nonetheless, bearing the above differences in mind, studies have been done which have attempted to assess differences and similarities between black and white children and their school achievement.

Semler & Iscoe (1963) studied 124 white and 124 black children aged five to nine years. Each child was administered the Wechsler Intelligence Scale for Children (WISC), then was randomly assigned to one of four experimental learning conditions. Results of the WISC showed a highly significant difference in favor of white children; however, the differences were greater for five-year-olds than for older children. The authors hypothesized that this difference between white and black five-year-olds may have been the result of the inadequate kindergarten experience had by the
black children. (There was no public kindergarten at that time. The white children attended a private school which had an excellent physical plant and staff.)

The research itself consisted of four experimental learning conditions that involved a paired-associate learning task. Again the greatest differences between the two groups of children were found for the five-year-olds. However, race differences in learning ability for the older children decreased steadily across the age levels and were not significant in the final analysis. The authors hypothesized that the insignificant differences in learning ability may have been the result of improved public school facilities for the older children. They believed that differences in achievement between white and black children were not based on genetic factors but on environmental factors. This seemed likely when there were no differences on overall learning with increasing age of the students.

Deutsch & Brown (1964) did a cross-sectional study of social class and race which involved first- and fifth-grade children. Using the Lorge-Thorndike, Level I, Primary Battery for first graders and Level III for fifth graders, it was found that the mean scores for the white children were significantly higher than the mean scores for the Negro children. Although the analysis of variance did not show a significant race by socioeconomic status interaction, inspection of the means showed that Negro children at each socioeconomic level scored lower than white children and that Negro-white differences increased at each higher socioeconomic
level. The interpretation made by the authors was that for the data collected "the influence of racial membership tends to become increasingly manifest and crucial as the social class level increases [p. 27]." The reasons for this IQ difference was hypothesized to be a combination of cultural and social background factors.

Research by Musgrove (1972) suggested that race has more impact on achievement than has socioeconomic status. He tested a group of low socioeconomic status Negro and white kindergarten children. No differences were apparent in intellectual ability between the two groups at that time. Two years later, there were significant differences in favor of the white children on four of the six subtests of the Primary Battery of the Stanford Achievement Test: word reading, paragraph, spelling and arithmetic. (The scores on the other two subtests—vocabulary and word skills—were also higher for the white children but the differences were not statistically significant.) Musgrove stated that the differences must stem from nonintellectual differences.

Hair Color. McGlannon (1968) reported data from a pilot study which examined family characteristics of children who had been admitted to a school as "reading disability" cases. It was found that in 51.4% of the cases, red hair was a characteristic possessed by the child or his family. The author hypothesized that there was a "vulnerable family" syndrome, i.e., families with specific genetic characteristics (one of which was red hair) may be most likely to produce a child with a learning disability.
On the basis of the literature reviewed six characteristics were included in the biological category: (a) height—tall, average, short; (b) weight—heavy, average, slim; (c) age—older than average, average (old), average (young); (d) sex—boy, girl; (e) race—white, black; (f) hair color—red, black, brown, blond.

Educational Characteristics

To many first grade teachers, whether or not a child has had kindergarten seems to make a great deal of difference as she evaluates him. In recent years whether or not a child has attended a prekindergarten program may also affect the teacher's evaluations. There has been a great deal of time, money and effort expended on a definitive answer to how kindergarten and prekindergarten experiences affect a child's future achievement in school. The following studies are typical of the large number that have been done. They clearly suggest that this is an area where long-term study and research could profitably be conducted.

Research describing three educational characteristics will be reviewed in this section: prekindergarten experience, kindergarten experience, and absence.

Influence of Prekindergarten Programs. Deutsch & Brown (1964) did a three-way analysis of variance of Lorge-Thorndike scores for first- and fifth-grade children by sex, race, and preschool experience. It was found that race and preschool experience were statistically significant. Children who had had preschool experience scored higher than those without. (The interaction terms were not significant.) It was also found that presence or lack
of preschool experience more highly differentiated intelligence test scores at grade five than it did at grade one.

Douglas & Ross (1964) described the later progress of children who at four years of age had spent at least two hours a day at nursery schools or classes. Complete educational information was available for 224 children. In each social class (middle, upper, manual working class, and lower working class) children who had attended nursery schools or classes made higher scores on ability and performance measures than the average child. However by age 11 they had lost this initial advantage and by age 15 had fallen slightly behind although in no year were the differences statistically significant.

Vane (1971) compared the intelligence and achievement of three groups of disadvantaged Negro kindergarten children. Group one had attended a summer Headstart program; group two had attended a year-long prekindergarten program; group three had no preschool experience and served as the control group. No differences in test scores were found among the three groups. Not only were the IQ mean scores very similar (Group one = 99.1; Group two = 100.9; Group three = 100.4) but they were all within the average range of intelligence. These results were not meant to suggest that children who attended Headstart programs or prekindergartens did not benefit. On further examination it was found that the control children were all upper-lower socioeconomic class children; the others were lower-lower socioeconomic class children.
Perhaps the upper-lower class children did not need prekindergarten as much as the lower-lower class children.

Prekindergarten programs for children with specific problems have been found to be beneficial. Evans & Bangs (1972) developed a special program for children aged three to six who had been diagnosed as having a language or learning disability. Of the children in the experimental group who had completed two school years in the program, only 30% were not achieving at grade level by the end of second grade. Of the children who had entered the experimental program but did not complete it, 75% were not achieving at grade level. For children in the control group, 82% were not achieving at grade level. It would seem from this research that if children with specific problems could be identified early that prekindergarten curricula could be arranged that might prevent future learning problems.

Influence of Kindergarten. Mindness & Keliher (1967) reviewed research done during the 1950's and early 1960's. On the basis of the research, they concluded that not only did kindergarten attendance facilitate academic performance in grade one, but also that evidence of this facilitation could be found as late as grade eleven (p. 509).

On the other hand, Barbe (1964) in his study of highly and moderately gifted elementary children found that not all of these bright children had attended kindergarten. Although all of the highly gifted girls and 90% of the highly gifted boys had attended kindergarten only 70% of the moderately gifted girls and 50% of
the moderately gifted boys had attended kindergarten. It was clear that most of the children did attend kindergarten. However, kindergarten attendance obviously was not necessary for all the children who were gifted.

All children may not benefit from kindergarten attendance to the same degree. Rubin (1972) attempted to evaluate the impact of kindergarten programs on boys and girls of the same age. One-hundred-eighty-two children were included in the study; 76 attended kindergarten, 106 did not. Analysis was based on the raw scores on the Metropolitan Readiness Test (MRT) and the Illinois Test of Psycholinguistic Abilities (ITPA). There were significant differences favoring boys who had attended kindergarten on both the MRT and ITPA. There were no significant differences for girls on the MRT except on one subtest (copying) or on the ITPA except for one subtest (visual-motor association). The author suggested that on the basis of the pre- and posttests given that boys and girls differed in language and readiness skills before kindergarten entrance and that they differed in the impact that kindergarten had on them. Therefore, before one could state that all children need to go to kindergarten, it would be necessary to evaluate each child to ascertain if he would benefit measurably from the experience. The author also suggested that flexible school entrance and promotion policies be established and rigid chronological age requirements be eliminated so that the broad range of individual differences could be accommodated.
The relationship between attendance at either prekindergarten or kindergarten and later success in school was not as simple as some people may believe. Sex differences, differences in the children's background, and differences in intellectual level may all influence the effectiveness of kindergarten experience.

**Absence in Kindergarten.** This characteristic was considered an educational rather than a biological characteristic for the following reasons. First, when a child misses school, he misses the educational activities that the rest of the class participated in, thus he may lack some educational experiences which his peers had. Second, because a child was absent does not necessarily mean that he was ill. There could be many other reasons why he was absent. To have included this characteristic as a biological characteristic would have meant that it was assumed that every time a child was absent, he was ill. This was not a tenable assumption. Therefore, absence was included as an educational characteristic on the basis of the educational experiences that a child had missed.

Adelman & Fesback (1970) stated that it was important for a child to have general health good enough that he was able to maintain regular attendance at school. Apparently they, like others (Kaeper, 1959, for example) assumed that there was a high correlation between school achievement and attendance.

However, Kowitz & Kowitz (1966) showed that a close and direct relationship between attendance and achievement was not as strong as it was often supposed. There were no significant differences
between the attendance records of second grade children who were classified as (a) needing enrichment (above average), (b) average, (c) having social or personal problems, (d) having learning or educational problems. One might expect (as these researchers did) that the students with problems would have been absent more than the students without problems. This was not the case. Students from all classifications were absent approximately the same amount of times.

Douglas & Ross (1965) examined detailed absence records over a four-year period for 3,273 primary school children in Britain. For upper-middle class children there did not seem to be a relationship between absence and achievement. Even if these children had been consistently absent, they were able to maintain their level of performance. In the best primary schools, children who were frequently absent during the first two years not only caught up with the level of achievement of their peers but often surpassed them. However, an examination of the scores of the lower class children showed there was a relationship between excessive school absence and achievement. The children who were consistently absent made low scores at age eleven and showed a relative deterioration in test scores between eight and eleven years.

Barbe (1964) in his study of highly and moderately gifted children found that the boys--both highly and moderately gifted, averaged 9.5 days absence for each of the years they had been in school. Girls averaged slightly less--the highly gifted missed 7.6 days and the moderately gifted missed 8.7 days per year.
According to the Columbus Board of Education, the average number of days missed by all elementary pupils was 6.083. The highly and moderately gifted students missed more days of school than average. This would lend support to the hypothesis that there was not a strong relationship between attendance and achievement.

Feldhusen, et al. (1970) correlated sixteen pupil variables with scores on the Metropolitan Achievement Test. One of the variables was absence. For the first grade pupils the correlation between absence and test scores was not significant.

On the basis of the literature reviewed, three characteristics were included in the educational category for this study: (a) prekindergarten experience—yes, no; (b) kindergarten—yes, no; (c) days absent from kindergarten.

Family Characteristics

It was impossible to directly observe any family characteristics of children in school. However, from the permanent records and from teachers' conversations with pupils, most teachers seemed to be aware of three family characteristics: the child's position in the family, i.e., whether or not he had siblings; whether or not the mother worked outside the home; and whether or not the family was intact. Therefore, the review of the literature was concerned with these three characteristics.

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1Personal communication.
Position in the Family. It often seemed to be assumed that first born children would be more successful in school than later born children. Research seemed to support this assumption to a degree. For example, Dale & Griffith (1966) found that 67% of the children who did better academically than had been predicted were the first born in a small family. Barbe (1964), in his description of characteristics of gifted elementary school children, found that 60% of the highly gifted children were first born and 54% of the moderately gifted children were first born.

Chittenden, Foan & Zweil (1968) examined school records of 129 pairs of first and second born siblings by looking at teacher grades and Iowa Basic Skills Test (IBS) scores earned during common years in their school careers. There was clear evidence of first-born superiority in teacher grades as well as on the IBS scores. It was also found that ordinate position may have been most significant for siblings who were close in age (one to one and one-half years). The authors postulated that the apparent superiority of first-born children reflected the "disadvantage" of the second child as well as the "advantage" of the first. Teacher comments regarding "effort" were also examined. The great majority of clearly negative comments were given to the second-born children. The authors suggested that the observed differences in achievement may have been caused to a great extent from differences in personality characteristics. Having briefly reviewed the literature on personality differences, they postulated that first-born children may have attended more closely to
the teacher, may have been more conscientious in carrying out assignments, and in general were seen by teachers as being more cooperative and reliable.

However, Shachter & Leventhall (1968) found that last-born children as compared to first-born or middle-born children had fewer problems serious enough to be referred to a Children's Psychiatric Center. Why then, if last-born children seemed to have fewer serious problems than first-born children, were first-born children seen by the teachers as being more cooperative and reliable?

Otto (1965) studied the sibling patterns of 300 good readers and 300 poor readers in grades four through nine. The children were categorized on the basis of five family positions: only child, eldest child, first child in a second family (when the child was seven or more years younger than his preceding sibling), middle child, youngest child. The results of chi square tests showed that at each grade level there were more first and only children among the good readers. (Statistically significant only at sixth grade however.) When combining grade levels the results were statistically significant indicating that more first-born and only-children were good readers. If the only-children were dropped from consideration, the results again were statistically significant, leading the authors to conclude "there are disproportionately more eldest children among good readers than among poor readers [p. 55]."
Greer & Whitely (1971) investigated the relationship between birth order and children having learning disabilities. They found that the largest proportion of learning disabled children were those who were born third in a family of three or more children.

On the other hand, Vockell & Bennett (1972) replicated the Greer & Whitely study with a larger sample and expanded on it in several ways. Their results provided no support for the hypotheses that birth order or sex of siblings were related to the incidence of learning disabilities.

Douglas (1964) studied British children born during one week in March 1946. He examined position in the family as it related to achievement in school. He contrasted (a) only-children with first-born children with two or three siblings and (b) first-born children with later-born children within families of two or three. First, it was found that only-children did very slightly better than did first-born children with siblings on tests of mental ability and achievement. However, these differences were not significant nor were they consistent between the social classes. For the second comparison, it was found that the average test scores made by first- and later-born children showed no consistent differences in either two or three child families. On the other hand, between the ages of eight and eleven years, the first-born children improved their test scores in relation to their younger brothers and sisters. This pattern persisted for the different socioeconomic classes. An examination of the results of the secondary selection exam indicated that first-born children with
one or two siblings did better than would have been expected and the later-born children did worse. This phenomenon was found to a greater extent in the manual working classes than in the middle classes. Douglas suggested:

It seems, however, that the eldest children, though they do not show any marked superiority in the tests, receive a stimulus which the younger children lack and which spurs them on to do well in the secondary selection examinations. And it seems that this stimulus is the presence of a younger child in the family, rather than the fact of being first-born, since the only children, in contrast to the first-born in larger families, get the number of grammar school places that would be expected from their eleven-year test scores, and no more (p. 90).

Vernon (1969) also found that more first-born children were accepted in grammar school than would be expected. (Children must take a qualifying exam to be accepted in grammar school.) He hypothesized that parents had higher aspirations for the first-born child and/or they may have talked to this child more than to later-born children.

Research by Adams & Phillips (1972) supported in part, Vernon's hypothesis. These researchers carried on a two year study of elementary school students in which they attempted to study motivation, achievement, and intellectual differences between first-born and later-born children. They found that parents had higher expectations for and expected higher achievement from the first-born in comparison to a later-born child. The first-born children seemed to live up to this expectation. They scored significantly higher than would be expected on four out of five measures of intellectual and academic achievement. However,
when the level of motivation was controlled, these differences disappeared

... suggesting that motivational differences between the two groups may be responsible for similar differences in intellectual and academic functioning (p. 62).

Cicirelli (1967) found that in general, birth order did not appear to be an important factor affecting ability and achievement in the sixth grade. He believed there was a developmental trend affecting birth order and achievement. The later-born child did better in early childhood, the first-born did better in high school and college, and at some period in the middle, they may not have differed in ability.

Cicirelli also examined differences in achievement between two-, three-, and four-child families. He cautioned that one must not generalize from the two-child family to families of larger size. For example, he found that in three- and four-child families birth order was not related to ability or achievement. However, in two-child families, the first-born girls and second-born boys scored higher on IQ than did second-born girls and first-born boys.

Schoonover (1959) compared longitudinal sibling records on intelligence and achievement for the period 1929-1951. She found no significant differences between older and younger siblings in intelligence or achievement as measured by deviation from norms for chronological age. She concluded that priority of birth in a family was of no advantage in intelligence or achievement.
Several researchers examined personality variables which might affect achievement between first- and later-born children. Schachter (1959), Rhine (1968), Sampson (1965), Sears, Maccoby & Levin (1957), Dean (1947), and Hilton (1967) all found differences between older and younger siblings on such characteristics as being dependent and conforming, the development of "conscience," being cooperative and being curious. It might be possible that children demonstrating greater or lesser amounts of the above characteristics might cause teachers to react differently with them which might be likely to affect their achievement in school.

**Working or Non-working Mother.** The assumption seemed to have been made that children whose mothers worked regularly outside the home may achieve less well in school. Research, however, indicated that children of working mothers did not achieve less well in school. Also, the relationship between the two factors was not as direct nor as simple as might be expected.

Hoffman (1961) found that maternal employment had a different effect on the mother-child relationship and the child's behavior depending on whether or not the mother enjoyed working. For example, the mother who enjoyed working showed her child more affection and used milder discipline. The working mother who did not enjoy her work also showed milder discipline, but was not as affectionate or sympathetic. "This suggests that the dislike work group tends to withdraw from the maternal role [p. 191]." Children of mothers who did not enjoy their work, were required to help more with household tasks than were children of non-working
mothers; children whose mothers enjoyed working, seemed to show less initiative and were less assertive than children of mothers who did not enjoy working. The assertiveness of children of mothers who did not enjoy working was directed both toward the mothers and toward the peers. In general, they were aggressive, used more physical force, and showed less impulse control. Both groups of working-mother children were likely to use non-adaptive responses to frustration (crying, blaming others, being over-critical of self) than did children of non-working mothers. Both groups of working-mother children showed lower intellectual performance and were somewhat less liked by the other children in their classes.

Fraser (1959) found that children of working mothers seemed, as a group, to be slightly less intelligent than the children of non-working mothers. However, children whose mothers worked were not less successful in their school work.

Herzog (1960) examined the research pertaining to the working mother and her relationship to her children. She concluded:

All in all, the research evidence available so far suggests that the mother's working is only one of the many factors impinging on children, and despite individual variations—that on the whole it is a secondary rather than a primary factor, so far as child development and adjustment are concerned. The primary factors, it would seem, have to do with family climate and functioning, the personality and temperament of the parents, the kind of care and training the child received (p. 37).

Intactness of the Family. There seemed to be general acceptance of the idea that a child needed an intact family in order to
develop to his fullest social, personal and academic potential. Sometimes this belief was so strong that marriages were held together "for the sake of the children." Actually a child may be better off in a broken family if there was violent marital discord and tension between the parents.

Two studies, for example, have shown the emotional adjustment of children from well-functioning one-parent homes to be superior to that of children from unbroken and unhappy homes ... (Herzog, 1960, p. 19).

This section will examine research which dealt with the effects of a "normal" home background (i.e., the legitimate son or daughter living with both his parents in a home apparently free from acutely disturbing condition; Fraser, 1959) and an "abnormal" home background (i.e., living with one parent, or grandparents, or another adult) on the academic and personal behavior of children.

Barbe (1964) in his study of 130 gifted children found that more than 90% of these children came from families in which the parents were married and living together. Only five of the 130 children had parents who were divorced.

Fraser (1959) found that the performance of children from abnormal homes was below that of children from normal homes on the basis of IQ scores. The difference was not large between the two groups, but it was consistent and significant statistically. The difference seemed to be more pronounced for children with IQs of 100+. For them the differences were statistically significant beyond the .001 level; for children with IQs below 100, the difference did not reach significance.
Blanchard & Biller (1971) compared father availability and academic performance among 44 third grade white boys. The boys were divided into four groups: father absent before age five, father absent after age five, father present but available to his son very little, father present and often available. The children were further matched in terms of age, IQ, socioeconomic status, and presence or absence of male siblings. Results showed that the academic performance of the boys whose fathers were often available to them was superior to the other three groups. Specifically, achievement test subscores indicated that boys whose fathers were absent before age five were "clearly under-achievers." The boys whose fathers were absent after age five and boys whose fathers were seldom available to them generally functioned three to five months below grade level. The boys whose fathers were available to them averaged about eight months above grade level.

Santrock (1972) compared third- and sixth-grade IQ and achievement scores for father-absent and father-present lower class white children. Results showed that the scores of father-absent third graders were significantly lower than for father-present children. However, for sixth-graders, father-absent children scored only slightly lower than did father-present children. Santrock also examined some of the details of father absence. For example, the most debilitating age (regarding cognitive development) for father-absence due to divorce, desertion, or separation seemed to be in the first two years of life—especially for boys. Also father-absence because of death affected a child's cognitive
development differently than absence due to divorce, desertion, or separation. No significant differences were found for girls whose fathers died at different times. Boys whose fathers died when they were six to nine had more depressed cognitive growth than if the father died in the initial two years of life. Generally it was found that there was a more negative influence on boys than on girls if the father was absent.

Santrock also examined the effect of a step-father moving into the home. For boys whose fathers had left in the first five years, a step-father seemed to have a positive effect on his cognitive development. However, the entrance of a step-father into a girl's previously father-absent home did not have a positive influence on her cognitive development. There seemed to be greater conflict for the girl concerning the remarriage of her mother than for the boy.

Deutsch & Brown (1964) found higher frequencies of broken homes and family disorganization for Negro children than for white children. Doing a four-way analysis of variance of the Lorge-Thorndike intelligence scores using sex, grade, race, and presence of the father as independent variables, it was found that white children scored higher than Negro, and children coming from homes where fathers were present scored significantly higher than children from fatherless homes. Analyzing only the data on Negroes for the two lower socioeconomic classes, it was found that for males, females, and the combined group, the IQs of children with
fathers in the home were always higher than the IQs of children who had no father in the home.

Bronfenbrenner (1967) reviewed the literature dealing with the serious inadequacies experienced in school by disadvantaged children. He concluded that father absence had a far greater impact on sons than on daughters. Also, the consequences of paternal absence were not limited to the emotional and social spheres. It played a crucial role in the development of a capacity essential to achievement generally and academic achievement in particular—the ability to delay immediate gratification in order to obtain a later reward.

Research by Deutsch (1960) also supported the theory of the effect of paternal absence on school performance. Lower-class Negro children from broken homes were far more likely to score below grade level on tests of academic achievement than were their classmates from intact families. Even though intact homes were more crowded than broken homes, children from intact homes scored higher, leading Deutsch to conclude "who lives in the room is more important than how many [p. 10]."

On the basis of the literature reviewed, three characteristics were included in the family category for this study: (a) the child's position in the family—oldest, middle, youngest, or only-child; (b) working mother—yes, no; (c) intact family—both parents, other (i.e., grandparents, mother only, father only, etc.).
Intellectual Characteristics

The relationship between intellectual characteristics of children and their school achievement has been documented in depth for many years. The relationship has been positive and significant. Just a few of the many research studies done will be included in this report. The specific characteristics chosen for inclusion were the following: scores on the Metropolitan Readiness Test, number knowledge, the ability to interpret or "read" a picture, alphabet knowledge, and the ability to match similar shapes.

Scores on the Metropolitan Readiness Test (MRT). Clutts (1969) found a correlation of .74 between the MRT and reading achievement.

Gates (1970) found the MRT to be the best single predictor of learning sight words. However, it was suggested that a number of other tests should be used for making the most accurate prediction.

Goodstein, Whitney & Cawley (1970) found that the MRT total test score appeared to offer the most potential for discriminating among failing and adequate readers. The reason for this was not based only on the content validity of the test but also on the range of abilities tested.

Feldhusen, et. al. (1970) reported that they found that the total readiness scores on the MRT were better predictors of reading achievement for girls than for boys. This finding had been supported by previous research.

Dykstra (1972) on the basis of research reviewed, suggested that the MRT was well constructed and measured abilities which
were commonly believed to be associated with success in early school learning. It was a valid and reliable test.

**Number Knowledge.** Koontz (1960) found statistical significance between the knowledge of numbers and a test of reading achievement. Number knowledge showed the highest relationship to reading achievement of all readiness items and other variables used in the study.

Flamand (1961) reported that performance on the MRT numbers subtest, at the kindergarten level, was the best single estimate of probable success in beginning reading.

Goodstein, et al. (1970) found that the MRT numbers subtest was significantly correlated with perceptual reading achievement among second grade disadvantaged children.

Livo (1970) reported that the correlation between the arithmetic subtest of the *Wechsler Preschool and Primary Scale of Intelligence* and the total reading score on the *Metropolitan Achievement Test* was .39. This correlation was statistically significant at the .01 level.

**Reading a Picture.** According to Torrance (1967), the ability to interpret or "read a picture" has been suggested as an indicator of school readiness. As with many other characteristics however, there has not been complete agreement among researchers that this characteristic does in fact indicate readiness for reading.

Flamand (1961) found that the ability to associate verbal descriptions with pictorial illustrations showed only limited
correlation with the results of a standardized reading test used to measure reading performance at the end of first grade.

On the other hand Porter (1968) suggested that reading and interpreting pictures will help prepare children for the necessary visualizations that are required in reading. The recommendation was made that teachers should provide many varied opportunities to help children develop this skill.

Aliotti (1970) found that scores of advantaged children were far superior to those for disadvantaged children on The Picture Interpretation Test. The implication might be that this may be part of the reason why disadvantaged children often have more problems learning to read than advantaged children.

Livo (1970) reported that the correlation between picture interpretation and the total reading score on the Metropolitan Achievement Test was .25. This correlation was statistically significant at the .01 level.

Alphabet Knowledge. Sutton (1964) analyzed many characteristics of children who had learned to read during their kindergarten year. She found that these children could name at least 23 of the 26 letters of the alphabet, even though no attempt had been made to teach the children these letters.

Chall (1967) analyzed seven studies that related knowledge of the letters of the alphabet and reading achievement. From these studies it was concluded that the ability to identify the letters in kindergarten or beginning first grade was an important predictor of reading achievement. Letter knowledge had a higher
association with success in early reading than did mental ability as measured by intelligence tests.

Five major reading readiness batteries (Metropolitan Readiness Test, Murphy-Durrell Reading Readiness Analysis, Clymer-Barrett Prereading Battery, Gates-MacGinitie Reading Test--Readiness Skills, and Harrison-Stroud Reading Readiness Profile) have included an alphabet knowledge subtest. All these batteries are presumed to measure reading readiness skills.

Matching Similar Shapes. Koontz (1961) found that there was a significant relationship between the ability to match similar shapes and a measure of reading achievement.

Goodstein, et. al. (1970) reported that the MRT matching subtest was significantly correlated with perceptual reading achievement among disadvantaged second grade children.

Feldhusen, et. al. (1970) correlated sixteen pupil variables with scores on the Metropolitan Achievement Test. One of the variables was matching similar shapes. For the first grade pupils included in this study, the correlation between matching and scores on the reading comprehension subtest was significant at the .01 level.

Calfee, Chapman, & Venezky (1970) devised a series of tests which were reported to assess the necessary skills a child must master before he can learn to read adequately. One of these tests was matching visual forms.

Three major reading readiness batteries (Metropolitan Readiness Test, Gates-MacGinitie Reading Test--Readiness Skills, and
Harrison-Stroud Reading Readiness Profiles have included matching similar shapes as a subtest. It was assumed that this skill was necessary for learning to read.

On the basis of the literature reviewed seven characteristics were included in the intellectual category for this study: (a) ability to read a picture, (b) ability to identify signs—yes, no, (c) alphabet knowledge—yes, no, (d) ability to read now—yes, no, (e) knowledge of numbers from 1-12—yes, no, (f) ability to match similar shapes—yes, no, (g) test scores on the Metropolitan Readiness Test.

Language Characteristics

When one examines language and its relationship to school achievement it becomes apparent that the relationship is very complex. Language is often thought of as one form of communication. However, not only is the message itself important but many times the form of the language is equally important. This may be because the form of the language one uses shows a relatively high correlation with one’s perceived social status (Putnam & O’Hern, 1955; Labov, 1966).

Lambert, Hodgson, Gardner & Fillenbaum (1960) for example, found that a person’s primary subjective reactions to language characteristics of an unknown person were associated with whatever stereotype held for the group in which that person was thought to be a member. Listeners in Montreal, Quebec were asked to assign personality characteristics to speakers of tape-recorded examples of French and English. Although the language samples
were recorded by perfect and coordinate bilinguals, the listeners rated the English speakers as better looking and more intelligent; the French speakers were rated as kinder and more religious. Similar research was done with American dialects (Tucker & Lambert, 1969; Hewet, 1971; Williams, Whitehead & Miller, 1971) and Jewish-accented and non-accented English (Ainsfeld, Bobo & Lambert, 1962). Research results were very similar—listeners made very specific evaluations of the person speaking only on the form of language used.

As one assesses the importance of language used in the classroom, the same problem comes up. Williams & Whitehead (1971) questioned the degree to which the speech of minority group children in the classroom elicited social stereotyping in the mind of a teacher. If it did so to any great degree, the stereotyping and associated attitudes might influence the teacher's instructional behavior toward the child.

Woodworth & Salzer (1971) found that the stereotyped attitudes described above were held by some teachers. Students in graduate education classes evaluated identical reports, tape-recorded and read alternately, by black and white male sixth grade students. The evaluation sessions were separated by an interval of three weeks. (The black children read the material written in standard English, not altering syntax nor substituting black dialect lexical variables.) Examination of the data showed that for each of the ten variables (clarity, coherence, critical thinking, etc.) the white child received a substantially higher rating than did
the black child for identical material. (On seven out of ten variables, the difference was statistically significant.)

Also, the relationship between language and success in school (especially in reading) was not at all clear. Very few studies have actually been able to give evidence that showed a causal relationship between them.

For example, according to Chall (1967), Loban (1963) and Strickland (1962) who correlated children's oral language ability (in terms of complexity of language patterns used) to their reading achievement, found no significant relationship between oral language and reading achievement in the primary grades, although significant correlations were found for the intermediate grades. Thus Strickland found a significant correlation between reading and oral language at the sixth grade level, but not at the second grade level (p. 158).

Bougere (1968) examined the relationship between first grade reading achievement and seven selected experimental language measures (for example, number of T-units or communication units, mean length of T-unit, and the type-token ratio). Subjects were 60 first grade pupils from six suburban schools representing three socioeconomic levels. The results showed that no single language measure nor any combination of these measures was found to have as much value in predicting reading achievement as did the Metropolitan Readiness Test. The coefficients of correlation found between the syntactic and vocabulary measures and the criterion measures were not large enough to be of any value in predicting reading achievement from these linguistic measures.
(The author cautioned however that the findings need not be
interpreted to mean that there was no relationship between oral
language competency and early reading achievement. It may have
been that the variables which she selected were not pertinent.
However, it would present a problem setting up alternative
language measures that would have been more pertinent.)

Weintraub (1968) examined older research (back to 1938) which
looked at the relationship between oral language and reading. He
concluded that the findings of the research did not point to
strong positive relationships between language measures and achieve­
ment in oral reading, word recognition, or paragraph compreh­ension.
After reading some of the studies cited by Weintraub, two comments
must be made: (a) perhaps the language measures used were not
appropriate; (b) Weintraub seemed to omit some facets of the
various studies which showed a somewhat more positive relationship.

For two years Winter (1957) collected oral language samples
in a "show and tell" situation from pupils in three elementary
schools that represented a "reasonable homogeneous sample in terms
of socioeconomic status." The pupils were then tested on measures
such as readiness and achievement tests. At the end of the second
year negligible relationships were found between reading and two
measures of oral language (total length of response and average
length of sentences). The findings indicated that learning to
read had little or no dependence upon oral language as tested in
children's show and tell situations. (It seemed that recording a
child's language only in show and tell situations was a narrow
measure of his oral language ability however. Rather as Bourgere suggested, perhaps recordings should have been made during children's free play, in the lunch room during child-child conversations and the like. In varied situations valuable clues may have been secured concerning the pupil's ability to speak in well-formed sentences and to use a wide and diverse vocabulary. At this point perhaps a more valid relationship could have been found between reading and oral language.)

Cordes (1965) attempted to find the relationship between selected oral language abilities and reading achievement of first grade boys. Complete measures were obtained for 305 boys. Some of the measures used were the Berko Morphology Test, total word output, mean of the five longest remarks, intelligence and several of the Gates Reading Tests. It was concluded that the language tests used did not differentiate markedly among these students; and that intelligence and the chronological age of boys entering first grade were more important factors to consider.

Clutts (1969) devised a Reading Readiness Rating Scale based on six readiness factors, one of which was oral language ability. Results indicated that oral language ability was not one of the best predictors of reading achievement.

On the other hand, Gibson (1970) stated that the vital first stage in reading was learning to communicate by spoken language. "Reading begins with the child's acquisition of spoken language [p. 322]." The child then learned to differentiate graphic
symbols, learned to decode letters to sound and used progressively higher-order units of structure.

There was research which supported Gibson's viewpoint. For example, Morrison (1962) investigated the relationship of children's maturity in the use of various types of sentence structure to their scores on the Lee Clark Reading Readiness Test. The subjects were 83 children in four kindergartens in a city school district. The children's language was recorded at sharing time and was classified according to complexity of sentence structure. The correlation of the raw scores used to measure the level of sentence structure and the raw scores on the reading readiness test was .721. This author suggested language development should be given much attention in readiness programs.

Brittain (1970) attempted to discover if a child's ability to use the regular principles of English inflection was a significant factor in beginning reading success. The subjects were 135 middle class white children in first and second grades. Measurement instruments used were a revision of Berko's Test, parts of the Primary Reading Profile and the Lorge-Thorndike Intelligence Test. Results of a correlational analysis indicated a significant relationship, independent of intelligence, between reading ability and inflectional performance. Based on the results of this study, Brittain recommended a careful appraisal of children's linguistic status before beginning formal instruction in reading.
From the research reported above, it was obvious that the relationships between language and achievement in school was complex. There was not only little agreement among researchers but, in addition what had been found may have been confounded because of the attitudes teachers have concerning language.

Nonetheless, four language characteristics and their possible relationship to achievement in school were examined: use of standard English, the ability to understand what is said in class, the ability to speak confidently and fluently, and vocabulary development.

**Standard English.** There were at least two distinct points of view on whether or not speaking a dialect seriously interferes with a child's success in reading. Researchers such as Shuy (1968) said that it did. Weber (1968) gave evidence that interference posed by a dialect does not interfere with learning to read.

Wardhaugh (1968) reported that it was possible to read standard English in almost any dialect. A standard printed text can be associated with dialects which show considerable phonological and grammatical variation from what might be considered the standard spoken dialects. He gave as an example, reports of children reading the standard written forms in non-standard spoken forms which were the dialect equivalents of standard forms. Although the teachers told the children their readings were "incorrect," in each case the children understood so well what was on the page that they gave the printed words the "correct" phonetic realizations in their own dialect. Wardhaugh felt that
many teachers revealed confusion between teaching children to read and teaching them to speak a different dialect.

Rystrom (1970) stated three hypotheses in a study which he conducted: (a) Negro children can be taught to use features of standard speech which do not occur in their native dialect; (b) Knowledge of this additional dimension of dialect will have positive and significant influence on word reading scores; (c) the use of phoneme-grapheme controlled readers (linguistic readers) will have a positive and significant influence on word reading scores. All three hypotheses were rejected. No interaction between dialect, reading, the use of linguistic readers and reading achievement was found.

Goodman (1970) responded to Rystrom's research in this way.

But there is another way to achieve success in teaching black children and other speakers of low status dialects to read. It involves teaching teachers to accept and build on the language competence of all learners. It involves seeking their linguistic strength, not weakness (p. 603).

In contrast, McConnell, Horton & Smith (1969) believed that the language "deficit" constitutes the greatest hazard to later school learnings and subsequent life achievement. They based their conclusion on an experiment which compared 128 children in a day care center which stressed language development with 57 children in a day care center that put less stress on language development. Analysis of the data showed a gain in intelligence, in sensory-perception skills, and significantly higher scores on the Metropolitan Readiness Test for the children in the day care
center that stressed language development. The authors felt the level of reading readiness may have been raised at least one score range by the experiences in the day care center. They also believed that the dialect must be changed before the children were "ready" for school.

Rist (1970) found that when a black kindergarten teacher grouped her black students, those who spoke other than standard English were penalized. Children at the first table (the "best" students) were much more adept in the use of "school language" than were the students the teacher saw as being potentially unsuccessful in school.

Bernstein (1961) had suggested that the "restricted" language of the lower class has shaped thought and cognitive style. If this hypothesis was correct, the intellectual performance of non-standard speakers would be low as a result of the restricted form of the language.

Bernstein (1971) reported that in Britain the lower working class and the rural groups speak a restricted code. This restricted form of language inhibited "the orientation to symbolize intent in a verbally explicit form [p. 77]." The middle class and adjacent social strata spoke an elaborated code which facilitated a verbally explicit form of the language. Therefore, children from different social classes were exposed to different kinds of language learning

... and so their resultant modes of self-regulation and orientation will be different, irrespective of innate intelligence. The net
effect of the constraint of a restricted code will be to depress potential linguistic ability, raise the relevance of the concrete and descriptive level of response and inhibit generalizing ability at the higher ranges (p. 81).

Bernstein said that if a child has available only the conditions for learning the restricted code that he will be limited in his learning ability because of the nature of his verbal learning.

A child limited to a restricted code will tend to develop essentially through the regulation inherent in the code. For such a child, speech does not become the object of special perceptual activity, neither does a theoretical attitude develop towards the structural possibilities of sentence organization. The speech is epitomized by a low-level and limiting syntactic organization and there is little motivation or orientation towards increasing vocabulary (p. 134).

Thus the relative backwardness of many working-class children who live in areas of high population density or in rural areas may well be a culturally induced backwardness transmitted by the linguistic process. Such children's low performance on verbal IQ tests, their difficulty with 'abstract' concepts, their failures within the language area, their general inability to profit from the school, all may result from the limitations of a restricted code (p. 151).

Research was done by Quay (1971) which seemed to challenge Bernstein's hypothesis. The Stanford-Binet test had been translated into the Negro dialect by W.A. Stewart, a linguist. This form as well as the standard form was given to Negro children who had attended two years of a Head Start Program. It was found that use of the dialect form of the test did not influence IQ scores. All the scores were within the normal range of intelligence. It was observed that although the children generally spoke the
dialect in both testing situations, they were able to comprehend and respond to standard English as well as they did the dialect. In other words, there seemed to be no cognitive deficit caused by the children's use of dialect. Quay suggested that language investigators should take care to use procedures which separate speech production from language comprehension.

The generalization of "deficit" or "difference" from speech production to language comprehension is unwarranted and certainly obscures the language behavior of the disadvantaged child (p. 14).

Williams (1970) attempted to find which language characteristics teachers used when making subjective evaluations of children's tape-recorded speech. It was found that the area "ethnicity-nonstandardness" was used. Some of the specific characteristics were pronominal apposition (i.e., "the other guy, he came ..."), deviation in the main verb; -s or -z deviations; and -t or -d deviations. The children who were judged as speaking in this manner were rated lower on socioeconomic status than those speaking standard English. If one considers the effect that socioeconomic status has on school success (either because of teacher expectation or other factors) one can hypothesize that the form of language used by the child would also influence his chance for success in school.

In further research by Williams & Whitehead (1971) video-tapes were made of children speaking. Again ethnicity-nonstandardness was one of the main dimensions used for judgment. The correlates with it were:
The language shows: a standard American style-marked ethnic style (.90)

The language spoken in the child's home is probably: standard American style - marked ethnic style (.90)

The child seems culturally: advantaged - disadvantaged (.80)

The child's family is probably: high social status - low social status (.80)

Pronunciation is: standard - nonstandard (.70) (p. 111).

The authors concluded

... that differences in language habits, particularly those of minority group children, have been too often confused as deficits. The fact that, for example, teachers in this research program have consistently based about half of their judgmental perspective upon nonstandardness is symptomatic of a prescriptionist (for standard English) rather than, say an aptness of a communicative criterion in evaluating children's speech (p. 112).

Morgan (1972) stated:

The language of an elementary school child frequently tells his hearer some of the most singular aspects of his past experiences, and of his personality. The structure of his speech alone is a rather objective disclosure of the educational and occupational background of his home. The words he selects to convey his thoughts, and his verbal reactions to the words of others manifest some of his deepest concerns, hopes, anxieties, values and aspirations (p. 395).

It would seem that because the form of language (either standard or non-standard English) is so closely associated with cultural stereotypes and expectations that it is difficult to draw one conclusion about its relationship to school success or failure. For example, even though it may be possible to demonstrate that a dialect should not interfere with success in learning to read
(and thus with success in school) this will not be generally true until teachers believe that the form of language makes no difference in predicting potential success or failure. Until that time, it would seem that the child who speaks the standard form of English has a better chance for success than the child who speaks a non-standard form.

**Understands What is Said in Class.** Adelman & Fesback (1970) in their rating scale used to predict potential reading failures stated that a child must understand what is said in class if he is to be a successful reader. Unfortunately, they do not describe specific behaviors which could be used to define the characteristic.

Gates, Bond & Russell (1939) found that tests of ability to listen to, understand, and make use of the teacher's instructions ranked high in predicting reading progress.

Research by Howard, Hoaps & McKinnon (1970) indicated that children from low socioeconomic families did not differ significantly from children in higher socioeconomic families in their ability to understand or comprehend the spoken work and to interpret sentences.

One of the subtests on the Gates-MacGinitie Reading Test—Readiness Skills was listening comprehension and following directions. This skill is presumed necessary for learning to read.

**Fluency.** Adelman & Fesback stated that for a child to be a successful reader he must speak clearly and plainly enough to be understood in class.
Howard, et al. (1970) found that children from higher socioeconomic classes showed significantly more verbal facility in standard English than children from lower socioeconomic classes. This would seem to be as one might expect. More than likely children from higher socioeconomic backgrounds do not have the verbal facility in nonstandard English that lower class children have.

The problem for the nonstandard English speaking child is that most teachers expect him to speak standard English which he cannot do. In trying to please the teacher, the child speaks school register (Houston, 1973) which may give the impression of limited language quality and quantity. Were the child given the opportunity to speak his non-school register, and if he knew it would be accepted by the teacher, it might be possible for teachers to recognize the creativity, giftedness and inventiveness that was seen by Houston in the non-standard English spoken by black children. It should not be said that lower socioeconomic children cannot use language fluently; they can use non-school register very fluently. Often they are not able to use school register nor standard English fluently, which unfortunately is often required in school.

Williams (1970) attempted to find which language and speech factors served as cues to teachers who made evaluational judgments of children's speech. Fifth and sixth grade children had been matched on race and social class (i.e., five Negro lower socioeconomic class children, five Negro high socioeconomic children, five white lower socioeconomic class children, five white high
socioeconomic class children). The children's free-responses to two questions had been tape-recorded. Using a semantic differential it was found,

... that although teachers would use some 22 individual scales in rating children's speech, their ratings were generally symptomatic of only two main evaluative dimensions. One of these dimensions was labeled as confidence-eagerness, which was a reflection of highly similar ratings on adjectival scales such as 'the child seems: unsure - confident' and '... reticent - eager' (Williams & Whitehead, 1971, p. 109).

One of the most salient predictors was the incidence of silent pausing. The child who spoke confidently and fluently was rated higher on social status.

According to research cited by Kools & Berryman (1971) there were more boys who stutter than there were girls. However, taking a sample of non-stuttering first grade boys and girls, the authors found that there were no statistically significant differences in the total number of disfluencies between the boys and the girls. Apparently boys were as fluent as girls at the first grade level.

Rist (1970) analyzed the characteristics of children that seemed to be used by a kindergarten teacher to divide the class into groups. He found that the children placed at the first table (the "best" students) were much more verbal with the teacher than the students seated at tables two and three. When a question was asked, a child at the first table generally answered it. Often if the teacher did ask a child at table two or three a question, they would not respond to it.
Teachers may make predictions about a child on the basis of his fluency. The child who speaks confidently and without hesitation may be judged more favorably than the child who seems unsure of himself or who stutters.

Vocabulary. Jeruchimowich, Costello & Bagur (1971) compared the number of action words and object words known by lower socioeconomic (LSES) and middle socioeconomic (MSES) status Negro preschool children. Using the Peabody Picture Vocabulary Test, (PPVT) it was found that the LSES children had a higher proportion of errors on verbs than on nouns; for MSES children there was no significant difference between the two classes of words. The total number of items passed on the PPVT by the MSES children was far superior to the number passed by the LSES children.

John & Goldstein (1964) found that urban disadvantaged black children had smaller vocabularies and less experience in labelling and categorizing than did middle class black or white children. Nonetheless, this should not be considered either a cause or a contributor to reading retardation in disadvantaged children in the first two grades according to research by Cohen & Kornfeld (1970). They found that urban disadvantaged black children could handle most of the conceptual vocabulary in seven different first grade readers.

Flamand (1961) found that although the ability to give word opposites was related to success in beginning reading there was only limited correlation between the ability to define words, to name words in a free association situation, and to compose
sentences from specific stimulus words and a standardized reading test used to measure reading performance in first grade.

Koontz (1960) found no statistical relationship between knowledge of word meanings and a measure of reading achievement.

On the basis of the literature reviewed, four characteristics were included in the language category for this study: (a) speaks standard English—yes, no; (b) understands what is said in class—yes, no; (c) speaks confidently and fluently; (d) vocabulary—above average, average, below average.

**Motor Ability Characteristics**

There were at least three motor ability characteristics that were easily observable in the classroom: the ability to copy a simple shape; the ability to cut, color, and paste; handwriting. Many of the research studies that have been done in the area of motor abilities and their relationship to achievement have dealt primarily with motor abilities in general and not all of the above abilities. The one motor skill that seemed to be examined in more depth was that of copying a simple shape. Research that related this skill to reading was examined here. The other research reviewed here was more general in nature. The assumption has been made that teachers assessed motor abilities as a result of evaluation of the children's handwriting; their cutting, pasting, and coloring abilities; and their ability to copy simple shapes.

Bond & Tinker (1967) stated that many disabled readers had poor motor coordination which was manifested by awkwardness in walking, running, and writing. Superior readers had better scores
on tests of motor precision than had non-readers. Nonetheless, a direct causal relationship between motor coordination and reading had not been clearly established.

On the basis of research reviewed Cratty (1969) stated:

... it is believed that there are relationships between the quality and quantity of obvious motor output of children and their ability and/or inclinations to engage in various tasks within the classroom (p. 8).

(He stated that although motor activities can be a helpful means of learning, one must be careful not to pay blind devotion to one or another of the popular 'movement messiahs'.)

The **Schnectady Kindergarten Rating Scales** (SKRS) were developed to screen large numbers of children so that preventive or remedial programs could be provided. The results from a study by Tobiessen, Duckworth & Conrad, (1971) showed that the **SKRS** was an effective way to differentiate between kindergarten children who may have learning and impulse-control problems and those children who would be successful in first grade. There were three scales directly relating to motor abilities and activities: "Restrainment of Motor Activity," "Use of Scissors," and "Type of Motor Activity."

Gesell & Ilg (1946) had studied children intensively for many years. They listed many characteristics which they stated were typical of children of different ages.

It was interesting to compare some of the items on the **SKRS** and some of the items that Gesell and Ilg stated were typical motor activities for five- and six-year-olds. For example, on the **SKRS**, the child who would not have problems in the first grade
was expected to be only relatively active and be able to engage in quiet activities for up to an hour-and-a-half to two hours. On the other hand, Gesell and Ilg suggested that a typical six-year-old child was very active and was in almost constant motion. The SKRS suggested that a kindergarten child was able to use scissors well and could cut out an intricate pattern. Gesell and Ilg suggested that a six-year-old was only able to cut simple things out and was not adept at doing so.

It seems that in many ways the SKRS may be one example of the ways in which teachers (and testers) have unrealistic ideas about what children can be expected to do. Rather than basing their expectations on a realistic estimate of children's abilities, they may base them on an "ideal" which is probably quite atypical. The result may be that an average child who cannot be expected to meet these ideal qualifications may be penalized merely because he is average.

Several studies have examined the relationship between copying a simple shape and reading success. The assumption has been made that children who have difficulty analyzing simple geometric forms well enough to reproduce them will also have difficulty analyzing more complex visual shapes such as words or letters (Critchley, 1964; Kinsbourne & Warrington, 1966; Money, 1966). The following two studies supported this point of view.

Wise (1968) found that the ability to copy simple shapes using sticks instead of paper and pencils was primarily a function of developmental age. (It was, in part, also related to
The Stick Design Copying Task showed significant predictive relationships with the Metropolitan Readiness Test which suggested that the ability to copy a simple form (using sticks) may be related to reading achievement.

Livo (1970) compared total scores and subtest scores on several tests to determine which would be most successful in predicting achievement as measured by the Metropolitan Achievement Test (MAT). One of the subtests on the Sartain Reading Readiness Test was copying. The correlation between the scores on this subtest and the MAT was significant at the .01 level.

Other research had indicated little or no relationship between copying a simple shape and success or failure in school. Koontz (1960) for example, found there was no statistical significance between copying a simple shape and a measure of reading achievement.

Singer & Brunk (1967) attempted to determine if third and fourth grade children rated high and low in intelligence would perform similarly on perceptual-motor tasks. The students were given a Figure Reproduction Test, the Pinter Elementary Test, and the Stanford Achievement Test. Results for children with either high or low intelligence indicated there were only low, positive, and in a few cases, significant correlations among these measures. The authors cautioned that the significance of the correlations could not be accepted without reservations for there was little relationship between intellectual ability and success on the Figure Reproduction Test.
Singer (1968) compared the results of various perceptual-motor abilities tests with the academic achievement of third and sixth grade children. Again it was found that the intercorrelations were low and most often not significantly related. The more complex tasks did not correlate any higher with intellectual tests than did simple motor tasks.

Reed (1969) had first grade children copy a Greek cross before they had had much formal instruction in reading. The figures were then judged to be either "good" or "poor" representations of the stimulus figure. Reed hypothesized that children who differed in copying ability would not differ in reading ability. The results indicated that:

...children may be quite deficient in their ability to copy, but this alone does not imply they will be deficient in their ability to read. At most, the ability to reproduce geometrical forms, per se, is a very weak clue concerning potential reading development (p. 136).

Goldstein, et. al. (1970) attempted to determine which psycho-educational measures demonstrated the strongest relationship to perceptual reading achievement for disadvantaged second grade children. Thirty variables, one of which was the copying subtest on the Metropolitan Readiness Test, were correlated with reading achievement as measured by a total of the Word Recognition and Language subtests of the SRA Achievement Test for Reading. The correlation coefficient was .37 (significant at the .01 level) between the copying subtest and the criterion measure. Although
the correlation was significant, the authors suggested it was not large enough to discriminate the poor from the adequate readers.

From the studies reviewed in this section, it could be seen that the relationship between skill in the various motor abilities and success or failure in reading was uncertain. The results have presented conflicting conclusions.

Nonetheless, on the basis of the literature reviewed, three characteristics were included in the motor abilities category for this study: (a) ability to copy simple shapes—all, some, few, if any; (b) ability to cut, color, paste; (c) handwriting ability.

**Personality Characteristics**

The relationship between non-intellectual factors and academic achievement has been discussed, debated, and researched in depth by many people. Considering the area of personality, it has been found there was often a relationship between various personality factors and achievement.

Ahammer & Schaie (1970) reviewed recent literature which supported the notion that academic success was not based only on intelligence but was also based on personality characteristics. Previously, most of the research had been done using subjects from junior high through adults. These authors examined age differences in the relationship between personality factors and academic success for elementary school aged students. In addition, an attempt was made to determine the personality factors that most effectively predicted school achievement at certain age levels. Third and sixth grade children from a variety of different
socioeconomic status backgrounds were given both achievement tests and personality questionnaires. It was found that for third graders, intelligence seemed to be the primary variable in predicting academic success. However, for sixth graders, ego strength (in addition to intelligence) became increasingly important. The authors expressed some surprise that as a child grew older the correlation between intelligence and academic success diminished.

This finding may indicate that variables such as personality factors and motivational factors become increasingly more important in determining school success with advancing age. In other words, school success in the higher grades may depend on more than merely "accumulated knowledge" (p. 196).

Vernon (1969), on the basis of a review of research studies, stated that personality judgments made by teachers of their pupils were based primarily on school achievement. Lower-class children tended to be rated as "lazy" or "lacking in concentration" or "poor discipline" more often than upper class children, possibly because the lower-class children were more often unsuccessful in school than upper class children.

Matlin & Mendelsohn (1965) hypothesized that "adjustment" as measured by the California Test of Personality would be positively correlated with achievement. However, they also predicted that adjustment would correlate more highly with teachers' grades than it would with scores on standard achievement tests. Results indicated that this indeed was the case for fifth grade students. It seemed that adjustment, in and of itself, perhaps was not affecting
achievement. Instead, adjustment may have actually affected the teacher's perceptions of the child's adjustment. "In other words, well adjusted and poorly adjusted pupils may perform equally well, but teachers may give better grades to the better adjusted students [p. 458]."

Chronister (1964) administered the Iowa Tests of Basic Skills, the California Short Form Test of Mental Maturity, and the California Test of Personality and Behavior Preference Record to fifth grade children. It was found that personality factors had a positive but slight relationship to reading comprehension. However, boys and girls were differentiated by selected personality factors. Cooperation was the only factor common to both sexes.

Feshback (1969) studied personality characteristics of children that were preferred by graduate students who were student teaching. By giving them 16 "cases" of situations in schools, she found that rigid, conforming, orderly girls and boys were regarded as most popular, most generous, most intelligent, most preferred by the teacher, and were predicted to have the best grades. She hypothesized that these personality characteristics apparently formed the bias for expectations concerning the child's ability, achievement, popularity, and generosity.

Lavin (1965) described several types of personality characteristics.

Some variables seem to refer to motivational states; these include anxiety, achievement motivation, level of interest in different content areas; and the like. A second type involves what might be termed personality...
Illustrative are factors such as degree of independence, impulse control, and introversion. A third factor, which involves the cognitive level, is the self-concept. Still other factors, such as measures of study habits, seem to point more directly to the behavioral level (p. 64).

The personality characteristics which were examined in this section seem to fall into one of two of the areas listed above—either personality "style" or behavior. The characteristics were the following: plays well with peers, works well independently, completes assigned tasks, obedient and polite to the teacher, neat desk, and smiling. These few characteristics were chosen from the multitudes of possible personality characteristics, first because they were fairly easily observed and second, most were found on various first grade report cards.

Plays Well with Others. Researchers made a longitudinal study of third, sixth, and ninth grade youngsters who consistently displayed either aggressive-disruptive behavior or socially approved behavior. The relationship between behavior and academic achievement was analyzed. The achievement criterion was based on grades in English, science, math, social studies, and scores from the Sequential Tests of Educational Progress. Although there was a significant difference in IQ between the groups, it was statistically controlled by analysis of covariance. Results indicated statistically significant differences in achievement as measured by the grades given by teachers and on the STEP scores between the two groups of children. There was little relationship or
interaction between the variables of sex or grade level (Feldhusen, et al., 1971).

Lavin (1965) analyzed personality variables associated with academic performance in many multivariate studies. The results indicated that greater socialization was a trait of persons who exhibited high levels of performance. One could assume that a child who showed greater socialization than others would be well liked by his peers and thus would play well with them.

Bernstein (1961) compared forms of interaction between mother and child within middle- and working-class families. It was found that the working-class child was relatively uninhibited in the direct expression of aggression and other feelings. He reacted overtly to frustration and hit out—not just because he had not been taught to control these instinctive tendencies but because he imitated the way adults reacted to him when he annoyed them. In other words, his parents were much more likely to use corporal punishment and physical coercion. In contrast, the middle-class child's interaction was more closely related to what might be called the development of the conscience. He internalized the moral values and prohibitions of his culture and was controlled in his conduct by his own guilt feelings. The parents tended to discipline more by psychological methods—by discussing the wrong doing, arousing guilt and anxiety about the consequences, or by withdrawing privileges. Thus it would seem that often middle-class children turned aggression in on themselves and reacted to conflict situations by repression. Working class children resorted
to denial and acting out and were more apt to blame the environment than themselves. This explanation may be one reason lower class children were often seen by their teachers as not playing well with their peers. Because this overt acting-out may not be acceptable to middle class teachers, it may be another reason why lower class children do less well academically than middle class children.

Works Independently. Lavin (1965) analyzed personality variables associated with academic performance in many multivariate studies that had been done. Results indicated that greater independence was characteristic of persons who exhibited high levels of performance.

Douglas (1964) found that youngsters who were overly reliant upon others in order to function or who found it difficult to make independent decisions also tended to receive lower grades in various aspects of academic achievement. This was independent of measured intelligence. This behavior was more typical of boys than girls but diminished with increasing age.

Completed Assigned Tasks. Lavin (1965) analyzed personality variables associated with academic performance in many multivariate studies. It was found that more endurance was characteristic of persons who exhibited high levels of performance. It was not stated whether "more endurance" meant physical or mental endurance but one might assume that if a child was able to complete all assigned tasks he was often exhibiting the trait of endurance.
Sutton (1964) compared characteristics of kindergarten children who had learned to read with the characteristics of kindergarten children who had not learned to read. She found there was no difference in persistence between the two groups. It would seem that persistence would have been a characteristic of children who completed assigned tasks.

Smith (1968) stated that a high achieving student worked at a task until it was completed. He was not satisfied with a job until it was done well.

Obedient and Polite. Lavin (1965) found that restraint in social behavior was a trait of persons who exhibited high levels of performance. It would seem logical to assume that a child who showed restraint in his social behavior would be obedient and polite to his teacher and to other adults.

Neat Desk. Lavin (1965) found that a higher need for order was a trait of persons who exhibited high levels of performance. It would be logical to assume that a higher need for order may be evidenced in a child by how neat he kept his desk.

Smith (1968) stated that simply by visiting a classroom and observing the children, one could informally determine if a child was a high, average, or low achiever. She suggested that if a child's desk was messy, i.e., there were items such as loose papers, and candy and gum wrappers that he had displayed a poor attitude toward his school work and was an underachiever. On the other hand, she stated that the high achiever's desk was neat and well organized.
**Smiling.** Harter, et. al. (1971) examined the relationship between a child's smiling behavior and the correctness of his responses on a pictorial word-recognition task. Previous studies had indicated that the smiling response was a function of the degree to which humor made a cognitive demand on the individual. The study hypothesized that in four and eight year old children there would be a relationship between smiling and the cognitive level of difficulty of the items. Results showed that at both age levels children smiled significantly more to correct than to incorrect responses. (Children were not told if their responses were correct or incorrect so the tendency to smile was not related to feedback from the examiner.) There was no support for the prediction that the magnitude of the smiling response to correct items would be positively related to the difficulty of the item.

On the basis of the literature reviewed, six characteristics were included in the motor abilities category for this study: (a) plays well with peers—yes, sometimes, no; (b) works well independently—yes, sometimes, no; (c) completes assigned tasks—yes, sometimes, no; (d) neat desk—yes, no; (e) obedient and polite—yes, no; (f) smiling.

**Summary**

A review of the literature seemed to indicate that there were at least eight major categories of characteristics of children which were observable by their teachers. These eight categories were: (a) appearance characteristics, (b) biological or innate characteristics, (c) educational characteristics, (d) family
characteristics, (e) intellectual characteristics, (f) language characteristics, (g) motor ability characteristics, (h) personality characteristics. Within each of the above categories were specific characteristics. These 36 characteristics were the variables that were chosen for further examination in the present study.

It was expected that from an examination of these characteristics that differences would be found that differentiated among the children in the three reading groups. It was also expected that from an examination of these characteristics that the criteria teachers used for reading group placement could be determined.
CHAPTER THREE

Procedures and Materials

In this chapter, the research questions are presented and then are stated as hypotheses. An explanation of how subjects were selected, the instrumentation, the manner in which the data were collected and prepared for analysis are also presented.

Hypotheses and Questions

The major objectives of this study were to answer the following four questions in order to determine the foundations on which teachers based their expectancies for success or failure in reading.

1. Are there significant differences among various characteristics of first grade children who have been placed into one of three reading groups based on the teacher's observations of these characteristics?

2. Are the criteria or standards of evaluation teachers say they use when placing children into reading groups consistent with the characteristics they say they have observed?

3. Are the generalizations, or inferences, made by teachers which describe differences between the characteristics of children in reading groups one and three consistent
with the characteristics that were found to differentiate between the children in these reading groups?

4. Do teachers perceive changes in the characteristics of children over a period of time? If so, are these changes related to changes in reading group placement?

Question 4 obviously consists of two separate questions. The more important of the questions was the second but it was impossible to ascertain an answer to it without answering the first question. For this reason, the fourth question is to be regarded as a single question composed of two parts.

These four questions can be stated in hypothesis form:

H1: There are significant differences among various characteristics of first grade children who have been placed into one of three reading groups based on the teacher's perceptions of these characteristics.

H2: The characteristics teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

H3: Generalizations made by teachers about the characteristics describing children in reading groups one and three are consistent with the characteristics that were found to differentiate between the children in these reading groups.

H4: Teachers perceive changes in the characteristics of children over a period of time. These changes are related to changes in reading group placement.
The methods and procedures used to obtain answers to the questions will be described in the following sections.

Population and Sample

Twenty first grade teachers from seven different public schools in Columbus, Ohio were chosen to participate in this study. The original plan was to include teachers from schools that were very similar on the following variables: (a) percent of minority pupils, (b) percent of minority teachers, (c) size of the school, (d) median level of income of parents. Faced with the reality of the differences among schools in the city however, some compromises had to be made. Table I lists the different characteristics of each school according to a report done in 1973 (Thompson, 1973).

TABLE I

Variables of the Schools Included in the Study

<table>
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<tr>
<th>School</th>
<th>Percent Minority (Students)</th>
<th>Percent Minority (Teachers)</th>
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<th>Median Income</th>
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</table>
Based on these figures, there were no great deviations from the averages for each of the schools with the exception of percent of minority students. School #1 had many fewer minority students than the average; school #4 had many more minority students than the average.

Principals were contacted by the investigator who explained the nature of the study. If the principal agreed, the first grade teachers were asked to participate. All teachers who were asked did participate with the exception of one who was a beginning teacher. In five of the seven schools, all of the first grade teachers participated; in one school three of the four first grade teachers participated; in one school two of the four first grade teachers participated. (Only two of the teachers in the last school participated because this was all that was needed to complete the sample. The principal was asked to choose the two teachers who would participate.) All twenty teachers were women; six were black, 14 were white. No other information about the teachers was gathered.

From each of the twenty classrooms, five children were chosen randomly to be analyzed in depth. One student moved shortly after the study was initiated, thus there was a total of 99 subjects. Information describing the characteristics of the 99 pupils included in the study is given in detail in Chapter Four.

Data Collection

The data were collected in four distinct stages.
Stage 1. Early in September the investigator interviewed each teacher outside the classroom. Each interview was tape-recorded. The goal of this interview was to determine the criteria teachers said they used when making reading group placements. (The interview schedule is included in Appendix A.)

Stage 2. Approximately five weeks after the first interview, the teachers were again interviewed by the investigator. This interview was also tape-recorded. The purpose of this interview was to ask each teacher to verbally describe the characteristics of the five children in her classroom that had been chosen to be included in the study.

The characteristics of children that the teachers were to discuss were grouped into one of eight categories: (a) appearance, (b) biological, (c) educational, (d) family, (e) intellectual, (f) language, (g) motor abilities, (h) personality. The characteristics within each category were included for two or more of the following reasons: (a) past research indicated that there was a relationship between the characteristic and school achievement; (b) past research indicated that there may be a relationship between the characteristic and school achievement; (c) the characteristic was included on first grade report cards (suggesting that someone believed there was a relationship between it and school achievement), (d) the characteristic was easily observed, (e) the characteristic was one that teachers had knowledge about—either from conversations with the child or from information included on the permanent records. (This of course eliminated the inclusion
of any characteristics related to socioeconomic status, interest shown by the parents, family interaction, and various personality characteristics. Although research had indicated possible relationships among these variables and school achievement, they were not included in this study because they were not characteristics that could be observed.) On the basis of past research, 36 different characteristics were chosen to be discussed.

In addition teachers were asked if they had seen changes in any of the characteristics for any of the children since the beginning of the school year. Also reading group placement was determined.

The schedule for Interview 2 is included in Appendix B.

Stage 3. Approximately two weeks after the second interview, each teacher was again interviewed by the investigator. This interview was also tape-recorded.

The purpose of this interview was to have teachers to verbally describe the general characteristics which they believed accurately described the children in the first and third reading groups. They were not to consider any of the five children specifically included in the study but rather to list the characteristics which they felt described the children in the first reading group, and the children in the third reading group.

In addition, reading group placement was verified for each child and any changes in reading group placement was noted.

The interview schedule is included in Appendix C.
At the conclusion of the third interview the teachers were asked to respond to a questionnaire (which is included in Appendix D).

Stage 4. In February all teachers were sent a letter that had two main purposes. The first was to ask them to again rank each of the five children in their room that were included in the study on two characteristics. The purpose of this was to determine if their rankings of the children had changed over the three month period of time since the third interview. Also reading group placement was again ascertained to determine if any changes in placement had been made.

The second purpose was to fill in any information that had not been gathered previously. For example, some of the information from the permanent records - the test scores and number of days absent in kindergarten - was not available in September. Teachers were asked to supply this information if it was now available.

Instrumentation

Only one instrument was administered to teachers. This was the questionnaire which was given to them during the third interview. The purpose of this was to ascertain if teachers' perceptions of characteristics possessed by children in the first and third reading groups were consistent with the characteristics they said they observed in children in these two reading groups.

The questionnaire was developed by the investigator. It was composed of two sections. The directions of the first part stated: "It is sometimes believed that some of the following items, which
describe behaviors and characteristics of first grade children may possibly be associated with reading success. Please mark on this sheet if you (1) agree, (2) disagree, (3) can't decide." Following these directions, fifty items were listed to which the teachers responded. Although the entire questionnaire is included in the Appendix D, the first ten items are listed here.

This first grade child
1. has known his telephone number and street address since before he started school.
2. has parents who are very interested in school.
3. writes his name neatly.
4. has a father who is an accountant.
5. has hair that is neat and clean.
6. smiles often.
7. lives in a home which is owned by his parents.
8. is the older of two children.
9. plays well with others.
10. has had both kindergarten and preschool experience.

The directions for the second section were identical to the first except that the word failure was used instead of success. Listed here are the first ten items from the second section.

This first grade child
1. has parents who earn less than $6,000 per year.
2. does not understand that printed material is simply "speech written down."
3. is black.
4. is the middle child of a large family.
5. has parents who are not at all interested in what happens at school: it is even difficult to get the report card returned to school.

6. comes to school wearing clothes that fit poorly and are obviously hand-me-downs.

7. cannot "read" a picture.

8. does not know the alphabet.

9. has parents who did not graduate from high school.

10. lives in an apartment which his parents rent for $80 per month.

The items included on the questionnaire were ones that seemed in some way to be related to reading success or failure on the basis of previous research. Although all characteristics that were on the observation forms were included on the questionnaire, the questionnaire itself included several additional items that research seemed to indicate were linked in some way to reading success or failure. (No analysis was made for these characteristics.)

In general, items included in the first section were "favorable." Items included in the second section were often "unfavorable." However, there were also items in both sections that were neutral, for example sex and race. In using items such as these, the characteristic of being a girl and being white were included in the "success" section; being a boy and being black were included in the "failure" section—not because one characteristic actually was more favorable than the other but because the review of the literature indicated there was a relationship between them and either possible reading success or possible
reading failure. In no case did the investigator arbitrarily place the neutral items in one section or the other. The placement of characteristics was made based on previous research.

The items included in the questionnaire were considered to be in one of the following categories of characteristics: appearance (e.g., is usually very clean); biological (e.g., had a birthday coming in the period from October to March); educational (e.g., had had both kindergarten and preschool experience); family (e.g., has an older sister who is an excellent student); intellectual (e.g., can match similar shapes); language (e.g., speaks standard English); motor ability (e.g., can copy a simple form); personality (e.g., works very well independently).

To develop the questionnaire, the list of ungrouped characteristics was given to several graduate students. They acted as judges and categorized the characteristics. There was almost complete agreement between these judges and the investigator. Of the 100 items (50 "favorable," 50 "unfavorable") there was disagreement on only ten items. Typical items on which there was disagreement were in the appearance category, for example, wears clothing that is either new or is in good condition; the language category, for example, obviously understands what is said in class; and the education category, for example, absence.

Some judges believed that the clothing item should have been considered a family characteristic rather than an appearance characteristic. However, the investigator believed that regardless of why a child wore new or old clothing (which would obviously
be related to the family) the teacher who would judge a child's appearance might not consider why a child wore new or old clothes but might consider only the appearance aspect. Some judges believed the language item should have been considered an intellectual rather than a language characteristic. However based on research, the investigator believed that understanding what was said in class was more closely related to a child's use of language even though there would be an obvious relationship to a child's intellectual ability. Some judges believed that absence should have been considered a biological rather than an educational characteristic. However, for this to be so, the assumption would have to be made that children were absent primarily because they were ill. This was not a tenable assumption because children were often absent for other reasons. Therefore absence was regarded as an educational characteristic based on the school experiences a child would miss if he were absent. Disagreement between the judges and the investigator on other items were discussed in the manner described above until the issue was resolved.

Originally the form of the questionnaire was quite different from the final form which was administered to teachers in the study. The initial intent of the questionnaire was to elicit from teachers the characteristics they would use to describe children who were either successful or unsuccessful in learning to read. Two forms of a questionnaire were designed to get this information. The directions for one form were as follows: "Teachers learn about their students by observing them, through conversations with them,
by reading their permanent file folders, and from the results of various tests given to them. The following characteristics are typical of the ones they have discovered.

Assume, please, that you are a first grade teacher. How would you predict the potential for success in reading in first grade if each of the following statements accurately described a particular child? It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheets from 1 to 6 as you think it would predict success or failure in reading. Work as quickly as possible please.

Description of the Ranking

1. This child will be a very successful reader.

2. This child will be a good reader.

3. This child will experience success more often than failure but will not be a "good" reader.

4. This child will experience failure more often than success but will still be able to read.

5. This child will be able to read very little.

6. This child essentially will be a non-reader in first grade.

The entire questionnaire is included in Appendix E.

The directions for the second form were identical except that a seventh ranking was included: "7. This item does not affect a child's potential for reading success or failure."
Following these directions 128 items describing various characteristics and behaviors were listed. These items were taken directly from research which indicated there was a relationship between them and success or failure in reading. (The directions to this form of the questionnaire are included in Appendix F.)

Response to these two forms of the questionnaire was very unsatisfactory. Teachers seemed to react in a very negative manner to the first form. Apparently they believed that they used few if any of the non-intellectual items as a basis for reading group placement. The teachers did not respond in a negative manner to the second form of the questionnaire. However, they indicated that they believed they used few, if any, of the non-intellectual characteristics as a basis for reading group placement.

Because the investigator believed, on the basis of research, that teachers did use both intellectual and non-intellectual factors as bases for reading group placement, two new sets of directions for responding to the questionnaire were written. The first stated: "Various studies have shown that the following characteristics of first grade children are typical of ones that some teachers use for predicting potential success or failure in reading. It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheets from 1 to 4
as you think other teachers may use them to predict success or failure in reading.

Description of the Ranking

1. This child will be a very successful reader in first grade.
2. This child will be a good reader in first grade.
3. This child will be a poor reader in first grade.
4. This child will not be successful in learning to read in first grade.

The directions to the second revised form were identical to the first except a fifth ranking was included: "This item does not affect a child's potential for reading success or failure." (The directions to these forms of the questionnaire are included in Appendix G and H.)

These forms were again used in a pilot test with graduate students. Response to these two forms of the questionnaire was also unsatisfactory. Although teachers did not express as much antagonism as they had to the first form; they obviously did not feel comfortable responding to them. Response to the second revised form was similar to that of the original second form—it indicated that teachers believed they used few if any of the non-intellectual characteristics as a basis for reading group placement.

For these reasons, a fifth form of the questionnaire was developed. The directions were changed again and several items were eliminated so that it included primarily items that could be easily observed. This form of the questionnaire was given in a pilot test to graduate students and teachers. Response to it was
not negative and the information gathered appeared to be useable. This form was the one that was used in the present study. It is found in Appendix D.

There were no instruments administered specifically by the investigator to the 99 children included in the study. The Metropolitan Readiness Test had been given to the children in the spring of their kindergarten year but the investigator had no connection with its administration in any way. The scores on this test however were used to determine if they did discriminate among the children on the basis of their reading group placement.

**Data Preparation**

The data from the first interview were transcribed by the investigator. From the first interview, lists were made of the criteria each teacher said she used for making reading group placements. A composite list was then made of all the criteria used. This composite list was then given to several graduate students who placed the items into one of the eight categories of characteristics (appearance, biological, educational, family, intellectual, language, motor abilities, personality). There were many items on which there was disagreement either among the graduate students themselves or between the graduate students and the investigator. It was often very difficult to decide in which of the eight categories an item belonged; some seemed to defy classification. For this reason a "miscellaneous" category was finally included after the last regular category of characteristics.
Typical of the items on which there was disagreement were the following: creative, how often they raise their hand, excited about learning, background experiences in reading, and attention span. On the basis of research and from further discussions with the graduate students the investigator then placed each of the characteristics into one of the previously listed eight categories. The list of criteria, by category, will be found in Appendix I.

Data from the second interview were also transcribed by the investigator. In this interview teachers had been asked to describe each of the 36 characteristics for each of the five children that had been chosen from her room. All of this information was first transcribed so that comparisons among the five children could be seen. (See Appendix J for sample worksheets.) Next this information was transferred to sheets that resulted in a description for each individual child. These individual sheets were then placed into one of three groups. In other words, the sheets of all the children who had been placed in the first reading group were put together; the sheets of all the children who had been placed in the second reading group were put together; the sheets of all the children who had been placed in the third reading group were put together.

Data from the third interview were also transcribed by the investigator. In this interview each teacher had been asked to list characteristics that she felt described the children in the first and third reading groups generally—without reference to
any of the five children in her room that were included in the
study. A composite list, by reading group, was made of all these
characteristics. The list was given to several graduate students
who acted as judges and put the characteristics into one of the
eight categories of characteristics listed above. Fifty character-
istics were listed to describe the children in the first reading
group; and fifty-eight characteristics were listed to describe
the children in the third reading group. For these 108 character-
istics, there was disagreement on only 11 items. Typical of the
items on which there was disagreement were the following: not
challenged by cut, color and paste activities; excelled in every-
thing, likes books but doesn't make up stories, needs to go slower,
may do messier work. On the basis of the research and from
further discussion with the graduate students, the investigator
placed each of the characteristics, by reading group, into one of
the previously listed eight categories. This list of character-
istics, by reading group, will be found in Appendix K.

Data Analysis

To determine if there were significant differences among the
characteristics of children who had been placed in one of three
reading groups, chi square tests were calculated. This involved
comparing the characteristics of the children in the three read-
ing groups on each of the 36 variables. Analysis of variance
was also calculated for the variables which yielded interval
or dichotomous nominal data.
To determine if there was consistency between the criteria teachers said they used for making reading group placement and the actual characteristics of children, the teachers had been asked to list the criteria they used when making the reading group placements. These criteria were then compared to the actual characteristics of children described by the teacher to ascertain if there were differences.

To determine if teachers accurately generalized about the characteristics of children in the reading groups, teachers were asked to list characteristics which they believed adequately described children in groups one and three. These general characteristics were then compared to the characteristics, described by the teacher, of the children in the two groups. In addition, information describing general characteristics of children was gathered from a questionnaire and compared to the characteristics of the children described by the teachers.

To determine if teachers saw the characteristics of children change, teachers were asked to evaluate the children at two different times. These findings were compared with changes in reading group placement to determine whether or not changes in characteristics affected changes in reading group placement.

This chapter has described the procedures and materials used to collect the data. The research questions and hypotheses were stated. In addition, how the subjects were selected, the purposes of the three interviews, the manner in which the questionnaire was designed, and how the data were to be analyzed were also described.
The following chapter will describe in greater detail the techniques used to analyze the data as well as the results of the analyses.
CHAPTER FOUR

Analysis of the Data

Chapter Four will consist of five sections. In each of the first four sections a hypothesis will be stated, the techniques used to analyze the data will be described, and the results will be reported. The last section will be a brief summary of the chapter.

The hypotheses are:

H₁: There are significant differences in various characteristics of first grade children who have been placed into one of three reading groups based on the teacher's perceptions of these characteristics.

H₂: The characteristics of children that teachers say they use as criteria, or standards of evaluation, when placing children into reading groups are consistent with the characteristics they say they have observed.

H₃: Generalizations, or inferences, made by teachers about the characteristics describing the children in reading groups one and three are consistent with the characteristics that were found to differentiate between the children in these reading groups.
H4: Teachers perceive changes in the characteristics of children over a period of time. These changes are related to changes in reading group placement. These hypotheses were formulated in order to determine the foundations on which teachers based their expectancies for success or failure in reading.

Following the analysis of the data, the results will be summarized in relationship to the hypotheses.

**Section One:**

**Characteristics of Children and Reading Group Placement**

H1: There are significant differences in various characteristics of first grade children who have been placed into one of three reading groups based on the teacher's perceptions of these characteristics.

The data collected to test this hypothesis were divided into eight categories of characteristics. Therefore, there were eight sub-hypotheses tested in this section:

(A) There are significant differences in the appearance characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(B) There are significant differences in the biological characteristics of first grade children who have been placed in the first, the second, or the third reading group.
(C) There are significant differences in the educational characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(D) There are significant differences in the family characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(E) There are significant differences in the intellectual characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(F) There are significant differences in the language characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(G) There are significant differences in the motor ability characteristics of first grade children who have been placed in the first, the second, or the third reading group.

(H) There are significant differences in the personality characteristics of first grade children who have been placed in the first, the second, or the third reading group.

The eight categories of characteristics included a total of 36 separate items or independent variables. Information describing the 36 variables was collected during the three interviews.
with the teachers. From this information, four types of data were created: (a) dichotomous data, e.g., response to the variable was yes or no; (b) ranked data with three responses, e.g., response to the variable was above average, average, below average; (c) ranked data with five responses, e.g., the subjects in each room were ranked 1-5 by their teacher; (d) interval data, e.g., test scores.

The following statistical techniques were used to analyze the data.

**Dichotomous Data.** Chi square tests were calculated to determine the significance of differences among reading groups. A first comparison was made to determine differences among the three groups. This produced a 3 x 2 matrix with two degrees of freedom; N equaled 99. The formula used to make this comparison was:

$$ \chi^2 = \sum \frac{(O - E)^2}{E} $$

Although Seigel (1954) suggested that expected cell frequencies should not be less than five, Ferguson (1971) suggested:

*With 2 or more degrees of freedom the error introduced by small expected frequencies is of less consequence than with 1 degree of freedom. An expectation of not less than 2 in each cell will permit the estimation of roughly approximate probabilities. If the frequencies are 5 or more, good approximations to the exact probabilities are obtained (p. 89).*

In several cases, the expected cell frequency was, in fact, less than five.
A second comparison was made to determine the significance of difference between groups one and three. This produced a 2 X 2 matrix with one degree of freedom; N equaled 61. The formula used to make this second comparison was:

\[
\frac{N(\left| AD - BC \right| - \frac{N}{2})^2}{(A+B)(C+D)(A+C)(B+D)}
\]

It was suggested by Seigel (1954) that this was the appropriate formula when \( N > 40 \) and degrees of freedom were one.

Since neither formula was appropriate when expected cell size was less than two, it was occasionally necessary to compare group one with the combination of groups two and three for certain characteristics. Also there were a few cases in which a second comparison could not be made. Cell size was too small even when groups two and three were combined.

The second comparison was made because the assumption was made that differences would be greater between groups one and three than the differences among the three groups. Therefore, in order to ascertain whether to accept or reject the hypotheses, it would be necessary to determine where the greatest differences might be.

The dichotomous data were also subjected to a standard one-way analysis of variance. Although the propriety of using analysis of variance on dichotomous data may be questioned by some, according to Lunney (1970) it is an acceptable procedure. Using the Monte Carlo technique, he found that in regard to both the size of the Type I error and power that analysis of variance
could be used for analyzing dichotomous data in fixed effects models. Analysis of variance was used not only to verify the results produced by the chi square tests, but because it is a powerful statistical technique.

**Ranked Data with Three Responses.** Chi square tests were calculated to determine the significance of differences among the reading groups. A first comparison was made to determine differences among the three reading groups. This produced a $3 \times 3$ matrix with four degrees of freedom; $N$ equaled 99. Formula 4:1 was used to make the calculations.

A second comparison was made to determine the significance of differences between group one and group three. This produced a $2 \times 3$ matrix with two degrees of freedom; $N$ equaled 61. In all cases the expected cell size was greater than two so formula 4:1 was used. The second comparison was again made because of the assumption that there would be greater differences between groups one and three than among the three groups.

**Ranked Data with Five Responses.** Chi square tests were calculated to determine the significance of differences among reading groups. A first comparison was made to determine the significance of differences among the three reading groups. This produced a $3 \times 5$ matrix with eight degrees of freedom; $N$ equaled 99. In all cases expected cell size was greater than two. Formula 4:1 was used to make the comparisons.

A second comparison was made to determine the significance of differences between group one and group three. This produced
a 2 X 5 matrix with four degrees of freedom; N equaled 61. In all
cases the expected cell size was greater than two. Formula 4:1
was used to make the comparisons. The second comparison was
again made because of the assumption that there would be greater
differences between groups one and three than among the three
groups.

Interval Data. Interval data were subjected to a standard
one-way analysis of variance. Post-hoc comparisons were made
using the Scheffé Method. This test was used to detect significant
differences between pairs of means. The hypothesis was set at
.05. To determine the critical value at .05, formula 4:3 was
computed.

\[
F = \frac{\sum (a-1) (1 \ + \ 1) }{\sum (1 + 1) \ MS_{S/A}}
\]

Kennedy (1974) suggested that the Scheffé Method could be used
for both compound and pairwise comparisons. It was necessary to
use this flexible, robust, and conservative method of post-hoc
multiple comparison because there were unequal ns in each group.

The statistical analyses and the results describing the
analyses for each of the eight categories of characteristics
will be presented in the following eight sub-sections.

Appearance Characteristics

Three items were included in the category of appearance
characteristics: (a) condition of clothing—neat and clean, or
untidy and/or dirty; (b) type of clothing--new, combination, or old; (c) condition of hair--neat and clean, or messy and dirty.

The analysis of these characteristics in relationship to reading group placement was as follows.

(a) Condition of clothing--neat and clean, or untidy and/or dirty. Of the 99 children in the study, 81 were judged by their teachers as having neat and clean clothing; 18 were judged by their teachers as having untidy and/or dirty clothing. Classifying the children by reading group placement and condition of clothing, the distribution was as indicated in Table 2.

**TABLE 2**

Classification of Subjects by Reading Group Placement and Condition of Clothing

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neat and Clean</td>
<td>29</td>
<td>28</td>
<td>24</td>
<td>81</td>
</tr>
<tr>
<td>Untidy and/or Dirty</td>
<td>1</td>
<td>10</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 6.5394, \text{df} = 2, p < .05 \]
\[ X^2 = 6.3793, \text{df} = 1, p < .02 \]

Chi square was calculated using these data to compare groups one, two, and three. The results indicated statistically significant differences \( (X^2 = 6.5394, \text{df} = 2, p < .05) \). Further calculations were done where groups two and three were combined and compared to group one. The results from this comparison were
also statistically significant \( (X^2 = 6.3793, df = 1, p < .02) \).

This analysis indicated that there were more children whose clothing was neat and clean in the first reading group than would be expected by chance; there were more children whose clothing was untidy and dirty in the second and third groups than would be expected by chance.

The above data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of condition of clothing are presented in Table 3.

TABLE 3

<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.0333</td>
<td>.1794</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.2631</td>
<td>.4403</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.2258</td>
<td>.4181</td>
</tr>
<tr>
<td>Totals</td>
<td>99</td>
<td>.182</td>
<td>.3727</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 4.
TABLE 4
Analysis of Variance of Condition of Clothing
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.9728</td>
<td>.4864</td>
<td>3.3950*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>13.7544</td>
<td>.1433</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>14.7273</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

Since the main effects for clothing according to reading group placement proved to be significant (F = 3.3950, df = 2/96, p < .05) post-hoc multiple comparisons were performed using the Scheffe method. It was found that the mean number of children having neat clothing in the first group exceeded the mean number of children having neat clothing in the second group (p < .05). This was the only post-hoc comparison which was significant.

(b) Type of clothing—new, combination, or old. Of the 99 children in the study, 30 were judged by their teachers as wearing primarily new clothes; 52 were judged as wearing a combination of old and new clothes; 17 children were judged as wearing primarily old clothes. Classifying the children by reading group placement and type of clothing, the distribution was as indicated in Table 5.
### TABLE 5
Classification of Subjects by Reading Group
Placement and Type of Clothing

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New+</td>
<td>12</td>
<td>12</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Combination</td>
<td>15</td>
<td>22</td>
<td>15</td>
<td>52</td>
</tr>
<tr>
<td>Old+</td>
<td>3</td>
<td>4</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>38</strong></td>
<td><strong>31</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

\[
\chi^2 = 8.5083, \ df = 4, \ ns.
\]

\[
\chi^2 = 5.7542, \ df = 2, \ ns.
\]

*Calculations based only on data from new or old clothing*

\[
\chi^2 = 7.3679, \ df = 2, \ p < .05
\]

\[
\chi^2 = 4.1302, \ df = 1, \ p < .05
\]

Chi square was calculated using these data which indicated no statistically significant differences on this characteristic among the three groups \((\chi^2 = 8.5083, \ df = 4, \ ns.)\). Further computations using chi square to compare groups one and three also indicated no significant differences between these groups \((\chi^2 = 5.7542, \ df = 2, \ ns.)\). Two additional comparisons were made using chi square: a comparison among children who wore only new or old clothing in groups one, two, and three; a comparison between children who wore only new or old clothing in groups one and three. Statistically significant differences were found for both comparisons \((\chi^2 = 7.3679, \ df = 2, \ p < .05; \chi^2 = 4.1302, \ df = 1, \ p < .05)\). This suggested that more children in group one wore...
new clothing than would be expected by chance; more children in
group three wore old clothing than would be expected by chance.

(c) **Condition of hair**—neat and clean, or messy and/or dirty.
Of the 99 children in the study, 87 were judged by their teachers
to have neat, clean hair; 12 were judged to have dirty and/or
messy hair. Classifying the children by reading group placement
and condition of the hair the distribution was as indicated in
Table 6.

**TABLE 6**

<table>
<thead>
<tr>
<th>Classification of Subjects by Reading Group Placement and Condition of Hair</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
</tr>
<tr>
<td>Neat and Clean</td>
</tr>
<tr>
<td>Messy and Dirty</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

\[ X^2 = 3.0686, \quad df = 2, \quad n.s. \]

Chi square was calculated to compare groups one, two, and
three. Results from this analysis indicated there were no statistically
significant differences among the reading groups on this
characteristic. \((X^2 = 3.0686, \quad df = 2, \quad n.s.)\). Expected cell sizes
were too small to permit further calculations.

The above data were also subjected to a standard one-way
analysis of variance. The means and standard deviations of the
three reading groups on the characteristic of condition of hair are presented in Table 7.

**TABLE 7**

Means and Standard Deviations of Condition of the Hair According to Reading Group Placement

<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.0333</td>
<td>.1794</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.1579</td>
<td>.3646</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.1613</td>
<td>.3678</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>99</strong></td>
<td><strong>.1212</strong></td>
<td><strong>.3211</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 8.

**TABLE 8**

Analysis of Variance of Condition of the Hair According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.3326</td>
<td>.1663</td>
<td>1.5632</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>10.2128</td>
<td>.1064</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>98</td>
<td>10.5454</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.
Since the main effects for condition of the hair according to reading group placement proved insignificant ($F = 1.5632, df = 2/96, n.s.$), no post-hoc multiple comparisons were made.

The results of the appearance characteristics and reading group placement are summarized in Table 9.

**TABLE 9**

Summary of Appearance Characteristics and Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$X^2 (1,2,3)$</th>
<th>$X^2 (1,3)$</th>
<th>$X^2 (1&amp;2,3)$</th>
<th>ANOVA (1,2,3)</th>
<th>Scheffe' (1,2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition of Clothing</td>
<td>.05</td>
<td>.02</td>
<td>.05</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Type of Clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
<tr>
<td>(new, old, combination)</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
<tr>
<td>Type of Clothing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
<tr>
<td>(new, old)</td>
<td>.05</td>
<td>.05</td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
<tr>
<td>Condition of Hair</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
</tbody>
</table>

In this sub-section, three appearance characteristics were analyzed in relationship to reading group placement. As is indicated in Table 9 there were statistically significant differences among groups one, two, and three and between groups one and three on the first characteristic, condition of clothing. There were no statistically significant differences among the groups on the second characteristic, type of clothing, when comparing the three clothing types (new, combination, old). However, an analysis of this characteristic comparing only new or old clothing indicated
statistically significant differences among groups one, two and three and between groups one and three. There were no statistically significant differences on the third characteristic, condition of the hair.

**Biological Characteristics**

Six items were included in the category of biological characteristics: (a) weight—heavy, average, slim; (b) height—tall, average, short; (c) race—white, black; (d) age—older than average (born before October 1966); average (older, born between October 1, 1966 and March 31, 1967); average (younger, born between April 1, 1967 and September 30, 1967); (e) hair color—black, brown, blond; (f) sex—girl, boy.

The analysis of these characteristics in relationship to reading group placement was as follows.

(a) **Weight—heavy, average, slim.** Of the 99 children in the study, 21 were judged by their teachers as being heavy, 42 were judged to be average, 36 were judged to be slim. Classifying the children by reading group placement and weight, the distribution was as indicated in Table 10.
TABLE 10

Classification of Subjects by Reading Group Placement and Weight

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy</td>
<td>4</td>
<td>10</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Average</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>Slim</td>
<td>13</td>
<td>14</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 2.7780, \text{df} = 4, \text{n.s.} \]
\[ X^2 = 1.6733, \text{df} = 2, \text{n.s.} \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases, the results indicated there were no statistically significant differences for weight in relationship to reading group placement (\( X^2 = 2.7780, \text{df} = 4, \text{n.s.} \); \( X^2 = 1.6733, \text{df} = 2, \text{n.s.} \)).

(b) Height--tall, average, short. Of the 99 children in the study, 38 were judged to be tall by their teachers, 30 were judged to be average, 31 were judged to be short. Classifying the children by reading group placement and height, the distribution was as indicated in Table 11.
### TABLE 11

Classification of Subjects by Reading Group Placement and Height

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tall</td>
<td>15</td>
<td>14</td>
<td>9</td>
<td>38</td>
</tr>
<tr>
<td>Average</td>
<td>10</td>
<td>14</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Short</td>
<td>5</td>
<td>10</td>
<td>16</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 10.0754, \text{df} = 4, p < .05 \]
\[ X^2 = 9.1136, \text{df} = 2, p < .02 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases, the results indicated statistically significant differences \((X^2 = 10.0754, \text{df} = 4, p < .05; X^2 = 9.1136, \text{df} = 2, p < .02)\).

This indicated that there were more children of tall and average height in group one than would be expected by chance; there were more short children in group three than would be expected by chance.

(c) Race—black, white. Of the 99 children in the study, 49 were black, 50 were white. Classifying the children by reading group placement and race, the distribution was as indicated in Table 12.
### TABLE 12
Classification of Subjects by Reading Group Placement and Race

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>15</td>
<td>21</td>
<td>14</td>
<td>50</td>
</tr>
<tr>
<td>Black</td>
<td>15</td>
<td>17</td>
<td>17</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = .7013, \ df = 4, \ n.s.$  
$X^2 = .1431, \ df = 2, \ n.s.$

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases the results indicated no statistically significant differences among the groups on this characteristic ($X^2 = .7013, \ df = 4, \ n.s.; X^2 = .1431, \ df = 2, \ n.s.$). The placement of children by race into reading groups was no different than would be expected by chance.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of race are presented in Table 13.
TABLE 13
Means and Standard Deviations of Race According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.5</td>
<td>.5</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.4474</td>
<td>.4973</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.5484</td>
<td>.4977</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.4949</td>
<td>.4982</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 14.

TABLE 14
Analysis of Variance of Race According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.1754</td>
<td>.0877</td>
<td>.3427</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>24.5721</td>
<td>.2559</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>24.7475</td>
<td></td>
<td>n.s.</td>
</tr>
</tbody>
</table>
Since the main effects for race according to reading group placement proved insignificant \( F = .3427, df = 2/96, \text{n.s.} \), no post-hoc multiple comparisons were made.

(d) Age—older than average, average-old, average-young. Of the 99 children in the study, seven were older than average (generally the children who were repeating first grade). The other 92 children were all of average age. For this analysis, these children were subdivided into two groups: those children whose birthdays came between October 1, 1966 and March 31, 1967 (average-old); and those children whose birthdays came between April 1, 1967 and September 30, 1967 (average-young). Classifying the children by reading group placement and age, the distribution was as indicated in Table 15.

**TABLE 15**

Classification of Subjects by Reading Group Placement and Age

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Older-than-Average</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Average-Old+</td>
<td>15</td>
<td>20</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Average-Young+</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

+Chi square calculated using only these two groups.
\[ \chi^2 = .5098, df = 2, \text{n.s.} \]
\[ \chi^2 = .0740, df = 1, \text{n.s.} \]
It was impossible to calculate chi square on these data to compare either groups one, two, and three or to compare groups one and three because expected cell sizes were too small. Therefore the older-than-average group was eliminated and chi square was calculated using the data only from the two average age groups. In both cases the results indicated no statistically significant differences among the groups on this characteristic ($X^2 = .5098$, $df = 2$, n.s.; $X^2 = .0740$, $df = 1$, n.s.). The placement of children by age into reading groups was no different than would be expected by chance.

(e) Hair color—black, brown, blond. Of the 99 children in the study, 46 had black hair, 27 had brown hair, and 26 had blond hair. Classifying the children by reading group placement and hair color, the distribution was as indicated in Table 16.

**TABLE 16**

**Classification of Subjects by Reading Group Placement and Hair Color**

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>14</td>
<td>15</td>
<td>17</td>
<td>46</td>
</tr>
<tr>
<td>Brown</td>
<td>7</td>
<td>13</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Blond</td>
<td>9</td>
<td>10</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 2.2791$, $df = 4$, n.s.  
$X^2 = .6175$, $df = 2$, n.s.
Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases the results indicated no statistically significant differences among the groups on this characteristic \((X^2 = 2.2791, \text{df} = 4, \text{n.s.}; X^2 = .6175, \text{df} = 2, \text{n.s.})\). The placement of children by hair color into reading groups was no different than would be expected by chance.

(f) Sex--boy, girl. Of the 99 children in the study, there were 48 boys and 51 girls. Classifying the children by reading group placement and sex, the distribution was as indicated in Table 17.

<table>
<thead>
<tr>
<th>TABLE 17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification of Subjects by Reading Group Placement and Sex</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>12</td>
<td>17</td>
<td>19</td>
<td>48</td>
</tr>
<tr>
<td>Girls</td>
<td>18</td>
<td>21</td>
<td>12</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\(X^2 = 3.1127, \text{df} = 2, \text{n.s.}\)
\(X^2 = 3.6824, \text{df} = 1, \text{n.s.}\)

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases the results indicated no statistically significant differences among the groups on this characteristic \((X^2 = 3.1127, \text{df} = 2, \text{n.s.})\).
The placement of children by sex into reading groups was no different than would be expected by chance.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of sex are presented in Table 18.

**TABLE 18**

Means and Standard Deviations of Sex According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.6000</td>
<td>.4899</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.5526</td>
<td>.4972</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.3871</td>
<td>.4870</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>.5152</strong></td>
<td><strong>.4918</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 19.
TABLE 19

Analysis of Variance of Sex According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.7777</td>
<td>.3889</td>
<td>1.5587</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>23.9496</td>
<td>.3495</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>24.7273</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.

Since the main effects for sex according to reading group placement proved insignificant ($F = 1.5587$, $df = 2/96$, n.s.), no post-hoc multiple comparisons were made.

The results of the biological characteristics and reading group placement are summarized in Table 20.

TABLE 20

Summary of Biological Characteristics and Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$\chi^2 (1,2,3)$</th>
<th>$\chi^2 (1,3)$</th>
<th>ANOVA (1,2,3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>.05</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Hair Color</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
In this sub-section, six biological characteristics were analyzed in relationship to reading group placement. As indicated in Table 20 there were no statistically significant differences among groups one, two, and three or between groups one and three on five of the six characteristics: weight, race, age, hair color and sex. There were statistically significant differences among groups one, two, and three and between groups one and two on the characteristic of height.

Educational Characteristics

Four items were included in the category of educational characteristics: (a) prekindergarten experience--yes, no; (b) kindergarten--yes, no; (c) days absent from kindergarten, (d) repeater--yes, no.

The analysis of these characteristics in relationship to reading group placement was as follows.

(a) Prekindergarten experience--yes, no. Of the 99 children in the study, 26 had attended a preschool or a prekindergarten; 73 had not had this experience. Classifying the children by reading group placement and prekindergarten experience, the distribution was as indicated in Table 21.
### TABLE 21

Classification of Subjects by Reading

Group Placement and Prekindergarten Experience

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>14</td>
<td>7</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>31</td>
<td>26</td>
<td>73</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 9.299$, $df = 2$, $p < .01$

$X^2 = 5.2820$, $df = 1$, $p < .05$

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases the results indicated statistically significant differences among the groups on this characteristic ($X^2 = 9.299$, $df = 2$, $p < .01$; $X^2 = 5.2820$, $df = 1$, $p < .05$). The placement of children who had prekindergarten experience was significantly different from what would have been expected by chance. More children with prekindergarten experience were in the first group; more children without prekindergarten experience were in the second and third groups.

This data was also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of prekindergarten experience are presented in Table 22.
### TABLE 22

Means and Standard Deviations of Prekindergarten Experience According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.5333</td>
<td>.4989</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.8153</td>
<td>.3877</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.8387</td>
<td>.4249</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>99</td>
<td>.7374</td>
<td>.4355</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 23.

### TABLE 23

Analysis of Variance of Prekindergarten Experience According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1.8010</td>
<td>.9005</td>
<td>4.9779**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>17.3707</td>
<td>.1809</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>98</td>
<td>19.1717</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01 **
Since the main effects for prekindergarten experience according to reading group placement proved to be significant ($F = 4.9779$, $df = 2/96$, $p < .01$), post-hoc multiple comparisons were performed using the Scheffe method. The mean number of children having prekindergarten experience in the first reading group exceeded the mean number of children having prekindergarten experience in both the second and in the third groups ($p < .05$); the mean number of children having prekindergarten experience in the second group exceeded the mean number of children having prekindergarten experience in the third group but was not significant.

(b) Kindergarten—yes, no. Of the 99 children in the study, 88 had attended kindergarten, 11 had not attended kindergarten. Classifying the children by reading group placement and kindergarten attendance, the distribution was as indicated in Table 24.

| TABLE 24 |
| Classification of Subjects by Reading Group Placement and Kindergarten Attendance |

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>27</td>
<td>35</td>
<td>26</td>
<td>88</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 1.2259$, $df = 2$, n.s.
Chi square was calculated using these data to compare groups one, two, and three. (No comparison was made between groups one and three because of small expected cell sizes.) The results indicated no statistically significant differences on this characteristic according to reading group placement ($\chi^2 = 1.2259$, $df = 2$, n.s.). The placement of children by kindergarten attendance into reading groups was no different than would be expected by chance.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of kindergarten attendance are presented in Table 25.

**TABLE 25**

Means and Standard Deviations of Kindergarten Attendance According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.1000</td>
<td>.4135</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.0789</td>
<td>.2696</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.1613</td>
<td>.3678</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.1111</td>
<td>.3494</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 26.
TABLE 26
Analysis of Variance of Kindergarten Attendance
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.1211</td>
<td>.0606</td>
<td>.7592</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>7.6567</td>
<td>.0798</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>7.7778</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.

Since the main effects for kindergarten attendance according to reading group placement proved insignificant, no post-hoc multiple comparisons were made. There were no differences among the reading groups on this characteristic other than what might have been expected by chance.

(c) Repeater—yes, no. Of the 99 children in the study, 7 were repeating first grade. For the other 92 children it was their first time in first grade. Classifying the children by reading group placement and being a repeater, the distribution was as indicated in Table 27.
TABLE 27
Classification of Subjects by Reading Group
Placement and Repeating First Grade

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes+</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>27</td>
<td>35</td>
<td>30</td>
<td>92</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 1.1285$, df = 2, n.s.

+Chi square single-sample test calculated for the repeaters; $X^2 = 1.1432$, df = 2, n.s.

Chi square was calculated using these data to compare groups one, two, and three. (No comparison was made between groups one and three because of small expected cell sizes.) The results indicated no statistically significant differences on this characteristic according to reading group placement ($X^2 = 1.1285$, df = 2, n.s.). A chi square single-sample test was performed for the children who were repeating first grade. This indicated that there was no statistically significant difference on this characteristic and reading group placement ($X^2 = 1.1423$, df = 2, n.s.).

(d) Absence in kindergarten. For analysis purposes the data were grouped as follows: 0-10 days absent in kindergarten; 11-20 days absent; 21-30 days absent; 31-40 days absent; more than 40
days absent. The classification of children by amount of absence and reading group placement was as indicated in Table 28.

### TABLE 28

Classification of Subjects by Reading Group Placement and Kindergarten Absence

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>11-20</td>
<td>7</td>
<td>9</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>21-30</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>31-40</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>41+</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>34</td>
<td>23</td>
<td>84</td>
</tr>
</tbody>
</table>

It was not possible to calculate chi square due to the small expected cell frequencies.

The ungrouped data were subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of kindergarten absence are presented in Table 29.
### TABLE 29

Means and Standard Deviations of Absence
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>27</td>
<td>13.8519</td>
<td>10.7831</td>
</tr>
<tr>
<td>Group 2</td>
<td>34</td>
<td>21.0588</td>
<td>16.5315</td>
</tr>
<tr>
<td>Group 3</td>
<td>23</td>
<td>13.0000</td>
<td>11.2829</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>84</strong></td>
<td><strong>16.5357</strong></td>
<td><strong>13.5222</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 30.

### TABLE 30

Analysis of Variance of Kindergarten Absence
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>998.6133</td>
<td>499.3067</td>
<td>2.6029</td>
</tr>
<tr>
<td>Within Groups</td>
<td>81</td>
<td>15538.28</td>
<td>191.8306</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>83</td>
<td>16536.8933</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.
Since the main effects for absence in kindergarten according to reading group placement proved insignificant ($F = 2.6029$, $df = 2/81$, n.s.), no post-hoc multiple comparisons were made. There were no differences among the reading groups on this characteristic other than what might have been expected by chance.

The results of the educational characteristics and reading group placement are summarized in Table 31.

<table>
<thead>
<tr>
<th>TABLE 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary of Educational Characteristics</td>
</tr>
<tr>
<td>and Reading Group Placement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>$X^2$ (1,2,3)</th>
<th>$X^2$ (1,3)</th>
<th>ANOVA (1,2,3)</th>
<th>Scheffe'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prekindergarten</td>
<td>.01</td>
<td>.05</td>
<td>.01</td>
<td>.05(1-3)</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Repeater</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absence</td>
<td>n.s.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this sub-section four educational characteristics were analyzed in relationship to reading group placement. As seen in Table 31, there were no statistically significant differences for three of the four characteristics: kindergarten attendance, repeating first grade, absence in kindergarten. There were statistically significant differences among groups one, two, and three, and between groups one and three for the characteristic of pre-kindergarten attendance.
**Family Characteristics**

Three items were included in the category of family characteristics: (a) position in the family—oldest, middle, youngest, or only child; (b) intact family—both parents or other (stepfather, stepmother, grandparents, etc.); (c) working mother—yes, no. The analysis of these characteristics in relationship to reading group placement was as follows.

(a) **Position in the family—oldest, middle, youngest, only.**

The classification of children by family position and reading group placement was as indicated in Table 32.

**TABLE 32**

Classification of Subjects by Family Position and Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oldest</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Middle</td>
<td>5</td>
<td>14</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Youngest</td>
<td>12</td>
<td>9</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Only</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>38</strong></td>
<td><strong>31</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

Each of the positions in the family and reading group placement was analyzed separately using the chi square single-sample test. None of the results were statistically significant: oldest child \( (X^2 = 1.3066, \text{df} = 2, \text{n.s.}); \) middle child \( (X^2 = 4.2069, \text{n.s.}); \)
Next a comparison of the positions in the family and placement into either the first or third reading groups was made. Using the chi square single-sample test again, none of the results were significant: oldest child ($X^2 = 1.4706, df = 1, n.s.$); middle child ($X^2 = 1.4706, df = 1, n.s.$); youngest child ($X^2 = .4286, df = 1, n.s.$); only child ($X^2 = 2.0, df = 1, n.s.$).

Last, a comparison of each of the positions in the family and placement in the first reading group with the combined second and third reading groups was made. Using a chi square single-sample test, the results this time showed two statistically significant differences: middle child ($X^2 = 12.4481, df = 1, p < .001$); only child ($X^2 = 8.0667, df = 1, p < .01$). Thus, more middle and only children were placed in the second and third reading groups than would be expected by chance. There were no statistically significant differences from what might have been expected by chance for the oldest children ($X^2 = .36, df = 1, n.s.$); or the youngest children ($X^2 = 1.2, df = 1, n.s.$).

(b) Intact family—both parents or other combination. Of the 99 children in the study, 57 lived with both natural parents according to school records or from information teachers had from talking with the children; 42 lived with one of the following—stepfather and mother, stepmother and father, mother only, father only, grandparents, aunt. Classifying the children by reading
group placement and intact family, the distribution was as indicated in Table 33.

**TABLE 33**

Classification of Subjects by Intact Family and Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both Parents</td>
<td>15</td>
<td>27</td>
<td>15</td>
<td>57</td>
</tr>
<tr>
<td>Other Combination</td>
<td>15</td>
<td>11</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 4.9973, \, df = 2, \, n.s. \]
\[ X^2 = 0.0169, \, df = 1, \, n.s. \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In neither case were the results statistically significant \((X^2 = 4.9973, \, df = 2, \, n.s.; \, X^2 = 0.0169, \, df = 1, \, n.s.)\). The placement of children by intact family into reading groups was no different than would be expected by chance.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of intact family are presented in Table 34.
### TABLE 34

Means and Standard Deviations of Intact Family

According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.5000</td>
<td>.5000</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.2895</td>
<td>.4535</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.5161</td>
<td>.4998</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.4242</td>
<td>.4826</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 35.

### TABLE 35

Analysis of Variance of Intact Family

According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1.1241</td>
<td>.5621</td>
<td>2.3401</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>23.0577</td>
<td>.2402</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>24.1818</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.

Since the main effects for intact family according to reading group placement proved insignificant ($F = 2.3401$, df 2/96, n.s.)
no post-hoc multiple comparisons were made. There were no statistically significant differences from what would be expected by chance for this characteristic and reading group placement.

(c) Working mother—yes, no. Of the 99 children in the study, 49 had mothers who worked outside the home, 50 had mothers who did not work outside the home. Classifying the children by reading group placement and having a working mother, the distribution was as indicated in Table 36.

| TABLE 36 |
| Classification of Subjects by Working Mother and Reading Group Placement |

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>17</td>
<td>16</td>
<td>49</td>
</tr>
<tr>
<td>No</td>
<td>14</td>
<td>21</td>
<td>15</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[
X^2 = .5764, \, df = 2, \, n.s. \\
X^2 = .0149, \, df = 1, \, n.s. \\
\]

Chi square was calculated on these data to compare groups one, two, and three and to compare groups one and three. In neither case were the results statistically significant \((X^2 = .5764, \, df = 2, \, n.s.; \, X^2 = .0149, \, df = 2, \, n.s.)\). The placement of children by working mother into reading groups was no different than would be expected by chance.
These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of working mother are presented in Table 37.

TABLE 37

Means and Standard Deviations of Working Mother and Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.4667</td>
<td>.4989</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.5526</td>
<td>.4973</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.4839</td>
<td>.4998</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.5051</td>
<td>.4808</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 38.
TABLE 38
Analysis of Variance of Working Mother
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.6492</td>
<td>.3246</td>
<td>1.2931</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>24.0982</td>
<td>.2510</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>24.7474</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n.s.

Since the main effects for working mother according to reading group placement proved insignificant, no post-hoc multiple comparisons were made. There were no statistically significant differences from what would be expected by chance for this characteristic and reading group placement.

The results of the characteristics in the family category and reading group placement are summarized in Table 39.
In this sub-section three family characteristics were analyzed in relationship to reading group placement. As can be seen in Table 39, no statistically significant differences resulted for two of the three characteristics: intact family and working mother. The third characteristic, position in the family resulted in statistically significant differences for two family positions--middle child and youngest child only when a comparison was made between group one and a combination of groups two and three. There were no statistically significant differences for being an oldest or an only child.
**Intellectual Characteristics**

Seven items were included in the category of intellectual characteristics: (a) ability to read a picture—the five children in each room were ranked 1-5; (b) ability to identify signs—yes, no; (c) alphabet knowledge—yes, no; (d) ability to read now—yes, no; (e) knowledge of numbers from 1-12—yes, no; (f) ability to match similar shapes—yes, no; (g) test scores on the Metropolitan Readiness Test.

The analysis of these characteristics in relationship to reading group placement was as follows.

(a) Ability to read a picture—the five children in each room were ranked 1-5 on this characteristic. The classification of children by rankings on reading a picture and reading group placement was as indicated in Table 40.
### TABLE 40

Classification of Subjects by Reading Group Placement and the Ability to Read a Picture

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14</td>
<td>5</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>9</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>7</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>38</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

χ² = 35.8605, df = 8, p < .001  
χ² = 30.9011, df = 4, p < .001

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results were statistically significant for both calculations (χ² = 35.8605, df = 8, p < .001; χ² = 30.9011, df = 4, p < .001). This indicated that there were significant differences in the ability to read a picture according to reading group placement. More children in the first reading group were ranked as reading a picture well than would be expected by chance; more children in the third reading group were ranked as reading a picture poorly than would be expected by chance.
(b) **Ability to recognize signs--yes, no.** Of the 99 children in the study, 71 were judged by their teachers to be able to recognize and identify simple signs seen in the classroom and/or neighborhood; 28 children were judged as being unable to do this. Classifying the children by reading group placement and the ability to recognize signs, the distribution was as indicated in Table 4.1.

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>27</td>
<td>28</td>
<td>16</td>
<td>71</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>10</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 11.1936, df = 2, p < .01$

$X^2 = 9.0338, df = 1, p < .01$

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. The results of both calculations were statistically significant ($X^2 = 11.1936, df = 2, p < .01; X^2 = 9.0338, df = 1, p < .01$). This indicated that there were significant differences in the ability to recognize signs according to reading group placement.

The above data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the
three reading groups on the characteristic of recognizing signs are presented in Table 42.

**TABLE 42**

Means and Standard Deviations of the Ability to Recognize Signs According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.1000</td>
<td>.4135</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.2632</td>
<td>.4403</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.4839</td>
<td>.4998</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>.2828</strong></td>
<td><strong>.4522</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 43.

**TABLE 43**

Analysis of Variance of Ability to Recognize Signs According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>2.2704</td>
<td>1.1352</td>
<td>6.1190**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>17.8104</td>
<td>.1855</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>98</td>
<td><strong>20.0808</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01**
Since the main effects for recognizing signs according to reading groups proved to be statistically significant ($F = 6.1190, \text{df} = 2/96, \ p < .01$), post-hoc multiple comparisons were calculated using the Scheffé method. It was found that the mean number of children in the first reading group able to recognize signs significantly exceeded the mean number of children able to recognize signs in the third group ($p < .01$). However the mean number of children able to recognize signs in the first group did not significantly exceed the mean number of children in the second group; the mean number of children in the second group able to recognize signs exceeded but was not significantly greater than the mean number of children able to identify signs in the third reading group. Therefore it was concluded that there were more children in the first group who were able to recognize signs than would be expected by chance; there were significantly more children in the third group unable to recognize signs than would be expected by chance.

(c) Alphabet knowledge--yes, no. Of the 99 children in the study, 69 were judged as knowing the alphabet; 30 were judged as not knowing the alphabet. Classifying the children by reading group placement and alphabet knowledge, the distribution was as indicated in Table 44.
TABLE 44
Classification of Subjects by Reading Group
Placement and Alphabet Knowledge

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>29</td>
<td>10</td>
<td>69</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>9</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$x^2 = 34.4053, df = 2, p < .001$
$x^2 = 28.0638, df = 1, p < .001$

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results in both cases were statistically significant ($x^2 = 34.4053, df = 2, p < .001$; $x^2 = 28.0638, df = 1, p < .001$). This indicated that there were significant differences in alphabet knowledge according to reading group placement.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of alphabet knowledge are presented in Table 45.
**TABLE 45**

Means and Standard Deviations of Alphabet Knowledge and Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.0000</td>
<td>.0000</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.2368</td>
<td>.4252</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.6774</td>
<td>.4675</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.3030</td>
<td>.3712</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 46.

**TABLE 46**

Analysis of Variance of Alphabet Knowledge According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>7.2673</td>
<td>3.6336</td>
<td>25.5707**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>13.6418</td>
<td>.1421</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>20.9091</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01**
Since the main effects for alphabet knowledge according to reading groups proved to be significant ($F = 25.5707, df = 2/96, p < .01$), post-hoc multiple comparisons were performed using the Scheffe method. The mean number of children knowing the alphabet in the first reading group exceeded the mean number of children knowing the alphabet in the third reading group ($p < .01$); the mean number of children knowing the alphabet in the second reading group exceeded the mean number of children knowing the alphabet in the third reading group ($p < .01$); and the mean number of children knowing the alphabet in the first reading group exceeded the mean number of children knowing the alphabet in the second reading group ($p < .05$). These results indicated that there were differences, greater than would be expected by chance, for this characteristic and reading group placement.

(d) Ability to read now--yes, no. Of the 99 children in the study, 41 were judged as being able to read now (at least the 15 basic sight words); 58 were judged as not knowing how to read at all. Classifying the children by reading group placement and the ability to read, the distribution was as indicated in Table 47.
TABLE 47

Classification of Subjects by Reading Group
Placement and Ability to Read Now

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>23</td>
<td>15</td>
<td>3</td>
<td>41</td>
</tr>
<tr>
<td>No</td>
<td>7</td>
<td>23</td>
<td>28</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\(X^2 = 28.2939, \text{ df } = 2, \ p < .001\)
\(X^2 = 25.3036, \text{ df } = 1, \ p < .001\)

Chi square was calculated using these data to compare groups one, two, and three, and to compare groups one and three. Results from both calculations were statistically significant \((X^2 = 28.2939, \text{ df } = 2, \ p < .001; X^2 = 25.3036, \text{ df } = 1, \ p < .001)\). This indicated that there were significant differences in alphabet knowledge according to reading group placement.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of ability to read now are presented in Table 48.
TABLE 48
Means and Standard Deviations of Ability to Read Now According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.2333</td>
<td>.4228</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.6053</td>
<td>.4888</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.9032</td>
<td>.2956</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.5859</td>
<td>.3285</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 49.

TABLE 49
Analysis of Variance of Ability to Read Now According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>6.8649</td>
<td>3.4325</td>
<td>19.2078**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>17.1553</td>
<td>.1787</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>24.0202</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01
Since the main effects for ability to read now according to reading group placement proved to be significant ($F = 19.2078$, $df = 2/96, p < .01$), post-hoc multiple comparisons were performed using the Scheffe method. It was found that the mean number of children able to read in the first reading group significantly exceeded the mean number of children able to read now in the second group ($p < .01$) and in the third reading group ($p < .01$); the mean number of children in the second reading group able to read now significantly exceeded the mean number of children in the third reading group able to read now ($p < .05$). Therefore the results indicated that more children, than would be expected by chance, in the first group were able to read now than in either the second or third reading groups.

(e) Knowledge of numbers from 1-12--yes, no. Of the 99 children in the study, 82 were judged as knowing the numbers from 1-12; 17 were judged as not knowing these numbers. Classifying the children by reading group placement and number knowledge, the distribution was as indicated in Table 50.
TABLE 50
Classification of Subjects by Reading
Group Placement and Number Knowledge

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>35</td>
<td>17</td>
<td>82</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>3</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 25.5940, \text{ df} = 2, p < .001 \]
\[ X^2 = 15.1221, \text{ df} = 1, p < .001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases, the results were statistically significant \((X^2 = 25.5940, \text{ df} = 2, p < .001; X^2 = 15.1221, \text{ df} = 1, p < .001)\). This indicated that there were significant differences in number knowledge according to reading group placement.

These data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of number knowledge are presented in Table 51.
### TABLE 51

Means and Standard Deviations of Number Knowledge According to Reading Group Placement

<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.0000</td>
<td>.0000</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.0789</td>
<td>.2696</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.4516</td>
<td>.4977</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>.1414</strong></td>
<td><strong>.3248</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 52.

### TABLE 52

Analysis of Variance of Number Knowledge According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th><strong>F</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>3.6401</td>
<td>1.8201</td>
<td>16.7351***</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>10.4407</td>
<td>.1088</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>98</td>
<td>14.0808</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***p < .01
Since main effects for number knowledge according to reading groups proved to be significant ($F = 16.7351, df = 2/96, p < .01$), post-hoc multiple comparisons were performed using the Scheffe method. It was found that the mean number of children having number knowledge in the first reading group exceeded the mean number of children having number knowledge in the third reading group ($p < .01$); the mean number of children having number knowledge in the second reading group exceeded the mean number of children having number knowledge in the third reading group ($p < .01$); the mean number of children having number knowledge in the first reading group exceeded the mean number of children having number knowledge in the second reading group but was not significant. The results then indicated there were differences, greater than would be expected by chance, for this characteristic and reading group placement.

(f) Ability to match similar shapes—yes, no. Of the 99 children in the study, 89 were judged to be able to match similar shapes; 10 were judged to be unable to match similar shapes. Classifying the children by reading group placement and the ability to match similar shapes, the distribution was as indicated in Table 53.
TABLE 53

Classification of Subjects by Reading Group
Placement and the Ability to Match Similar Shapes

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>30</td>
<td>36</td>
<td>23</td>
<td>89</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$x^2 = 12.7008$, df = 2, $p < .01$

Chi square was calculated using these data to compare groups one, two, and three. Results were statistically significant ($X^2 = 12.7008$, df = 2, $p < .01$). (No comparison was made between groups one and three because expected cell frequencies were too small.) The results indicated there were greater differences among the groups from what would be expected by chance.

The data were also subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of ability to match similar shapes are presented in Table 54.
Means and Standard Deviations of Ability to Match Similar Shapes According to Reading Group Placement

<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.0000</td>
<td>.0000</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.0526</td>
<td>.2233</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.2580</td>
<td>.4376</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.1010</td>
<td>.2812</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 55.

Analysis of Variance of Ability to Match Similar Shapes According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>1.1597</td>
<td>.5796</td>
<td>7.1029**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>7.8301</td>
<td>.0816</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>8.9898</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01
Since the main effects for ability to match similar shapes according to reading groups proved to be significant ($F = 7.1060, df = 2/96, p < .01$), post-hoc multiple comparisons were made using the Scheffé method. The mean number of children in the first reading group having the ability to match similar shapes significantly exceeded the mean number of children in the third group having the ability to match similar shapes ($p < .01$). This was the only comparison that was significant. It indicated that more children in the first reading group were able to match similar shapes and fewer children in the third group were able to match similar shapes than would be expected by chance.

(g) Test scores on the Metropolitan Readiness Test. The means and standard deviations of the three reading groups for test scores are presented in Table 56. An examination of the table suggested that students in the first reading group had higher test scores than did the students in the second and third reading groups. It further suggested that the test scores of children in the second reading group had higher test scores than did the children in the third reading group.
<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>25</td>
<td>64.48</td>
<td>15.562</td>
</tr>
<tr>
<td>Group 2</td>
<td>33</td>
<td>55.18</td>
<td>15.473</td>
</tr>
<tr>
<td>Group 3</td>
<td>25</td>
<td>45.84</td>
<td>13.003</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>83</strong></td>
<td><strong>55.1687</strong></td>
<td><strong>14.3793</strong></td>
</tr>
</tbody>
</table>

To subject these tentative findings to formal test, a standard one-way analysis of variance was performed. The results are summarized in Table 57.

**TABLE 57**

Analysis of Variance of Test Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>4343.13</td>
<td>2171.57</td>
<td>9.5545**</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>18182.51</td>
<td>227.2814</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>98</strong></td>
<td><strong>22525.64</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .01**
Since the main effects for test scores according to reading group placement proved to be significant ($F = 9.5545$, $df = 2/96$, $p < .01$), post-hoc multiple comparisons were performed using the Scheffe method. It was found that the mean scores of children in the first reading group exceeded that of children in the third group ($p < .01$). However, the mean score of children in the first group did not significantly exceed that of children in the second group; the mean score of children in the second group did not significantly exceed that of children in the third group. These results suggested that children in the first group had higher test scores than would be expected by chance; children in the third group had lower test scores than would be expected by chance.

Summary. The results of the characteristics in the intellectual category in relationship to reading group placement are summarized in Table 58.
In this sub-section, seven intellectual characteristics were analyzed in relationship to reading group placement. As indicated in Table 58, statistically significant differences were found among the three reading groups on all seven characteristics: ability to read a picture, ability to recognize signs, alphabet knowledge, ability to read now, number knowledge, ability to match similar shapes, and test scores.

### Language Characteristics

Four items were included in the category of language characteristics: (a) speaks standard English—yes, no; (b) understands what is said in class—yes, no; (c) speaks confidently and fluently—
children were ranked 1-5; (d) vocabulary--above average, average, below average.

The analysis of these characteristics in relationship to reading group placement were as follows.

(a) Speaks standard English--yes, no. Of the 99 children in the study, 69 were judged by their teachers to speak standard English; 30 were judged to speak a non-standard English. Classifying the children by reading group placement and speaking standard English, the distribution was as indicated in Table 59.

**TABLE 59**

Classification of Subjects by Reading Group Placement and Use of Standard English

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>26</td>
<td>18</td>
<td>69</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>12</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[
X^2 = 4.6568, \text{ df } = 2, \text{ n.s.}
\]

\[
X^2 = 3.5440, \text{ df } = 2, \text{ n.s.}
\]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and two. In neither case were the results statistically significant (\(X^2 = 4.6568, \text{ df } = 2, \text{ n.s.}\); \(X^2 = 3.5440, \text{ df } = 1, \text{ n.s.}\)). The placement of children by use of standard English into reading groups was no different than would be expected by chance.
The above data were subjected to a standard one-way analysis of variance. The means and standard deviations of the three reading groups on the characteristic of standard English are presented in Table 60.

**TABLE 60**

Means and Standard Deviations of Standard English According to Reading Group Placement

<table>
<thead>
<tr>
<th>Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.1667</td>
<td>.3727</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.3158</td>
<td>.4648</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.4194</td>
<td>.4935</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>.3030</strong></td>
<td><strong>.4487</strong></td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in Table 61.

**TABLE 61**

Analysis of Variance of Standard English According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>.9835</td>
<td>.4918</td>
<td>2.3692</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>19.9256</td>
<td>.2076</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>98</td>
<td></td>
<td></td>
<td>n.s.</td>
</tr>
</tbody>
</table>
Since main effects for standard English according to reading group placement proved statistically insignificant, no post-hoc multiple comparisons were made. There were no significant differences from what would be expected by chance for this characteristic and reading group placement according to the analysis of variance.

(b) Understands what is said in class—usually, sometimes, seldom. Of the 99 children in the study 52 were judged by their teachers as usually understanding what was said in class; 29 were judged as sometimes understanding what was said in class, 18 were judged as seldom understanding what was said in class. Classifying the children by reading group placement and understanding what was said in class, the distribution was as indicated in Table 62.

**TABLE 62**

Classification of Subjects by Reading Group Placement and Understanding What is Said in Class

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually</td>
<td>27</td>
<td>23</td>
<td>2</td>
<td>52</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3</td>
<td>9</td>
<td>17</td>
<td>29</td>
</tr>
<tr>
<td>Seldom</td>
<td>0</td>
<td>6</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 44.8974, df = 4, p < .001 \]

\[ X^2 = 43.3471, df = 2, p < .001 \]
Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and two. In both cases, results were statistically significant \( (X^2 = 44.8974, \text{df} = 4, p < .001; X^2 = 43.3471, \text{df} = 2, p < .001) \). This indicated that more children who understood what was said in class were placed in group one than would be expected by chance; more children who did not understand what was said in class were placed in group three than would be expected by chance.

(c) Speaks confidently and fluently--the five children in each room were ranked 1-5. The distribution of the ranked positions among reading groups was as indicated in Table 63.

**TABLE 63**

Classification of Subjects by Reading Group Placement and Ranking on Speaking Confidently and Fluently

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
<td>2</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>9</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>10</td>
<td>8</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>13</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>4</td>
<td>13</td>
<td>17</td>
</tr>
</tbody>
</table>

**Total** 30 38 31 99

\[ X^2 = 58.1728, \text{df} = 8, p < .001 \]

\[ X^2 = 34.3418, \text{df} = 4, p < .001 \]
Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and two. In both cases the results were statistically significant ($X^2 = 58.1728$, $df = 8$, $p < .001$; $X^2 = 34.3418$, $df = 4$, $p < .001$). This indicated more children who spoke confidently and fluently were placed in the first group than would be expected by chance; more children who did not speak confidently and fluently were placed in the third group than would be expected by chance.

(d) Vocabulary—above average, average, below average. Of the 99 children in the study, 33 were judged by their teachers to have an above average vocabulary; 38 were judged to have an average vocabulary; 28 were judged to have a below average vocabulary. Classifying the children by reading group placement and vocabulary, the distribution was as indicated in Table 64.

**TABLE 64**

Classification of Subjects by Reading Group

Placement and Vocabulary

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Average</td>
<td>22</td>
<td>9</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>Average</td>
<td>6</td>
<td>20</td>
<td>12</td>
<td>38</td>
</tr>
<tr>
<td>Below Average</td>
<td>2</td>
<td>9</td>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 34.2606$, $df = 4$, $p < .001$

$X^2 = 30.5005$, $df = 2$, $p < .001$
Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results were statistically significant in both cases ($X^2 = 34.2606$, $df = 4$, $p < .001$; $X^2 = 30.5005$, $df = 2$, $p < .001$). This indicated that more children having an above average vocabulary were placed in the first group than would be expected by chance; more children having an average or below average vocabulary were placed in the second and third groups than would be expected by chance.

**Summary.** The results of the language characteristics and reading group placement are summarized in Table 65.

**TABLE 65**

**Summary of Language Characteristics**
and Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$X^2$ (1,2,3)</th>
<th>$X^2$ (1,3)</th>
<th>ANOVA (1,2,3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaks Standard English</td>
<td>n.s.</td>
<td>n.s.</td>
<td>n.s.</td>
</tr>
<tr>
<td>Understands What Is Said In Class</td>
<td>.001</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Speaks Confidently and Fluently</td>
<td>.001</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>.001</td>
<td>.001</td>
<td></td>
</tr>
</tbody>
</table>

In this section four language characteristics were analyzed in relationship to reading group placement. As can be seen in Table 65, no statistically significant differences resulted for one of the characteristics, speaks standard English. There were
statistically significant differences among the groups for the other three characteristics: understands what is said in class, speaks confidently and fluently, and vocabulary.

**Motor Ability Characteristics**

Three items were included in the category of motor ability characteristics: (a) ability to copy simple shapes (square, circle, triangle, rectangle)—yes, some shapes, few if any shapes; (b) ability to cut, color, and paste—the five children in each room were ranked 1-5; (c) handwriting—the five children in each room were ranked 1-5.

The analysis of these characteristics in relationship to reading group placement was as follows.

(a) **Ability to copy simple shapes—yes, some shapes, few if any shapes.** Of the 99 children in the study, 49 were judged by their teachers to be able to copy simple shapes, 30 were judged to be able to copy some of the simple shapes, and 29 were judged to be able to copy few or none of the simple shapes. Classifying the children by reading group placement and the ability to copy simple shapes, the distribution was as indicated in Table 66.
TABLE 66

Classification of Subjects by Reading Group
Placement and Ability to Copy Simple Shapes

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26</td>
<td>19</td>
<td>4</td>
<td>49</td>
</tr>
<tr>
<td>Some</td>
<td>3</td>
<td>17</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>2</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 50.3248, \text{df} = 4, p < .001 \]
\[ X^2 = 34.1171, \text{df} = 2, p < .001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases, results were statistically significant \((X^2 = 50.3248, \text{df} = 4, p < .001; X^2 = 34.1171, \text{df} = 2, p < .001)\). This indicated that more children in the first group were able to copy all the simple shapes than would be expected by chance; more children in the third group were unable to copy the simple shapes than would be expected by chance.

(b) Cut, color, and paste--the five children in each room were ranked 1-5 on this characteristic. The classification of the children by rankings on cutting, coloring, and pasting and reading group placement was as indicated in Table 67.
TABLE 67
Classification of Subjects by Reading Group
Placement and Ability to Cut, Color and Paste

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>5</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>13</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>9</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>4</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 36.3082, \text{df} = 8, p < .001 \]
\[ X^2 = 25.4817, \text{df} = 4, p < .001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results from both calculations were statistically significant (\( X^2 = 36.3082, \text{df} = 8, p < .001 \); \( X^2 = 25.4817, \text{df} = 4, p < .001 \)). The results indicated that there were more children in the first reading group who could cut, color, and paste well than would be expected by chance; there were more children in the third reading group who could not cut, color, and paste well than would be expected by chance.

(c) Handwriting—the five children in each room were ranked 1-5 on this characteristic. The classification of children by
rankings on handwriting and reading group placement was as indicated in Table 68.

**TABLE 68**

Classification of Subjects by Reading Group Placement and Handwriting Ability

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15</td>
<td>4</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>10</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>14</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>8</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>2</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ X^2 = 54.1271, df = 8, p < 0.001 \]
\[ X^2 = 29.2124, df = 4, p < 0.001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results from both calculations were statistically significant \( (X^2 = 54.1271, df = 8, p < 0.001; X^2 = 29.2124, df = 4, p < 0.001) \). The results indicated that more children in the first reading group had good handwriting than would be expected by chance; more children in the third reading group had poor handwriting than would be expected by chance.
Summary. The results of the motor ability characteristics in relationship to reading group placement are summarized in Table 69.

**TABLE 69**

Motor Ability Characteristics and Reading Group Placement Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>$\chi^2$ (1,2,3)</th>
<th>$\chi^2$ (1,3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to Copy Shapes</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>Ability to Cut, Color, Paste</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>Handwriting</td>
<td>.001</td>
<td>.001</td>
</tr>
</tbody>
</table>

In this sub-section three motor ability characteristics were analyzed in relationship to reading group placement. As indicated in Table 69, there were statistically significant differences among the three reading groups on all three characteristics: ability to copy simple shapes; ability to cut, color, and paste; and handwriting.

**Personality Characteristics**

Six items were included in the category of personality characteristics: (a) plays well with peers—yes, sometimes, no; (b) works well independently—yes, sometimes, no; (c) completes assigned tasks—yes, sometimes, no; (d) neat desk—yes, no; (e) obedient and polite—yes, no; (f) smiling—the five children in each room were ranked 1-5.
The analysis of these characteristics in relationship to reading group placement was as follows.

(a) Ability to play well with peers—yes, sometimes, no.

Of the 99 children in the study, the teachers judged 46 as playing well with other children; 33 were judged as playing well with other children sometimes; 20 were judged as generally not playing well with other children. Classifying the children by reading group placement and the ability to play well with peers, the distribution was as indicated in Table 70.

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>21</td>
<td>16</td>
<td>9</td>
<td>46</td>
</tr>
<tr>
<td>Sometimes</td>
<td>6</td>
<td>15</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ x^2 = 11.8934, \text{df} = 4, p < .02 \]
\[ x^2 = 12.2614, \text{df} = 2, p < .01 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results from both calculations were statistically significant \( (x^2 = 11.8934, \text{df} = 4, p < .02; x^2 = 12.2614, \text{df} = 2, p < .01) \). The results indicated that there were more children in the first reading group...
who played well with other children than would be expected by chance; there were more children in the third reading group who played poorly with other children than would be expected by chance.

(b) Ability to work well independently--yes, sometimes, no. Of the 99 children in the study, 45 were judged as working well independently, 29 were judged to work well independently sometimes, and 25 were judged not to work well independently. Classifying the children by reading group placement and the ability to work well independently, the distribution was as indicated in Table 7.1.

<table>
<thead>
<tr>
<th>Classification of Subjects by Reading Group Placement and the Ability to Work Well Independently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Sometimes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 49.7462, \text{df} = 4, p < .001 \]
\[ \chi^2 = 27.9818, \text{df} = 2, p < .001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. In both cases results were statistically significant \((\chi^2 = 49.7462, \text{df} = 4, p < .001; \chi^2 = 27.9818, \text{df} = 2, p < .001)\). The results indicated that more children in the first reading group worked well
independently than would be expected by chance; more children in the third reading group did not work independently than would be expected by chance.

(c) Ability to complete assigned tasks—yes, sometimes, no.

Of the 99 children in the study, 44 were judged by their teachers as generally completing all assigned tasks, 31 children were judged as sometimes completing assigned tasks, 24 children were judged as seldom, if ever, completing assigned tasks. Classifying the children by reading groups and the ability to complete assigned tasks, the distribution was as indicated in Table 72.

**TABLE 72**

Classification of Subjects by Reading Group Placement and the Ability to Complete Tasks

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>24</td>
<td>17</td>
<td>3</td>
<td>44</td>
</tr>
<tr>
<td>Sometimes</td>
<td>4</td>
<td>14</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>7</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 33.3588, \text{df} = 4, p \leq .001 \]

\[ \chi^2 = 31.0342, \text{df} = 2, p \leq .001 \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results from both calculations were statistically significant \( (\chi^2 = 33.3588, \text{df} = 4, p \leq .001; \chi^2 = 31.0342, \text{df} = 2, p \leq .001) \). The results
indicated that there were more children who completed their assigned tasks in the first reading group than would be expected by chance; there were more children in the third reading group who did not complete their tasks than would be expected by chance.

(d) Neat desk--yes, no. Of the 99 children in the study 67 were judged by their teachers as having neat desks, 32 were judged as having messy desks. Classifying the children by reading group placement and having a neat desk, the distribution was as indicated in Table 73.

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26</td>
<td>26</td>
<td>15</td>
<td>67</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>12</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>38</td>
<td>31</td>
<td>99</td>
</tr>
</tbody>
</table>

$X^2 = 10.2278$, $df = 2$, $p < .01$
$X^2 = 8.4749$, $df = 1$, $p < .01$

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results in both cases were statistically significant ($X^2 = 10.2278$, $df = 2$, $p < .01$; $X^2 = 8.4749$, $df = 1$, $p < .01$). The results indicated that more children with neat desks were in the first reading
group than would be expected by chance; more children with messy
desks were in the third reading group than would be expected by
chance.

The data were also subjected to a standard one-way analysis
of variance. The means and standard deviations of the three read­
ing groups on the characteristic of neat desks are presented in
Table 74.

**TABLE 74**

Means and Standard Deviations of Neat Desks

According to Reading Group Placement

<table>
<thead>
<tr>
<th>Reading Groups</th>
<th>Group Size</th>
<th>Group Means</th>
<th>Group SDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>30</td>
<td>.1333</td>
<td>.3400</td>
</tr>
<tr>
<td>Group 2</td>
<td>38</td>
<td>.3158</td>
<td>.4648</td>
</tr>
<tr>
<td>Group 3</td>
<td>31</td>
<td>.5161</td>
<td>.4998</td>
</tr>
<tr>
<td>Total</td>
<td>99</td>
<td>.3232</td>
<td>.4429</td>
</tr>
</tbody>
</table>

The results of the analysis of variance are summarized in
Table 75.
TABLE 75

Analysis of Variance of Neat Desks
According to Reading Group Placement

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>2</td>
<td>2.2375</td>
<td>1.1188</td>
<td>5.5304*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>96</td>
<td>19.4191</td>
<td>0.2023</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>21.6566</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*<p < .05

Since the main effects for neat desks according to reading group placement proved to be significant (F = 5.5304, df = 2/96, p < .05), post-hoc multiple comparisons were performed using the Scheffe method. It was found that the mean number of children in the first reading group having neat desks significantly exceeded the mean number of children in the third reading group having neat desks (p < .05). The mean number of children in the first reading group having neat desks exceeded the mean number of children in the second reading group having neat desks but was not significant; the mean number of children in the second reading group having neat desks exceeded the mean number of children in the third reading group but was not significant. These results indicated that more children in the first reading group had neat desks than would be expected by chance; more children in the
third reading group had mess desks than would be expected by chance.

(e) Obedient and polite—yes, sometimes, no. Of the 99 children in the study, 66 were judged to be obedient and polite, 23 were judged to obeydient and polite sometimes, and 10 were judged to be generally disobedient and impolite. Classifying the children by reading group placement and being obedient and polite, the distribution was as indicated in Table 76.

TABLE 76
Classification of Subjects by Reading Group Placement and Being Obedient and Polite

<table>
<thead>
<tr>
<th>Item</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>24</td>
<td>22</td>
<td>66</td>
</tr>
<tr>
<td>Sometimes</td>
<td>7</td>
<td>10</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>10</td>
</tr>
</tbody>
</table>

Total 30 38 31 99

\[X^2 = .5952, \text{df} = 4, \text{n.s.}\]
\[X^2 = .1558, \text{df} = 2, \text{n.s.}\]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. The results were not significant in either case (\(X^2 = .5952, \text{df} = 4, \text{n.s.}\); \(X^2 = .1558, \text{df} = 2, \text{n.s.}\)). This indicated no differences among groups on this characteristic.
(f) Smiling—the five children from each room were ranked 1-5 on this characteristic. The distribution of the ranked positions among reading groups was as indicated in Table 77.

TABLE 77

Classification of Subjects by Reading

Group Placement and Smiling

<table>
<thead>
<tr>
<th>Ranks</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>4</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>10</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>9</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>38</strong></td>
<td><strong>31</strong></td>
<td><strong>99</strong></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 12.1672, \quad \text{df} = 8, \quad \text{n.s.} \]
\[ \chi^2 = 7.4442, \quad \text{df} = 4, \quad \text{n.s.} \]

Chi square was calculated using these data to compare groups one, two, and three and to compare groups one and three. Results from both calculations showed no statistically significant differences among the groups on this characteristic \((\chi^2 = 12.1672, \quad \text{df} = 8, \quad \text{n.s.}; \quad \chi^2 = 7.4442, \quad \text{df} = 4, \quad \text{n.s.})\). These results indicated that there were no differences among reading groups on this characteristic.
Summary. The results of the characteristics in the personality category in relationship to reading group placement are summarized in Table 78.

TABLE 78

Personality Characteristics and Reading Group Placement Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>$\chi^2_{(1,2,3)}$</th>
<th>$\chi^2_{(1,3)}$</th>
<th>ANOVA $\chi^2_{(1,2,3)}$</th>
<th>Scheffe $\chi^2_{(1,3)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plays Well With Peers</td>
<td>.02</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works Well Independently</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes Tasks</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neat Desk</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Obedient and Polite</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smiling</td>
<td>n.s.</td>
<td>n.s.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In this sub-section six personality characteristics were analyzed in relationship to reading group placement. As indicated in Table 78, statistically significant differences were found for four of the six characteristics: ability to play well with peers, ability to work well independently, ability to complete assigned tasks, and neat desk. Two characteristics showed no statistically significant differences among the groups: obedient and polite, and smiling.
**General Summary**

The results reported in the previous sub-sections will be summarized.

Twenty-two of the 36 characteristics analyzed yielded statistically significant differences. This indicated that there were 22 characteristics that differentiated between children who had been placed in the first reading group and those who had been placed in the second or third reading groups. The 22 characteristics and the level of statistical significance of each are listed in Table 79.

**TABLE 79**

Characteristics that Showed Statistically Significant Differences in Relationship to Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$\chi^2$ (1,2,3)</th>
<th>$\chi^2$ (1,3)</th>
<th>$\chi^2$ (1,2&amp;3)</th>
<th>ANOVA (1,2,3)</th>
<th>Scheffe (1,3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition of Clothing</td>
<td>.05</td>
<td></td>
<td>.02</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Type of Clothing</td>
<td>.05</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>.05</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prekindergarten</td>
<td>.01</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 79 (Continued)

Characteristics that Showed Statistically Significant Differences in Relationship to Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$\chi^2_{(1,2,3)}$</th>
<th>$\chi^2_{(1,3)}$</th>
<th>$\chi^2_{(1,2&amp;3)}$</th>
<th>ANOVA $\chi^2_{(1,2,3)}$</th>
<th>Scheffe $\chi^2_{(1,3)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Position in Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Child</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only Child</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understands What Is Said In Class</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaks Confidently</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motor Ability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to Copy Simple Shapes</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to Cut, Color, Paste</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handwriting</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intellectual</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reads a Picture</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Recognizes Signs</td>
<td>.01</td>
<td>.01</td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Alphabet Knowledge</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Knows How to Read</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Number Knowledge</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Matches Similar Shapes</td>
<td>.01</td>
<td></td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Test Scores</td>
<td>.01</td>
<td></td>
<td></td>
<td>.01</td>
<td>.01</td>
</tr>
</tbody>
</table>
TABLE 79 (Continued)

Characteristics that Showed Statistically Significant Differences in Relationship to Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>$X^2_{(1,2,3)}$</th>
<th>$X^2_{(1,3)}$</th>
<th>$X^2_{(1,263)}$</th>
<th>ANOVA $X^2_{(1,2,3)}$</th>
<th>Scheffe $X^2_{(1,3)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plays Well With Peers</td>
<td>.02</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works Independently</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes Assigned Tasks</td>
<td>.001</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neat Desk</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td></td>
</tr>
</tbody>
</table>

The remaining 14 characteristics showed no statistically significant differences among the three reading groups: condition of the hair, weight, race, age, hair color, sex, kindergarten experience, kindergarten absence, repeater, intact family, working mother, speaks standard English, obedient and polite, and smiling. That there were no statistically significant differences on these characteristics indicated that they did not differentiate among children who had been placed in the first reading group and the children who had been placed in the second or third reading group.

In each of the eight categories of characteristics there were one or more characteristics that differentiated among the three reading groups. The percentages, by category, of the characteristics that were statistically significant are presented in Table 80.
### TABLE 80
Percent of Statistically Significant Characteristics by Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Percent</th>
<th>Number of Significant Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>67%</td>
<td>(2 out of 3)</td>
</tr>
<tr>
<td>Biological</td>
<td>16%</td>
<td>(1 out of 6)</td>
</tr>
<tr>
<td>Educational</td>
<td>25%</td>
<td>(1 out of 4)</td>
</tr>
<tr>
<td>Family</td>
<td>33%</td>
<td>(1 out of 3)</td>
</tr>
<tr>
<td>Intellectual</td>
<td>100%</td>
<td>(7 out of 7)</td>
</tr>
<tr>
<td>Language</td>
<td>75%</td>
<td>(3 out of 4)</td>
</tr>
<tr>
<td>Motor Ability</td>
<td>100%</td>
<td>(3 out of 3)</td>
</tr>
<tr>
<td>Personality</td>
<td>67%</td>
<td>(4 out of 6)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63%</strong></td>
<td><strong>(22 out of 36)</strong></td>
</tr>
</tbody>
</table>

It was interesting to note in Table 80 that 63% of the characteristics differentiated among the reading groups. However, there was a great difference among the percentages of significant characteristics by category. The biological characteristics differentiated among groups least whereas the intellectual and motor ability characteristics differentiated most among the three reading groups. This would seem to indicate that teachers used intellectual and motor ability characteristics as criteria for reading group placement more than they use biological characteristics.
Hypothesis 1 stated that there would be significant differences in the characteristics of first grade children who had been placed into one of three reading groups. The hypothesis must now be accepted because there were statistically significant differences for the characteristics in each of the eight categories and reading group placement. Because of this, each of the eight sub-hypotheses must also be accepted. At least one characteristic analyzed for each sub-section resulted in statistically significant differences.

Section Two:

Criteria and Reading Group Placement

H2: The characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics of children they say they have observed.

The data collected to test this hypothesis were divided into eight categories of characteristics. Therefore there were eight sub-hypotheses examined in this section:

(A) The appearance characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(B) The biological characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.
(C) The educational characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(D) The family characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(E) The intellectual characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(F) The language characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(G) The motor ability characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

(H) The personality characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

The data collected to analyze these sub-hypotheses were gathered in the following way. Teachers, during the first
interview, were asked, "What criteria do you use when placing children into reading groups?" The 78 different answers to this question were put into one of the eight categories of characteristics (or a miscellaneous category) in the manner described in Chapter Three. (The entire list is in Appendix I.)

The analysis in this section compared the characteristics listed by teachers as criteria for reading group placement and the characteristics that were analyzed in section one of this chapter.

The characteristics listed by the teachers as criteria for reading group placement were grouped in one of the three following classifications and the subsequent assumptions were made. (a) The characteristic was listed by the teachers but had not been analyzed in section one because little or no research had been done which related it to success or failure in reading or because it was not easily observable. It was not possible to ascertain if these characteristics were used as criteria for reading group placement or if they did differentiate among the reading groups. (b) The characteristic was listed by the teacher, it was analyzed in section one, and it differentiated among the children in the three reading groups. The assumption was made that this characteristic was actually used by the teachers as a criteria for reading group placement. (c) The characteristic was listed by the teachers, it was analyzed in section one, but it did not differentiate among the children in the three reading groups. The assumption was made that this characteristic actually was not used by the teachers as
a criteria for reading group placement even though the teachers said it was used.

One more assumption undergirds the analysis in this section. 
(d) There were several characteristics analyzed in section one and were found to differentiate among children in the three reading groups that were not listed as criteria for reading group placement by the teachers. The assumption was made that these characteristics were also used by the teachers as criteria for reading group placement.

The following criteria were used to decide if the hypothesis should be accepted or rejected.

The hypothesis was rejected if (a) a characteristic was listed by teachers as criteria for reading group placement but did not differentiate among the children in the reading groups according to the analysis in section one; (b) the characteristic was not listed by the teachers as a criteria for reading group placement but was found to differentiate among the children in the reading groups according to the analysis in section one. The hypothesis was accepted if (c) the characteristic was listed as a criteria for reading group placement and did differentiate among the children in the reading groups according to the analysis in section one.

**Appearance Characteristics**

Teachers listed no appearance characteristics as criteria for reading group placement. However, in section one, two appearance characteristics had been found to differentiate among the children in the three reading groups--new versus old clothing,
and clean versus dirty clothing. Therefore, based on criteria (b), sub-hypothesis A must be rejected. Teachers actually did use appearance characteristics as criteria for reading group placement even though they did not list them as criteria.

**Biological Characteristics**

Teachers listed four biological characteristics as criteria for reading group placement. None of them had been analyzed in section one because they were not characteristics that could be easily observed or recognized by all teachers. Therefore it was impossible to ascertain if these four characteristics were used as criteria for reading group placement or if they did differentiate among the children in the three reading groups.

However, one biological characteristic—height—was found to differentiate among the children in the three reading groups. Therefore, based on criteria (b) (and disregarding the characteristics listed but not analyzed), sub-hypothesis B must be rejected, at least in part. Teachers actually did use a biological characteristic as a criteria for reading group placement even though it was not listed as a criteria.

**Educational Characteristics**

Teachers listed three educational characteristics as criteria for reading group placement, all of which had been analyzed in section one. All three—repeating first grade or not, kindergarten or not, and absence—were found not to differentiate among children in the three reading groups.
The one educational characteristic, analyzed in section one, that differentiated among the children in the three reading groups—prekindergarten experience—was not listed by the teachers as a criteria used for reading group placement. Sub-hypothesis C must be rejected for two reasons. First the three educational characteristics listed as criteria by the teachers did not differentiate among the children in the three reading groups. Second, the one educational characteristic which did differentiate among the children in the three reading groups was not listed by the teachers.

**Family Characteristics**

Teachers listed two family characteristics as criteria for reading group placement. Neither of them had been analyzed in section one because they were not characteristics that could be easily observed. Therefore it was impossible to ascertain if these two characteristics were used as criteria for reading group placement or if they did differentiate among the children in the three reading groups. However, one family characteristic—position in the family—was found to differentiate among the children in the three reading groups. It was difficult to say that teachers used this particular characteristic as a basis for reading group placement. Often teachers did not know what a child's position in a family was relative to siblings. Therefore it was not possible to either reject or accept this hypothesis for lack of sufficient information.
**Intellectual Characteristics**

Teachers listed 30 different intellectual characteristics as criteria for reading group placement. Of these, seven had been analyzed in section one. Therefore it was impossible to ascertain if the 22 characteristics which had not been analyzed were used as criteria for reading group placement or if they did differentiate among the children in the three reading groups.

However, of the seven characteristics listed by teachers that had been analyzed in section one, all were found to differentiate among the children in the three reading groups. The seven characteristics were: test scores, alphabet knowledge, number knowledge, ability to read now, knows the 15 basic words (these two characteristics had been combined in the analysis in section one), recognizing signs, and reads a picture. Therefore, disregarding the 22 characteristics that were listed as criteria but had not been analyzed in section, it was necessary to accept sub-hypothesis E based on the fact that all seven of the analyzed characteristics the teachers listed as criteria for reading group placement did differentiate among the children in the three reading groups.

**Language Characteristics**

Teachers listed seven language characteristics as criteria for reading group placement. It would seem that all seven characteristics could logically be subsumed under one of the four language characteristics which had been analyzed in section one. Four of the characteristics—how they respond orally, use of language, speaking in sentences, and speech problems—could be included
under the more general characteristic of speaks confidently and fluently. Two of the other characteristics listed—listening ability and understands what the teacher is talking about—could be included under the more general characteristic of understands what is said in class. The last characteristic listed, vocabulary, was a characteristic that had been analyzed in section one.

All three of the above characteristics—understands what is said in class, speaks confidently and fluently, and vocabulary—were analyzed in section one and were found to differentiate among the children in the three reading groups. Therefore, it was necessary to accept sub-hypothesis F based on the fact that all three of the language characteristics the teachers listed as criteria for reading group placement did differentiate among the children in the three reading groups. The language characteristics of children teachers said they used as criteria when placing children into reading groups were consistent with the characteristics they said they had observed.

**Motor Ability Characteristics**

Teachers listed four motor ability characteristics as criteria for reading group placement. Two of these—handwriting and coloring—had been analyzed in section one. The other two characteristics—motor coordination and eye-hand coordination—were not analyzed directly. However, it could logically be assumed that these two were more general characteristics and that the three characteristics analyzed in section one would give evidence of these more general abilities.
All four of the motor abilities listed by the teachers had been analyzed in section one and were found to differentiate among the children in the three reading groups. Therefore it was necessary to accept sub-hypothesis G based on the fact that all the motor ability characteristics listed by the teachers as criteria for reading group placement did differentiate among the children in the three reading groups. The motor ability characteristics of children teachers said they used as criteria when placing children into reading groups were consistent with the characteristics they said they had observed.

**Personal?ty Characteristics**

Teachers listed 21 personality characteristics as criteria for reading group placement. Of these only two--peer relationships and ability to finish work--had been analyzed in section one because little or no research had been done which related the others to success or failure in reading. Therefore it was impossible to ascertain if the 19 characteristics which had not been analyzed were used as criteria for reading group placement or if they differentiated among the children in the three reading groups.

Of the two characteristics listed by teachers that had been analyzed, both were found to differentiate among children in the three reading groups. However, there were two other personality characteristics analyzed in section one which differentiated among the children in the three reading groups. Therefore, disregarding the 19 characteristics that were listed as criteria
but had not been analyzed in section one, it was necessary both to accept and reject sub-hypothesis H. Based on the fact that the two criteria listed by teachers that were analyzed in section one did differentiate among the children in the three reading groups it was necessary to accept sub-hypothesis H. However, based on the fact that there were two characteristics which differentiated among the children which teachers did not list, it was necessary to reject the sub-hypothesis.

Summary

Sub-hypothesis A was rejected. Teachers used appearance characteristics as criteria for reading group placement even though they did not list them as criteria.

Sub-hypothesis B was rejected. Teachers used one biological characteristic as a criteria for reading group placement even though they did not list it as a criteria.

Sub-hypothesis C was rejected. The educational criteria listed by teachers did not differentiate among the children in the three groups. Also, the one educational characteristic which did differentiate among the children was not listed by the teachers.

Sub-hypothesis D could be neither accepted nor rejected on the basis of the data collected.

Sub-hypothesis E was accepted. Teachers listed seven intellectual characteristics as criteria for reading group placement which had been analyzed in section one and which had been found to differentiate among the reading groups.
Sub-hypothesis F was accepted. Teachers listed seven language characteristics as criteria for reading group placement. These had been analyzed in section one and had been found to differentiate among the reading groups.

Sub-hypothesis G was accepted. Teachers listed four motor ability characteristics as criteria for reading group placement. These had been analyzed in section one and had been found to differentiate among the reading groups.

Sub-hypothesis H was both accepted and rejected. Teachers listed two personality characteristics as criteria for reading group placement which had been analyzed in section one and which had been found to differentiate among the reading groups. However, two other personality characteristics had been found to differentiate among the children in the three reading groups which were not listed by the teachers. Therefore they used criteria for reading group placement which they did not list as criteria.

An examination of the total number of characteristics teachers listed as criteria presented some intriguing insights. In Table 81 are presented (a) the number of characteristics that had been both listed by the teachers as criteria and had been analyzed in section one as differentiating among children in the three reading groups; (b) the number of characteristics that had been analyzed in section one as differentiating among the children in the three reading groups; (c) the number of different characteristics that the teachers listed as criteria for reading group placement; (d) the percent of the total different characteristics each
category represented; (e) the total number of responses given in each category, and (f) the percent of the total each category represented.

TABLE 81
Summary of the Number of Criteria Listed by Teachers for Reading Group Placement

<table>
<thead>
<tr>
<th>Item</th>
<th>Differentiating Characteristics Listed by Teachers</th>
<th>Differentiating Characteristics in Section One</th>
<th>Number of Different Characteristics Listed</th>
<th>Percent by Category</th>
<th>Total Responses</th>
<th>Percent of Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Biological</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>5.195%</td>
<td>4</td>
<td>2.29%</td>
</tr>
<tr>
<td>Educational</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3.896%</td>
<td>5</td>
<td>3.82%</td>
</tr>
<tr>
<td>Family</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2.597%</td>
<td>2</td>
<td>1.53%</td>
</tr>
<tr>
<td>Intellectual</td>
<td>6</td>
<td>7</td>
<td>30</td>
<td>38.961%</td>
<td>71</td>
<td>54.19%</td>
</tr>
<tr>
<td>Language</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>9.091%</td>
<td>13</td>
<td>9.92%</td>
</tr>
<tr>
<td>Motor</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5.195%</td>
<td>8</td>
<td>6.11%</td>
</tr>
<tr>
<td>Personality</td>
<td>2</td>
<td>4</td>
<td>21</td>
<td>27.273%</td>
<td>23</td>
<td>17.56%</td>
</tr>
<tr>
<td>Miscellaneous+</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>7.792%</td>
<td>6</td>
<td>4.58%</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>22</td>
<td>77</td>
<td>100.00%</td>
<td>131</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

+Characteristics not analyzed.
As can be observed from columns (a) and (b) in Table 81, 13 of the 22 characteristics that differentiated among the children in the three reading groups were listed by the teachers as criteria used for placing children into reading groups. The categories where the characteristics listed by teachers were most consistent with the characteristics which differentiated among groups were the intellectual, language, and motor ability characteristics.

An examination of columns (a) and (c) indicated that of the total number of different characteristics listed by teachers as criteria for reading group placement, 13 were found to have differentiated among the children in the reading groups according to the analysis in section one. On the basis of this research, there is no means of determining what number of the remaining 64 characteristics may have actually differentiated among children in the three reading groups.

Examination of columns (c) and (e), and (d) and (f) indicated the difference between the number of different characteristics listed in each category as compared to the total number of responses that had been listed in each category. For example, there were four different motor ability characteristics listed (column c) as compared to a total of eight responses in this category (column e); there were four different biological characteristics listed as compared to a total of four responses in this category. In other words, twice as many teachers listed motor ability characteristics as criteria for reading group placement as compared to biological
characteristics used as criteria for reading group placement. Consider also the categories of intellectual and personality characteristics. As can be seen in columns (c) and (e) in the table, 21 different personality characteristics were listed as compared to a total of 23 personality characteristics that were listed. Thirty different intellectual characteristics were listed as compared to a total of 71 intellectual characteristics that were listed. Many teachers agreed that several of the same intellectual characteristics were used as criteria for reading group placement whereas there was very little agreement on the personality characteristics that were used as criteria for reading group placement.

Although not indicated in the table, it was found that there was great variation in the number of characteristics listed by individual teachers. The range was from two to seventeen, the average being eight responses per teacher. Thus, some teachers said they used many more criteria for reading group placement than did others. Possibly teachers did not list all the criteria they used when making reading group placement or else they did not know what criteria they actually used when making reading group placements.

The second hypothesis stated:

The characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics of children they say they have perceived.
In this section, this hypothesis and the related sub-hypotheses were analyzed. The results indicated that the overall hypothesis must be both rejected or accepted because, one had to consider the eight sub-hypotheses which made up the overall hypothesis: three sub-hypotheses were rejected, three sub-hypotheses were accepted, one sub-hypothesis could neither be accepted or rejected on the basis of the data collected, and one sub-hypothesis was both accepted and rejected on the basis of the individual characteristics in the category being examined.

**Section Three:**

**General Characteristics of Children**

in Reading Groups One and Three

**H3:** Generalizations or inferences, made by teachers about the characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

The data collected to this hypothesis were divided into eight categories of characteristics. Therefore there were eight sub-hypothesis examined in this section.

(A) Generalizations made by teachers about the appearance characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the
children in these reading groups according to the analysis in section one.

(B) Generalizations made by teachers about the biological characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

(C) Generalizations made by teachers about the educational characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

(D) Generalizations made by teachers about the family characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

(E) Generalizations made by teachers about the intellectual characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.
(F) Generalizations made by teachers about the language characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

(G) Generalizations made by teachers about the motor ability characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

(H) Generalizations made by teachers about the personality characteristics describing the children in reading groups one and three were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

The data collected to analyze these sub-hypotheses were from two main sources, the third interview and the questionnaire. During the third interview teachers were asked to describe the general characteristics of children in the first and third reading groups. They were not to describe the characteristics of any of the specific children included in the study but were to give their impressions of each group in general. The purpose of the interview was to ascertain if teachers could generalize or make
inferences about the characteristics that described the children in each of these two reading groups.

The second source was from responses to the questionnaire which was given to the teachers at the end of the third interview. The questionnaire was composed of two sections. The directions to the first section asked the teachers to indicate whether the 50 listed characteristics might describe first grade children who were successful readers—in other words, the children in the first reading group. The directions to the second section asked teachers to indicate whether the 50 listed characteristics might describe first grade children who were not successful readers—in other words, generally the children in the third reading group. The teachers indicated if they agreed, disagreed, or couldn't decide. Listed were the 36 characteristics chosen for examination in this study plus several others which were not analyzed.

The data from these two sources were analyzed in the following ways. Characteristics were examined by category. First the information gathered from the interview is presented. The responses the teachers gave to the question "What differences, if any, do you see between the characteristics of the children in the first and third reading groups?" were not amenable to statistical analysis. The answers were simply compared to the differences in the characteristics that were found in section one of this chapter.

The responses to the questionnaire were first analyzed using a single-sample chi square test. This was calculated to
ascertain whether significant differences existed between the observed number of responses for each possible answer (agree, disagree, can't decide) and the expected number of responses. A null hypothesis would state that there should be no statistically significant differences in the number of answers for each of the possible choices the teachers could respond to. (There should have been approximately 6.67 responses for each of the answers.) The resultant statistic was then compared to the corresponding statistic found in section one to determine if there was agreement or disagreement on each characteristic.

To determine if the hypothesis should be accepted or rejected the following procedures were used. A comparison among the characteristics listed by the teachers in the interview, the responses to the questionnaire and the characteristics that had been analyzed in section one was made for the children in groups one and three. If the listed characteristics, the responses to the questionnaire and the analysis in section one were similar, the hypothesis was accepted. If there were differences among these three comparisons, the hypothesis was rejected.

Within each category of characteristics, the responses from the third interview will be discussed first for the two reading groups. Second, the responses from the questionnaire will be analyzed. Third, a summary will be made and the hypothesis will be accepted or rejected.
Appearance Characteristics

Data from the interview. Only one teacher listed any appearance characteristics which described children in the first reading group. This teacher said that children in the first reading group were neater in appearance than children in the third reading group.

Teachers listed no appearance characteristics which they believed described the children in the third reading group. It would seem from the responses that with one exception teachers perceived no differences between the children in these two reading groups on appearance characteristics.

Data from the questionnaire. In Table 82 are presented the three pairs of appearance characteristics included on the questionnaire and analyzed in section one. For this table and for the subsequent seven tables, the "success" characteristic was listed first followed by the "failure" characteristic. In column (a) were the number of teachers who agreed that the characteristic—for example hair neat and clean—described children who were successful readers, i.e., the children in the first reading group. In column (b) were the number of teachers who disagreed that neat and clean hair was a characteristic describing children who were successful readers. In column (c) were the number of teachers who couldn't decide if neat and clean hair was a characteristic of successful readers. In column (d) was the level of statistical significance which indicated if teachers believed the characteristic described the children in reading groups one or three.
column (e) was the level of significance (if any) which indicated if the characteristic had differentiated between the reading groups in section one.

**TABLE 82**

Summary of Questionnaire Responses and Related Statistics for the Appearance Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed</td>
<td>Disagreed</td>
</tr>
<tr>
<td>Hair neat/clean</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Hair sloppy</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Clean clothes</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Dirty clothes</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>New clothes</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Old clothes</td>
<td>4</td>
<td>11</td>
</tr>
</tbody>
</table>

As seen in Table 82, the pattern of agreement-disagreement on the three pairs of characteristics in this category was the same. Teachers agreed that having neat and clean hair, clean clothes, and new clothes described children in the first reading group, but they disagreed that having sloppy hair, dirty clothes and old clothes described children in the third reading group. This would seem to indicate that children in the third group were judged favorably too so that in effect there should be no differences between the groups on these appearance characteristics.
Summary. An examination of column (e) in Table 82 indicated that according to the results in section one there were two appearance characteristics which differentiated between the children in the two reading groups. They were condition of the clothing and type of clothing. Neither by the responses given orally nor by the responses to the questionnaire did a significant number of teachers indicate that they had observed any differences among the children on appearance characteristics.

Sub-hypothesis A must be rejected. There were differences in the appearance characteristics between the groups which were not identified by the teachers. Their generalizations were not consistent with the appearance characteristics which had been found to differentiate between the groups.

Biological Characteristics

Data from the interview. Teachers listed no biological characteristics which they believed differentiated between the children in either of the two reading groups.

Data from the questionnaire. In Table 83 are presented the five pairs of biological characteristics included on the questionnaire and analyzed in section one.
### TABLE 83

Summary of Questionnaire Responses and Related Statistics for the Biological Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th></th>
<th></th>
<th>Single Sample ( x^2 )</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
<td>Decide (c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October-March birthday</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>April-September birthday</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>4</td>
<td>13</td>
<td>3</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Black</td>
<td>3</td>
<td>13</td>
<td>4</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Slender</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Heavy</td>
<td>1</td>
<td>17</td>
<td>2</td>
<td>.001</td>
<td>n.s.</td>
</tr>
<tr>
<td>Tall</td>
<td>7</td>
<td>8</td>
<td>5</td>
<td>n.s.</td>
<td>.01</td>
</tr>
<tr>
<td>Short</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Girl</td>
<td>4</td>
<td>12</td>
<td>4</td>
<td>.05</td>
<td>n.s.</td>
</tr>
<tr>
<td>Boy</td>
<td>5</td>
<td>12</td>
<td>3</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 83, teachers' responses to the questionnaire indicated that they perceived no relationship between birthdate or height and either success or failure in reading. Apparently the teachers did not believe these two characteristics differentiated between children in the first and third reading groups.

As seen in Table 83, teachers' responses to the questionnaire indicated that a significant number disagreed that being white or a girl were characteristics of children who were successful readers; the same number disagreed that being black or a boy were
characteristics of children who were not successful readers. These responses would seem to indicate that teachers believed both white and black children, and both boys and girls were successful as well as unsuccessful readers. Apparently the teachers did not perceive race or sex as a characteristic which differentiated between the children in the first and third reading groups.

As seen in Table 83, teachers' response to the questionnaire indicated that they perceived no relationship between weight and placement in the first reading group. However, they indicated that they did perceive a relationship between weight and placement in the third reading group. Seventeen teachers disagreed that heavy children would be placed in the third reading group. Therefore the assumption might be that teachers characterized children in this reading group as being either slim or of average weight.

Summary. An examination of column (e) in Table 83 indicated that according to the results in section one that only one biological characteristic—height—differentiated among the children in the two reading groups. Neither by the responses given orally not by the responses to the questionnaire did a significant number of teachers indicate that they had observed any differences among the children on any biological characteristics.

Sub-hypothesis B must be rejected. There was a significant difference in one biological characteristic between the children in the two reading groups which was not identified by the teachers.
The generalizations were not consistent with the biological characteristic that had been found to differentiate between the groups.

**Educational Characteristics**

*Data from the interview.* Teachers listed no educational characteristics which they believed differentiated between the children in reading groups one and three.

*Data from the questionnaire.* In Table 84 are presented the two pairs of educational characteristics included on the questionnaire and analyzed in section one.

**Table 84**

Summary of Questionnaire Responses and Related Statistics for the Educational Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
<td>Couldn't Decide (c)</td>
<td>Single Sample $x^2$ (d)</td>
<td>Level of Significance in Section 1 (e)</td>
</tr>
<tr>
<td>Absent very little</td>
<td>18</td>
<td>1</td>
<td>1</td>
<td>.001</td>
<td>n.s.</td>
</tr>
<tr>
<td>Absent a lot</td>
<td>17</td>
<td>2</td>
<td>1</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Both kindergarten and prekindergarten</td>
<td>11</td>
<td>5</td>
<td>4</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Neither kindergarten nor prekindergarten</td>
<td>6</td>
<td>9</td>
<td>5</td>
<td>n.s.</td>
<td></td>
</tr>
</tbody>
</table>
As seen in Table 84, teachers' responses to the questionnaire indicated that a significant number of teachers agreed that children who were successful readers were absent very little; a significant number also agreed that children who were not successful readers were often absent. Apparently teachers believed that amount of absence was a characteristic which differentiated between the children in the first and third reading groups.

As seen in Table 84, teachers' responses to the questionnaire indicated that they perceived no relationship between kindergarten and prekindergarten experience and either success or failure in reading. Apparently they did not believe that this characteristic differentiated between the children in either the first or the third reading group.

Summary. An examination of column (e) in Table 84 indicated that there was no significant difference in the amount of absence in kindergarten for children in either the first or the third reading groups. This characteristic did not differentiate between the children in the two reading groups according to the analysis in section one. However, on the questionnaire a significant number of teachers had agreed that it did differentiate between the children. This belief was not supported in this study. In the interview, no teachers listed absence as differentiating among children in either of the reading groups.

An examination of column (e) in Table 84 indicated that there was no statistic from section one for the first pair of items. This was because in section one kindergarten and prekindergarten
were not analyzed as one characteristic as they were on the questionnaire, but as two separate characteristics. Possibly due to the poor wording for these characteristics on the questionnaire, the comparison between results in section one and the results from this section was difficult to make.

In section one, it had been found that whether or not a child had attended kindergarten made no difference in which reading group he was placed in. On the other hand, it was found that whether or not a child had attended prekindergarten did make a difference in his reading group placement. More children in the first reading group had attended prekindergarten than would be expected by chance.

During the interview no teachers listed either kindergarten or prekindergarten experience as characteristics which described children in either reading group.

On the basis of these data, sub-hypothesis C must be rejected. Teachers were not able to identify the educational characteristics which differentiated between children in reading group one from those in reading group three. They reported that the believed that amount of absence differentiated between the groups when in fact, it did not. They did not report that prekindergarten experience differentiated between the groups, which it did. The generalizations made by the teachers were not consistent with the educational characteristics that had been found to differentiate between the groups.
Family Characteristics

Data from the interview. Teachers listed several family characteristics which they believed differentiated between the children in the two groups. None of the characteristics were ones that had been analyzed in section one however. Therefore, there was no way to determine if these characteristics did differentiate between the children in the two reading groups.

Data from the questionnaire. In Table 85 are presented the three pairs of family characteristics included on the questionnaire.

TABLE 85

Summary of Questionnaire Responses and Related Statistics for the Family Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed  (a)</td>
<td>Disagreed  (b)</td>
</tr>
<tr>
<td>Older of two children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle child</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Both parents</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Parents divorced</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Mother doesn't work</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Mother works</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

As seen in Table 85, teachers' responses to the questionnaire indicated that a significant number of teachers disagreed that being the older of two children was characteristic of children
who were successful readers. A significant number of teachers also disagreed that being a middle child was characteristic of children who were unsuccessful readers. Apparently the teachers did not believe these two family positions were characteristics which differentiated between the children in the first and third reading groups.

As seen in Table 85, teachers' responses to the questionnaire indicated that teachers did not perceive a relationship between an intact family (or not) and being either a successful or unsuccessful reader. Apparently teachers did not believe this family characteristic was one that differentiated between children in the first and third reading groups.

As seen in Table 85, teachers' responses to the questionnaire indicated that teachers perceived no relationship between having a mother who did not work and being a successful reader. On the other hand, a significant number of teachers disagreed that unsuccessful readers had mothers who did work. Apparently the teachers did not believe this characteristic differentiated between the children in the first and third reading groups.

Summary. Because none of the family characteristics listed by teachers in the interview were ones that had been analyzed in section one, this summary will be concerned only with the comparison between questionnaire responses and the results from section one.

According to questionnaire responses, teachers perceived no relationship between any of the family characteristics listed and
reading group placement. These responses were in agreement with the results in section one with one exception. In section one, a relationship was found between being an only or a middle child and reading group placement: more only and middle children were found in the second and third reading groups than would be expected by chance. Because the questionnaire only compared the placement of children into the first and third reading groups, and because the characteristic of being an only child was not included on the questionnaire it was impossible to reject sub-hypothesis D. The teachers' perceptions that there were no family characteristics which differentiated among children in the two reading groups were essentially accurate. The generalizations made by the teachers were consistent with the family characteristics that had been found to differentiate between the groups.

**Intellectual Characteristics**

*Data from the interview.* The teachers listed 21 different intellectual characteristics which they believed described the children in the first reading group. The following eight had been analyzed in section one: already had word knowledge, knew math concepts better, knew the alphabet, could read a little, knew the 15 basic words, described a picture better, matched shapes better, did well on the *Metropolitan Readiness Test* (MRT). There was no way to determine if the remaining 13 characteristics did describe the children in the first reading group because they had not been analyzed.
The teachers listed 17 intellectual characteristics which they believed described the children in the third reading group. The following four had been analyzed in section one: only described surface items in a picture, did poorly on the Metropolitan Readiness Test, needed work on number identification, didn't know letters. There was no way to determine if the remaining 13 characteristics did describe the children in the third reading group because they had not been analyzed.

Data from the questionnaire. In Table 86 are presented the seven pairs of intellectual characteristics included on the questionnaire and analyzed in section one.
### TABLE 86

Summary of Questionnaire Responses and Related Statistics for the Intellectual Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th></th>
<th></th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
<td>Couldn't Decide (c)</td>
<td>Single Sample $x^2$ (d)</td>
</tr>
<tr>
<td>Did well on MRT</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>n.s.</td>
</tr>
<tr>
<td>Did poorly on MRT</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>.01</td>
</tr>
<tr>
<td>Gives good description of a picture</td>
<td>19</td>
<td>1</td>
<td>0</td>
<td>.001</td>
</tr>
<tr>
<td>Gives poor description of a picture</td>
<td>17</td>
<td>1</td>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>Recognizes signs</td>
<td>16</td>
<td>2</td>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>Can't recognize signs</td>
<td>16</td>
<td>3</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Knows alphabet</td>
<td>17</td>
<td>1</td>
<td>2</td>
<td>.001</td>
</tr>
<tr>
<td>Doesn't know alphabet</td>
<td>13</td>
<td>6</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Knows numbers</td>
<td>13</td>
<td>3</td>
<td>4</td>
<td>.05</td>
</tr>
<tr>
<td>Doesn't know numbers</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>.001</td>
</tr>
<tr>
<td>Knows how to read now</td>
<td>15</td>
<td>2</td>
<td>3</td>
<td>.01</td>
</tr>
<tr>
<td>Doesn't know how to read now</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>n.s.</td>
</tr>
<tr>
<td>Matches similar shapes</td>
<td>14</td>
<td>1</td>
<td>5</td>
<td>.001</td>
</tr>
<tr>
<td>Can't match shapes</td>
<td>10</td>
<td>7</td>
<td>3</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
As seen in Table 86, teachers' responses to the questionnaire indicated that they perceived no relationship between doing well on the MRT and reading success. However, a significant number of teachers agreed that doing poorly on the MRT was characteristic of children who were not successful readers. Apparently the teachers did not believe doing well on the MRT was a characteristic which described children in the first reading group but believed doing poorly on the MRT was a characteristic which described the children in the third reading group.

As seen in Table 86, teachers' responses to the questionnaire indicated that a significant number of them agreed that giving a good description of a picture, that recognizing signs, and that knowing the alphabet were characteristic of children who were successful readers. A significant number of teachers also agreed that giving a poor description of a picture, that not recognizing signs, and that not knowing the alphabet were characteristic of children who were not successful readers. Apparently teachers believed that these three intellectual characteristics differentiated between children in the first and third reading groups.

As seen in Table 86, teachers' responses to the questionnaire indicated that a significant number of them agreed that knowing the numbers from 1-12, that knowing how to read now, and the ability to match similar shapes were characteristic of children who were successful readers. On the other hand, they saw no relationship between not knowing the numbers from 1-12, not being able to read now, and inability to match similar shapes and being
an unsuccessful reader. Apparently the teachers believed number knowledge, reading now, and ability to match similar shapes were characteristics which described the children in the first reading group but not knowing the numbers, inability to read now and inability to match similar shapes were not characteristics which described children in the third reading group.

Summary. The teachers' generalizations of the intellectual characteristics of the children in the first reading group were in agreement with what they said they had observed. The eight characteristics listed by them during the interview that were analyzed in section one were characteristics that did describe the children in the first reading group. The teachers also agreed that all intellectual items but one, listed on the questionnaire, described children in the first reading group. This one item--did well on the MRT--actually did describe the children in the first reading group. For this characteristic, their generalization was not consistent with what had been observed.

The teachers' generalizations of the intellectual characteristics of the children in the third reading group were not so accurate. Also, there was some disagreement between the characteristics listed in the interview and the teachers' responses to the questionnaire. For example, in the interview, "needs work on number identification" was listed as characteristic of these children. On the questionnaire teachers responded that not knowing numbers was not characteristic of these children. As seen in column (e) of Table 86, the results from section one indicated
this characteristic did differentiate between the first and third reading groups with fewer children than would be expected by chance not having number knowledge. There were two other characteristics listed on the questionnaire which teachers believed were not characteristic of children in the third reading group--doesn't know how to read now and can't match similar shapes. As seen in column (e) in Table 86, both of these characteristics did describe children in the third reading group. For these three characteristics, the generalizations were not accurate. However, all four characteristics listed during the interview and the four remaining characteristics listed on the questionnaire indicated that the teachers' generalizations of most of the intellectual characteristics were in agreement with what they said they had observed.

Therefore sub-hypothesis E must be accepted. The generalizations made by teachers about the intellectual characteristics describing the children in reading groups one and three, according to data collected in the interview and from responses to the questionnaire, were relatively consistent with the characteristics found to differentiate between the children in the two reading groups according to the analysis in section one.

Language Characteristics

Data from the interview. The teachers listed three language characteristics which they believed described the children in the first reading group. One of these--better vocabulary--was analyzed in section one and did describe the children in this group. The other two characteristics listed--used language more
effectively and better listeners--were in a sense analyzed as part of the characteristics speaks confidently and fluently and understanding what is said in class. They did differentiate between the groups.

The teachers listed six language characteristics which they believed described the children in the third reading group. One of these--poor vocabulary--was analyzed in section one and did differentiate between the groups. Two of the other characteristics listed--difficulty expressing themselves and don't listen as well--were in a sense analyzed as part of the characteristics speaks confidently and fluently and understanding what is said in class. There was no way to determine if the other three characteristics listed in the interview did describe the children in group three because they had not been analyzed in section one.

Data from the questionnaire. In Table 87 are presented the four pairs of language characteristics included on the questionnaire and analyzed in section one.
TABLE 87
Summary of Questionnaire Responses and Related Statistics for the Language Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th>Could'nt Decide</th>
<th>Single Sample x^2</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature vocabulary</td>
<td>13</td>
<td>4</td>
<td>3</td>
<td>.05</td>
</tr>
<tr>
<td>Limited vocabulary</td>
<td>16</td>
<td>3</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Speaks confidently</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Hesitates when talking</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>.001</td>
</tr>
<tr>
<td>Understands what is said</td>
<td>17</td>
<td>3</td>
<td>0</td>
<td>.001</td>
</tr>
<tr>
<td>Difficulty understanding what is said</td>
<td>19</td>
<td>1</td>
<td>0</td>
<td>.001</td>
</tr>
<tr>
<td>Speaks standard English</td>
<td>14</td>
<td>4</td>
<td>2</td>
<td>.05</td>
</tr>
<tr>
<td>Speaks non-standard English</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

As seen in Table 87, the pattern of agreement--disagreement on the first three pairs of characteristics was the same. A significant number of teachers agreed that a mature vocabulary, speaking confidently, and understanding what is said were characteristic of children who were successful readers. A significant number of teachers also agreed that a limited vocabulary,
hesitating when speaking, and having difficulty understanding what was said in class were characteristic of children who were not successful readers. Apparently the teachers believed these three characteristics were ones which differentiated between the children in the first and third reading groups.

Response to the last pair of characteristics was different. Although a significant number of teachers agreed that speaking standard English was characteristic of children who were successful readers, they perceived no relationship between speaking non-standard English and being an unsuccessful reader. Apparently teachers believed that the use of standard English was characteristic of children in the first reading group but that children in the third reading group spoke either standard or nonstandard English.

Summary. The teachers' generalizations of the language characteristics for the children in both reading groups were in agreement with what they said they had observed. As indicated in column (e) in Table 87, all three of the characteristics which teachers believed differentiated between the children according to the interview and the questionnaire did significantly differentiate among the children according to the analysis in section one. The one characteristic which, according to the questionnaire responses, did not differentiate between reading groups also did not differentiate according to the analysis in section one.

Therefore, sub-hypothesis F must be accepted. The generalizations made by the teachers were consistent with the language characteristics that had been found to differentiate between the groups.
Motor Ability Characteristics

Data from the interview. The teachers listed three motor ability characteristics which they believed described the children in the first reading group. Two of them--writes better and colors better--had been analyzed in section one and did differentiate between the two groups. The third characteristic--better motor skills--was a general ability and this could be considered as having been analyzed as the total of all the motor ability characteristics.

The teachers listed two motor ability characteristics which they believed described children in the third reading group. One--can't write name well--was analyzed in section one and did differentiate between the groups. The second motor ability characteristic listed--poor motor development--was again analyzed in section one if one considers it as the total of the specific characteristics that were analyzed.

Data from the questionnaire. In Table 88 are presented the five pairs of motor ability characteristics included on the questionnaire and analyzed in section one. During the second interview, teachers seemed to regard the first three pairs of characteristics as a single item. Therefore in the analysis in section one they were combined and the analysis dealt with just one characteristic that was composed of three parts. For this analysis, they will be examined separately first and then will be regarded as a single characteristic as in section one.
### TABLE 88

Summary of Questionnaire Responses and Related Statistics for the Motor Ability Characteristics Category

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th></th>
<th></th>
<th>Single Sample ( x^2 )</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
<td>Can't Decide (c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cuts well</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Difficulty using scissors</td>
<td>13</td>
<td>6</td>
<td>1</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Colors well</td>
<td>12</td>
<td>5</td>
<td>3</td>
<td>.05</td>
<td>.001</td>
</tr>
<tr>
<td>Scribbles</td>
<td>10</td>
<td>7</td>
<td>3</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Pastes neatly</td>
<td>8</td>
<td>9</td>
<td>3</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Pastes messily</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>n.s.</td>
<td></td>
</tr>
<tr>
<td>Can copy a simple form</td>
<td>15</td>
<td>1</td>
<td>4</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>Can't copy a simple form</td>
<td>13</td>
<td>5</td>
<td>2</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Writes neatly</td>
<td>15</td>
<td>2</td>
<td>3</td>
<td>.01</td>
<td>.001</td>
</tr>
<tr>
<td>Writes messily</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>

It was interesting to note that the pattern of responses was so different for the first three pairs of characteristics which teachers had regarded as the same motor ability characteristics during interview two. As seen in Table 87, the teachers' responses to cutting ability indicated that they perceived a relationship between it and success or failure in reading; the ability to color was perceived as being related to success in reading but not failure in reading; the ability to paste was not perceived as being related to either success or failure in reading.
As seen in Table 88, the pattern of responses to the fourth and fifth pairs of characteristics indicated that a significant number of teachers agreed that copying a simple form and writing neatly were characteristic of children who were successful readers; a significant number of teachers also agreed that inability to copy a simple form and poor handwriting were characteristic of children who were unsuccessful readers. Apparently teachers believed these characteristics were ones that differentiated between children in the first and third reading groups.

**Summary.** The teachers' generalizations of the motor ability characteristics for the children in the first reading group were in agreement with what they said they had observed. The characteristics listed by the teachers during the interview and the teachers' responses (except to one item) on the questionnaire indicated that they believed that the children in the first reading group had better motor development than did the children in the third reading group. As indicated in column (e) in Table 88, the analysis of the motor ability characteristics in section one indicated that their generalizations were accurate.

The teachers' assessments of the motor ability characteristics which described children in the third reading group were not quite so accurate. The characteristics listed by the teachers during the interview indicated that they believed these children had poorer motor development than did the children in the first reading group. This evaluation was supported by the analysis in section one. On the other hand, the teachers' responses to the
questionnaire indicated that they did not believe that scribbling with crayons and pasting messily were characteristic of children in the third reading groups. According to the analysis in section one however, the rankings for the combination of cutting, coloring and pasting for children in the third reading group were lower than would be expected by chance. The teachers were not as consistent in their generalizations of motor ability characteristics for this group of children.

Sub-hypothesis G must be accepted. The generalizations made by the teachers during the interview were relatively consistent with the motor ability characteristics that had been found to differentiate between the two groups. The generalizations made by the teachers on the questionnaire with the motor ability characteristics that had been found to differentiate between the two groups with the exception of three minor characteristics.

**Personality Characteristics**

**Data from the interview.** The teachers listed 28 personality characteristics which they believed described the children in the first reading group. Of these, five had been analyzed in section one. They were: well liked by peers, don't always get along well with peers, completes work well, works independently, better behaved and more cooperative. (The last two were not analyzed directly but could be considered an aspect of the characteristic obedient and polite.) There was no way to determine if the remaining 22 characteristics described the children in the first reading group.
The teachers listed 30 personality characteristics which they believed described the children in the third reading group. Of these, five were similar to characteristics that had been analyzed in section one: not so well liked by peers, need directions given over, don't always finish work, not independent, discipline problems (i.e., not obedient and polite). There was no way to determine if the remaining 25 characteristics described the children in this reading group.

Data from the questionnaire. In Table 89 were presented the six pairs of personality characteristics included on the questionnaire and analyzed in section one.
## Table 89

**Summary of Questionnaire Responses and Related Statistics for the Personality Characteristics Category**

<table>
<thead>
<tr>
<th>Item</th>
<th>Number of Teachers Who:</th>
<th>Level of Significance in Section 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agreed (a)</td>
<td>Disagreed (b)</td>
</tr>
<tr>
<td>Obedient and polite</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Not obedient and polite</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Plays well with peers</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Aggressive</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Neat desk</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Messy desk</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Completes a task</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Short attention span</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Works independently</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>Copies</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Smiles often</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Seldom smiles</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

As seen in Table 89, the pattern of responses to the first three pairs of characteristics indicated that the teachers did not perceive a relationship between being obedient and polite (or not), playing well with peers (or not), having a neat or a messy desk, and being either a successful or unsuccessful reader.
Apparently teachers did not believe these characteristics differentiated between the children in the first and third reading groups.

As seen in Table 89, the pattern of responses to the fourth and fifth pairs of characteristics indicated that a significant number of teachers agreed that working independently and completing a task were characteristic of children who were successful readers. A significant number of teachers also agreed that copying and having a short attention span were characteristic of children who were unsuccessful readers. Apparently teachers believed that these personality characteristics differentiated between children in the first and third reading groups.

As seen in Table 89, the response to the last pair of characteristics indicated that a significant number of teachers agreed that smiling was a characteristic of children who were successful readers. On the other hand, teachers perceived no relationship between seldom smiling and being an unsuccessful reader. Apparently teachers believed smiling often was a characteristic of children in the first reading group but seldom smiling was not a characteristic of children in the third reading group.

Summary. The teachers' assessments of the personality characteristics which described children in the first reading group were not completely consistent with the analysis of the characteristics found to differentiate these children from the children in the third reading group. In the interview, two conflicting characteristics were listed—well-liked by peers and don't always get along well with peers. The analysis indicated that significantly
more children than would be expected by chance did play well with their peers. Also, the teachers described children in the first reading group as being better behaved and more cooperative. The analysis indicated that there were no significant differences between the groups on this characteristic. The other two personality characteristics listed in the interview did describe the children in the first reading group according to the analysis in section one.

Responses to the questionnaire indicated that teachers perceived the children in the first reading group as smiling more often than the children in the third reading group. The analysis indicated that there were no significant differences between the children in the two groups on this characteristic. Responses to the questionnaire also indicated that teachers perceived no significant differences between the children in the two groups on the two characteristics of playing with their peers or having a neat or messy desk. The analysis indicated that these two characteristics did differentiate between the children in the two groups.

The teachers' perceptions of the personality characteristics which described the children in the third reading group were somewhat more consistent with the analysis of the characteristics found to differentiate these children. The characteristics listed by the teachers during the interview indicated that they believed these children were not independent, didn't always finish their work, couldn't follow directions as well, and were not so well liked by their peers. This evaluation was supported by the
analysis in section one. On the other hand, the teachers said that the children in the third reading group were discipline problems. According to the analysis in section one however, there were no more disobedient and impolite children in the third group than would be expected by chance.

A comparison of the questionnaire responses with the analysis in section one indicated two characteristics where there was not agreement. On the questionnaire teachers responded that being aggressive with peers and having a messy desk were not characteristics which differentiated the children in the third reading group from the children in the first reading group. As seen in column (e) in Table 89, these two characteristics did differentiate between the children. For these two characteristics the teachers' generalizations were not in agreement with what they said they had observed. On the other four items there was agreement between the questionnaire responses and the analysis as indicated in column (e).

Sub-hypothesis H must be both rejected and accepted. Some of the generalizations made by the teachers during the interview and the responses on the questionnaire were consistent with the personality characteristics that had been found to differentiate between the two groups, however, other generalizations were not consistent with the personality characteristics that had been found to differentiate among the two groups.
Summary

Sub-hypothesis A was rejected. Generalizations, made by teachers, about the appearance characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were not consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis B was rejected. Generalizations, made by teachers, about the biological characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were not consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis C was rejected. Generalizations, made by teachers, about the educational characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were not consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis D was accepted. Generalizations, made by teachers, about the family characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were essentially
consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis E was accepted. Generalizations, made by teachers, about the intellectual characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were essentially consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis F was accepted. Generalizations, made by teachers, about the language characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis G was accepted. Generalizations, made by teachers, about the motor ability characteristics describing the children in reading groups one and three, according to data collected in an interview and responses to a questionnaire were essentially consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

Sub-hypothesis H was rejected. Generalizations, made by teachers, about personality characteristics describing the children
in reading groups one and three, according to data collected in an interview and responses to a questionnaire were not consistent with the characteristics that were found to differentiate between the children in these reading groups according to the analysis in section one.

The third hypothesis stated:

Generalizations made by teachers about the characteristics describing children in reading groups one and three are consistent with the characteristics that were found to differentiate between the children in these reading groups. Because three sub-hypotheses were rejected, four sub-hypotheses were accepted and one sub-hypothesis was both accepted and rejected, it was necessary to both accept and reject the overall hypothesis for this section.

Section Four:

Changes in Characteristics of Children

In Relationship to Changes in Reading Group Placement

$H_4$: Teachers perceive changes in the characteristics of children over a period of time. These changes are related to changes in reading group placement.

During the second interview the teachers were asked to describe each of the five children chosen from their rooms on each of the 36 characteristics. They were also asked if they had perceived changes in the children on any of the characteristics since the beginning of the school year. The number of changes
(both positive and negative) which teachers reported they had observed are presented in Table 90, by reading group.

**TABLE 90**

Summary of Characteristics Perceived by Teachers as Having Changed Since the Beginning of the School Year

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Children With Changed Characteristics</th>
<th>Percent Changed</th>
<th>Number of Positive Changes</th>
<th>Percent of Positive Changes</th>
<th>Number of Negative Changes</th>
<th>Percent of Negative Changes</th>
<th>Total Number of Changes</th>
<th>Percent of Total Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22</td>
<td>73.333</td>
<td>31</td>
<td>16.939</td>
<td>1</td>
<td>11.11</td>
<td>32</td>
<td>15.842</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>78.947</td>
<td>79</td>
<td>43.169</td>
<td>3</td>
<td>33.33</td>
<td>82</td>
<td>40.594</td>
</tr>
<tr>
<td>3</td>
<td>26</td>
<td>86.667</td>
<td>73</td>
<td>39.891</td>
<td>5</td>
<td>55.55</td>
<td>78</td>
<td>38.614</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
<td>183</td>
<td>9</td>
<td>192</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

From Table 90 it can be seen that 78 children of the 99 children in the study were perceived as having changed on one or more characteristic. A total of 192 changes were seen in these 78 children. A chi square single-sample test was calculated to determine if teachers had perceived more changes in children than would be expected by chance. Results were statistically significant for the total number of children \( \chi^2 = 32.8182, df = 1, \)
as well as for each group (group 1: $X^2 = 6.534, df = 1, p < .01$; group 2: $X^2 = 12.736, df = 1, p < .001$; group 3: $X^2 = 14.226, df = 1, p < .001$). Teachers perceived more changes in the characteristics of children than would be expected by chance.

Teachers perceived more changes in the characteristics of the children in the third group than for the children in any other group. However, the largest number of positive changes were perceived as taking place in the second reading group. The largest number of negative changes were perceived as taking place in the third reading group. Group one was perceived as changing least. Teachers often expressed the opinion that children in the first group were already far above average so they were not as likely to change on the characteristics discussed. In Appendix L will be found a table that lists the individual characteristics and the number of changes observed for each.

To test the above results, further data were collected. In February, by letter, each teacher was asked again to rank each of the five children in her classroom on two characteristics chosen randomly from the list of 36 characteristics that had been analyzed in section one. The two characteristics for this comparison ranking were (a) understands what is said in class and (b) the ability to cut, color, and paste. In Table 91 are summarized the number and percent of children whose ranking had: not changed; changed positively; changed negatively; changed in either way.
This comparison because two teachers did not complete the  
only 90 of the 99 children in the study were included in  

<table>
<thead>
<tr>
<th>Group</th>
<th>Total 90</th>
<th>26</th>
<th>14</th>
<th>90</th>
<th>50</th>
</tr>
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</tr>
</tbody>
</table>

Ability to cut, color and paste

<table>
<thead>
<tr>
<th>Group</th>
<th>Total 90</th>
<th>35</th>
<th>17</th>
<th>18</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Number of Unchanged Rankings

Understands what is said in class

Summary of Second Comparison Rankings

Table 91
Teachers perceived changes in the characteristic "understands what is said in class" as evidenced by the changed rankings for 35 children of the 90 children. The changes were not perceived as taking place evenly among the children in the three reading groups. An examination of column (h) in Table 91 indicated that the rankings of only 20% of the children in the first reading group had changed as compared to almost 50% of the rankings for children in the second and third reading groups. Most of the positive changes in rankings were made for children in the second reading group (see column d) and most of the negative changes in rankings were made for children in the third reading group (see column f).

Teachers perceived changes in the characteristic "ability to cut, color, and paste" as evidenced by the changed rankings for 40 of the 90 children. Again, the changes were not perceived as taking place evenly among the children in the three reading groups. Also, the pattern of changes was not similar to the pattern of changes for the above characteristic. An examination of column (h) in Table 91 indicated that the rankings of children in the third reading group had changed least. Most of the positive as well as the negative changes in rankings were made for children in the second reading group (see columns d and f).

One can conclude from the data included in Table 91 that the teachers did perceive the characteristics of children changing over a period of time. However, there seemed to be no pattern to the changes based on the data analyzed here.
On the basis of the data presented in Tables 90 and 91, the first part of hypothesis four must be accepted. Teachers did perceive changes in the characteristics of children over a period of time.

The second part of hypothesis four stated that the changes in the characteristics of children would be related to changes in reading group placement. From the data collected during interview three it was determined that the reading group placement had been changed for 11 children. From the data that had been collected during the second interview a tally was made of the number of changes the teachers had perceived in the characteristics of the 11 children who had been moved from one reading group to another. These changes, both negative and positive, were compared to the number of changes noted by the teachers for the children whose reading group placement had not been changed in Table 92.

TABLE 92

Changes in the Characteristics of Children

<table>
<thead>
<tr>
<th>Reading Group Placement Changed</th>
<th>N</th>
<th>Positive Changes</th>
<th>Average</th>
<th>Negative Changes</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>8</td>
<td>18</td>
<td>2.25</td>
<td>3</td>
<td>.375</td>
</tr>
<tr>
<td>Down</td>
<td>3</td>
<td>14</td>
<td>4.667</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>11</td>
<td>32</td>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading Group Placement Not Changed</th>
<th>N</th>
<th>Positive Changes</th>
<th>Average</th>
<th>Negative Changes</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>88</td>
<td>152</td>
<td>1.727</td>
<td>6</td>
<td>.068</td>
</tr>
</tbody>
</table>

| **Total**                          | 99| 184             |         | 9               |         |
From Table 92, it can be seen that for the 11 children whose reading group placement had changed there were 32 characteristics on which they had changed positively and three characteristics on which they had changed negatively. Table 93 lists the individual characteristics and the number of changes observed for each.

Considering the children who had been moved into a higher reading group, there were 18 characteristics on which they had changed positively which averaged 2.25 per child. Considering the children who had been moved to a lower reading group, there were 14 characteristics on which they had changed positively which averaged 4.667 per child. For the 88 children whose reading group placement had not changed, there was a total of 152 characteristics on which they had changed positively which averaged 1.727 per child.

For the eight children who had been moved into a higher reading group, there were three characteristics on which they had changed negatively which averaged .375 per child. For the three children who had been moved into a lower reading group there were no characteristics on which they had changed negatively. For the 88 children whose reading group placement had not been changed, there were six characteristics on which they had changed negatively which averaged .068 per child.

Although the number of children whose reading group placement changed was too small to make any extensive generalizations, it would seem that these teachers perceived more positive changes in the characteristics of children who had been moved down into a
lower reading group as compared to either the children who had been moved up into a higher reading group or the children who stayed in the same reading group. They perceived more negative changes in the characteristics of children who had been moved up into a higher reading group as compared to either the children who had been moved down into a lower reading group or the children who stayed in the same reading group.

In Table 93 are summarized the individual characteristics that teachers perceived as changing for the eleven children whose reading group placement had been changed. It was interesting to note the differences in the number of changed characteristics of children who had been moved to a higher reading group that were perceived by the teachers. The range was from zero to seven. On the other hand, there was little differences in the number of changes perceived for the children who had been moved to a lower group. The range was from four to five.

The three characteristics that were perceived as changing negatively were all the same--the desks were becoming messier rather than neater. These negative changes were all perceived in children who were moved into a higher reading group.
TABLE 93
The Characteristics that had Changed Positively or Negatively of
Children Whose Reading Group Placement had been Changed

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Children Moved to a Higher Reading Group</th>
<th>Children Moved to a Lower Reading Group</th>
<th>Total Positive</th>
<th>Total Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>P</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Understands what is said</td>
<td>P</td>
<td>P P P P</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Vocabulary</td>
<td>P</td>
<td>P P</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Speaks Confidently</td>
<td>P</td>
<td>P P P</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Identifies signs</td>
<td>P</td>
<td>P P</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Matches shapes</td>
<td>P</td>
<td>P P</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Reads a picture</td>
<td>P</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Cuts, pastes, colors</td>
<td>P</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Works independently</td>
<td>P</td>
<td>P P P P P P P P</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Completes tasks</td>
<td>P</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Obedient and Polite</td>
<td>P</td>
<td>P P</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 93 (Continued)

The Characteristics that had Changed Positively or Negatively of
Children Whose Reading Group Placement had been Changed

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Children moved to a Higher Reading Group</th>
<th>Children Moved to a Lower Reading Group</th>
<th>Total Positive</th>
<th>Total Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiling</td>
<td>P</td>
<td>P</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Neat desk</td>
<td>N</td>
<td>N N N</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Total: Positive 2P 1P 0 0 7P 4P 1P 3P 4P 5P 5P 32
Negative 1N 1N 1N 3
Next, an examination was made of the relationship between the changes in the comparison rankings done in February (see Table 91) and the changes in reading group placement. This data was summarized in Table 94.

**TABLE 94**

Children Whose Reading Group Placement Had Changed:
Results From the Comparison Ranking Done in February

<table>
<thead>
<tr>
<th>Understands What is Said in Class</th>
<th>N*</th>
<th>Number of:</th>
<th>Positive Changes</th>
<th>Negative Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unchanged Rankings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reading Group Placement Changed:</strong></td>
<td></td>
<td>Up</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Down</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ability to Cut, Color and Paste</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Group Placement Changed:</strong></td>
</tr>
<tr>
<td>Down</td>
</tr>
</tbody>
</table>

*N = 9 because one teacher who had moved two children did not respond to the letter sent in February.

From Table 94 it can be observed that for the six children who had been moved up into a higher reading group, half (i.e., three children) were ranked lower on understanding what is said
in class on the February ranking; one was ranked higher and two stayed the same. On coloring, cutting, and pasting, two children were ranked lower than they had been previously, and the ranking for four children stayed the same.

For the three children who had been moved into a lower reading group, two were ranked lower on understanding what was said in class, and the ranking of one did not change. Two children were ranked lower on cutting, coloring, and pasting, and the ranking of one child did not change.

From the data presented in Tables 92 and 94, it was concluded that there was no pattern of relationship between the characteristics of children that had changed (either positively or negatively) and changes in reading group placement. The second part of hypothesis four was then rejected.

In addition, an examination was made of some of the stable characteristics of the children to ascertain if there might be a relationship among them and changes in reading group placement. The twelve stable characteristics that had been analyzed in section one were examined: test scores, whether or not the child was repeating first grade, height, weight, race, sex, position in the family, intact family or not, working mother, prekindergarten experience, kindergarten attendance, and absence in kindergarten. This information is summarized in Table 95.
TABLE 95

Stable Characteristics of Children Whose Reading Group Placement Had Changed

<table>
<thead>
<tr>
<th>Item</th>
<th>Children Moved Up:</th>
<th>Children Moved Down:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4  5  6  7 8  9  10  11</td>
<td></td>
</tr>
<tr>
<td>Repeater—Yes, No</td>
<td>Y  N  Y  N  N  N  N  N  N  N  N</td>
<td></td>
</tr>
<tr>
<td>Height—Tall, Average</td>
<td>T  A  T  A  A  A  A  T  A  A  A</td>
<td></td>
</tr>
<tr>
<td>Weight—Heavy, Average, Slim</td>
<td>A  A  H  S  A  H  A  A  H  A  A</td>
<td></td>
</tr>
<tr>
<td>Race—White, Black</td>
<td>B  B  B  W  B  B  W  B  B  B  B</td>
<td></td>
</tr>
<tr>
<td>Sex—Boy, Girl</td>
<td>B  B  G  G  B  B  B  G  B  B  G</td>
<td></td>
</tr>
<tr>
<td>Family Position—Only, Middle, Younger</td>
<td>O  M  O  M  M  Y  M  M  O  O  Y</td>
<td></td>
</tr>
<tr>
<td>Parents—Both, Other</td>
<td>O  B  B  O  B  B  B  B  O  O  O</td>
<td></td>
</tr>
<tr>
<td>Mother Works—Yes, No</td>
<td>Y  N  N  N  N  N  Y  Y  N  N  N</td>
<td></td>
</tr>
<tr>
<td>Prekindergarten—Yes, No</td>
<td>Y  N  N  N  N  N  N  N  Y  N  N</td>
<td></td>
</tr>
<tr>
<td>Kindergarten—Yes, No</td>
<td>Y  Y  Y  Y  N  Y  Y  Y  Y  Y  Y</td>
<td></td>
</tr>
<tr>
<td>Absence in kindergarten</td>
<td>4  9  11  4  16  4  33  -  3</td>
<td></td>
</tr>
<tr>
<td>Test Scores</td>
<td>71  45  57  -  46  75  67  23  32  56</td>
<td></td>
</tr>
<tr>
<td>Average Test Scores</td>
<td>60.167</td>
<td>37</td>
</tr>
</tbody>
</table>
An examination of Table 95 indicated there was a pattern of sorts for some of the stable characteristics. For example, the average test scores were much higher for the children who had been placed in a higher reading group as compared with the test scores for the children who had been placed in a lower reading group. All the children whose reading group placement had been changed were black with the exception of two who were white. In fact, all the students who were placed in a lower reading group were black. All the children whose reading group placement had been changed were boys with the exception of three girls--two of whom were moved to a higher reading group, one of whom was moved to a lower reading group. All the children who were placed in a lower reading group lived with other than both parents; all but two children who were placed in a higher reading group lived with both parents.

From these data no conclusions about the stable characteristics of children whose reading group placement changed could be made. However, it seems that the reading group placement was changed more for black children than white children, and for more boys than girls. No other clear patterns were observable.

Summary

In this section the two parts of the fourth hypothesis were examined. The results indicated that the first part of the hypothesis must be accepted. Teachers did see the characteristics of children change over a period of time. The second part of the hypothesis was rejected. Although the sample size was small, the
changes in the characteristics of children were apparently not related to changes in reading group placement.

Section Five:

Chapter Summary

In this chapter four hypotheses were analyzed. The first three hypotheses were divided into eight sub-hypotheses and the overall hypothesis was accepted or rejected on this basis. The fourth hypothesis consisted of two parts, each of which was analyzed and were accepted or rejected.

The first hypothesis stated:

\[ H_1: \] There are significant differences among various characteristics of first grade children who have been placed into one of three reading groups based on the teacher's perceptions of these characteristics.

This hypothesis was accepted because there were statistically significant differences among the characteristics of the children in the three reading groups.

The second hypothesis stated:

\[ H_2: \] The characteristics of children teachers say they use as criteria when placing children into reading groups are consistent with the characteristics of children they say they have observed.

This hypothesis was both accepted and rejected because the sub-hypotheses were both accepted and rejected on the basis of the data collected.
The third hypothesis stated:

\( H_3: \) Generalizations made by teachers about the characteristics describing children in reading groups one and three are consistent with the characteristics that were found to differentiate between the children in these reading groups.

This hypothesis was both accepted and rejected because the sub-hypotheses were both accepted and rejected on the basis of the data collected.

The fourth hypothesis stated:

\( H_4: \) Teachers perceive changes in the characteristics of children over a period of time. These changes are related to changes in reading group placement.

On the basis of data collected, the first part of this hypothesis was accepted; teachers did perceive changes in the characteristics of children over a period of time. However, the second part of the hypothesis was rejected. There seemed to be little or no relationship between the changes in characteristics and changes made in reading group placement.
CHAPTER FIVE
Summary, Conclusions, Discussion, and Recommendations

For Further Research

Summary

Most first grade teachers group the students in their rooms for reading instruction. Generally this grouping is done on the basis of perceived predicted potential for success in reading. If a teacher were to have three reading groups, the first group would consist of children the teacher perceived as being most successful in learning to read; the second group would consist of children the teacher perceived as being not quite so successful in learning to read; the third group would consist of children the teacher perceived as being least successful in learning to read. Therefore, teachers' expectancies for success for individual children would be different once reading group placement has been made.

It had been indicated by Brophy & Good (1971) that teachers' interactions with high expectancy children were different than their interactions with low expectancy children. Teachers seemed to demand better performance from children for whom higher expectancies were held and were content with poorer performance from children for whom the lower expectancies were held. This interaction affected the performance of both groups of children.
The central purpose of this study was to determine if there were relationships between teachers' perceptions of various characteristics of first grade children and placement into reading groups. If there were characteristics which differentiated among the children in the groups, this would suggest some of the standards that teachers used as a basis for their expectancies, which in turn would predict which children might be successful readers.

In addition, answers to three related questions were sought. First, were the criteria, or standards of judgment, teachers said they used for reading group placement consistent with the characteristics and observable behavior they said they had observed in children? The reason for asking this question was to determine if teachers were aware of all the criteria they used--intentionally as well as unintentionally--as they evaluated children and placed them into reading groups.

Second, were the generalizations, or inferences, made by teachers about the characteristics of children in the first and third reading groups consistent with the characteristics that they had said they had observed? The reason for asking this question was to determine two things. First did teachers overgeneralize the positive characteristics they perceived in some of the children in the first reading group to all the children in the first reading group? Conversely, did teachers overgeneralize the negative characteristics they perceived in some of the children in the third reading group to all the children in the third reading
group? If so, it would seem that these overgeneralizations could affect the teachers' expectancies for the children in these reading groups, thus affecting their interactions with them.

Third, did teachers perceive changes taking place in any of the characteristics of the children in their room? If there were changes, were these perceived changes in characteristics related to changes in reading group placement? In other words, it would seem that if teachers perceived children changing in positive ways, that the teachers might change their expectancies for these children and thus teacher-pupil interactions might be more positive. This might lead to the children becoming more successful and thus being moved into a higher reading group. Conversely, if teachers perceived children changing in negative ways, the teachers might change their expectancies for these children, thus teacher-pupil interaction might become more negative. This might lead to these children becoming less successful and thus being moved into a lower reading group.

On the basis of a review of research literature, a total of 36 different characteristics of children were chosen for study. These characteristics were classified into one of eight categories: appearance, biological, educational, family, intellectual, language, motor abilities, and personality.

Twenty first grade teachers from seven schools participated in the study. The schools were relatively similar on the following variables: (a) percent of minority pupils, (b) percent of minority teachers, (c) size, (d) median income of parents. From
the classrooms of each of the 20 teachers, five children were randomly chosen for in-depth study. Because one child moved shortly after the study began, 99 students were included in the final sample.

Data were collected through a series of three interviews the investigator had with each individual teacher. From these interviews the following information was obtained: the criteria teachers said they used for making reading group placement; descriptions of each of the 99 children on all 36 characteristics; the reading group placement of each child; changes seen in the characteristics of individual children; and teachers' general impressions of the characteristics of the children in the first and third reading groups. In addition a questionnaire was given to each teacher after the third interview. The purpose of the questionnaire was to ascertain teachers' impressions of children in general who were successful or unsuccessful readers. A follow-up letter was sent to each teacher three months after the last interview. The purpose of the follow-up letter was to ascertain if teachers perceived changes in the characteristics of the five children in their rooms after a longer period of time had passed.

There were four hypotheses in this study. The first stated:

\[ H_1: \text{There are significant differences among various characteristics of first grade children who have been placed into one of three reading groups based on the teachers' perceptions of these characteristics.} \]
This hypothesis was divided into eight sub-hypotheses, one for each of the eight categories of characteristics listed above. The differences in the characteristics of the children perceived by the teachers were analyzed using chi square for all nominal data and using a standard one-way analysis of variance for interval and dichotomous nominal data. All eight sub-hypotheses were accepted. There were statistically significant differences in the appearance, biological, educational, family, intellectual, language, motor ability, and personality characteristics among the children in the three reading groups based on the teachers' perceptions of these characteristics. Therefore the overall hypothesis was accepted.

The second hypothesis stated:

H₂: The characteristics of children that teachers say they use as criteria when placing children into reading groups are consistent with the characteristics they say they have observed.

This hypothesis was divided into eight sub-hypotheses, one for each of the eight categories of characteristics listed above.

To analyze these hypotheses, the criteria that teachers had listed in the first interview were classified into one of nine categories: appearance, biological, educational, family, intellectual, language, motor ability, personality, and miscellaneous. The characteristics that the teachers listed which had also been included as one of the 36 characteristics analyzed in section one of Chapter Four were compared by category. No attempt was made
to analyze any of the criteria listed by teachers which had not been analyzed previously.

The assumption was made that if there were differences among the characteristics of the children in the three reading groups that teachers must have used these characteristics as criteria for reading group placement. On this basis, because there were differences among the groups on appearance, biological, and educational characteristics, the first three sub-hypotheses were rejected. The sub-hypothesis concerned with family characteristics could neither be accepted nor rejected on the basis of the data collected. Because the intellectual, language, and motor ability characteristics listed by the teachers as criteria for reading group placement were consistent with the characteristics teachers said they had observed, these three sub-hypotheses were accepted. Some of the personality characteristics listed by the teachers as criteria for reading group placement were consistent with the characteristics teachers said they had observed; others however were not consistent. For this reason, this sub-hypothesis was both accepted and rejected. The overall hypothesis was both rejected and accepted on the basis of the data collected.

The third hypothesis stated:

H₃: Generalizations made by teachers about the characteristics describing the children in reading groups one and three, are consistent with the characteristics that were found to differentiate between the children in these reading groups.
This hypothesis was divided into eight sub-hypotheses, one for each of the eight categories of characteristics listed above.

To analyze this hypothesis a three-way comparison was made among the characteristics describing the children in reading groups one and three that had been listed by teachers during the third interview, the teachers' responses to the questionnaire, and the results from section one in Chapter Four. The generalizations made by teachers about the appearance, biological, and educational characteristics of the children were not consistent with the characteristics that were found to differentiate between the children in the reading groups. Therefore these three sub-hypotheses were rejected. The generalizations made by teachers about the family, intellectual, language and motor ability characteristics were relatively accurate. Therefore these four sub-hypotheses were accepted. Although some of the generalizations regarding personality characteristics were consistent with what teachers had said they had observed, others were not. Therefore it was necessary both to accept and reject this sub-hypothesis. The overall hypothesis was both rejected and accepted on the basis of the data collected.

The fourth hypothesis stated:

H₄: Teachers see changes in the characteristics of children over a period of time. These changes are related to changes in reading group placement.

To analyze this hypothesis, each teacher had been asked to note any changes in the characteristics of the five children in her room since the beginning of the school year. In addition, the
follow-up letter sent to all teachers asked if changes had been noted. Results from a chi square single-sample test indicated that teachers saw more changes in the characteristics of children than would be expected by chance. Therefore the first part of the hypothesis was accepted.

Based on information gathered in the third interview, changes in reading group placement had been made for eleven children; eight children had been placed in a higher reading group, three had been placed in a lower reading group. A comparison was made between the changes in characteristics (both positive and negative) seen by the teachers of the eight children who had been placed in a higher group and the changes in characteristics seen by the teachers of the three children who had been placed in a lower group. There were fewer favorable changes and more unfavorable changes seen in the children who were placed in the higher reading groups as compared to the number of favorable and unfavorable changes seen in the children who were placed in a lower reading group. A comparison between the children who were moved to a lower reading group with the children who had not been moved indicated again that the children who had been moved into a lower reading group showed more favorable changes in characteristics than did the children who stayed in the same reading group. Therefore, the second part of the hypothesis was rejected. There seemed to be no relationship between changes in characteristics as perceived by the teachers and changes in reading group placement.
Conclusions

On the basis of the results of this study, the following conclusions can be stated:

1. It appears that based on the teachers' perceptions of the characteristics that there are significant differences in the appearance, biological, educational, family, intellectual, language, motor ability, and personality characteristics of children who had been placed in one of three reading groups by their teachers.

   In this study the successful readers were perceived by the teachers as the children who wore neat, clean, new clothing, were taller than their peers, and had attended prekindergarten; they understood what was said in class, spoke confidently, and had a well developed vocabulary; in addition they displayed good motor coordination, could read a picture, recognize signs, knew the alphabet and their numbers from 1-12, knew how to read a little, could match similar shapes, and had higher test scores; they also played well with their peers, could work independently, completed their assigned tasks and had a neat desk.

2. Very early in the school year, teachers evaluated the characteristics of children and then placed the children into reading groups. (The assumption was made when this study was designed that most teachers would group the children about the fifth or sixth week of school. Therefore the second series of interviews would not take place until that time. However, all teachers but one had grouped their children by the time of the first interviews which took place in the second and third weeks.
of school.) Many of the criteria listed by the teachers for making the evaluations were consistent with the characteristics that they had said they observed to differentiate among the children in the groups. Might it not be that these characteristics, rather than being causally related to success or failure in reading, were the basis of the teachers' expectations for success or failure in reading? For example, there has been much documentation which supports the notion that alphabet knowledge is positively related to learning to read. When a teacher determines that a child knows the alphabet, she may judge him to be "bright" and "ready" to learn to read. She may also interact differently with him than she does with the child who does not know the alphabet. Therefore it may be the difference in teacher-pupil interaction that creates the difference between children who are successful readers and children who are not successful readers, rather than alphabet knowledge, *per se*.

There would appear to be no valid reason why there should be a relationship between some other characteristics (for example, appearance or biological) and reading success or failure. However, if certain characteristics (such as wearing clean, new clothes or being tall) suggests to the teacher that the child will be a successful reader, her expectancy for him and the teacher-pupil interactions may be positive.

Therefore, it would seem that any characteristic or any combination of characteristics displayed by children can be used as the basis for positive or negative expectancies for them. It may
be the differences in the teachers' interactions with children based on these expectancies that may allow some children to be successful readers and other children to be unsuccessful.

3. The generalizations made by teachers about the characteristics of children in the first reading group were most often positive and favorable. An examination of the data indicated that these generalizations were not always accurate. Many characteristics of children in the first reading group had been described as being neither positive nor favorable. Conversely, the generalizations made by teachers about the characteristics of children in the third reading group were most often negative and unfavorable. An examination of the data indicated that these generalizations were not always accurate. Many characteristics of individual children in the third reading group had been described as being both positive and favorable. Therefore it seemed that teachers overgeneralized the positive characteristics of some of the children in the first reading group to all the children in that group and overgeneralized the negative characteristics of the children in the third reading group to all the children in that group.

4. It appears that teachers perceived changes in the characteristics of children over a period of time.

5. It seems that the changes perceived as taking place in children were not related to changes in reading group placement. There seemed to be no relationship between changing in a positive manner and being moved to a higher reading group. It would appear
that children generally stay in the reading group they have first been placed in.

Discussion and Implications

In this section a comparison will be made between the results of this study described in Chapter Four and the review of the literature presented in Chapter Two. From this basis, possible implications will be discussed. As in Chapter Two, this section will be organized so that each category of characteristics will be discussed separately.

Appearance Characteristics

In Chapter Two, the review of the literature indicated that teachers made judgments about children's potential achievement in school based on appearance characteristics. The results of this study indicated that there were more children with neat, clean, and new clothing in the first reading group than would be expected by chance; conversely, there were more children with untidy, dirty, and old clothing in the third group than would be expected by chance.

According to data gathered during the first interview, teachers did not say that they used any appearance characteristics as criteria for reading group placement. Also the teachers (with one exception) during the third interview said that they did not perceive any differences in appearance between the children in the first and third groups. In addition, the responses to the questionnaire indicated that teachers perceived no differences in appearance between the children in these two reading groups.
There was disagreement between the teachers' generalizations of the characteristics of the children in the two groups and the characteristics that the teachers said that they observed. Thus because teachers' responses to the questionnaire indicated that they disagreed (at a statistically significant level) that children who read successfully wore neat, clean, new clothing and that children who did not read successfully wore untidy, dirty, and old clothing, they must have believed that appearance was not a factor they used in evaluating children. However, because the analysis indicated that there actually were differences in appearance between the two groups, this would suggest that appearance characteristics were used by the teachers, probably unintentionally, as a basis for reading group placement. If teachers had not pre-judged children on the basis of their appearance, there would have been no differences among the three reading groups on this characteristic. This would imply that both pre- and in-service teachers need to be alerted to the possibility that they may be using these characteristics as a basis for judging a child's potential academic success or failure although they may be unaware that they may be doing so.

**Biological Characteristics**

The six biological characteristics examined in this study will be discussed individually because the relationships between them and achievement in school were quite different.

**Height and weight.** The review of the literature indicated that there were relationships between height and weight and
personality variables which might affect a teacher's perceptions of a child's capacity for academic success. The results of this study indicated that there were more tall children in the first reading group than would be expected by chance; conversely, there were more short children in the third reading group than would be expected by chance. If teachers had not pre-judged children on the basis of height there would have been no differences among the groups on this characteristic. There were no differences between the groups on the characteristic of weight.

According to data gathered during the first interview teachers did not say that they used either height or weight as criteria for reading group placement. Also on the basis of the generalizations made by teachers during the third interview and their responses to the questionnaire, there was no evidence that they perceived any differences between the children in the two groups on these characteristics.

For the characteristic of weight there was agreement between the teachers' generalizations and the observations made of children in the two reading groups. There were no differences among the children on this characteristic. The review of literature indicated that there might be a relationship between weight and academic success on the basis of personality characteristics related to body build. This research did not support that hypothesis.

For the characteristic of height there was disagreement between the teachers' generalizations and their observations of this
characteristic. This implied that height was used by teachers, probably unintentionally, as a basis for reading group placement. Perhaps teachers perceived the tall children as being more "mature" and thus more ready to begin reading successfully. This would suggest that both pre- and in-service teachers need to be alerted to the possibility that they may be using height as a basis for judging a child's potential academic success or failure.

Age. The review of the literature indicated that the relationship between age and academic success was not clear. In some studies they were positively related, in others they were not. The results of this study indicated there were no differences between the groups on the characteristic of age.

According to the data gathered during the first interview, teachers did not list age as a criteria for reading group placement. Neither on the basis of the generalizations made by teachers during the third interview nor by their responses to the questionnaire was there any evidence that teachers saw relationships between the children who read successfully or unsuccessfully and age.

For the characteristic of age there was agreement between the teachers' generalizations and their observations made of children in the two reading groups. Teachers had not pre-judged children on the basis of age for there were no differences among the reading groups on this characteristic. This would imply that age was not used as a criteria for reading group placement.
Sex. The review of literature indicated that in many cases there was a relationship between sex and reading. Generally girls were more successful than boys. The results of this study indicated that there were no differences between the children in the reading groups on the characteristic of sex.

According to data gathered during the first interview teachers did not say that they used sex as a criteria for reading group placement. Also on the basis of the generalizations made by teachers during the third interview and their responses to the questionnaire there was no evidence that teachers perceived either boys or girls as the better readers.

For the characteristic of sex there was agreement between the teachers' generalizations and the observations made of the children in the two reading groups. There were no differences based on sex in reading group placement. Thus, this group of teachers did not seem to use sex as a criteria for grouping for if they had, there would have been differences among the groups on the characteristic of sex. Perhaps enough had been written and discussed about sex differences in reading that these teachers were aware of the possible bias and thus interacted similarly with the two groups of children so that both boys and girls could learn to read equally well.

Race. The review of the literature indicated that with few exceptions black children were not as successful as white children in reading achievement. The results of this study indicated
that there were no differences between the children in the reading groups on the characteristic of race.

According to data gathered during the first interview teachers did not say they used race as a criteria for reading group placement. Neither on the basis of the generalizations made by teachers during the third interview nor by their responses to the questionnaire was there any evidence that teachers perceived either black or white children as the better readers. For the characteristic of race there was agreement between the teachers' generalizations and the observations made of the children in the reading groups.

There were no differences based on race in reading group placement. This implied that this group of teachers did not use race as a criteria for grouping for if they had, there would have been differences among the three groups. It might be inferred that teachers probably interacted in a similar manner with both white and black children.

Hair color. The review of the literature indicated that there may have been a relationship between having red hair and being unsuccessful in reading. Because there was only one child who had red hair in the study, it was not possible to determine if having red hair was related to reading group placement. The results of this study indicated that there was no relationship between other hair colors (black, brown, blond) and reading group placement. Hair color was not listed by teachers as a criteria used for reading group placement. Neither was there any evidence that teachers perceived any relationship between hair color and
reading group placement on the basis of their generalizations of group characteristics or their responses to the questionnaire. Teachers did not pre-judge children on the basis of hair color.

**Educational Characteristics**

The three educational characteristics examined in this study will be discussed individually because the relationships between them and achievement in school were quite different.

**Prekindergarten experience.** The review of the literature indicated a complex relationship between prekindergarten experience and success in school. For some children it seemed beneficial, for others the experience seemed to have no lasting effects. The results of this study indicated that there were more children who had had prekindergarten experience in the first reading group than would be expected by chance; conversely, there were more children in the third reading group without prekindergarten experience than would be expected by chance.

According to data gathered during the first interview teachers did not say they used this characteristic as a criteria for reading group placement. Also data collected during the third interview did not indicate that teachers saw prekindergarten experience as characteristic of the children in any reading group.

Thus there was disagreement between the teachers' generalizations and the characteristic as it was observed to differentiate between the children in the two reading groups. This might imply that the teachers, perhaps unintentionally, used prekindergarten experience as a criteria for reading group placement. However,
there were several cases where teachers did not know if the students had attended prekindergarten. (The information was obtained from the permanent records.) It would then not be possible to state that teachers used this characteristic as a criteria for reading group placement. Perhaps the prekindergarten experience itself prepared the children for first grade activities. Therefore children who had attended were more ready to learn to read.

*Kindergarten experience.* The review of the literature indicated that for some children kindergarten experience was positively related to academic success. Other research indicated that it facilitated academic performance for all children. The results of this study indicated that there were no differences between the children in the reading groups on the characteristic of kindergarten experience.

According to data collected during the first interview, teachers did not say that they used this characteristic as a criteria for reading group placement. Also the data collected during the third interview did not indicate that teachers perceived kindergarten experience as characteristic of children in any particular reading group.

There was agreement between the teachers' generalizations and the characteristic as it was observed—kindergarten experience did not differentiate between the two groups. This may have been because there were only eleven children who had not attended kindergarten.
Based on conversations during the second interview, most teachers knew which children had not attended kindergarten. Many times they acted surprised that a child without kindergarten experience could do so well in school. This would imply that they expected children without kindergarten to do less well than children who had attended kindergarten. However, as seen in Table 24, three of the eleven children without kindergarten were placed in the first reading group. This would suggest that the teachers did not use this characteristic as a criteria for reading group placement nor did they pre-judge a child's chance for success in reading based on this characteristic. They must have interacted with the children who did not attend kindergarten in such a way that these children were able to experience success.

Absence in kindergarten. The review of the literature indicated that the relationship between absence and school achievement was not as strong as one might assume it to be. The results of this study indicated that there was no relationship between amount of absence in kindergarten and reading group placement. In fact, children in the third reading group were absent less often than children in either of the other two groups.

Although teachers did not mention absence (or regular attendance) as a criteria for reading group placement or as a characteristic describing the children in either of the reading groups, their responses to the questionnaire suggested that they believed regular school attendance was very important for success in reading.
These results imply that absence in kindergarten really did not affect reading achievement in first grade. There was no way to determine from this study if absence in first grade had an effect on reading achievement. Perhaps though, because the teachers believed that regular attendance was so important for success in reading that any relationship between absence and reading achievement would be based more on teacher attitude and its effect on teacher-pupil interaction than on amount of absence per se.

**Family Characteristics**

The three family characteristics examined in this study will be discussed separately because the relationship between them and achievement were quite different.

**Position in the family.** The review of the literature indicated no clear relationship between position in the family and school achievement. The results of this study indicated that there were more middle and only children in the second and third reading groups than would be expected by chance. There was no relationship between being first or last born and reading group placement.

Teachers did not mention position in the family either as a criteria used for reading group placement or as a characteristic describing the children in either reading group. Their responses to the questionnaire also indicated they did not believe this characteristic described children in either reading group. However, because there were significant differences between this characteristic and reading group placement, teachers either must
have pre-judged the children on the basis of position in the family, or the position in the family per se must have influenced reading group placement.

**Working mother.** The review of the literature indicated that this factor did not greatly influence a child's academic success. It was a secondary factor rather than a primary one in its effect on a child. The results of this study indicated that there was no relationship between a child's mother working and his reading group placement. Also, all responses from teachers suggested that they did not see any relationship between having a working mother and a child's success or failure in reading.

This would imply that teachers were aware of the fact that there was little or no relationship between reading group placement and whether or not a child's mother works. If teachers had pre-judged children on this characteristic, there would have been differences among the groups. Since there were no differences it can be assumed that it was not used as a criteria for reading group placement.

**Intactness of the family.** The review of the literature seemed to indicate that there was a relationship between paternal absence and school achievement particularly for boys. The results of this study indicated that there was no relationship between an intact home and reading group placement. This may have been for one or more of the following reasons. First the analysis of the data only examined the relationship between both parents being in the home and an "abnormal" family composition, i.e., children living
with one parent, grandparents, etc. There was no analysis made between both parents and only the mother living with the children because there were not enough data to make the analysis. Second, the analysis did not compare girls as contrasted to boys and the effect on an intact or a non-intact family and its relationship to reading group placement. Perhaps if one or both of these comparisons could be made, a relationship might have been discovered.

All responses from the teachers (in the two interviews and on the questionnaire) suggested that they did not see any relationship between reading group placement and this characteristic. This would imply that teachers do not pre-judge children from homes where both parents are living together differently from children from homes in which both parents are not living together either as they place children into reading groups or as they described the characteristics of the children in the two reading groups.

**Intellectual Characteristics**

The seven intellectual characteristics examined in this study will be discussed together because the relationships between them and academic achievement were very similar.

The seven intellectual characteristics examined were: test scores on the Metropolitan Readiness Test, reading a picture, number knowledge, alphabet knowledge, ability to match similar shapes, ability to recognize signs, and the ability to read now. The review of the literature indicated that there were positive relationships between each of these characteristics and success
in reading. The results of this study indicated also there was a positive relationship between each of the characteristics and reading group placement.

During the first interview teachers listed all seven characteristics as criteria which they used for reading group placement. Also, during the third interview teachers listed these seven characteristics as ones that described children who were successful readers.

The only area in which there was some disagreement was on the responses to some of the questionnaire items. Teachers reported that they believed doing poorly on the Metropolitan Readiness Test was characteristic of children who were in the third reading group but that doing well on the test was not characteristic of children who were in the first reading group. The reasons for these responses may have been related to the fact that for the first time the first grade teachers themselves did not administer the Metropolitan Readiness Test to their children. It had already been given in kindergarten. Several teachers commented to the investigator that they believed the scores were not as accurate as they had been in the past. They hypothesized that perhaps the kindergarten teachers had helped the children either because they felt "sorry" for them or so that the scores would be higher, thus reflecting good teaching. These responses on the questionnaire may imply that these teachers were not relying as heavily on test scores as criteria for reading group placement as they had done in the past. They may have placed more emphasis on other criteria.
There were three pairs of characteristics on the questionnaire for which teachers agreed that the favorable characteristic described children in the first reading group but disagreed that the unfavorable characteristic described children in the third reading group. These items were number knowledge, ability to match similar shapes, and the ability to read now. An examination of Tables 50 and 51 indicated that 17 of the 31 children in the third reading group knew their numbers from 1-12 and that 23 of the 31 children in the third reading group could match similar shapes. Therefore, even though these characteristics differentiated between the children in the two reading groups, more than half the children possessed number knowledge and almost all could match similar shapes. This would imply that teachers' responses to the questionnaire indicated an accurate evaluation of the abilities of these children. An examination of Table 47 indicated that only three children in the third reading group knew how to read then. Perhaps the teachers responded in the manner they did on the questionnaire because it was so early in the school year. Although it was true that few children in the third reading group could read at that time, teachers probably believed that later in the school year most of the children would be able to read.

**Language Characteristics**

Two of the four language characteristics examined in this study will be discussed together because the relationships between them and academic achievement were very similar. The two others will be discussed separately.
Fluency and the ability to understand what is said in class.
The review of the literature indicated that both of these language characteristics seemed to be positively related to success in reading. The results of this study also indicated these characteristics were related to reading success. More children in the first reading group spoke fluently and were able to understand what was said in class than would be expected by chance; conversely more children in the third reading group did not speak fluently and did not understand what was said in class than would be expected by chance.

In one form or another teachers listed these two language characteristics as criteria for reading group placement in the first interview. Also during the third interview they listed these characteristics as ones that described children who were successful readers. The responses to the questionnaire also indicated that they believed the characteristics differentiated between children who were successful or unsuccessful readers. This implied that teachers had pre-judged children's potential for success or failure in reading on the basis of whether or not the children could speak fluently and were able to understand what was said in class. Their interactions with the children were undoubtedly different for they expected those children who spoke fluently and who understood what was said in class to be successful readers. This would suggest that children who did not have these abilities would not have as positive interactions with the teachers until they were able to be successful which might imply a cycle of failure for these children.
Vocabulary. The review of literature indicated there was not necessarily a positive relationship between a child's vocabulary development and success in reading. The results of this study indicated that more children whose vocabularies were judged to be mature by teachers were in the first reading group than would be expected by chance; conversely, more children whose vocabularies were judged to be limited by their teachers were in the third reading group than would be expected by chance.

In the first interview vocabulary was listed as a criteria for reading group placement. Also during the third interview a good vocabulary was listed as a characteristic describing children in the first group and a poor vocabulary was listed as a characteristic describing children in the third reading group. Questionnaire responses also indicated this same evaluation.

There seem to be at least two implications based on these data. First a mature vocabulary does have a positive relationship to reading; or second, because the teachers' evaluations of the children's vocabularies was purely subjective, the evaluations may not have been accurate. In other words, teachers may have judged the vocabularies of children in the first reading group as mature just because they were already reading somewhat successfully. In the same way, they may have judged the vocabularies of children in the third reading group as poor just because these children were not yet successful in learning to read. In either case, teachers had pre-judged children's potential for success in reading on a characteristic that research had indicated was not
necessarily related to being a successful reader. Teachers need to be made aware that they are using a characteristic that may not be a sound criterion for reading group placement.

**Standard English.** The review of the literature indicated that there were conflicting results when examining the relationship between speaking nonstandard English and success in reading. The relationship was complex because of stereotypes and attitudes held by many people regarding speakers of nonstandard English. It was found that even though children who spoke nonstandard English could be taught to read that some educators believed that the child's dialect should be changed before he was "ready" for school. The results of this study indicated that there was no relationship between speaking either standard or nonstandard English and reading group placement.

This characteristic was not listed by teachers as a criterion for reading group placement in the first interview nor was it listed as a characteristic which described the children in either reading group.

The responses to the questionnaire indicated (at a low level of significance) that teachers believed speaking standard English was characteristic of children in the first reading group. On the other hand, they saw no relationship between speaking nonstandard English and being in the third reading group. This would seem to imply that teachers generally characterize children in the third reading group as speaking either standard or nonstandard English.
This group of teachers apparently did not hold negative attitudes and stereotypes toward children who spoke nonstandard English. It also appeared that they had not pre-judged children's potential for success or failure in reading on the basis of the form of the language they used, for there were no differences among the three groups on this characteristic. The results of this study supported the research which indicated children speaking nonstandard English could learn to read successfully.

Motor Ability Characteristics

The three motor ability characteristics examined in this study will be discussed together because the relationships between them and reading achievement were similar.

The review of the literature indicated that a direct, causal relationship between motor coordination and reading had not yet been established. The results of this study indicated that there were positive relationships between the ability to cut, color, and paste; the ability to copy a simple form; and handwriting ability and placement in the first reading group.

In the first interview teachers listed motor skills as a criterion for reading group placement. Also during the third interview, well-developed motor skills were listed as characteristic of children in the first reading group and poorly developed motor skills were listed as characteristic of children in the third reading group.

Questionnaire responses were not quite so consistent. Teachers indicated that they perceived no relationship between scribbling
with crayons or pasting messily and reading failure; they perceived no relationship between pasting neatly and reading success. On all other motor ability characteristics the teachers indicated that they believed that good motor skills were related to reading success and poor motor skills were related to reading failure. The responses to the questionnaire where teachers indicated they perceived no relationship between the poor motor skill and reading failure may have been because these teachers did not believe those characteristics were very important.

The results of this study seem to imply that these teachers believed strongly in a positive relationship between motor development and success in reading. In only one case did a teacher admit that a child in the first reading group had poor motor development. (In that case, she seemed almost apologetic to admit that one of her best readers did so poorly on cutting, pasting, and coloring activities, could copy none of the simple forms, and had a difficult time writing his name neatly.) These teachers obviously had pre-judged children's ability on the basis of their motor ability for there were differences among the three groups on these characteristics. Considering the fact that the review of literature indicated that there seemed to be no causal relationship between motor coordination and reading, teachers should be encouraged to consider characteristics other than motor abilities as criteria for reading group placement.
Persona Characteristics

All but two of the six personality characteristics examined in this study will be discussed separately because the relationships between them and reading achievement were quite different.

Plays well with others. The review of the literature seemed to suggest that there was a positive relationship between the ability to get along with one's peers and academic success. The results of this study indicated that more children who played well with their peers were in the first reading group than would be expected by chance; conversely, more children who did not play well with their peers were in the third reading group than would be expected by chance.

In the first interview teachers listed this characteristic as a criterion for reading group placement. However, in the third interview some teachers indicated that they believed children in the first reading group were well-liked by their peers but some teachers indicated that they believed children in the first reading group didn't always get along well with their peers. Children in the third reading group were characterized as being not so well liked by their peers. Response to the questionnaire indicated that teachers saw no relationship between this characteristic and success or failure in reading.

These evaluations are obviously conflicting. Teachers' responses to the questionnaire were different from what they said they had observed. Although the ability to get along well with peers was listed as a criteria for reading group placement, the
inability to get along with peers, as well as the ability to get along with peers, was listed as a characteristic which described children in the first reading group. The teachers may have responded to the questionnaire in the manner that they did because this was a personality rather than an intellectual characteristic.

Perhaps the teachers did not believe it would be related to either success or failure in reading.

Some teachers however, must have used the characteristic intentionally, others may have used it unintentionally, as a criteria for grouping. If teachers had not pre-judged children on the basis of their ability to get along well with their peers, there would have been no differences among the three reading groups on this characteristic. Because the ability to get along with one's peers may be a trait that teachers believe is important, they may have interacted negatively with children who did not have the ability to get along well with their peers and this could have affected the teacher-pupil relationship in such a way that the pupils did not achieve as well academically. Teachers must be made aware of the fact that they use this characteristic as a criteria for reading group placement. Rather than using it as a criteria for reading group placement teachers need to be helped to develop ways of interacting with pupils so that they can help children who do not play well with their peers to learn to do so.

Obedient and polite. Little research had been done that examined the relationship between being obedient and polite and reading success. One can only speculate that the characteristic
of being obedient and polite was included on report cards because it was a value that teachers believed was important. The results of this study indicated that there were no significant differences between the children in the reading groups on this characteristic.

The responses to the questionnaire also indicated that teachers did not perceive a relationship between being obedient and polite and success in reading; conversely, they did not see a relationship between not being obedient and polite and failure in reading. Although in the first interview, being obedient and polite was not listed as a criteria for reading group placement, in the third interview it was listed as a characteristic which described the children in the first reading group (i.e., these children were better behaved and cooperative.) Children in the third reading group were characterized as being discipline problems (i.e., not obedient and polite).

The results of the analysis and the responses to the questionnaire were obviously not consistent with the generalizations made by the teachers in the third interview. This could imply several things. First, teachers may not have regarded the children who were not obedient and polite as discipline problems. Perhaps, also, in the teacher's mind, being a discipline problem involved more than being disobedient and impolite. Therefore, in the second interview, the investigator should have asked, "Is this child a discipline problem?" rather than asking if the child was obedient and polite. The characteristics on the questionnaire probably should have been phrased in the same way. In both cases
the results may have been quite different. Also on the question-
naire teachers may not have believed that a personality character-
istic would be related to either success or failure in reading so
they responded that they saw no relationship between reading
successfully or not reading successfully and being obedient and
polite.

Possibly too, teachers were reluctant to admit that a partic-
ular child was disobedient and impolite. The reluctance of teachers
to give unfavorable opinions of children has been documented by
Douglas (1964).

When survey children were ten years old we asked
their teachers to assign them to one of five
categories which varied from "very hard-working"
to "lazy". As is usual in such assessments, the
teachers were reluctant to give an unfavorable
opinion; only 17 per cent of the children, they
say, work less hard than the average child, but
38 per cent work harder. Very few are prepared
to say a pupil is lazy (p. 60).

An examination of Table 76 indicated that 20 children in the
first reading group and 22 children in the third reading group
were perceived as being obedient and polite. Yet, during the
third interview, children in the first reading group were described
as being more cooperative and better behaved than the children in
the other reading groups and the children in the third reading
group were described as being discipline problems. Perhaps this
implied that teachers had overgeneralized the negative character-
istics of a few children in the third reading group and thus
regarded many of them as discipline problems primarily because
they were not as successful in reading as the children in the
other reading groups. Or it may have been that when the teachers were making a general description of the children in the third reading group they felt freer to describe them unfavorably than they did when they were asked to describe specific children.

Neat desk. Little research had been done that examined the relationship between having a neat desk and academic success. Again, one can only speculate that the characteristic of a neat desk was included on report cards because it was a value that was important to teachers. The results of this study indicated that there were more children in the first reading group who had neat desks than would be expected by chance; conversely, there were more children in the third reading group who had messy desks than would be expected by chance.

In the first interview teachers did not list a neat desk as a criteria for reading group placement nor in the third interview did they indicate that a neat or a messy desk was characteristic of the children in either the first or the third reading group. The responses to the questionnaire suggested that the teachers did not see a relationship between this characteristic and success or failure in reading.

The results of the analysis and the teacher's generalizations about this characteristic were not consistent. This could imply one of the following things. First, possibly teachers did not perceive this characteristic accurately. In other words, perhaps because the teachers saw the children in the first reading group as more successful in reading than the other children, they also
unintentionally believed that more of these children had accepted the notion of the importance of neatness. Second, the teachers may have responded to the questionnaire in the way that they did because they believed that this characteristic, not being intellectually based, would not be related to either success or failure in reading. Third, it may well have been that the teachers' perceptions of this characteristic were accurate and that children whose desks were orderly also worked in an orderly, organized manner and that this actually did contribute to their early success in beginning reading. Fourth, the teachers' perceptions of this characteristic may have been accurate. The teachers may have assumed that because the children's desks were neat that these children had some of the same values as the teachers. Thus the assumption might have been made that these children would be more ready to be successful in reading than children whose values were different from those of the teacher. In any case, the teachers had pre-judged these children on the basis of the neatness of their desks for if they had not, there would have been no differences among the children in the three reading groups on this characteristic. The teachers' expectations and interactions with the children with neat desks might be different than the expectations and interactions with the children with messy desks: thus achievement could be influenced.

Smiling. The review of the literature indicated that children smiled more often when they made correct responses than they did when they made incorrect responses. The results of this study
indicated that there were no significant differences among the children in the three groups on this characteristic.

In the first interview teachers did not list smiling as a criteria for reading group placement nor in the third interview did they indicate that different amounts of smiling were characteristic of the children in either the first or the third reading groups. The responses to the questionnaire suggested however that the teachers believed that smiling often was a characteristic of children who were successful readers but that seldom smiling was not related to children who were not successful.

Although there were no statistically significant differences between groups one and three on this characteristic, the difference almost reached significance ($X^2 = 7.442, .05 = 9.49$). This may be one reason why the teachers' responses to the questionnaire indicated that they saw a relationship between smiling and reading success and why they saw no relationship between seldom smiling and reading failure. Also if the research by Harter, et. al. (1971) is accurate children tended to smile when they knew they were correct. This response may reinforce teachers' perceptions of themselves as successful teachers. Therefore they may judge that a child who does not smile often does not learn so quickly which to them may be negative reinforcement to their teaching. Facial expression then, may be one means teachers have of measuring satisfaction with their jobs and an unsmiling face may be a threat to this. Therefore, they may conclude that unsmiling children are not as smart as smiling children and may respond to them in such
a way that this judgment is fulfilled in the child's lack of success.

Completes assigned tasks and works well independently. The review of the literature seemed to suggest there was some evidence that these two personality characteristics were positively related to academic success. However, there was little evidence that they were positively related to reading success. Therefore, one must speculate that these characteristics were included on report cards because teachers believed it was important for children to be able to complete assigned tasks and to work independently. The results of this study indicated that significantly more children in the first group completed their assigned tasks and worked well independently than would be expected by chance; conversely, fewer children in the third reading group completed their assigned tasks and worked independently than would be expected by chance.

In the first interview, teachers listed the ability to finish work as a criteria they used for reading group placement. In the third interview teachers listed both the ability to complete work and the ability to work independently as characteristics of children in the first reading group. They also listed both not being independent and not finishing work as characteristics of children in the third reading group. Their responses to the questionnaire also indicated that teachers saw relationships between these characteristics and reading success or failure.

These results would imply that teachers believed these two characteristics were positively related to reading success. They
had pre-judged the children who were able to complete their assigned
tasks and who worked independently as being successful readers.
Their interactions with these children were undoubtably quite
different than were their interactions with children who were not
able to complete assigned tasks and who had difficulty working
independently. The teachers' high expectancies for success were
probably conveyed to the children who completed their assigned
tasks and who worked well independently whereas the teachers' low
expectancies for success were conveyed to the other children. It
would seem then that teachers intentionally use these characteris-
tics as criteria for reading group placement.

Summary

The Pygmalion effect, or the self-fulfilling prophecy, is a
phenomenon of which all teachers need to be cognizant. Quite un-
intentionally, perhaps, teachers interact most positively with
children who seem to display the same values which they (the
teachers) believe are important. For this reason it is vitally
important for teachers to be aware of their own values and opinions.
If early in the school year they pre-judge children's potential
for success in a negative manner because the children do not dis-
play the same values held by the teachers then these children most
likely will not be as successful in school as they might have
been had the teacher interacted with them in a more positive manner.

It would seem that it is the teacher's responsibility to learn
to interact in a positive manner with all children, accepting
individual differences and building on the strengths that all
children possess. They should not expect nor assume that the children they teach will have accepted the values they believe are important. It is the teacher's responsibility to help each child achieve to his highest potential. This will not be possible until teachers have learned not to negatively pre-judge children whose values are different from those held by the teacher.

**Recommendations for Further Research**

Several studies need to be conducted that would study both teacher-pupil non-verbal communication and pupil-teacher non-verbal communication. It would seem that there are at least three studies that could examine teacher-pupil non-verbal communication:

1. Patterns of teacher-pupil non-verbal communication could be ascertained. It would seem that there might be at least three main patterns discovered: positive, neutral, and negative.

2. After the patterns have been discovered, teacher-pupil non-verbal communication should be studied using the pupils in the first and third reading groups. Do the patterns of non-verbal communication differ for high and low expectancy children? If so, how do they differ?

3. Beginning on the first day of school, teacher-pupil non-verbal communication should be studied. Does the teacher immediately begin to use the patterns associated with high and low expectancy that might have been found above or is there more neutral non-verbal communication until she has placed the children into reading groups?
Based on this research, a study could then be conducted that examined the characteristics (perhaps using the eight categories used in this study) of children with whom the teacher interacted either positively or negatively. What are the characteristics displayed by these children that seemed to be the basis of positive or negative non-verbal communication? (In this study, most evaluations of the characteristics of children were based on the teachers' subjective opinions. If future research is to examine the characteristics of children, the first concern should be to design non-subjective rating scales. This would permit a more objective evaluation of a child than was possible in this study.)

Closely related to the studies that examined teacher-pupil non-verbal communication are several suggestions that would involve studying pupil-teacher non-verbal communication:

1. Patterns of pupil-teacher non-verbal communication could be ascertained. It would seem that there might be more distinct patterns that would be discovered because the pupil would not only be reacting to the teacher's verbal and non-verbal communication but would display his own unique patterns of communication.

2. After the patterns have been discovered, pupil-teacher non-verbal communication patterns should be studied as the children are in their reading groups. Are there distinct patterns displayed by children as they are in either a high or a low expectancy situation?

3. Beginning of the first day of school, pupil-teacher non-verbal communication patterns should be studied. Do these patterns
change as the teacher begins to make judgments about the pupil's potential success or failure in reading? Are the pupil's patterns of non-verbal communication dependent upon the teacher's patterns of non-verbal communication with them?

On the basis of studies such as these, perhaps it could be discovered why a teacher's prediction of a student's potential success or failure in reading is often accurate (i.e., the self-fulfilling prophecy).

The results of this study indicated there was no relationship between the teachers' perceptions of changes in characteristics of children and changes in reading group placement. Because relatively few children are moved from one reading group to another, it would seem important to discover why the reading group placement has been changed for them while the majority of children stay in the same reading group. Why isn't the reading group placement changed for more pupils since this research indicated that teachers perceive the characteristics of most pupils changing over a period of time?

Past research seemed to indicate that often middle class teachers reacted negatively to the poor clothing worn by lower class children. Assuming that the clothing of middle class or upper middle class children was not always neat, clean, and new, it would be pertinent to ascertain if there was a relationship between the type and condition of clothing worn by these children and reading group placement.
The results of this study indicated that there was no relationship between kindergarten absence and reading group placement. Previous research also indicated there was often little relationship between absence and school achievement. However, the teachers in this study believed quite strongly that excessive absence and being unsuccessful in reading were strongly related. Future research could ascertain if there was a relationship between amount of absence, sex, socioeconomic status, age, and subject matter and then relate the findings to teachers' attitudes.

Since the teachers in this study reported that they used level of vocabulary development of children as a criteria for reading group placement, further research should be done to assess how important vocabulary development is in relationship to success in reading. The review of the literature indicated the relationship was not as strong as these teachers seemed to believe.

A general area in which future research could very profitably be undertaken is the relationship between personality characteristics and reading. The following questions need to be answered:

1. Do successful readers actually play better with other children? If so, why? Why would this characteristic be related to reading successfully?

2. The teachers characterized the children in the third group as "discipline problems". What does being a "discipline problem" mean? Did teachers overgeneralize or were there actually more children with "discipline problems" in this reading group?
Is being labeled a "discipline problem" the cause or the effect of being an unsuccessful reader?

3. Is there really a relationship between having a neat desk and reading successfully? Or is this only a characteristic which some teachers value?

4. Do children who are successful readers smile more often than children who are unsuccessful readers? Is this generalization made by teachers accurate? If so, why?

These are a few of the recommendations for future research. Undoubtedly there are other areas which could be examined that would give teachers more insight about grouping, the effect grouping has on the teaching of reading, and the self-fulfilling prophecy.

As teachers group children for reading instruction, they must be made aware that they may cease looking at individual children once the group is formed. Olsen (1959) stated:

> The tendency to place people in pigeonholes and then to ascribe to them the characteristics of a larger group is quite pronounced in human behavior (p. 262).

It should also be emphasized that personal and social adjustment is an individual rather than a group problem, since differences within any group are always much larger than the average differences between groups. One cannot profitably "type" children and draw an individual application (p. 262-263).

Teachers must be aware of individual differences and then teach individual children even if the children have been placed in a reading group; only then will each child be a successful reader and achieve at his own level of capacity.
APPENDIX A

Interview 1

As we discussed earlier, I am attempting to study the placement of children into reading groups. Do you use groups as you teach reading? (All teachers answered "yes" to this question.)

Because this research is concerned with characteristics of first grade children and their reading group placement I'd like to know some of the criteria you use as you make the decision of which reading group a child will be placed in. Past research simply says that children were placed into groups according to test scores, teacher observation and evaluation, and previous classroom performance. Are these criteria that you use? Can you be specific about some of the characteristics that you use when evaluating a child for reading group placement?

I appreciate the time that you have spent with me. I will be back sometime during the middle of October to talk with you again about your students.
APPENDIX B

Interview 2

There are several objectives that I would like to accomplish in this interview. First, I'd like your impressions of some of the characteristics of the children that were observed in September. Second, I'd like to know if you have observed changes in the characteristics of the children. Third, I'd like you to compare the children on several of the characteristics.

For example, in the area of language, is ______ able to use language effectively?

Does he speak standard English?

Does he seem to understand what is said in class? How can you tell?

Does he speak confidently and fluently or does he hesitate or stutter as he speaks?

Is his vocabulary well or poorly developed?

Have you noticed ______ changing on any of these characteristics?

(This procedure was used until the teacher had described each child on the characteristics.)

Now to compare each of the children with the other children.

Which of these five children would you rank as best understanding what is said in class? Which least?

Which child speaks most confidently and fluently?

Which child has the best developed vocabulary?

What do you see as ______'s intellectual strengths and weaknesses?

Is he able to "read" pictures?
Does he seem to be able to identify signs and posters?

Does he know his alphabet?

Is he able to read at all at this time?

Does he know his numbers from 1-12?

Is he able to copy a simple shape, for example, a triangle, square, circle and a square?

Is he able to match similar shapes?

(The same procedures described above were used for each category of characteristics.)

Describe _______'s personality.

Does he play well with other children?

Does he work well independently?

Is he able to complete assigned tasks?

Is he obedient and polite to you and the other adults in the school?

Does he keep his desk neat and orderly?

Does he smile often?

What does _______ look like? Could you describe a few of the characteristics that make up his appearance?

Are his clothes neat and clean?

Is his hair neat or sloppy looking?

Are his clothes new or old?

What is his body build? Is he tall, average or short? Is he heavy, average or slim?

Does he wear glasses?

Do you know if he is of average age or is he either older or younger than his classmates?

What is his race?

What color is his hair?
What do you know about _______'s family?

Is he an oldest, younger, middle or only child?

Is he living with both parents?

Does his father work?

Does his mother work?

Do you know if he attended preschool or a prekindergarten?

Did he attend kindergarten?

How are _______'s motor abilities?

Is he able to use scissors well?

Is he able to color well?

Is he able to paste well?

Is he able to write his own name well?

What reading group is each of these children in now?

    Thank you again for your time. This information will be
very helpful to me. I will look forward to seeing you again in
about two weeks.
APPENDIX C

Interview 3

Today I'd first like to check to be sure that I have the reading group placements accurately for each of the five children from your room that we have discussed. Is ______ in ______ group? Is ______ in ______ group?, etc. Now, you said you had ______ reading groups. If you had only three groups, which group would each of these children be placed in? (I'm asking this so that it will be possible to make comparisons between classes on a common basis.)

I'd now like you to think about your reading groups in general—-not thinking of the five children we have discussed but considering the groups you have now and those you have had in the past. What differences, if any, do you see between the characteristics of the children in the first and third groups? Do you see them differing in appearance? Do you see them differing on any biological characteristics, for example height or weight? Have you noticed differences in educational characteristics, for example whether or not they have had kindergarten? Do you see any differences in family characteristics? Are there differences in their language abilities? Intellectually, how are the groups different? Do you see personality differences among the groups? Are their motor abilities the same or different?
Was there anything from the last interview that you have thought of concerning any of the five children that we did not discuss?

I'd like you now to complete this questionnaire. It is composed of two sections, one that deals with characteristics of children who are successful readers, in other words the children who may be in your first reading group. The second section deals with characteristics that may be associated with children who do not read successfully, in other words those children who are probably in the third group. Feel free to react to these statements very honestly. None of the responses will be examined individually but the total responses of all teachers will be considered together.

Do you have any questions regarding anything we have talked about? Have you wondered why I have chosen some characteristics to talk about and not others? (At this time we spent time discussing the study in general if they had questions. Probably about half the teachers had questions and I dealt with them quite honestly and openly. I felt there was very good rapport between us in all cases.)

I have really appreciated the time you have spent with me. I have also appreciated your having the observers spend as much time as they have in your classroom. All of them have said that it has been one of the most worthwhile experiences they have had during their time in school.

As soon as the study is completed I will send a summary of the findings to the school.
APPENDIX D

Questionnaire

It is sometimes believed that some of the following items, which describe behaviors and characteristics of first grade children, may possibly be associated with reading success. Please mark on this sheet if you: (1) agree (2) disagree (3) can't decide.

This first grade child

1. has known his telephone number and street address since before he started school.
2. has parents who are very interested in school.
3. writes his name neatly.
4. has a father who is an accountant.
5. has hair that is neat and clean.
6. smiles often.
7. lives in a home which is owned by his parents.
8. is the older of two children.
9. plays well with others.
10. has had both kindergarten and preschool experience.
11. is tall.
12. has a birthday coming in the period from October to March.
13. is usually very clean.
14. is able to cut close to the outline of a large figure.
15. has hands that are usually clean.
16. can read a little—at least the 15 basic words.
17. has a very mature vocabulary.
18. did very well on the Metropolitan Readiness Test.
19. is able to color, keeping within the lines.
20. has an older sister who is an excellent student.
21. can match similar shapes.
22. has parents who both graduated from college.
23. uses spare time to good advantage.
24. is able to paste neatly.
25. comes to school in clean clothes.
26. knows the alphabet.
27. works well independently.
28. can give a simple description of a picture.
29. has both parents living in the home.
30. speaks confidently and fluently.
31. obviously understands what is said in class.
32. can recognize and interpret many signs and symbols such as traffic signs.
33. is able to retell a simple story in sequential order.
34. has books, magazines, and newspapers in the home and he often sees his parents reading.
35. keeps his desk well organized and his belongings neat.
36. is white.
37. has a mother who does not work.
38. communicates verbally very well.
39. has parents who earn between $10,000 and $15,000 per year.
40. is slender.
41. has an awareness of the relationship between written and spoken language.

42. attends school regularly.

43. speaks standard English.

44. is a girl.

45. is obedient and polite to adults.

46. wears clothing that is either new or is in good condition.

47. works at a task until it is completed.

48. knows his numbers from 1-12.

49. can copy a simple form.

50. has black hair.
It is sometimes believed that some of the following items, which describe behaviors and characteristics of first grade children, may possibly be associated with reading failure. Please mark on this sheet if you: (1) agree (2) disagree (3) can't decide.

This first grade child

1. has parents who earn less than $6,000 per year.

2. does not understand that printed materials is simple "speech written down."

3. is black.

4. is the middle child of a large family.

5. has parents who are not at all interested in what happens at school; it is even difficult to get the report card returned to school.

6. comes to school wearing clothes that fit poorly and are obviously hand-me-downs.

7. cannot "read" a picture.

8. does not know the alphabet.

9. has parents who did not graduate from high school.

10. lives in an apartment which his parents rent for $50 per month.

11. has red hair.

12. hesitates when talking and often stutters.

13. has difficulty using scissors.

14. has had neither kindergarten nor preschool experience.

15. cannot read at all.

16. places greater reliance on non-verbal communication than on the use of language.

17. misses school often.

18. is a boy.
19. has a limited vocabulary.
20. is only able to scribble with crayons.
21. has an older sister who is repeating third grade.
22. has parents who live on welfare.
23. often has body odor.
24. has parents who are divorced; he is living with his mother.
25. writes his name poorly.
26. has hair that is generally sloppy looking.
27. cannot retell a simple story.
28. has difficulty understanding oral directions.
29. has difficulty recognizing signs and even more difficulty knowing what they mean.
30. has a birthday coming in the period between April and September.
31. has a very messy desk.
32. has hands that generally are dirty and nails that are broken and ragged.
33. is fat.
34. needs a "physical" approach in matters of discipline.
35. has few reading materials in the home so he seldom if ever sees his parents reading.
36. has difficulty completing any task.
37. did poorly on the Metropolitan Readiness Test.
38. gets paste all over himself, his desk and his possessions.
39. is short.
40. is not able to remember his telephone number or address even after much practice.
41. may become aggressive in the effort to be accepted or noticed by his peers.
42. comes to school wearing clothes that often are not clean.
43. cannot match similar shapes.
44. has a mother who works outside the home.
45. very seldom smiles.
46. copies--gets too much help from his peers.
47. speaks a non-standard dialect.
48. wastes a lot of time in school.
49. does not know his numbers from 1-12.
50. cannot copy a simple form.
APPENDIX E

The Questionnaire

Directions to the Teachers

Teachers learn about their students by observing them, through conversations with them, by reading their permanent file folders and from the results of various tests you have given them. The following characteristics are typical of the ones they have discovered.

Assume, please, that you are a first grade teacher. How would you predict the potential for success in reading in first grade if each of the following statements accurately described a particular child? It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheets from 1 to 6 as you think it would predict success or failure in reading.

Work as quickly as possible please.

Description of the Ranking

1. This child will be a very successful reader.
2. This child will be a good reader.
3. This child will experience success more often than failure but will not be a "good" reader.
4. This child will experience failure more often than success but will still be able to read.
5. This child will be able to read very little.
6. This child essentially will be a non-reader in first grade.
Description of the Ranking

1. This child will be a very successful reader.
2. This child will be a good reader.
3. This child will experience success more often than failure but will not be a "good" reader.
4. This child will experience failure more often than success but will still be able to read.
5. This child will be able to read very little.
6. This child essentially will be a non-reader in first grade.

This first grade child

1. has a binocular vision problem.
2. has plenty of paper and extra pencils.
3. has known his telephone number and street address since before he started school.
4. has parents who are very interested in school; the mother volunteers to work one afternoon a week in the school library.
5. has parents who earn less than $6,000 per year.
6. does not understand that printed material is simply "speech written down."
7. has a very negative self concept.
8. has a father who is an accountant.
9. is black.
10. has hair that is neat and clean.
11. needs praise.
12. is the middle child of a large family.
13. is a boy who wears his hair cut short and it is neat looking.
14. does not use double negatives.
15. has parents who are not at all interested in what happens at school; it is even difficult to get the report card returned to school.
16. comes to school wearing clothes that fit poorly and are obviously hand-me-downs.
17. often sucks his thumb and chews on his pencils.
18. blurts out what he has to say, i.e., he cannot control his comments.
19. has difficulty in solving picture puzzles because he cannot discriminate size, shape or perspective.
20. smiles often.
21. lives in a home which is owned by his parents.
22. has no hearing loss.
23. has parents who did not graduate from high school.
24. is the older of two children.
25. plays well with others and accepts responsibility for his own actions.
26. lives in an apartment which his parents rent for $80 per month.
27. hesitates when talking and often stutters.
28. has a birthday coming in the period from October to March.
29. has had both kindergarten and preschool experience.
30. can use a pencil with enough control to keep close to the outline of a large figure.
31. has a hearing loss greater than 30-35 decibels.
32. is usually very clean.
33. has good motor coordination, i.e., he is able to cut, color and paste.
34. has no difficulty grouping blocks that are of different shapes and colors.
35. has hands that are usually clean with short, neat fingernails.
36. is able to copy a diamond.
37. has a very mature vocabulary.
38. has difficulty using scissors, is only able to scribble with crayons and has a hard time doing a pasting activity.
39. did very well on the Metropolitan Reading Readiness Test.
40. has had neither kindergarten or preschool experience.
41. speaks a non-standard dialect; his language shows a marked ethnic style.
42. has good vision.
43. places greater reliance on non-verbal communication than on the use of language.
44. understands and uses positional words such as up, down, on, under.
45. has an older sister who is an excellent student.
46. misses school often because he is ill and has colds regularly.
47. is a boy.
48. has parents who both graduated from college.
49. uses spare time to good advantage.
50. comes to school appropriately dressed.
51. has a limited vocabulary.
52. has difficulty tracing a figure.
53. has an older sister who is repeating third grade.
54. has good posture—he stands, sits and walks properly.
55. works very well independently.
56. uses poor grammar.
57. has parents who live on welfare.
58. often has body odor.
59. has hair that is generally sloppy looking.
60. has parents that are divorced; he is living with his mother.
61. can give a simple description of a picture.
62. tends to reverse small letters and reverts to capital letters.
63. cannot retell a simple story.
64. has teeth that are straight and nice looking.
65. is unable to rhyme or to recognize rhyming words.
66. has both parents living in the home.
67. uses compound and/or complex sentences.
68. has no problem in solving picture puzzles.
69. obviously has difficulty understanding oral directions.
70. has difficulty recognizing signs and even more difficulty knowing what they mean.
71. is a boy who wears his hair long.
72. slouches when standing or sitting.
73. has a birthday coming in the period between April to September.
74. plays with gadgets in his pockets or desk.
75. has parents who have provided all kinds of toys and play materials for him.
76. speaks confidently and fluently.
77. has a very messy desk.
78. obviously understands what is said in class.
79. uses few, if any, compound and/or complex sentences.
80. likes to touch, handle and explore materials with his hands.
81. has hands that generally are dirty and nails that are broken and ragged.
82. can recognize and interpret many signs and symbols such as traffic signs.
83. is able to retell a simple story in sequential order.
84. has books, magazines and newspapers in the home and he often sees his parents reading.
85. keeps his desk well organized and his belongings neat.
fails to get meaning from simple pictures because he attends to irrelevant details.

is fat.

has difficulty copying any shape or form.

needs a "physical" approach in matters of discipline.

is white.

generally has no paper; if he has a pencil, it is usually short and unsharpened.

has few reading materials in the home so he seldom if ever sees his parents reading.

communicates verbally very well.

did poorly on the Metropolitan Reading Readiness Test.

has parents who earn between $10,000 and $15,000 per year.

is slender.

has a short attention span in any task.

is not able to group objects that are different in color and shape.

will often raise his hand to volunteer information in class.

has a very positive self concept.

has an awareness of the relationship between written and spoken language.

has difficulty understanding and using positional terms such as over, under, around and through.

keeps his hands and objects away from his face.

has determination and the desire and ambition to achieve.

is a follower and not a leader.

uses double negatives.

is easily distracted by the environment.
108. is not able to remember his telephone number or address even after much practice.

109. attends school regularly; is very seldom sick.

110. speaks standard English.

111. may become aggressive in the effort to be accepted or noticed by his peers.

112. comes to school wearing clothes that often are not appropriate.

113. shows a lack of motivation to do his school work.

114. uses good grammar.

115. is an incessant talker.

116. is a girl.

117. is obedient and polite to adults.

118. very seldom smiles.

119. is very active and somewhat clumsy.

120. enjoys "playing" with words—making and saying rhyming words for example.

121. copies—gets too much help from his peers.

122. has difficulty copying from the blackboard.

123. wears clothing that is either new or is in good condition.

124. has very few toys to play with.

125. shows leadership potential.

126. works at a task until it is completed.

127. obviously needs dental care.

128. uses language that is intercommunicative—it involves an interchange of ideas.
APPENDIX F

The Questionnaire

Directions to the Teachers

Teachers learn about their students by observing them, through conversations with them, by reading their permanent file folders and from the results of various tests given them. The following characteristics are typical of the ones they have discovered.

Assume please, that you are a first grade teacher. How would you predict the potential for success in reading in first grade if each of the following statements accurately described a particular child? It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheets from 1 to 7 as you think it would predict success or failure in reading.

Work as quickly as possible please.

Description of the Ranking

1. This child will be a very successful reader.

2. This child will be a good reader.

3. This child will experience success more often than failure but will not be a "good" reader.

4. This child will experience failure more often than success but will still be able to read.

5. This child will be able to read very little.
6. This child essentially will be a non-reader in first grade.

7. This item does not affect a child's potential for reading success or failure.

*See Appendix E for the items included in this form of the questionnaire.
APPENDIX G

The Questionnaire* 

Directions to the Teachers 

Various studies have shown that the following characteristics of first grade children are typical of ones that some teachers use for predicting potential success or failure in reading. It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheet from 1-4 as you think other teachers may use them to predict success or failure in reading. 

Work as quickly as possible please. 

Description of the Ranking 

1. This child will be a very successful reader in first grade. 

2. This child will be a good reader in first grade. 

3. This child will be a poor reader in first grade. 

4. This child will not be successful in learning to read in first grade. 

*See Appendix E for the items included in this form of the questionnaire.
APPENDIX H

The Questionnaire

Directions to the Teachers

Various studies have shown that the following characteristics of first grade children are typical of ones that some teachers use for predicting potential success or failure in reading. It is realized that one given characteristic alone cannot predict success or failure for a child. Usually it is the combination of factors that makes a difference. Nonetheless, rank each characteristic on the separate answer sheet from 1-5 as you think other teachers may use them to predict success or failure in reading.

Work as quickly as possible please.

Description of the Ranking

1. This child will be a very successful reader in first grade.
2. This child will be a good reader in first grade.
3. This child will be a poor reader in first grade.
4. This child will not be successful in learning to read in first grade.
5. This item does not affect a child's potential for reading success or failure.

*See Appendix E for the items included in this form of the questionnaire.
APPENDIX I

Interview I: A List of the Characteristics Given by Teachers That They Said They Used as Criteria for Reading Group Placement

Appearance (no characteristics listed)

Biological

1. health
2. eye movements
3. visual problems
4. neurologically handicapped

Educational

5. repeaters put in middle group
6. kindergarten or not (2 responses)
7. absence (2 responses)

Family

8. talks with parents
9. whether or not parents work with children

Intellectual

10. sequential order
11. test scores (9 responses)
12. readiness activities (5 responses)
13. knows the alphabet (10 responses)
14. sounds of letters (3 responses)
15. knows colors (3 responses)
16. knows color words (2 responses)
17. knows numbers (3 responses)
18. knows number words (2 responses)
19. ability to extend what the teacher says
20. left to right
21. likes looking at books
22. has a concept of space
23. how well the skills are mastered (3 responses)
24. how well math is done
Intellectual (Continued)

25. recognizing likenesses and differences
26. how well they read from a first grade book
27. reading signs around the room
28. asks questions frequently
29. IQ scores
30. background experiences in reading
31. learn school routines easily
32. could write numbers
33. reading a picture
34. performance
35. auditory or visual learners
36. interest in doing activities other than coloring
37. do not use test scores (10 responses)
38. visual perception
39. knows 15 basic words (2 responses)

Language

40. how they respond orally (4 responses)
41. listening ability (4 responses)
42. vocabulary
43. use of language
44. speaking in sentences
45. speech problems
46. understands what the teacher is talking about

Motor Abilities

47. motor coordination (3 responses)
48. handwriting (3 responses)
49. coloring
50. eye-hand coordination

Personality

51. peer relationships
52. attention span
53. maturity (3 responses)
54. creative
55. attitude
56. ability to work together
57. actions--general behavior
58. how often they raise their hand
59. paying attention
60. anxious to please
61. ability to finish work
62. ability to sit still
63. follows directions easily
64. not always busy with neighbor
Personality (Continued)

65. whether or not he fidgets when teacher reads a story
66. emotional stability
67. response to the teacher when she plays games with him
68. excited about learning
69. "ready" for school
70. out-going-ness
71. awareness

Miscellaneous

72. intuition
73. kindergarten teacher's opinion
74. lots of little things
75. own judgment
76. picks out those capable of going on
77. accumulative records
APPENDIX J

Worksheet - Second Interview

School ___________________ Teacher ___________________

Language

Is he able to use language effectively?

1.
2.
3.
4.
5.

Does he speak standard English?

1.
2.
3.
4.
5.

Does he seem to understand what is said in class?

1.
2.
3.
4.
5.

Does he speak confidently and fluently or does he hesitate and stutter as he speaks?

1.
2.
3.
4.
5.

Does his vocabulary seem well or poorly developed?

1.
2.
3.
Does his vocabulary seem well or poorly developed? (Continued)

4.
5.

Other

1.
2.
3.
4.
5.

Intellectual

What do you see as his intellectual strengths and weaknesses?

1.
2.
3.
4.
5.

Is he able to "read" a picture?

1.
2.
3.
4.
5.

Does he seem to be able to identify signs and posters?

1.
2.
3.
4.
5.

Does he know his alphabet?

1.
2.
3.
4.
5.
Does he know how to read at all at this point?

1.
2.
3.
4.
5.

Does he know his numbers from 1-20?

1.
2.
3.
4.
5.

Is he able to copy a simple form?

1.
2.
3.
4.
5.

Is he able to match similar shapes?

1.
2.
3.
4.
5.

Other

1.
2.
3.
4.
5.

Personality

Does he play well with other children?

1.
2.
3.
4.
5.
Does he work well independently?

1.
2.
3.
4.
5.

Is he able to complete a given task?

1.
2.
3.
4.
5.

Is he obedient and polite to you and other adults?

1.
2.
3.
4.
5.

Does he keep his desk neat and orderly?

1.
2.
3.
4.
5.

Other

1.
2.
3.
4.
5.

Appearance

Is he neat and clean?

1.
2.
3.
4.
5.
Are his clothes new or old?

1.
2.
3.
4.
5.

Is his hair neat or sloppy looking?

1.
2.
3.
4.
5.

What is his body build?

1.
2.
3.
4.
5.

Does he wear glasses?

1.
2.
3.
4.
5.

Average, older or younger than classmates?

1.
2.
3.
4.
5.

Race

1.
2.
3.
4.
5.
Hair color?

1.
2.
3.
4.
5.

Other

1.
2.
3.
4.
5.

Family

Oldest, youngest, middle, only child?

1.
2.
3.
4.
5.

Living with both parents?

1.
2.
3.
4.
5.

Where father works?

1.
2.
3.
4.
5.

Does mother work?

1.
2.
3.
4.
5.
Did he attend preschool?

1.
2.
3.
4.
5.

Did he attend kindergarten?

1.
2.
3.
4.
5.

Not from the Interview

Birthdate

1.
2.
3.
4.
5.

Days absent from kindergarten

1.
2.
3.
4.
5.

Days absent from first grade (first days of school only)

1.
2.
3.
4.
5.

Information from readiness test scores

1.
2.
3.
4.
5.
APPENDIX J

Rankings and Comments from Interview II

by Reading Group Placement

Teacher ______________________  Student ______________________  Group # ___

Language: Total ranked scores _____ _____

Speaks Standard English Yes No
Understands what is said in class _____ _____
Speaks confidently _____ _____
Vocabulary _____ _____
Other _____________________________

Intellectual: Total ranked scores _____ _____

Reads a picture _____ _____
Identifies signs _____ _____
Knows alphabet _____ _____
Knows how to read now _____ _____
Knows Numbers _____ _____
Can match similar shapes _____ _____
Test scores _____ _____
Other _____________________________

Motor: Total ranked scores _____ _____

Copy simple form _____ _____
Cut, paste, color _____ _____
Handwriting _____ _____
Other _____________________________

Personality: Total ranked scores _____ _____

Plays well with others _____ _____
Works independently _____ _____
Completes a task _____ _____
Obedient and polite _____ _____
Desk neat _____ _____
Smiling _____ _____
Other _____________________________

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Appearance: Total ranked scores

Neat and clean
Clothing Old New
Hair
Other

Biological

Height
Weight
Glasses No Yes
Race
Age: Before 10-66; 10-31-66 to 3-31-67; 4-1-67 to 9-30-67
Hair color

Family

Oldest; middle; youngest; only
Family
Father works
Mother works

Educational

Preschool Yes No
Kindergarten Yes No
Days absent from kindergarten
APPENDIX K

The List of Characteristics Given by Teachers Describing
The Characteristics of Children in Groups One and Three

Group 1

Appearance
1. neater in appearance

Biological (no characteristics listed)

Educational (no characteristics listed)

Family
2. parents are more interested (6 responses)

Intellectual
3. already had word knowledge (2 responses)
4. did not need as much work on sounds (5 responses)
5. knew math concepts better (3 responses)
6. knew alphabet (6 responses)
7. could read a little (3 responses)
8. knew 15 basic words
9. described a picture better (2 responses)
10. drew complete figures of people
11. better visual discrimination and perception
12. knew how to apply sounds to words
13. not challenged by cut, color, paste activities
14. good in word attack skills
15. excelled in everything
16. can decode and sound out words (2 responses)
17. interested in meaning of words
18. catches on to new concepts quickly (6 responses)
19. knew left to right
20. mature response to questions
21. noticed beginning letters
22. matched shapes better
23. did well on the Metropolitan Readiness Test

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Language
24. used language more effectively—orally and written (12 responses)
25. better vocabulary
26. better listeners (6 responses)

Motor
27. wrote better (2 responses)
28. better motor skills (3 responses)
29. colors better

Personality
30. enthusiastic
31. attention span longer (5 responses)
32. interest in reading
33. more curious, eager
34. well liked by peers
35. mature
36. don't always get along with peers
37. completes work well
38. follows directions
39. neater
40. patient
41. work at a faster rate
42. somewhat snobbish
43. worked independently
44. better behaved
45. pays attention
46. more cooperative
47. self-reliant
48. works hardest
49. self-motivated
50. don't mind making mistakes (2 responses)

Group 3
Appearance (no characteristics listed)
Biological (no characteristics listed)
Educational (no characteristics listed)

Family
1. may lack background experiences
2. parents not so interested (2 responses)
3. maybe don't have books
Intellectual

4. do not hear sounds (4 responses)
5. things don't come easy to them (4 responses)
6. can't see that what they are doing now will lead to reading later
7. only described surface items in a picture (3 responses)
8. drew stick figures
9. know sounds but can't apply them
10. loves cut, color, paste activities (as opposed to "reading" activities)
11. confused letters and words
12. would rather do activities other than reading
13. still in alphabet stage
14. don't know letters
15. low I.Q.
16. can't remember
17. don't know a whole lot
18. did poorly on the Metropolitan Readiness Test
19. needed work on left to right
20. needed work on number identification

Language

21. language was often "silly"—moved away from the subject (2 responses)
22. poor vocabulary
23. difficulty expressing themselves (4 responses)
24. don't listen as well
25. don't use sentences
26. more talkative

Motor Ability

27. poor motor development
28. can't write name well

Personality

29. take longer to get quiet (3 responses)
30. not as interested (5 responses)
31. cannot work in a group
32. more active (3 responses)
33. discipline problems (2 responses)
34. not so well liked by peers
35. must give directions over
36. eager to read but can't do anything about it
37. can't follow through
38. over-anxious
39. less patient
40. don't always finish work
Personality (Continued)

41. more humble
42. shyer
43. lack of aggressiveness (2 responses)
44. poor self image (2 responses)
45. may do messier work
46. give up easily
47. don't know what to do when finish their work
48. not motivated
49. have to be told what to do
50. immature
51. not independent (2 responses)
52. generally lazy
53. short attention span
54. more emotional type problems
55. not so self-confident
56. never quite ready for something new
57. not so anxious to share
58. won't ask for help
APPENDIX L

Summary of Characteristics of Children Perceived by the Teachers to have Changed

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Total</th>
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<tbody>
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<td>Appearance</td>
<td></td>
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<tr>
<td>Intellectual</td>
<td></td>
<td></td>
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<tr>
<td>General Improvement</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Reads a Picture</td>
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<td>3</td>
<td>4</td>
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<td>Identifies Signs</td>
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<td>Knows Alphabet</td>
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<tr>
<td>Matches Shapes</td>
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<td>3</td>
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<tr>
<td>Knows Numbers</td>
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<tr>
<td>General Improvement</td>
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<td>6</td>
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<tr>
<td>Understands What is Said</td>
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<td>4</td>
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<tr>
<td>Speaks Confidently</td>
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<td>Vocabulary</td>
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# APPENDIX L (Continued)

**Summary of Characteristics of Children Perceived by the Teachers to Have Changed**

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<td><strong>Motor Ability</strong></td>
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<td>Copy Simple Form</td>
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<td>Cut, Color, Paste</td>
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<td>Handwriting</td>
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<td><strong>Personality</strong></td>
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<tr>
<td>Plays Well</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Works Independently</td>
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<td>4</td>
<td>18</td>
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