

THE RELATION BETWEEN IMPROVEMENT IN READING ACHIEVEMENT  
AND SELF-CONCEPT IN FIFTH-GRADE GROUPS

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

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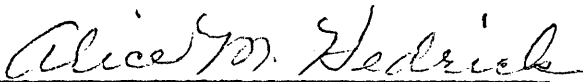
In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts in Education

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by  
Alice Margaret Hedrick  
August 1971

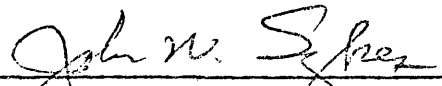
APPROVAL SHEET

This thesis is submitted in partial fulfillment of  
the requirements of the degree of  
Master of Arts  
in Education

  
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## ABSTRACT

The purpose of this study was to (1) investigate the effects of two different treatments on improvement of reading skills, and (2) investigate the relationship of self-concept and reading achievement. It was hypothesized that there would be no significant difference between experimental groups following differing treatments. It was also hypothesized that there would be no significant difference between experimental groups and a control group following treatment. A third hypothesis was that there would be no positive relationship between reading achievement and self-concept.

Four groups were formed with subjects randomly selected from a fifth-grade population numbering 126. Group A was designated "mechanical," Group B was designated "attention," Group C was designated "non-mechanical" and Group D was the control group. Groups A, B and C met three times per week, for thirty minutes at each meeting. Length of the experiment was seven weeks. Sixteen subjects in each group remained at the end of the experiment.

Data were analyzed by means of a two-way analysis of variance. It was shown that there were no significant differences between groups or among groups, and the three null hypotheses were accepted.

## ACKNOWLEDGEMENTS

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## CHAPTER I

### INTRODUCTION

Man communicates through symbols. Physical symbols may range from a nod to an eloquent oration; traffic lights and billboards are other representations perceptible to the senses--and all are symbols which make communication possible. In reading, visual symbols are used to represent sounds which are, in turn, symbols of meanings. Thus the process of reading involves a hierarchy of skills ranging from auditory and visual discrimination to such higher order mental activities as organizing ideas, making generalizations and drawing inferences. Reading is essential in our complex system of social arrangements. More than that, it is a means of recreating the past; it has made communication possible from one era or age to another. Public concern with reading ability is evident in the many books, articles and comments devoted to the subject (DeBoer & Dallman, 1970, pp. 3-13).

Reading is not a single skill, but embraces a wide variety of tasks, activities, skills and mental processes. Theorists and researchers have investigated numerous facets of the reading process, and are far from agreement over many questions concerning reading. There is, however, widespread agreement that reading

is an indispensable factor in modern life, interwoven with work, recreation, and other activities of young people and adults. Its great value lies in two facts: printed materials provide the most illuminating and

varied records of human experience that are now available; and they can be examined and restudied time and again at the reader's convenience in acquiring clear understandings, in developing rational attitudes, and in reaching sound conclusions. Some of these values cannot be attained so effectively through other media because the individual is not free to pause and deliberate at will (Gray & Rogers, 1956, p. 8).

The importance of proficient reading becomes clearer when its role in various aspects of a person's life is considered. Reading plays a vital part in daily activities, progress in school and in personal and social adjustment. In reference to the responsibilities of citizenship, a positive relationship can be shown between voter participation and level of education (Bone & Ranney, 1967, p. 20).

Reading is recognized as one of the most important skill areas in the elementary school. Skill in reading is an essential tool for learning and for progress through school levels (Bond & Tinker, 1967, p.5). Writers and researchers in education appear to be in agreement as to the economic importance of education, both to the individual and to society in general. Considered only from a financial standpoint, the rate of return on a college education is clearly in excess of ten per cent, while the rate of return on alternate investments is considerably lower (Innes, Jacobson & Pellegrin, 1965, p. 41).

There has been both private and public concern that many individuals do not attain a level of skill which makes it possible for them to function effectively in situations which require reading. It is gradually becoming evident that many of the difficulties which

people experience in life are closely connected with the ways in which they see themselves and the world in which they live. Faulty perceptions of themselves and the world may cause students' failures in basic subjects (such as reading); misdirected motivation; and the lack of commitment characteristic of the underachiever, the dropout and the socially disabled (Purkey, 1970, p.2).

#### Statement of Problem and Hypotheses

With research and other writings as guides and encouragement, the present study was conceived, designed and implemented. Fifth-grade groups were given differing treatments in reading skills, and were also tested for self-concept. The purpose of the study was to investigate the effects of two different treatments on improvement of reading skills, and to also investigate the relationship of self-concept and reading achievement. From this problem, three hypotheses evolved. The first hypothesis was that there would be no significant difference between experimental groups following differing treatments. The second hypothesis was that there would be no significant difference between experimental groups and control group following treatment. The third hypothesis was that there would be no positive relationship between reading achievement and self-concept.

#### Limitations

As with many studies, there were some limiting factors. Students from five classes, with five different teachers, were included; there may have been uncontrolled and unknown variables

involved. The abbreviated time of the experiment was a definite limitation. Time available for testing procedures limited the choice of testing instruments. Different third-grade classrooms were used each day as their usual occupants were engaged in art class, and this arrangement limited both materials and activities to some extent, and required extra "orientation" time each day. Other activities in which fifth-grade classes were participants caused cancellation of several meetings, and were responsible for some absences. Some of these difficulties and limitations had been recognized at the beginning, and others arose as the experiment was in progress.

#### Organization of Paper

The remainder of the paper is organized in the following manner:

Chapter II. Related Literature

Chapter III. Method of Investigation

Chapter IV. Analysis of Data

Chapter V. Conclusions, Limitations and Implications

Additional data are located in the Appendix, and a list of references constitutes the last section of the paper.

## CHAPTER II

### RELATED LITERATURE

#### Reading, Intelligence and Academic Achievement

Berry, Barret and Powell (1969) state that "Ability to read is almost universally regarded as an essential tool for learning in school, for achieving the power to pursue knowledge independently and for promoting personal enrichment and fulfillment [Preface]."

Havighurst (1959) postulated that lack of mastery of the reading task was the greatest handicap a child in our society could have. Intellectual deprivation, due to a lack of reading, was described as one part of a three-fold deprivation which produced inadequate adults, who would in turn serve poorly as parents. Many children who were products of a deprived situation were also potential delinquents. Havighurst further concluded that learning to read is one of the developmental tasks of our society.

Shafer (1948) found that achievement in the tool subjects such as reading, English and math had been recognized for some time as being of the utmost importance to scholastic success. Despite the common recognition of the problem, the literature in the field at that time lacked sound, empirically based findings and descriptive information concerning the effects of deficiencies in tool subjects.

The literature reviewed in conjunction with the present

study has been limited to selections from research and writings published since 1940. The focus has been (1) on those studies which investigated relationships between reading, intelligence and/or academic achievement and (2) on studies which explored the relationship between self-concept and success or failure in reading.

Harootunian (1966), in an investigation of intellectual abilities and reading achievement, used 513 students in seventh- and eight-grades as subjects. Fifteen predictor tests were administered. Product-moment coefficients of correlation were computed. The coefficient of multiple correlation between reading and the combined variables was .781, and between reading and Intelligence Quotient as determined by the California Test of Mental Maturity, Long Form, was .558. The substantial relationship between intelligence and reading was the expected outcome of the study.

A longitudinal study of young adults ten to fifteen years after severe reading disability showed that those who had become adequate adult readers had been the least disabled. Although a post-high school education had not been considered a realistic goal, most of the subjects did at least graduate from high school, and some went on to vocational education or a year or two of college. In so doing, they surpassed the educational record of their fathers. They did not, however, surpass the occupational record of their fathers (Balow & Blomquist, 1965).

Geoffrey (1968) investigated the relationship between reading achievement and three variables: (1) Certain environmental factors; (2) Parental occupation; and (3) Verbal intelligence. Sixty fifth-grade children, chosen by random selection, comprised the

experimental population. Correlations were computed among all variables for the total sample, and by social class and sexes separately; also for the total sample and for boys and girls considered separately. Reading achievement was strongly related to verbal intelligence, and to a lesser degree was related to parental occupation and visits, which comprised part of the first variable, certain environmental factors. Verbal intelligence contributed significantly, at the .05 level, to the multivariate prediction of reading achievement.

Durkin (1966), in longitudinal studies of early readers, found that, over time, the average achievement of early readers (those who read before entering first grade) remained significantly higher than the average achievement of equally bright children who were not reading at their entrance into the first grade. I.Q., as measured by Stanford-Binet scores, ranged from 91 to 161 in the first study, with a median of 121, and from 82 to 170 in the second study, with a median of 133. Findings for the first study showed that at the close of the fifth year, 15 children who had been double-promoted had a median I.Q. of 135, a reading-grade level of 9.3 and a correlation between reading achievement and intelligence of .84. Thirty-four children not double-promoted, with a median I.Q. of 112, had a reading-grade level of 7.2 and correlation of .72.

At the end of three years in the second study, 25 double-promoted subjects, with a median I.Q. of 137, had a median reading-grade level of 7.8 and correlation between reading achievement and intelligence of .65. One hundred thirty-one subjects not double-

promoted, with a median I.Q. of 133, had a median reading-grade level of 5.8 and correlation of .38.

Sutton (1969) reported a study similar in some respects to Durkin's. Children who, upon entering the first-grade, scored .3 or higher on the Gates Primary Reading Achievement Test comprised an experimental group, or Group A. Subjects had a mean I.Q. of 115.5, as measured by the SRA Primary Mental Abilities Test, with a range of 98-141. Group B, which did not score on the reading test, had a mean I.Q. of 101.5 and a range of 70-145. The two groups varied in mean chronological age by one month. At the end of three years of school, Group A, with a mean I.Q. of 115.5, had a median score of 6.0 grade level on Gates reading tests. Group B, with a mean I.Q. of 101.6, scored just over 4.0 on Gates reading tests. Group C, consisting of children who had transferred to the school after the start of the study, had a mean I.Q. of 104.4 and achieved 4.5 on the reading tests. The early readers had experiences in reading during the second part of the kindergarten year. Such experiences were limited to fifteen minutes per day for a maximum total of twenty hours; for many of the children it was much less. Sutton concluded that the resulting early reading advantage continued and increased as the children advanced through the primary grades.

Reading ability in its relation to the SRA Primary Mental Abilities Test was the area of investigation in a study by Marquis (1952). Three hundred and sixty-four children in fourth-grade comprised the sample. The SRA PMAE (Elementary) and Forms L and M of the Iowa Every-Pupil Test of Silent Reading Comprehension, Part I,

were administered. Reading comprehension was determined by the combined scores of the two reading tests. Correlation coefficients were derived from the data and it was found that a "high" relationship existed between Verbal-meaning (total) and reading ability, and between Verbal-meaning (words) and reading ability. A "marked" or "substantial" relationship existed between reading ability and the total score, Reasoning (word grouping), Verbal-meaning (pictures) and Reasoning (total). The components of intelligence which contributed primarily to an estimation of reading capacity were Verbal-meaning (words) and Reasoning (word grouping).

Fuller (1967), in order to understand reading achievement better, evaluated three different factors: visual perception, intelligence and reading understanding. Subjects were 347 seventh-grade students. The Minnesota Percepto-Diagnostic Test (MPDT), the California Test of Mental Maturity (CTMM), the SRA Reading for Understanding (RFU) and the California Achievement Test (CAT) were the measuring instruments used. Means, standard deviations and Pearson product-moment correlations were compiled, and correlation coefficients between reading achievement and three variables were computed. A significance beyond .01 was obtained for each variable. Seventy-six per cent of reading achievement was attributed to visual perception, intelligence and reading for understanding. Reading achievement and intelligence correlated to a high degree, with a correlation of .74.  $r$ 's significance at the .05 level was .10, and at the .01 level was .13.

Humber (1944) found at the time of investigation that

although considerable attention had been given to the demonstration of the association existing between aptitude, motivation and other factors and achievement in academic fields, less attention had been given to the contribution of reading efficiency to scholastic success. He concluded (1) that scores on reading tests used in the investigation were frequently related to achievement in the humanities groups but infrequently related to achievement in those curricula emphasizing science material and (2) that when a student at the University within the sample reached the senior year, the difference between grades was less dependent on scholastic aptitude than on factors such as reading efficiency.

Anderson & Dearborn (1941) attempted to determine if differences in reading ability which varied independently of intelligence affected scholarship. Other studies had attacked the problem at elementary and high school level. This investigation was conducted on a college level. The problem was to determine if there was a significant relationship between reading ability and achievement, even when intelligence was held constant. Sixty-eight paired subjects were matched for intelligence, as measured by the Scholastic Aptitude Test, but differed in scholarship, which was measured by course marks. Subjects were freshmen enrolled in freshman courses which required the most reading. Subjects were paired with others from the same courses and same sections of the courses, if more than one section existed. After selection, a battery of reading tests was administered. Tests used were the Nelson-Denny Reading Test (paragraph meaning), the Iowa Silent Reading (paragraph meaning, paragraph organization and rate of

reading), and Whipple's Reading Test. Results showed that there was a positive relationship between reading ability and college achievement even when variables independent of intelligence were considered. Consistency of the results was considered to be, in itself, a measure of significance, and this was felt to be a reinforcement of the conclusions.

Dale (1969), in discussing the future of reading, stated that reading is the most effective way to interconnect, interrelate, integrate and evaluate all our learning. The future of reading is endangered by narrow perspectives. Good readers need to be flexible in reading skills--able to "change gears" to fit changed purposes in reading.

Some studies showed a high degree of relationship between intelligence and the use of the various skills needed for reading. Smith (1963, p. 260 & p. 455) has stated that a child's intelligence is one of the strongest contributory factors to beginning reading maturity, and has cited early (prior to 1940) research in support of her position.

DeBoer, et al., (1970, p. 24 & p. 177), reaffirms the relationship between intelligence and the ability to read. Part of the relationship is attributed to cultural background, but whatever the reasons, it has been demonstrated that in our culture, and under present conditions in American schools, a child has a better chance of success in reading if he has average or above average intelligence. A child's ability to comprehend in reading is limited by the conceptual "load" that his mental ability enables

him to carry. All of the mechanical reading skills in the world will not enable him to read materials involving abstractions beyond the level of his mental development. The slowest learner can grow in comprehension, but the growth may be very slow.

Reading difficulties and disabilities, however, are not confined to those of lower-than-average intelligence. The average and above-average person may be woefully inadequate in his reading skills, and may also be unable to improve his condition--or able to improve only after the expenditure of much time and effort by himself and those associated with him.

Spache (1969, pp. 56-57) warned against too much dependence on I.Q. as a predictor of reading success. He suggested that the climate and procedures of the classroom were reflected to a greater extent than the child's intelligence in the child's reading achievement, and that teachers' expectations based on the intelligence test results tended to limit their pupils' achievement.

### Reading and Self-concept

In recent years the role of self-concept as a vital factor in school and career development has assumed an increasingly important position in theory and research. Educators and psychologists have become aware of the apparent relationship between self-concept and reading success or failure. A number of studies and articles dealing with the subject of self-concept and reading were found; many of the studies examined, however, were contradictory or non-conclusive. The term "self-concept" may not be understood by all in the same manner. Some researchers referred to self- image

or self-perception as well as self-concept. This variation in terms brings about semantic confusion.

Confusion of terms is only one part of the problem. There are many difficulties to be overcome in measuring self-concept and in dealing with the complexities of social interaction. Attempts to define and measure the self-concept have led to the use of numerous personality tests utilizing identical or similar labels with implied equivalency in construct. Vincent (1968) has undertaken a study of three instruments used in the measurement of self-concept and has found some similarity in construct definition and validity for four factors of the seven analyzed. The three tests showing similarities were the Security-Insecurity Inventory, the Sixteen Personality Factor Questionnaire and the Tennessee Self-Concept Scale. All were standardized tests. A fourth test, also standardized, was found to be almost totally unrelated to the other three. This test was the California Psychological Inventory.

A review of some definitions of self-concept is necessary before proceeding. Pietrofesa (1969) stated that:

Self-concept, a composite of numerous self-percepts, is an hypothetical construct, encompassing all of the values, attitudes and beliefs towards one's self in relation to the environment. The self-concept influences and to a great degree determines perception and behavior [p. 37].

Combs and Snygg, in Individual Behavior (1959), indicated that how we act in any given situation depends on how we perceive ourselves and how we perceive the situation in which we are involved (pp. 16-18).

Bodwin (1957) defined self-concept as

a developmental phenomenon whose final stages included incorporation and identification. Any interruption in this developmental process limited and distorted the subsequent incorporation, identification and therefore learning [p. 1645].

A definition offered by LaBenne and Greene is as follows:

"Self-concept is the person's total appraisal of his appearance, background and origins, abilities and resources, attitudes and feelings which culminate as a directing force in behavior [p. 10]." In addition to investigating various definitions of self-concept, LaBenne and Greene also studied various tests purporting to be instruments for determining self-concept, and concluded that measures could not be taken as equivalent unless it could be shown that they were highly related. When self-report was used as a measure, then the study was of self-report rather than self-concept. Self-concept is how the individual sees himself, and self-report is what he is willing to say about himself; the two may be very different and this should be considered in the evaluation of studies on self-concept.

This confusion also makes the classroom teacher's job more difficult. With the growing awareness of the importance of the way a person sees himself in relation to school, career and all of life's situations, there is a growing demand that schools provide more meaningful opportunities for individual development. Kunz (1969), in a discussion of the ways in which teachers can provide some opportunities for development, emphasized the importance of relating reading to the child's life experiences. She pointed out that the teacher should have a three-point goal in teaching. The points are:

(1) awareness of the student's self-image, (2) awareness of the skills necessary for reading, and (3) knowledge of the subject matter being taught. Kunz concluded that schools do need to provide experiences which will help people to develop as individuals rather than as stereotyped conformists, and that teachers can be instrumental in accomplishing this goal as they teach children the tools for reading.

Kokovich and Matthews (1971) re-affirmed the importance of self-concept in the reading program. Their question was: Could a program of cross-age tutoring and counseling improve a student's self-image, change his attitude toward learning, and increase his reading skills? A study was devised, using sixth-grade pupils who had repeatedly met with failure and had low reading scores as tutors or "student listeners" for first-graders with reading problems. Data was compiled through pre-program and post-program testing, as well as teacher observations and interview techniques. The FAB Scale and the 101-A Self-Inventory Scale were the instruments used. Five students were selected as tutors. All were boys, with an indication of average or above-average mental ability and an indifferent attitude toward school; some had behavior problems and all were experiencing reading difficulties. First-grade children were selected who were experiencing difficulty and frustration with reading and who might benefit from a peer relationship on a one-to-one basis. The program also included a weekly group session with the school principal for the "student listeners." All of the "listeners" had gains in reading, as shown by the Gates Reading Survey. The boy with the least gain was the one who was able to alter very little in his self-concept. It was

difficult to determine if behavior changes, which were also noted, were due to work with younger pupils or to the counseling sessions with the principal. A follow-up report showed four of the five "listeners" making satisfactory progress at their grade level in high school. The fifth dropped out of school. A similar situation prevailed with the first-graders who were being tutored. Four of the five were making average or above-average gains academically, while the fifth had severe emotional problems due to a traumatic home situation.

Bodwin (1957) investigated the relationship between immature self-concept and certain educational difficulties, mainly reading and arithmetic. The method of evaluation was the Draw-A-Person Test (SCS-DAP), and the research group consisted of three hundred subjects. Of the subjects, one hundred had reading disability, one hundred had arithmetic disability, and one hundred had no educational disability. The SCS-DAP was administered to the subjects, achievement test results were obtained, and correlations were calculated between reading and arithmetic disabilities and SCS-DAP scores. The differences and significance of difference between some of the correlations were also calculated. The following conclusions were shown from this study:

1. A positive and significant relationship existed between immature self-concept and reading disability. The correlations obtained on this part of the investigation were .72 on the third-grade level and .62 on the sixth-grade level, both of which were significant on the one per cent level of confidence.

2. A positive and very significant relationship existed between immature self-concept and arithmetic disability. The correlations obtained on this part of the investigation were .78 on the third-grade level and .68 on the sixth-grade level, both of which were significant on the one per cent level of confidence.

3. The relationship between immature self-concept and reading and arithmetic disability was greater than the relationship between immature self-concept and disability in other school subjects.

4. The relationship between immature self-concept and reading disability was somewhat less, although not significantly so, than the relationship between immature self-concept and arithmetic disability.

5. The relationship between immature self-concept and reading and arithmetic disabilities was greater on the third-grade level than on the sixth-grade level. This indicated the presence of age differences in the relationships.

Does one achieve higher because of a higher self-concept or does one have a higher self-concept because he achieved higher? Caplin (1969) investigated the problem in a study of the relationship of self-concept to achievement in reading by fifth-grade children. The sample group consisted of 180 intermediate grade children from the three elementary schools of a small city in northern New Jersey located near New York City. One of these schools was a de facto segregated school, with a large percentage of black students. The second school was newly desegregated by transfer of black children to the school. The third had been desegregated for many years because of the housing pattern in the neighborhood. The instrument used was a self-report technique as developed at the Horace Mann-Lincoln

Institute of School Experimentation, Teachers College, Columbia University. Analyses of variance were computed on the scores representing self-concept for the entire group, for the girls separately, for the boys separately, among the white pupils, among the black pupils, between the white and black pupils and between girls and boys. Correlations were calculated between the scores on the self-concept instrument and the standard composite scores on the Iowa Test of Basic Skills. The major focus of this study was academic achievement and its relation to self-concept. It was hypothesized that children, both white and black, attending a de facto segregated school have less positive self-concepts than do children attending desegregated schools, and that there is a significant positive relationship between self-concept and academic achievement. Analysis of the data supported the hypothesis.

The purpose of the study conducted by Prows (1967) was to investigate whether a reading consultant, through working with teachers in a classroom, could help teachers become sensitive to the child's self-concept. An additional purpose was to determine whether the teacher would attempt to build positive self-concepts in the children, and as a result of this, increase achievement in reading. The Rosenzweig Picture-Frustration Study was used to measure the self-concept. This was supported by parent questionnaires, a pupil questionnaire and observations of the experimental teachers relating to changes in the students. The word meaning scores and paragraph meaning scores from the Stanford Achievement Test: Intermediate Battery were used to measure reading achievement. Two fourth-grade classes in a rural school constituted the experimental groups, and a control

group, also fourth-grade, was located in a different school with a comparable socio-economic background. Both experimental groups showed a significant change toward a more positive self-concept. The control group showed no significant change. There was no significant difference in the reading achievement of the three groups.

Carlton and Moore (1968) developed self-directive dramatization for use in a regular classroom. This was done in an attempt to transfer some of the successful techniques used in clinical situations to activities which could be used by the classroom teacher to build more positive self-concepts in the pupils. The desired result was an increase in reading achievement. Self-concept was defined as "involving what a child thinks he is, what he thinks he can do, what he thinks he cannot do [p. 11]." This definition provided the justification of good self-concept as a factor in reading. The technique used was defined:

Self-directive dramatization of stories refers to the pupil's own original, imaginative, spontaneous interpretation of a character of his own choosing in a story which he selects and reads cooperatively with other pupils in his group which is formed for the time being and for a particular story only [p. 10].

A list of self-concept questions was checked by the teacher during the three weeks prior to the beginning of the self-dramatization period, which usually lasted for three and one-half months. The list was re-checked at the end of the period to investigate whether changes in self-concept had taken place.

Experimental classes ranged from grade two to grade seven. Classrooms were located in a rural school, a laboratory school, and in middle-class and lower-class neighborhoods in small and large cities. Teachers were prepared by experience, and by instruction in the

techniques. Significant gains were achieved in reading in all grades during the experiment. The number of questions checked on the self-concept question lists decreased, which showed gains toward more positive self-concepts. The per centage decrease ranged from 72 to 86 per cent, by groups. Using Spearman's rank order correlation in grade seven, and the point biserial formula for other grades, a correlation between progress in reading and changes in self-concept was found in all grades except the seventh. In an experiment with culturally disadvantaged pupils, similar gains in self-concept and reading were found. Gains also were noted in other subjects. The investigators stated that when a skillful teacher was combined with a reading program focused on self-directive dramatization, the stage was set for learning experiences which would result in improved reading skill and more stable and wholesome personality (p.100).

Hake (1969) developed a projective instrument, the Reading Apperception Test, in order to evaluate covert motivations in contrast to overt behavior symptoms related to reading situations. Eighty sixth-grade pupils of average intelligence as tested by standardized intelligence tests acted as subjects for the study. Using the reading scores obtained on the California Achievement Test, the subjects were then divided into two groups designated as "below-average" and "above-average" readers. Thirty-six of the subjects were boys and forty-four were girls. The below-average reading group contained a larger number of boys than girls. Pupils who were undergoing psychological treatment were not used as subjects. As a result of a pilot study, ten pictures were selected. These pictures depicted children in various

reading situations; the subjects were told that this was a test of their imagination, and they were to tell the most interesting stories they could relate to the pictures they saw. Each subject was assured that his stories would not be graded or scored in the usual manner of school work, and that teachers would not see or hear the stories. The measuring instrument was found to be reliable by test-retest method; Spearman's Rank Correlation Coefficient was the statistical means employed to test reliability. Scores of the two groups were analyzed, using the Mann-Whitney U Test. It was found that below-average readers in the sixth-grade exhibited significantly more negative covert motivations than did their above-average peers. Similarly, when the overt behavior of the two groups was compared, the poor readers displayed more negative classroom behavior as perceived by their teachers. The investigator reported that the study supported earlier studies in finding that poor readers exhibited more negative desires and wishes and more maladjustive classroom behavior than did good readers. He concluded that classroom teachers and reading clinicians should not only be concerned about the poor reader's word recognition problems, but should be equally sensitive to the emotional difficulties shown by poor readers.

Cheatham (1968) hoped to determine whether group counseling, when used in conjunction with remedial-reading instruction, was an effective technique for improving self-concept and reading efficiency of low-achieving readers in a public intermediate school. Subjects were twelve students--six boys and six girls--selected from sixty seventh- and eighth-graders receiving remedial-reading instruction. Random

selection was used to separate the twelve subjects into experimental and control groups. The experimental group received counseling and also participated in the remedial reading. The control group received remedial-reading instruction but no counseling. Changes in self-concept and in reading efficiency were measured by the California Test of Personality and by the Nelson Reading Test, respectively. Data were test scores assigned to each student. Findings were that group counseling did not significantly change self-concept, nor did it significantly change reading performance of low-achieving readers. Group counseling was considered responsible for statistically significant change in relationship that developed between self-concept and reading efficiency.

An investigation of the age differences and sex differences in the relationship between self-concept and grade-point average was conducted by Bruck(1957). The instrument selected to measure self-concept was the Machover Draw-A-Person Test (SCS-DAP). The subjects were 300 third-,sixth- and eleventh-grade students, evenly divided as to sex. Grade-point averages were calculated and relationship determined. Three conclusions were derived from the experiment; a positive and significant relationship existed between self-concept and grade-point average on all grade levels ranging from the one to the five per cent level of confidence; there were significant age differences in the relationship between self-concept and grade-point achievement when comparison was made between early elementary and senior high students and later elementary and senior high students, but there was no significant difference in the relationship between early and late

elementary school subjects; and there were significant sex differences when early elementary pupils were compared, also when senior high pupils were compared, but there was no significant sex difference when later elementary school pupils were compared.

The purpose of a study by Nichols (1968) was to determine if significant observable changes occurred in reading achievement, self-concept, and attitudes toward school in a group of children from culturally disadvantaged areas as a result of receiving tutoring by university students. Gains made by an experimental group of fifty-three intermediate grade students were compared with a control group of a fourth-grade from one of the three schools involved in the study. Comparison was also made with a fifth-grade from a second school and a sixth-grade from a third school. Instruments used were The Gates-MacGintie Reading Tests, Primary C or Survey D; Sears Self Concept Inventory; Sears Attitude Scale, "Attitude Toward Subject Areas and Classroom Activities"; and an informal questionnaire. No significant differences were found in the amount of change between the groups to whom the Gates-MacGintie Primary C comprehension and vocabulary sub-tests were administered. No significant difference was found in groups to whom the Gates-MacGintie Survey D comprehension sub-test was administered, but a significant difference at the .01 level of confidence was found on the vocabulary sub-test favoring the control group. Review of the questionnaires revealed that parents, teachers and tutors felt that the tutoring sessions were valuable. Parent questionnaires showed that eighty-eight per cent felt tutoring helped the child's reading attitudes, and eighty-five per cent felt tutoring aided self-confidence. More than fifty per cent of teachers and tutors felt that

the tutoring sessions were valuable, reading achievement was improved, attitudes were enhanced and self-concept of the children was improved.

Sebson (1970), in a discussion of self-concept and reading disabilities, had five specific suggestions for teachers which could help them in developing positive self-concepts in their students. Accepting the child as a unique person; helping him to talk about how he feels and thinks; locating areas in which the child can find success; relating school to his life situation; and demonstrating to the child that the teacher cares about them are all ways in which the classroom teacher could help the students. In a similar article, Berretta (1970) stated that an adequate self-concept is an important component of successful reading. An individualized approach would integrate reading instruction and development of positive self perceptions, and thereby meet the individual's needs for learning and for good emotional development.

Lucas (1968) explored the possibility of relationships between the self-concepts of high school students, selected scholastic variables, and their cumulative grade-point averages. Complete data--including intelligence; scholastic achievement; grade nine through twelve g. p. a. and self-concept--was available for 390 students in seven high schools in a metropolitan area. Measures used were: (1) C. T. M. M. Total Index I. Q., (2) sub-tests 3 and 4 of the Iowa Tests of Educational Development, and (3) the Bills Index of Adjustment and Values. The data seemed to support the following conclusions: (1) The self-concepts of high school students are significantly related to g. p. a. (2) The ideal self aspect of self-concept is significantly related to scholastic

achievement. (3) There are significant differences in self-concept between sexes. (4) There are significant differences in self-concept between students grouped according to ability. More adequate self-concepts are associated with placement in more able groups.

Bailey (1971) stated that findings on relationship between a student's self-perception and his academic achievement were inconsistent, but there appeared to be a positive correlation between a favorable self-concept and academic success. The study consisted of 100 subjects, all college students, both male and female, randomly selected. Underachieving and achieving groups were matched on sex, class rank, and scores on a test of college ability. All were considered to be low ability students. Two self-rating scales, developed by the investigator, were used in the study; 486 students in introductory psychology served as a standardization group for the measures. Henmon-Nelson Tests of Mental Ability and grade-point averages were also used as measures. Predictions were that achieving students would have higher self-ratings on ability, higher desired levels of ability, smaller discrepancies between their perceived and wished-for levels of ability and smaller discrepancies between their perceived and actual levels of ability than would the underachieving students with below-average ability. All ability and achievement levels pertained to college. The four hypotheses were strongly supported, and it was concluded that significant differences in self-perceptions of achieving and underachieving students of below-average college ability do exist and have important implications for understanding the role of non-intellectual factors in academic achievement.

Homze (1962) discussed reading and self-concept, and stated that the effects of reading were important but were often overshadowed by the "How-to-do-it" approach to all reading problems. Her purpose was to describe some of the research concerning the general effects of reading and the development of the self-concept, and then draw a hypothetical relationship between the two. The complexity of the task of investigating the effects of reading was given as one reason for neglect in this area. Homze stated that before a child reads, he identifies with people; after learning to read, he selects some of his models from the books he reads. It must also be considered that how well a child reads could influence his self-concept. It was concluded that the interdependence of reading and the self-concept had important implications for education. Children need a wide variety of materials and story situations to relate to, and the freedom to select the book that best fills their immediate appetite.

Wylie (1961), in The Self Concept, reviewed literature, theories and measuring instruments up to 1960. This is a definitive work, giving a comprehensive view of the field at that time. The book is, of course, not limited to studies in relation to reading or academic achievement, but it provides an extremely helpful theoretical background. Wylie found that the empirical researches on constructs concerning the self could not be classified according to theoretically relevant categories because the theories were vague, incomplete and overlapping; and because no one theory had received extensive, empirical exploration. Positive trends were tantalizing, but there was ambiguity in the results, apparent contradiction among the findings of

various studies, and a tendency for different methods to produce different results. The total accumulation of substantive findings was disappointing, especially in proportion to the great amount of work which had been done, and the effort which obviously had been expended. The instruments used in many of the studies tried to cover too much too soon, and Wylie suggested that well-analyzed and more limited measuring instruments were needed. A slow accumulation of information in regard to reliability and construct validity was needed also, if measures were to give a clear meaning.

Purkey (1970) also discussed the problem of measurement of self-concept, but placed more emphasis on the wonderful uniqueness of the self. Like fingerprints, no two people will hold identical sets of belief about themselves. Purkey indicated that this uniqueness helped to explain some of the problems of communication, and also some of the problems incurred in attempts to measure the self-concept.

Piers and Harris (1964) reported a study which was the first step in a systematic effort to develop and standardize a general self-concept instrument which could be used with children over a wide age range. Another purpose of the study was to determine the correlates of self-concept in children. Third-, sixth- and tenth-grade classes in a large school system were used for administration of the test. Reliability was judged with the Kuder-Richardson Formula 21, and as a check, the Spearman-Brown odd-even formula was applied to part of the sample. The instrument has been further refined, and was selected for use in the present study. The test has been carefully developed over a period of several years, and is easily administered in a

relatively short time (about twenty minutes). Reliability and validity as presently established are presented at length in the Appendix.

### Summary

The literature and studies reviewed in this paper constitute only a portion of what has been done in the area. The scope of this representative sample is enough, however, to indicate the importance of the relationships between reading and academic achievement and reading and self-concept. Measurement, especially in the area of self-concept, is a complicating factor. A number of investigators have developed their own instruments, ranging from self-report techniques to ratings secured from others. Such instruments may lack both reliability and validity. Wylie (1961) has cautioned against proceeding without testable hypotheses, even though this may slow the pace of progress in the field. She concludes with a final thought which is very appropriate: "Although interpreting the facts thoughtfully and going beyond them are the most important things, gradualness, drudgery, and patience are the price of attaining those significant increments in factual knowledge from which valid psychological laws may be formed [p. 324]."

Definitions of self-concept also vary, but not to the extent exhibited by the instruments for measuring self-concept. The definition given by Coopersmith (1967) is accepted for this paper: "an abstraction that an individual develops about the attributes, capacities, objects, and activities which he possesses and pursues [p. 20]."

## CHAPTER III

### METHOD OF INVESTIGATION

#### Planning

The present study had its beginnings in an outline which called for differing instructional treatments in reading skills for two or more groups, and an examination of a possible relationship of self-concept to the reading. The proposed study was discussed with the investigator's Graduate Advisor. Permission to conduct the study was granted by supervisory personnel in the Williamsburg-James City County School System. A conference was arranged with Mr. John H. Haas, III, Principal of Norge Elementary School, Mrs. Elizabeth Morie, Assistant Principal and Mrs. Anna Pretty, Reading Teacher at the school. During the conference, the fifth-grade was selected to provide the experimental population. Meeting time and frequency were also decided upon; groups would meet three times each week, with each group meeting for thirty minutes each meeting day. Instruction would be limited to reading for meaning, locating information and related work-study skills.

#### Selection of Sample

The school had just completed administration of a battery of tests to the students, so it was requested that testing time be kept to a minimum. This consideration dictated the final choice of both reading and self-concept tests. The Nelson Reading Test, with a

working time of thirty minutes, could be administered in approximately forty-five minutes. The Piers-Harris Children's Self-Concept Scale could be administered in twenty-five to thirty minutes. Information on standardization, normative data, reliability and validity for both of these test, which were the instruments selected, is found in the Appendix.

The entire fifth-grade group of students was pre-tested with Form A of the Nelson Reading Test (Vocabulary and Paragraph comprehension). The initial testing was accomplished in one day. Random selection of boys and girls from each of the five fifth-grade classrooms produced four groups (A, B, C and D) with twenty subjects in each group. Groups A, B and D were each composed of nine girls and eleven boys, while Group C was composed of ten girls and ten boys. Within groups, each fifth-grade classroom was represented by four subjects. The Piers-Harris Self-Concept Scale was administered to the subjects, and groups were then randomly selected for treatment.

Post-testing followed the same procedure, with the use of Form B of the Nelson Reading Test and a retest of the Self-Concept Scale.

Subjects selected were representative of the school population, which is comprised of black and white students from middle- and lower-middle-class backgrounds. The school itself is located in a small community near Williamsburg, Virginia, and accomodates students from grade one through grade six.

### Time and Location of Meetings

Groups met three times each week for seven weeks with the exception of days already committed to school-wide programs and intramural athletic events. Each group met for thirty minutes per day starting at nine a. m. The same order of A, B and C was followed each day.

Different third-grade classrooms were used in rotation except for two days spent in the school library.

### Treatment of Groups

Group A was designated as the "mechanical group" and all instruction was conducted with the aid of "machines" or "hardware." Instruction was on an individualized, paired or small-group basis.

Group B did not receive instruction and was designated the "attention" group. This group selected, with some restrictions, their own activities, and all members usually engaged in the same activities instead of dividing into smaller groups.

Group C was the "non-mechanical" group. All instruction was on an individualized, paired or small group basis, with no use of mechanical aids. Self-selection and game-type activities were used for this group.

Group D or the control group did not receive any treatment, nor did the subjects meet as a group at any time during the experiment, not even during the testing periods.

## Equipment and Materials

### Group A:

Controlled Reader and accompanying stories and comprehension builders - grade levels 3, 4 and 5

Rateometer

Film strip projector

Individual film strip viewers

Encyclopedia Britannica film strips - study skills and stories - grade levels 3, 4, 5 and 6

Houghton Mifflin and McGraw-Hill study skills film strips - elementary level

Record player and recorded material - songs, stories and historic events

Film projector and film stories

Overhead projector and study skills transparencies

Teacher-made tapes

### Group B:

Prints of works by Renoir, Cassat, Picasso and other well-known artists

Magazine illustrations and advertisements

Records -

Albums by Glenn Campbell and Ray Charles

1812 Overture

Assortment of "soul" music

Story - The Wheel on the School

Films -

Assorted film strip stories

8 mm. silent films - "old time" movies with the  
Little Rascals, Shirley Temple, Abbot and Costello, etc.

16 mm. films - The Hare and the Tortoise, The Loon's  
Necklace

Books -

Hitchcock's Haunted Houseful

Stories and poems on various grade levels - subject  
matter as requested by students

Group C:

Short stories and books - grade levels 3, 4, 5 and 6  
Duplicated materials covering paragraph comprehension,  
parts of a book, library skills and reading for under-  
standing - grade levels 3, 4, 5 and 6  
Games covering various skills; synonyms, antonyms, "a"  
and "an", rhyming words, locational skills, etc., for  
individual or small group participation - grade levels  
two through five.

#### Information given to Subjects

All subjects were assured from the beginning of the testing  
program that activities in the various groups would not affect class-  
room grades, except as they provided useful skills and information.

Teachers were requested to discourage classroom discussion  
of experimental groups' activities.

Subjects assumed, in most cases, responsibility for partic-  
ipation. Self-selection was encouraged and an atmosphere free of  
tension was attempted at all times.

## CHAPTER IV

### ANALYSIS OF DATA

#### Obtained Data

The problem was two-fold: the investigation of the effects of two different treatments on improvement of reading skills and also the investigation of the relationship of self-concept and reading achievement. In order to proceed with the investigation, scores and ranks in groups at the beginning and the end of the experiment were obtained for each subject in two areas. Scores were the result of the administration of Nelson Reading Tests, Forms A and B and a test-retest of the Piers-Harris Children's Self-Concept Scale.

In the interest of brevity, the Nelson Reading Tests will hereafter be referred to as NRT A or NRT B, and the Piers-Harris Children's Self-Concept Scale will be referred to as SCS 1 or SCS 2.

#### Validity and Reliability of Tests

Scores were also obtained from two subtests of the SRA battery administered by the school just prior to the start of the experiment. The two subtests were Reading - Vocabulary and Reading - Paragraph. Together, they produced a total score which was correlated with the total score of the NRT A. Scores were ranked, by classroom groups, and Spearman's Rank Order Correlation Coefficients were computed for each of the fifth-grade classes. The coefficients thus obtained ranged from .415 to .870. Three of the correlations were significant

at the .01 level, and the other two were significant at the .05 level. The data are presented in Table 1. This procedure demonstrated the congruent validity of the NRT, and is supported by correlations exhibited in the Examiner's Manual in which the NRT was correlated with vocabulary and paragraph subtests of the Iowa Tests of Basic Skills. These correlations produced coefficients of .62 to .76 for grades four and six.

Correlations were computed by classrooms, rather than by the entire fifth-grade as a group, in order to decrease the frequency of tied scores which could cause a flaw in the statistical procedure.

#### Test of Hypotheses

The three hypotheses to be tested were:

- (1) There will be no significant difference between experimental groups following differing treatments in reading skills.
- (2) There will be no significant difference between experimental groups and a control group following treatment in reading skills.
- (3) There will be no positive relationship between reading achievement and self-concept.

A two-way analysis of variance was used to determine the divergence of the groups, with the result showing no significance in the obtained F-ratios. The analysis of variance was accomplished with the aid of an IBM System/360 digital computer, and the Galfo Statistics Package. Tables 3 and 4 show the input and output of data from which the values for F were obtained.

Table 1

Correlation between Nelson Reading Test - Form A (total)  
and SRA Reading subtests (total)

Fifth-grade Classrooms	N	Spearman's Rank Order Correlation Coefficient
501	26	.410*
502	23	.850**
503	24	.415*
504	16	.837**
505	27	.870**

\*p < .05

\*\*p < .01

Table 2  
Means and Standard Deviations  
NRT A, NRT B, SCS 1 & SCS 2; Groups A, B, C & D

Group	Test	N	Mean	SD
A	NRT A	16	49.3	20.30
A	NRT B	16	53.6	22.56
A	SCS 1	16	53.0	22.01
A	SCS 2	16	54.9	23.41
B	NRT A	16	48.4	20.15
B	NRT B	16	50.0	22.40
B	SCS 1	16	52.0	22.86
B	SCS 2	16	51.9	22.63
C	NRT A	16	49.4	16.51
C	NRT B	16	55.5	17.40
C	SCS 1	16	52.3	22.20
C	SCS 2	16	54.9	23.52
D	NRT A	16	48.2	20.00
D	NRT B	16	50.8	25.01
D	SCS 1	16	50.9	22.56
D	SCS 2	16	52.0	23.13

Table 3

Analysis of Variance: Input Data  
Differences between groups - Reading Treatments

Treatment	Self-concept			
	High	High Average	Low Average	Low
A	4 -6 8 0	17 1 -1 -3	19 4 6 -1	0 10 12 14
B	11 -3 4 0	-8 8 -3 14	3 0 0 6	-17 14 -4 2
C	5 11 7 9	4 11 10 0	-1 1 3 8	2 3 8 0
D	2 7 6 1	11 0 0 2	11 -2 5 2	0 -6 -5 5

Table 4  
Data Obtained from Analysis of Variance

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Squares
R	3.42188	3	1.14063
T	157.92188	3	52.64063
RT	490.64063	9	54.51563
C	32.79688	3	10.93229
RC	418.26563	9	46.47395
TC	310.26563	9	34.47395
RTC	1171.92188	27	43.40451
Total	2585.23438	63	

Grand mean = 3.60938

$F_{RT} = 1.212$  ( sig. at .05 at 2.84; .01 at 4.31)

$F_c = .252$  ( sig. at .05 at 2.12; .01 at 2.89)

$F_{TC} = .794$  ( sig. at .05 at 2.12; .01 at 2.89)

$F_{RTC} = 1.000$  ( sig. at .05 at 1.74 )

Differences in self-concept scores were computed for each subject. These differences were arbitrarily divided into High, High Average, Low Average and Low cells for each treatment group. The differences obtained from pretest and posttest in reading were then assigned to the same cell in which the subject's self-concept difference fell. These data comprise the input for the analysis of variance. Table 4 shows output and values of F.

### Summary

Following an analysis of variance, it was shown that:

- (1) There was no significant difference between experimental groups following differing treatment in reading skills.
- (2) There was no significant difference between experimental groups and a control group following treatment in reading skills.
- (3) There was no positive relationship between reading achievement and self-concept.

The three null hypotheses were accepted. The implications of these findings are discussed in Chapter V.

## CHAPTER V

### CONCLUSIONS, LIMITATIONS, IMPLICATIONS AND RECOMMENDATIONS

#### Problem and Hypotheses

This paper has investigated the effects of two differing treatments on improvement of reading skills, and the relationship of self-concept to reading achievement. At the beginning of the experiment, three null hypotheses were formulated:(1) that there would be no significant difference between experimental groups following differing treatments in reading skills, (2) that there would be no significant difference between experimental groups and a control group following treatment in reading skills, and (3) that there would be no positive relationship between reading and self-concept. There were no significant differences, and hypotheses (1) and (2) were accepted. There was no significant relationship between reading and self-concept, and the third hypothesis was accepted.

#### Limitations

Limitations recognized from the beginning of the study may have introduced uncontrolled variables into the study. Students from five classrooms were involved and this produced complications of timing and movement of groups. The abbreviated time of the experiment was quite limiting. Use of different rooms each meeting day limited materials and equipment to those items which could be

easily and rapidly moved about. Some subjects were lost from the study because of absence from school at the time when the SCS 1, SCS 2 or NRT B were administered. Others moved away from the school district during the progress of the experiment. Two subjects were arbitrarily dropped from one group in order to equate the size of the groups and make an analysis possible. When samples are small, the error involved in measurement may be disproportionately large, and losses from the groups reduced all groups to sixteen subjects each.

### Implications

All groups showed an increase in reading achievement as measured by the test procedures. This was the expected outcome, as continuous growth in reading achievement should be evident throughout the school year. Groups A and C showed the greatest gains, and although these gains were not significant, it would be extremely interesting to see the results of a similar experiment operating over a longer period of time. The greater gains showed by Group C may be the reflection of greater opportunities for communication between pupils and teacher.

Although there was no significant relationship shown between self-concept and reading achievement, Group C showed greater gains in self-concept than the other groups. Did the increase in reading gains bolster the self-concept, or was an increased self-concept responsible for the reading score gains? The answer to this question is not to be found in the available data. This is an important question in regard to the relationship between self-concept

and academic achievement in all fields. Many of the studies reviewed in Chapter II found a positive relationship and concluded that one was responsible for the other to some degree. The answer as to which is the prior variable must remain inconclusive in this and many other studies. Teacher and investigator opinions, when not supported by empirical evidence, are not sufficient base for conclusions and developmental theory formation.

Another interesting aspect of the study is shown by the behavior of Group B. This group had attention, but no instruction. As a group, they exhibited concern that they were not engaged in formal "learning" activities. This was in contrast to Group C, whose members did not question the use of games or the lack of formal evaluation and grading.

The strong correlation between the NRT (total) and the SRA (total) scores was an expected outcome. Not expected, however, was the wide variation between classrooms as shown by the correlations. There is a marked difference, but the reason is not known.

### Recommendations

All groups showed growth in reading achievement, but the two experimental groups had greater gains than the control and attention groups. A longer study would give a clearer picture of the differences which may be found in reading gains under the different treatments. An even stronger method of investigating the differences in treatments would be achieved by divorcing the reading instruction for the experimental groups from the regular classroom reading instruction, which was not done during the present study.

It is hoped that the study has contributed to knowledge concerning reading improvement and its relation to the self-concept in fifth-grade children. The investigator shares Wylie's (1961) opinion that growth in this area must be achieved by patient, gradual work, coordinated and measured with reliable and valid instruments. Any studies which explore the uses and limitations of instruments in the area of self-concept will be making a contribution to the accumulation of knowledge which is greatly needed.

APPENDIX A  
The Piers-Harris Self-Concept Scale  
Technical Data

Table 5

## Means and Standard Deviations for the Piers-Harris Self Concept Scale

Sample	Age or Grade	N	Mean	SD
Small town Pennsylvania Public School Children (Millen, 1966)	grade 4	275	47.79	15.19
	" 6	265	55.36	13.93
	" 8	231	52.04	13.52
	" 10	221	49.67	12.36
	" 12	191	54.56	12.05
<u>Normative Group</u>	<u>Total</u>	1183	51.84	13.87
Rural and Urban Oregon Public Schools (Wing, 1966)	grade 5	510	59 (median)	10.5 (quartile deviation)
Small town Pennsylvania Public Schools (Piers, 1965)	grade 4	111	60.40	11.40
	" 6	113	54.09	12.71
Spokane Public Schools (Eastman, 1965)	grades 5, 6	36	55.94	-----
Denver Public Schools (Guordo, 1966)	grade 6	114	58.35	13.58
East Pennsylvania School (Farls, 1966)	grade 4	221	54.3	-----
	" 5	211	56.2	-----
	" 6	207	52.7	-----
Suburban New York State Special Education Classes (Mayer, 1965)	12-13 yrs.	34	55.97	11.5
	14 "	25	51.08	15.19
	15 "	22	54.64	11.89
	16 "	17	55	12.78
Pennsylvania Public School Stutterers (Morley, 1967)	8-10.3 yrs.	40	56.48	9.15
	10.3-12 "	39	55.36	12.40
North Carolina School for Emotionally Disturbed (Borstelman, 1964)	Younger boys	7	50.4	-----
	Older "	7	60	-----
Economically Deprived Schools, Pontiac, Mich.	grades 4, 5, 6		56.42	12.06
	" 4, 5, 6		55.69	11.07

Table 6

## Concurrent Validities and Rating Correspondence

	Age or Grade	N	Sex	Measure	Pearson r with Piers-Harris total score
Mayer (1965)	12-16 yrs.	98	Both	Lipsitt Children's Self-Concept Scale	.68**
Cox (1966)	grade 6-9	97	Both	Health Problems	-.48**
	" 6-9	97	Both	Big Problems on SRA Junior Inventory	-.64**
Piers (1965)	grade 4	54	Boys	Teacher Rating	.06
	" 4	57	Girls	" "	.41**
	" 6	58	Boys	" "	.25
	" 6	55	Girls	" "	.17
	" 4	54	Boys	Peer Rating	.26
	" 4	57	Girls	" "	.41**
	" 6	58	Boys	" "	.49**
	" 6	55	Girls	" "	.34*
Cox (1966)	grade 6-9	97	Both	<u>Socially effective behavior</u>	
				Teacher rating	.43**
				Peer rating	.31**
	grade 6-9	97	Both	<u>Superego strength</u>	
				Teacher rating	.40**
				Peer rating	.42**

\* p &lt; .05

\*\* p &lt; .01

Table 7  
Correlations with Other Measures

	Grade	N	Sex	Measure	Pearson r
Millen (1966)	4	275	Both	Children's Social Desirability Scale	.42**
	6	265	"	"	.45**
	8	231	"	"	.39**
	10	221	"	"	.25**
	12	191	"	"	.34**
Cox (1966)	6-9	97	Both	Perception of parents as loving vs. rejecting	.56**
	6-9	97	Both	Peer acceptance-rejection 4-yr. average score	.61**
Millen (1966)	4	275	Both	Children's Manifest Anxiety Scale	-.59**
	6	265	"	"	-.65**
	8	231	"	"	-.61**
	10	221	"	"	-.54**
	12	191	"	"	-.69**

\*\*p < .01

Table 8

## Correlations with Measures of Intelligence and Achievement

	Grade	N	Sex	I. Q. Measure	Pearson r
Piers-Harris (95 items)	3	88	Both	Group	.17
	6	116	Both	Group	.25**
Piers (80 items)	4	54	Boys	Otis	-.04
	4	57	Girls	"	.56**
	6	58	Boys	"	.27*
	6	55	Girls	"	.10
Eastman	5&6	36	Both	WISC Full Scale	.23
	"	"	"	WISC Verbal	.28
	"	"	"	WISC Performance	.08
	"	"	"	WISC Full Scale with Factor II (Intellectual and School Status)	.43**
	"	"	"	WISC Verbal Scale with Factor II	.50**
Mayer	12-16 yrs.	98	Both	WISC & Binet Standard Scores	.04
Cox	6-9	97	"	Calif. Test Ment. Mat.	.48**
Piers-Harris (95 items)	3	117	Both	Achievement Test	.19*
	6	126	"	"	.32**
Piers (80 items)	4	54	Boys	"	.32*
	4	57	Girls	"	.43**
	6	58	Boys	"	.38**
	6	55	Girls	"	.06

\*p &lt; .05

\*\*p &lt; .01

Table 9

## Reliability Data

	Grade	Sex	N	Index	Coefficients
Pennsylvania Public Schools (Piers & Harris, 1964; 95 items)	3	Girls	56	Kuder-Richardson	.90
	3	Boys	63	" "	.93
	6	Girls	56	" "	.89
	6	Boys	71	" "	.90
	10	Girls	53	" "	.78
	10	Boys	64	" "	.88
	6	Both	63	Spearman-Brown	.90
	10	Both	58	" "	.87
	3	Both	56	4 month test-retest	.72
	6	Both	66	" "	.71
10	Both	60	" "	.72	
Oregon Public Schools (Wing, 1966; 80 items)	5	Both	244	2&4 month test-retest	.77

Table 10

School Age Norms (Grades 4 through 12)  
(N=1138)

Piers-Harris Raw Score	Percentile	Stanine	Piers-Harris Raw Score	Percentile	Stanine
80			44	27	4
79			43	24	4
78			42	23	3
77			41	21	3
76	99		40	20	3
75	98		39	18	3
74	97	9	38	17	3
73	96	8	37	15	3
72	95	8	36	14	3
71	94	8	35	13	3
70	93	8	34	12	3
69	91	8	33	11	3
68	89	7	32	10	3
67	87	7	31	9	3
66	85	7	30	8	2
65	82	7	29	7	2
64	79	7	28	6	2
63	77	6	27	6	2
62	74	6	26	5	2
61	71	6	25	5	2
60	69	6	24	4	1
59	66	6	23	3	
58	63	6	22	3	
57	60	5	21	2	
56	57	5	20	2	
55	55	5	19	2	
54	52	5	18	1	
53	49	5	17		
52	46	5	16		
51	44	5	15		
50	41	5	14		
49	38	4	13		
48	36	4	12		
47	33	4	11		
46	31	4	10		
45	29	4			

APPENDIX B  
Nelson Reading Tests  
Technical Data

Table 11  
GRADE EQUIVALENT NORM TABLE  
Nelson Reading Tests

VOCABULARY			PARAGRAPH			TOTAL					
Form		Raw Score	Form		Raw Score	Form		Raw Score	Form		
A	B		A	B		A	B		A	B	
2.0	2.0	7	2.0	2.0	15	2.0	2.0	77	6.2	6.3	
2.1	2.1	8	2.1	2.1	16	2.1	2.1	78	6.3	6.4	
2.3	2.3	9	2.2	2.3	17	2.1	2.2	79	6.4	6.5	
2.5	2.5	10	2.4	2.5	18	2.2	2.3	80	6.4	6.6	
2.6	2.6	11	2.5	2.6	19	2.3	2.3	81	6.5	6.8	
2.8	2.7	12	2.7	2.8	20	2.3	2.4	82	6.6	6.9	
2.9	2.9	13	2.8	3.0	21	2.4	2.5	83	6.7	7.0	
3.0	3.0	14	3.0	3.1	22	2.5	2.5	84	6.7	7.1	
3.2	3.1	15	3.1	3.3	23	2.5	2.6	85	6.8	7.3	
3.4	3.3	16	3.3	3.5	24	2.6	2.7	86	6.9	7.4	
3.5	3.5	17	3.5	3.7	25	2.7	2.8	87	7.0	7.5	
3.7	3.7	18	3.7	3.9	26	2.7	2.9	88	7.1	7.6	
3.8	3.8	19	3.8	4.1	27	2.8	3.0	89	7.2	7.8	
3.9	4.0	20	4.0	4.3	28	2.9	3.0	90	7.3	7.9	
4.0	4.2	21	4.1	4.5	29	3.0	3.1	91	7.4	8.0	
4.2	4.3	22	4.3	4.6	30	3.1	3.2	92	7.5	8.1	
4.3	4.4	23	4.5	4.7	31	3.2	3.3	93	7.6	8.2	
4.4	4.5	24	4.7	4.8	32	3.3	3.4	94	7.8	8.3	
4.5	4.6	25	4.8	4.9	33	3.4	3.5	95	7.9	8.4	
4.7	4.7	26	5.0	5.0	34	3.5	3.6	96	8.0	8.5	
4.8	4.7	27	5.2	5.1	35	3.5	3.6	97	8.2	8.6	
4.9	4.8	28	5.4	5.2	36	3.6	3.7	98	8.3	8.7	
5.0	4.9	29	5.5	5.3	37	3.7	3.8	99	8.5	8.7	
5.2	5.0	30	5.6	5.4	38	3.8	3.9	100	8.6	8.8	
5.3	5.0	31	5.7	5.5	39	3.8	4.0	101	8.7	8.9	
5.4	5.1	32	5.8	5.7	40	3.9	4.0	102	8.7	9.0	
5.5	5.2	33	6.0	6.0	41	4.0	4.1	103	8.8	9.0	
5.6	5.3	34	6.1	6.2	42	4.1	4.2	104	8.9	9.1	
5.7	5.3	35	6.3	6.5	43	4.2	4.3	105	9.0	9.2	
5.8	5.4	36	6.5	6.9	44	4.2	4.4	106	9.0	9.3	
5.9	5.5	37	6.8	7.5	45	4.3	4.5	107	9.1	9.4	
6.0	5.7	38	7.2	7.7	46	4.4	4.5	108	9.2	9.5	
6.1	5.8	39	7.5	7.9	47	4.4	4.6	109	9.2	9.6	
6.2	6.0	40	7.8	8.1	48	4.5	4.6	110	9.3	9.7	
6.3	6.1	41	8.0	8.3	49	4.6	4.7	111	9.4	9.8	
6.3	6.2	42	8.2	8.5	50	4.6	4.7	112	9.4	9.9	
6.4	6.3	43	8.5	8.7	51	4.7	4.8	113	9.5	10.0	
6.5	6.5	44	8.7	8.9	52	4.8	4.8	114	9.6	10.0	
6.7	6.7	45	8.9	9.1	53	4.8	4.8	115	9.7	10.1	
6.8	6.9	46	9.0	9.3	54	4.9	4.9	116	9.8	10.2	
6.9	7.1	47	9.2	9.5	55	5.0	4.9	117	9.9	10.3	
7.0	7.3	48	9.4	9.7	56	5.0	5.0	118	10.0	10.4	
7.1	7.5	49	9.5	9.9	57	5.1	5.0	119	10.1	10.5	
7.3	7.6	50	9.7	10.0	58	5.2	5.0	120	10.2	—	
7.5	7.8	51	9.9	10.2	59	5.2	5.1	121	10.3	—	
7.7	8.0	52	10.1	10.4	60	5.3	5.1	122	10.4	—	
7.8	8.2	53	10.3	10.5	61	5.4	5.2	123	10.5	—	
8.0	8.3	54	10.5	—	62	5.4	5.2				
8.1	8.5				63	5.5	5.3				
8.3	8.6				64	5.5	5.3				
8.5	8.8				65	5.6	5.3				
8.7	9.0				66	5.6	5.4				
8.8	9.1				67	5.7	5.4				
9.0	9.3				68	5.7	5.5				
9.1	9.5				69	5.8	5.5				
9.3	9.7				70	5.8	5.6				
9.4	9.9				71	5.9	5.7				
9.5	10.1				72	5.9	5.8				
9.9	10.3				73	6.0	5.9				
10.1	10.5				74	6.0	6.0				
10.3	—				75	6.1	6.1				
10.5	—				76	6.2	6.2				

Table 12  
 PERCENTILE RANK OF RAW SCORES  
 Nelson Reading Tests  
 FOR GRADE 5

**FORM A**

Vocabulary	Paragraph	Total Voc.-Para.	%-ile Rank
67+	60+	121+	99
63-66	57-59	116-120	98
61-62	55-56	112-115	97
60	53-54	109-111	96
58-59	52	107-108	95
57	51	105-106	94
56	50	104	93
55	49	103	92
54	48	101-102	91
53	47	99-100	90
52	—	98	89
—	46	96-97	88
51	45	95	87
—	44	94	86
50	43	92-93	85
49	42	91	84
—	—	90	83
48	41	89	82
—	—	88	81
47	40	87	80
—	—	86	79
46	39	85	78
—	—	84	77
45	—	83	76
—	38	—	75
44	—	82	74
—	—	81	73
43	37	80	72
—	—	79	71
42	36	—	70
—	—	78	69
41	—	77	68
—	35	76	67
—	—	75	66
40	34	74	65
—	—	73	64
39	—	72	63
—	33	71	62
—	—	70	61
38	—	69	60
—	32	68	59
37	31	67	58
—	—	66	57
36	—	65	56
—	—	64	55
35	30	63	54
—	—	62	53
—	—	61	52
34	—	60	51
—	29	59	50
—	—	58	49
33	—	57	48
—	—	56	47
32	28	55	46
—	—	54	45
—	—	53	44
31	—	52	43
—	27	51	42
—	—	50	41
30	26	49	40
—	—	48	39
—	—	47	38
29	25	46	37
—	—	45	36
—	—	44	35
28	24	43	34
—	—	42	33
—	—	41	32
—	—	40	31
27	23	39	30
—	—	38	29
—	—	37	28
26	—	36	27
—	22	35	26
25	—	34	25
—	—	33	24
24	21	32	23
—	—	31	22
—	—	30	21
23	20	29	20
—	—	28	19
—	—	27	18
22	19	26	17
—	—	25	16
21	18	24	15
—	—	23	14
—	17	22	13
20	—	21	12
—	16	20	11
—	15	19	10
—	—	18	9
18	14	17	8
17	—	16	7
16	13	15	6
15	12	14	5
12-14	11	13	4
10-11	10	12	3
8-9	8-9	11	2
1-7	1-7	10	1

**FORM B**

%-ile Rank	Vocabulary	Paragraph	Total Voc.-Para.	%-ile Rank
99	68+	59+	121+	99
98	65-67	57-58	118-123	98
97	63-64	55-56	115-117	97
96	62	54	113-114	96
95	61	53	111-112	95
94	60	52	109-110	94
93	59	51	107-108	93
92	—	50	106	92
91	58	49	104-105	91
90	57	48	102-103	90
89	56	—	101	89
88	55	47	100	88
87	54	46	99	87
86	—	45	98	86
85	53	—	97	85
84	52	44	96	84
83	—	—	95	83
82	51	43	94	82
81	—	—	93	81
80	—	42	92	80
79	50	—	91	79
78	—	41	90	78
77	49	—	89	77
76	—	—	88	76
75	48	40	87	75
74	—	—	86	74
73	47	39	85	73
72	—	—	84	72
71	46	38	83	71
70	—	—	82	70
69	—	—	81	69
68	45	37	80	68
67	—	—	79	67
66	—	36	78	66
65	44	—	77	65
64	—	—	76	64
63	43	35	75	63
62	—	—	74	62
61	42	34	73	61
60	—	—	72	60
59	—	—	71	59
58	41	—	70	58
57	—	33	69	57
56	40	—	68	56
55	—	—	67	55
54	39	32	66	54
53	—	—	65	53
52	38	—	64	52
51	—	31	63	51
50	—	—	62	50
49	37	—	61	49
48	—	—	60	48
47	—	30	59	47
46	36	—	58	46
45	—	—	57	45
44	—	—	56	44
43	—	29	55	43
42	35	—	54	42
41	—	—	53	41
40	—	28	52	40
39	—	—	51	39
38	33	27	50	38
37	—	—	49	37
36	32	26	48	36
35	—	—	47	35
34	31	25	46	34
33	—	—	45	33
32	30	24	44	32
31	—	—	43	31
30	29	23	42	30
29	—	—	41	29
28	28	22	40	28
27	—	—	39	27
26	27	21	38	26
25	—	—	37	25
24	26	20	36	24
23	—	—	35	23
22	25	19	34	22
21	—	—	33	21
20	24	18	32	20
19	—	—	31	19
18	23	17	30	18
17	—	—	29	17
16	22	16	28	16
15	—	—	27	15
14	21	15	26	14
13	—	—	25	13
12	20	14	24	12
11	—	—	23	11
10	19	13	22	10
9	—	—	21	9
8	18	12	20	8
7	—	—	19	7
6	17	11	18	6
5	16	10	17	5
4	15	9	16	4
3	14	8	15	3
2	13	7	14	2
1	12	6	13	1
—	11	5	12	—
—	10-13	9-11	11	—
—	6-9	7-8	10	—
—	1-5	1-6	9	—
—	—	—	8	—
—	—	—	7	—
—	—	—	6	—
—	—	—	5	—
—	—	—	4	—
—	—	—	3	—
—	—	—	2	—
—	—	—	1	—

## APPENDIX C

TABLE 13. MASTER DATA SHEET - A &amp; B

Group A						Group B					
Self-concept			Reading			Self-concept			Reading		
1	2	diff.	1	2	diff.	1	2	diff.	1	2	diff.
67	69	2	58	75	17	49	43	-6	44	27	-17
58	54	-4	48	48	0	47	51	4	54	65	11
59	57	-2	89	108	19	48	57	9	76	73	-3
57	68	11	75	79	4	52	51	-1	89	91	2
70	77	7	78	72	-6	71	64	-7	71	85	14
33	32	-1	44	48	4	57	60	3	59	63	4
55	44	-11	61	71	10	42	40	-2	59	59	0
52	51	-1	30	36	6	39	41	2	42	34	-8
50	56	6	34	35	1	62	55	-7	39	35	-4
48	48	0	38	37	-1	65	68	3	46	54	8
45	53	8	58	66	8	49	52	3	22	22	0
52	57	5	21	18	-3	46	46	0	20	20	0
56	55	-1	34	33	-1	55	56	1	50	47	-3
43	57	14	40	40	0	63	60	-3	50	52	2
60	57	-3	45	57	12	28	30	2	40	54	14
44	36	-8	21	35	14	59	56	-3	14	20	6

TABLE 13 (continued). MASTER DATA SHEET - C & D

Group C						Group D					
Self-concept			Reading			Self-concept			Reading		
1	2	diff.	1	2	diff.	1	2	diff.	1	2	diff.
55	50	-5	65	67	2	51	49	-2	43	54	11
62	70	8	72	76	4	64	68	4	99	110	11
67	70	3	74	85	11	54	55	1	67	65	-2
47	57	10	76	81	5	59	60	1	82	87	5
43	39	-4	37	47	10	50	54	4	44	46	2
49	56	7	50	61	11	39	42	3	58	58	0
62	67	5	57	57	0	55	51	-4	52	52	0
52	62	10	64	71	7	54	48	-6	41	35	-6
36	56	20	41	50	9	44	52	8	37	44	7
48	49	1	47	46	-1	59	53	-6	44	39	-5
20	20	0	23	26	3	26	26	0	16	18	2
50	49	-1	42	50	8	50	56	6	28	34	6
48	38	-10	35	35	0	31	27	-4	38	38	0
65	68	3	37	38	1	46	56	10	36	37	1
64	64	0	34	42	8	59	55	-4	46	51	5
64	64	0	40	43	3	64	68	4	43	45	2

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