

THE RELATIONSHIP OF CERTAIN PSYCHO-SOCIAL  
VARIABLES TO READING ACHIEVEMENT,  
OF ABLE SEVENTH GRADE STUDENTS

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## PREFACE

Research shows that many able junior high school students fail in academic achievement because of an inability to read effectively. Moreover, studies show that reading retardation is a significant factor among school dropouts: of the almost one million dropouts in 1962, the average student was retarded two or more years in reading.

Educators agree that reading retardation is the result of many interacting factors, and that certain psycho-social variables influence reading progress. The purpose of the study is to investigate whether or not the level of reading achievement of able seventh grade students is related to certain psycho-social variables.

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## CHAPTER I

### THE PROBLEM

#### Introduction

Reading plays a significant role in American life. Recent scientific developments and sociological changes have made educators increasingly aware of the importance of reading as a tool in furthering scholastic attainment and promoting social progress.

Today we know that reading is a many-faceted complex which requires initial and continuous development on many fronts. (McCullough, 1961, p. 13).

McCullough, Strang, and Traxler (1946, p. 86) express the nature of reading development as follows:

Learning to read is a lifelong process. From birth to old age, each period of life makes its contribution to the development of reading abilities, interests, and attitudes. Reading ability, as a part of the individual's total development, increases with his growth in interests and general ability and with the challenge of increasingly complex and difficult reading tasks at each successive educational level.

Until comparatively recent years, the teaching of reading was considered to be the responsibility of the elementary school teacher. Either the pupil learned to read successfully in the elementary grades or he never learned to read.

At the present time, professional educators recognize that they have a responsibility not only to assist those students who may have failed to learn to read well in the elementary grades, but to teach the

developmental reading skills needed at each successive grade level.

Conant (1959, p. 67) explains the need for a developmental reading program in the secondary school designed to make better readers out of good readers:

A school should have the equipment for a developmental reading program. The program should be available on a voluntary basis for the pupils in the school. The counselors and teachers of English should be asked to view the program sympathetically and to urge students to take advantage of the opportunity to increase reading speed and comprehension.

Strang (1955, pp. 489-490) points out the direction taken by research on the reading of gifted children. She identifies two main areas: (1) areas in which the reading of gifted children follows a general pattern of superiority; (2) areas in which the reading of gifted children indicates underachievement.

Most gifted students are reading at or above grade level, but should not they be expected to read at the level of their mental capacity? Barbe (1961, p. 216) defines the problem in these terms:

If the measure of a student's reading ability is whether he is reading at or above grade level, then the gifted student is most often a superior reader. But if the measure of his reading ability is determined on the basis of how closely his reading age approximates his mental age, then gifted students perhaps achieve further below their potential level than any other group.

Furthermore, some students who are above average in intelligence develop so little skill in reading that they are seriously handicapped in their educational development. Many possible diverse factors contribute to reading underachievement of the able learner. Strang (1954, p. 10) says: "In a large number of cases, the causes of reading retardation in able learners are deep-seated, persistent, and pervasive."

In addition, research studies indicate that reading retardation is

a contributing factor in causing school dropouts. Bianchi (1959, p. 9) in reviewing the factors related to school dropouts says:

The failure of the child to master the fundamental skills of reading in the earliest grades magnifies his difficulties as he progresses from grade to grade. ... and the ultimate effect of these discouragements is the possibility of leaving school as the least line of resistance.

Schreiber (1962, p. 52) in describing certain constants in the school environment that tend to characterize the "school dropout" (NEA Study) reports:

Reading remains the fundamental educational skill; without it no student can perform adequately in any subject. Yet studies from every section of the country testify that the average dropout is "at least" two years retarded in reading ability by the time he quits school.

Moreover, Bianchi (1959, p. 7) states that statistics show: "Most surprising and significant is the fact that it is not necessarily the less intelligent who leave school before graduation." Research relating to the able student and his reading reveals many unsolved problems. Some of these unsolved problems will be presented in the need for the study.

#### Need for the Study

In view of the wide variety of reading tasks students face today, educators are concerned with developing reading programs that will bring each student up to his maximum reading capacity. Until comparatively recent years, reading research was directed toward the instructional and disability problems of the elementary school child. Bamman (1961, p. 42) says:

In the vast body of research which we have in the field of reading instruction, however, there is little to be found which is helpful to us in setting up a good reading program for the secondary school.

Furthermore, research literature indicates that, while many investigators, such as Kirk (1940), Fernald (1943), and Monroe (1932), have studied the reading problems of the slow learner, few studies have been made of the reading problems of the able learner. Yet, Durrell (1954, pp. 201-208) concludes that one of four failing students will have normal or superior intelligence and may be expected to do better in reading.

Wheeler and Wheeler (1949, pp. 230,231) characterize the need for research relating to reading disability among able students:

It is the common observation of those experienced in clinical reading, and reading in the upper-grade levels, that low mentality is not a cause of the majority of reading difficulties. The most seriously retarded readers in our schools are the mentally superior.

In his review of reading research, Traxler (1958, p. 12) suggests the need for additional research above the elementary level on the improvement of reading ability in ten areas. Two of these are:

1. Further study of the nature of the relationship between personality and reading.
2. Planning and evaluation of special reading programs for gifted students.

Early (1958, p. 22) reports the inconclusiveness of clinical studies related to a single factor. She states:

Future research should be concerned with broad studies, centered in schools rather than clinics, involving both retarded and able readers, to determine the interactions among causative factors.

#### Statement of the Problems

The problem of the study is to discover if the able retarded reader and the able accelerated reader differ with respect to certain psychosocial variables as measured by two standardized personality tests and as rated on a social status occupational index scale. The specific

problem is: What relationship exists between the level of reading achievement of able seventh grade students and certain psycho-social variables? The students are enrolled in three particular junior high schools in Oklahoma.

#### Nature of the Problem

Reading retardation may be mild, moderate, or extreme; but, whatever its degree, educators assume that there is present a cause, or a constellation of causes, which handicap the child so that he cannot make normal progress in reading. (Bond and Tinker, 1957, p. 84). Factors which contribute to reading retardation may be constitutional, environmental, or both. In general, there is basic agreement that reading difficulties stem from: (1) low intelligence, (2) neurological limitations, (3) physical deficiencies, (4) personality maladjustment, and (5) unfavorable sociological conditions. (Early, 1958, pp. 17-22).

The acceptance of reading disabilities as a symptom of ineffective functioning in the "whole child" has particular implications for the researcher in this area.

The disabled reader is more than a child who cannot read well. He is a child who is not reading as well as could be expected for one of his intellectual maturity. Bond and Tinker (1957) classify disabled readers into four descriptive categories, according to the seriousness of the problem and the nature of the adjustment needed. The categories are:

1. Simple retardation cases: Readers who lack general maturity in reading.
2. Specific retardation cases: Readers who have specific

limitations in certain reading skills.

3. Limiting disability cases: Readers who have serious deficiencies in basic skills and abilities.
4. Complex disability cases: Readers who cannot grow further in reading because of deficiencies in basic reading abilities complicated by their rejection of reading, accompanying personality problems, and frequently by sensory or physical handicaps. (Bond and Tinker, 1957, pp. 81, 82).

#### Purposes of the Study

The major purpose of the study is to investigate whether or not the level of reading achievement of able seventh grade students from three particular junior high schools in Oklahoma is related to certain psychosocial variables. A second purpose of the study is to present the findings in such a manner that they will aid educators in developing reading programs designed to prevent and correct reading retardation of able seventh grade students.

#### Hypotheses

Able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ in the following psycho-social variables:

1. Self Adjustment: The extent to which the student reveals his self-concept by his responses to the California Test of Personality.
2. Social Adjustment: The extent to which the student reveals

his self-concept in relationship to others by his responses to the California Test of Personality.

3. Emotional Reactions: The extent to which the student reveals by negative, positive, or neutral responses his emotional reactions to the Rohde Sentence Completions.
4. Socio-economic Status of Family: The extent to which the occupations of the fathers differ as classified on the Warner Revised Scale for Rating Occupations.

#### Clarification of Terms

The term "variable": One of the forces or conditions that is related to a given result.

"Psycho-social variable": Individual characteristics which are both psychological and sociological in nature.

The "level of reading achievement": Grade level achievement scores obtained from the Gates Reading Survey Test, Grades 3 to 10.

The "reading expectancy level": Reading expectancy as determined by the Bond and Tinker (1957, p. 78) reading expectancy formula, "(years in school x I. Q.) + 1.0."

"Able students": Seventh grade students who obtain an intelligence quotient of 110 or above as measured by the Wechsler Intelligence Scale for Children.

The term "junior high school": Seventh, eighth, and ninth grade students enrolled in an organized three-year junior high school program.

#### Scope and Limitations of the Study

The study seeks to determine whether or not a relationship exists



between the level of reading achievement of able seventh grade students and certain psycho-social variables. The study has certain limitations.

It is limited in its scope to seventh grade students from three particular junior high schools in Oklahoma: (1) the Roosevelt Junior High School of Oklahoma City, (2) the West Junior High School of Ponca City, and (3) the Junior High School of Stillwater. Although environmental differences exist in the populations from which the samples were drawn, data given in Table I, Chapter III, show that the populations of the three cities have many comparable social and economic characteristics. A study of the occupational profiles, Figure 1, Chapter III, shows the percentage of men from the three cities engaged in each of the nine occupational classifications as described by Gillen.(1951, pp. 23-25).

The study is further limited by the complex nature of the psycho-social variables being studied. The investigation considers only those psycho-social variables which seem particularly related to reading retardation among able students in the junior high school.

In view of the nature of the study, subjects were selected on the criteria of degree of mental development and level of reading achievement. For this reason, statistical inferences on the basis of the selective nature rather than the random nature of the groups would be unsound. A description of the subjects studied and their environment (Chapter III and Appendix A, Tables A-I to A-III) may provide a basis for drawing implications concerning the wisdom of expecting similar findings in other junior high schools if such a study should be contemplated.

## Summary

The significant role that reading plays in American life today, and the need for additional research in reading, especially research involving gifted secondary school students, have been presented in Chapter I. Expert opinion has been cited to show that until comparatively recent years investigations in reading were confined, largely, to two areas -- the slow learner, and the elementary school pupil. In addition, reading authorities have been quoted to show the need for studies in reading relating to: reading and personality, reading programs for the gifted, and causative factors of reading failure.

A statement of the problem, the nature of the problem, and the purposes, hypotheses, and limitations of the study have also been presented in Chapter I.

A review of literature pertaining to the able learner and underachievement in reading is presented in Chapter II.

The general conditions under which the research was done are presented in Chapter III. First, the subjects and their environment are described; second, the subjects are classified and the criteria and rationale used in their classification are discussed. Next, the instruments used to classify the subjects and to study the psycho-social variables are indicated and defined.

The presentation and analysis of data are included in Chapter IV. The significance of the findings, determined by two statistical techniques -- analysis of variance and chi-square, are also discussed.

In Chapter V, a summary of the study is made, findings are reported, conclusions are drawn, and recommendations are made.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

Studies of the nature of the reading process show that the whole being -- the mental, the physical, and the psycho-social -- is involved. Therefore, a review of literature related to the mental, physical, and psycho-social development of the able learner is presented in Chapter II. This is followed by a discussion of the causes of underachievement in reading.

#### The Able Learner

The study of the able individual has become a national issue. Leaders in government, industry, and education are becoming increasingly aware of the vast reservoir of potential talent represented by the gifted individual. He possesses powers, both quantitative and qualitative, in excess of the average individual, and is well-rounded in mental, physical, and psycho-social development. The able may be identified as: bright, superior, or gifted.

#### Mental Characteristics of the Able Learner

Accelerated mental development as measured by intelligence tests is characteristic of the able learner. Getzels (1954, p. 16) says:

The able learner has traditionally been identified by his superior intelligence quotient. But how superior this intelligence quotient should be is largely a relative and arbitrary matter.

Bentley (1937, p. 3) classifies children with intelligence quotients of 110 or above, as gifted. He explains: "The designation, a bright child, signifies intelligence beyond the average or norm of one's natural group as measured by traditional instruments in the educational testing program."

Hollingsworth (1926, p. 43) defines the gifted child as a child who is in the top one per cent of the juvenile population in general intelligence. She holds the view that general intelligence is the "power to achieve literacy and to deal with its abstract knowledge and symbols." (Hollingsworth, 1931, p. 195).

The gifted subjects included in the study of Terman and Oden (1947, p. 11) at Stanford University had intelligence quotients of 135-200. Superior mental endowment is another distinguishing characteristic of the gifted. Herriott (1926) describes the mental traits of the superior child under four general headings of intellectual ascendancy. They are: (1) power, (2) attitude, (3) general mental habits of the approved kind, and (4) versatility in the thought-processes. (Herriott, 1926, pp. 7, 8).

The gifted child has power to learn. Bentley (1937, p. 21) states: "It arises in all probability from the excellency of neurological patterns and speed in the transmission of neuro-muscular impulses."

The mentally superior child also differs from the average-normal child in that he reads more effectively, remembers with greater ease, and has unusual powers in the fixation of attention.

Mental life is made up largely of a variety of attitudes. Mental attitudes that characterize the superior child are: (1) common sense, (2) breadth of mind, and (3) self-criticism. (Bentley, 1937, pp. 1-30).

One of the major problems of the school is the development of

approved methods of study. The superior child, whose interest is challenged, usually exhibits proficient methods of work with a minimum of guidance. In such cases, the function of the teacher is to provide a rich and imaginative educational environment. The able learner is a creative learner, and is easily bored with subjects requiring only imitation, repetition, and drill. Getzels (1954, p. 21) says intellectual characteristics of the able learner are:

1. He has greater curiosity and is not content with mere rote repetition.
2. He is more exploratory and is likely to want to go beyond the limits of a particular problem or the arbitrary restrictions of a particular lesson unit.
3. He is more autonomous and is likely to want to work out problems independently.
4. He is more abstract in his thinking and is likely to want to generalize from particulars to principles.
5. He is more creative and is likely to be impelled to add something original or imaginative of his own to a given problem or classroom project.

Versatility is an attribute of the superior mind. The gifted child manifests interest in a wide variety of activities. In describing the traits of gifted young people in the Lansing Public Schools, Drews (1961, p. 113) says: "These children read more, hold more offices (our studies show four times as many), and have more hobbies. ... They do things, they make lists, and they plan ahead."

#### Physical Characteristics of Able Learners

In spite of many studies to the contrary, the misconception remains that the bright child is physically weak and underdeveloped. Since the bright child is frequently the youngest member of his class, his physical development is unfavorably compared with that of his chronologically

older and, therefore, larger classmates. Terman and Oden (1951, p. 23) report in their study of gifted children:

The average member of our group is a slightly better physical specimen than the average child of the generality; the evidence obtained from the medical examinations, the health histories, and the anthropometric measurements is unanimous and conclusive on this point.

Witty made a study of the height and weight of one hundred gifted children over a period of five years. Bentley (1937, pp. 17, 18) reports the following conclusions from the study:

First, that gifted children, as a group, are very superior in size and weight. Second, that intellect cannot be reliably inferred from physical size, nor physical size from intellect. Third, that the height and weight of superior children tend to remain constant over a period of time.

In general, research data indicates that superior physical health and efficient physical growth accompany superior mental endowment.

#### Psycho-Social Characteristics of Able Learners

The able child with his superior mental and physical organism has been studied in order to evaluate his social abilities and disabilities. There are considerable data which give foundation to the fact that the gifted child is not a social misfit.

Hildreth, Brumbaugh, and Wilson (1952, p. 186) describe the gifted children of the Hunter College Elementary School in the following manner:

The superior personal qualities of these children have been demonstrated in all observational studies that have been made of their behavior. As a group, they are happy, emotionally stable, friendly, well-adjusted young people. They are outstanding in character development. They rate above average in ethical conduct and moral traits; they are honest in dealing with others. Discipline problems are practically nonexistent.

Terman and Oden (1951) used a battery of seven character tests to

measure personal and social traits of gifted children. They state:

As compared with unselected children they are less inclined to boast or to overstate their knowledge; they are more trustworthy when under temptation to cheat; their character preferences and social attitudes are more wholesome; and they score higher in a test of emotional stability. On total score of the character tests, the typical gifted child of 9 years tests as high as the average child of 12 or 13. (Terman and Oden, p. 24).

More recently, Lightfoot (1951, p. 2) reports that superior children obtained significantly higher scores, than did a group of duller children, in terms of the Murray scheme of personality analysis.

#### Underachievement

The modern school is vitally concerned with the achievement of its subjects; underachievement represents failure of its purpose. This was not true a half century ago, since the underachiever seldom remained in school until he reached the upper grade levels. But today, with social promotion and compulsory education, the underachiever is found at all educational levels. "Underachievement is generally considered to be one of the major problems of education for the gifted." (De Haan and Havighurst, 1961, p. 160).

In the past, educators have been more concerned about helping the hopelessly retarded than the unusually able. Hildreth, Brumbaugh, and Wilson (1952, p. 15) state: "The real retarded students in our school systems are not the slow learners, but the gifted who remain undiscovered or not sufficiently challenged at school."

Often, the bright child who appears to be doing well in school is actually functioning below his capacity level. He is likely to achieve easy success with little effort, when compared with average normal children, but may be a failure in terms of his potential ability.

Carey (1962, p. 70) defines the bright underachiever as follows:

The bright underachiever in reading is an individual who exhibits a discrepancy between his reading achievement on the one hand, and, on the other hand, his superior oral vocabulary, his above-average auditory comprehension, and his high level of demonstrated intelligence.

#### Underachievement in Reading

The underlying causes of underachievement in reading are complex. No two cases of underachievement are exactly alike, and no two cases are caused by the same set of circumstances. However, a single factor seldom causes extreme underachievement. As stated in Chapter I, reading disabilities stem from: (1) low intelligence, (2) neurological limitations, (3) physical deficiencies, (4) personality maladjustment, and (5) unfavorable sociological conditions.

Robinson (1962, pp. 9-12) describes five types of underachievers in reading in terms of their intellectual development and their cultural environment as:

1. The slow-learners: Pupils with intelligence quotients ranging from 70 to 90.
2. The retarded readers: Pupils with intelligence quotients from 90 to 110, but with reading achievement below the normal range.
3. The bright underachievers: Pupils with intelligence quotients above normal, perhaps ranging from 110 to 180, but whose reading achievement is not in harmony with their capacities.
4. The reluctant readers: Pupils who obtain reading scores in harmony with their capacities, but who obtain neither pleasure nor satisfaction from reading.



5. The "culturally different": Pupils who come from homes where there is cultural and language deprivation.

### Intelligence

The results of objective tests show that reading achievement tends to be related to intelligence at all academic levels. In the elementary grades, Strang (1943, p. 356) reports correlations of .80 to .84 between the language score on the California Tests of Mental Maturity and scores on the Gates Basic Reading Tests. But, for the nonlanguage intelligence score and the reading tests, the correlations were only .36 to .56. Similarly, Traxler (1939, pp. 329-335), studying ninth grade pupils, shows a correlation of .69 between the language score on the California Tests of Mental Maturity and the score on the Iowa Silent Reading Test, and a correlation of .36 between the nonlanguage score and the reading score. In a recent study of 100 seventh grade students, Mayer (1958, p. 117) finds a moderate but substantial relationship of .624 between the Wisc full scale score and the Step Reading score.

### Physical Deficiencies

A survey of the literature indicates that physical deficiencies may or may not contribute to reading disability. For many individuals, physical illness does not interfere with reading achievement. On the other hand, a child who misses, because of illness, months of school during the primary grades, may run into serious reading difficulties. Any physical condition which lowers a child's vitality so that he is in a continuous state of fatigue makes the complicated task of learning to read almost impossible.

Auditory and visual abnormalities have been exhaustively examined in relation to reading achievement. Carey (1962, p. 72) says:

The conclusion to be drawn from a study of the research seems to be that, short of total blindness or deafness, poor vision and poor hearing seldom, if ever, are the sole or direct causes of serious underachievement.

#### Personality Maladjustment

One of the principal aims of education today is to facilitate the personal and social adjustment of every child. Personality adjustment is a term difficult to define. However, it seems to be generally agreed that personality maladjustment involves impaired personal relationships.

In the educational setting, behavior can be considered abnormal if it sets up a barrier between the child and his group. (Wall, 1955).

Kaplan and Baron (1952, pp. 363-380) outline behavior characteristics commonly associated with serious emotional problems in school as: over-actions, deviations, immaturity, exhibitionism, psycho-somatic disturbance, and antisocial behavior.

Robinson (1949, p. 116) summarizes the manifestations of emotional maladjustment exhibited by poor readers in four categories as follows: aggression, withdrawal, loss of emotional effectivity, and general tensions.

The capable student's lack of reading ability often makes him resort to compensatory behavior which disrupts the class. On the other hand, Strang, McCullough, and Traxler (1955, p. 361) make the following observation: "Occasionally a gifted child uses reading as an escape. ... Gifted children sometimes find the world of books more satisfying than the real world."

In 1941, Gates (1941, pp. 82, 83) reported the implications of the current studies relating to the role of personality maladjustment in reading disability. He says that:

Personality maladjustment is frequently found to coexist with reading disability. The more serious the reading retardation, the greater is the probability that maladjustment also exists. My estimate is that among cases of very marked specific reading disability about 75 per cent will show personality maladjustment. Of these, the personality maladjustment is the cause of the reading defect in a quarter of the cases, and an accompaniment or result in three-quarters.

Holmes (1961, p. 111) states in his review of one hundred significant studies (from 1953-59) relating to personality characteristics of disabled readers that: "In the main, the same general conclusions arrived at by Gates are, but for slight modifications, still applicable."

Holmes (1961, pp. 111, 112) comments on the findings of the one hundred experimental studies in these terms:

A few investigations reported significant differences for personality traits between good and poor readers, but unfortunately, many such differences tended to be nicely counterbalanced by other studies which supported significant differences in the opposite direction.

A further analysis of the findings of studies indicates that the relationship between reading development and personality adjustment may vary in significance at successive academic levels.

For instances, Meyer (1953) studied a group of 62 kindergarten children in order to determine if Rorschach test records might provide evidence that would be helpful in predictive reading achievement or underachievement. The Rorschach tests were administered in the kindergarten grade, and the Chicago Reading Tests were administered in the fall of the third year of school. Meyer indicates that poor readers showed lack of self-confidence, instability, and timidity. His

conclusions are:

This study has presented evidence that kindergarten Rorschach records may not only be used as prognostic tests of reading achievement in the primary grades, but also may be used to provide data on first grade reading readiness, particularly in the area of intellectual and emotional readiness. (Meyer, 1953, pp. 424, 425).

Hallock (1958, p. 2061) investigated attitudinal factors affecting achievement in reading. Tests used were: (1) the California Short-Form Test of Mental Maturity, (2) the California Reading Achievement Test, and (3) the California Test of Personality. The 926 subjects were enrolled in the fourth, sixth, and eighth grades. Variables found to affect reading in the following order of significance were: family relations, self-reliance, anti-social tendencies, feeling of belonging, withdrawing tendencies, school relations, nervous symptoms, and feeling of personal worth. Fourth grade boys of high ability, relatively free of nervous symptoms, made the highest mean reading scores. Fourth grade boys of low ability, with many nervous symptoms, made the lowest mean reading scores.

Keshian (1962, pp. 229, 230) studied psycho-social characteristics of 72 fifth grade children selected from three communities. The communities were representative of three socio-economic levels -- low, middle, and high. The 72 children were classified as successful readers in that their reading ages were equal to or above their mental ages. The case study method was used and both qualitative and quantitative data was utilized in the study. Keshian (1962, p. 230) concludes:

1. Socio-economic status and reading success are not related.
2. Children who read successfully come from homes which are emotionally integrated units and which encourage reading.
3. Children who read successfully are well adjusted.

Norman and Daley (1959, p. 31) compared a group of 41 inferior readers with a group of 42 superior readers in order to contrast the personality adjustment and personality "patterns" of superior and inferior readers. The male subjects were sixth-graders from middle class schools in Albuquerque, New Mexico. Intelligence quotients of the subjects ranged from 84 to 116 as determined by the Non-Language section of the California Test of Mental Maturity. Two other identifying instruments were used: (1) the California Achievement Test, to determine reading achievement; and (2) the California Test of Personality (Elementary), to assess personality. They report the following findings:

That there is no difference in the kind of adjustment made by the two groups, considering kind to be reflected in patterns, but there is a strong difference in "degree" of adjustment. (Norman and Daley, 1959, p. 33).

However, they report that an item analysis of the 144 items on the California Test of Personality revealed significant differences on 26 of the items between inferior and superior readers.

Barrett (1957) reports that an intensive longitudinal study of 32 gifted children was made by the heads of the Guidance Departments of the Toronto secondary schools. The study of the children began at the fifth grade level and ended at the ninth grade level. The "gifted child" was defined as a child with an IQ of 130 or above as determined by the Henmon-Nelson Advanced Test (Grades VII to XII). The Differential Aptitude Tests were used to evaluate academic achievement. Personality patterns were studied by the use of: teachers' ratings, a sociometric scale, student autobiographies, figure drawings, and by Rorschach and TAT responses.

The two study groups consisted of: 16 students achieving a standing commensurate with their capacity, and 16 students definitely underachieving. The purpose of the study was to identify patterns of achievement and underachievement in gifted children in four areas: (1) pattern of intellectual achievement and ability, (2) pattern of home background, (3) pattern of school attitudes, and (4) pattern of personality.

The conclusions reached by the investigators in relationship to "pattern of personality" are of particular interest to the present study. Barrett (1957, p. 194) reports them as follows:

1. There are emotional disturbances among both achievers and underachievers. It should be pointed out that adolescence is a period of adjustment in which the child is struggling toward maturity. The achievers, however, tend to be more aware of the nature of their disturbances and to be more constructive in their efforts to cope with them.
2. As seen in the school situation, the achievers come considerably closer to the guidance heads' conception of the well-integrated personality than do the underachievers.
3. On three personality criteria -- feeling of worth as an individual, the ability to persist in face of difficulty, and the amount of interest or energy devoted to leisure-time activities -- there is considerable overlapping in individual cases, but on the average the achievers excel.
4. The achievers appear to have a more rational approach to the problem of solving difficulties than the underachievers.
5. Good academic achievement is not incompatible with a high degree of acceptance by classmates.
6. Both groups suffer from feelings of inadequacy. Among the achievers, this tends to act as a motivating force. The achievers want to prove to the world that they are adequate and worthy. Among the underachievers, the feelings of inadequacy act as depressors. The underachievers withdraw and refuse to compete.

Johnson (1957, p. 18) makes the following significant conclusions

from her study of the research: First, there is no single personality trait or combination of traits invariably associated with either success or failure in reading. Variability of personality structure will be great within groups of both achieving and disabled readers. Second, personal maladjustments, which lead to inability to attend and concentrate will have a negative effect on the development of reading ability. Third, the presence of the very serious symptoms of personal maladjustment is more frequently associated with failure in reading than with success in reading. Fourth, emotional problems and reading disability, when they occur together, are likely to aggravate each other. Both must be considered in the treatment of the whole problem. Fifth, the influence of home conditions is strong in determining both personal adjustment and achievement in reading.

#### Unfavorable Sociological Conditions

The school is an agent of society; therefore, educators are involved and affected by the current social-cultural differences found in the present culture. They are faced with the problem of providing equal and adequate opportunity for every child. Social and cultural factors operating to create unequal educational opportunity for the lower socio-economic groups are -- economical, environmental, and educational.

(Carey, 1962, p. 71).

Riessman (1962, p. 3) characterizes the lower socio-economic groups as a class who, "lack many of the advantages (and disadvantages) of middle-class culture." Furthermore, he explains:

They possess a culture of their own, with many positive characteristics that have developed out of coping with a difficult environment. (Riessman, 1962, p. 3).

Della-Dora (1963, p. 226) points out the following distinguishing qualities of adults and children in the lower socio-economic classes:

The adults and children concerned have certain qualities in common. They have little formal education, no jobs or low-level employment opportunities, generally reside in sub-marginal housing, have improper diets, and suffer from inadequate medical care.

Success in school seems to be closely associated with reading efficiency, and significantly a study of educational literature indicates that many children from the lower socio-economic groups underachieve in school because of reading disability. Riessman (1962, p. 115) reports:

The general estimate of reading inability among school children is 15 to 20 per cent, while among educationally deprived children the disability estimate is as high as 50 per cent.

Coleman (1940, p. 62) studied the academic performance of junior high school students and found that: "'poor readers', as a group came with surprising consistency from children of lower socio-economic status."

Sexton (1961) investigated the relationship between average family income and the composite Iowa Achievement Test Scores of fourth, sixth, and eighth grade subjects from a large Midwestern city. The findings of the study have significant implications for the educator for two reasons. First, family income is one index to social class and is highly correlated with, "occupation of father, type of housing, educational level, etc." (Sexton, 1961, p. 11). Second, The Iowa Achievement Tests are written tests and measure the ability of the student to read accurately and quickly. They also measure his academic achievement. Sexton (1961, pp. 26, 27) reports the following findings from the study:

One: All schools "above" \$7,000 income are achieving "above" grade level (with only one exception in the eighth grade). All schools "below" \$7,000 income are achieving "below" grade level.



Two: In general, achievement scores tend to go up as income levels go up.

Three: Group 1 [\$3,000 income level] is achieving almost one whole year below grade level. At the same time, group 26 [\$9,000 income level] is achieving more than a year above grade level. Thus, the highest income group is achieving at a level "two whole years" above the lowest income group.

The child in the low socio-economic family group reflects the impoverishment of his home environment -- not enough food to eat, insufficient clothes to wear, inadequate facilities for rest and study, and work that demands skills and strength beyond his powers. Such conditions leave little time, energy, or motivation for reading.

Environmental and educational conditions which impede the "culturally deprived" child's reading progress may stem from home and school conditions and may exist on any socio-economic level. Research studies indicate that certain factors in the home and school environment hinder reading progress.

Mingoa (1962) studied the socio-economic conditions of 3,000 sixth-graders in relationship to overachievement and underachievement in reading. Identifying instruments were: (1) Kuhlmann Anderson Test of Mental Maturity, form F, (for determining intelligence quotient); and (2) Stanford Reading, form K, (for determining reading achievement). He reports the following relationships between the underachievement score and the socio-economic milieu of the school:

Overachievement, where reading age was more than one year above mental age, was found to be rare in schools located in low rental waterfront areas (where the mean IQ's of the schools ranged from 88 to 92). Examples of underachievement, ranging from slight to extreme, were numerous. The overachievers approximated the underachievers in the number of cases in the area when the mean IQ's of the schools ranged from 98 to 103. The hill schools in privileged neighborhoods (mean IQ's of the schools ranged from 108 to

112) produced numerous overachievers, some slight under-achievers, but extreme underachievers were rare. (Mingoia, 1962, p. 222).

The clinical staff members of Special Reading Services of the New York City Board of Education studied 35 elementary school children who were severely maladjusted educationally. Fifteen of the children showed both reading and arithmetic difficulties, and the other twenty had more extensive disability in reading than in other subjects. The intelligence quotients of the children ranged from 80 to 129, with the median at 102.9. Clinical analysis of each child indicated many symptoms of maladjustment.

The clinical staff found numerous unsolved problems within the family. Fite and Mosher (1959, p. 183) report the findings:

In thirty-four of the cases, there were disturbed mother-child relationships. Severe marital difficulty was also present in the families of twenty-three children. Mental illness, including four cases of alcoholism, was found in twenty parents. Nineteen mothers gave accounts of their own childhood which indicated that they themselves had experienced early emotional deprivation.

In addition, they report the following school experiences of the group unfavorable to learning: "excessive absences (71 per cent), numerous school changes (49 per cent), and repetition of grades (23 per cent)." (Fite and Mosher, 1959, p. 184).

Moreover, the child who is accustomed to hearing and speaking incorrect English in the home comes to school handicapped in learning to read the English language. (Crosby (1963, p. 23) says:

The first force affecting the child's reading power is the interrelationship between personality development and command of the English language in its totality.

Crosby (1964, p. 12) says of a study in progress in the public schools of Wilmington, Delaware:

We have discovered that informal standard English is the greatest block to learning experienced by disadvantaged children. They have a dynamic, exciting natural language which has usually been frowned upon by the teacher so that the child has been bereft of the only means of communication he knows.

Riessman (1962, p. 80) concurs with Crosby as follows:

These children have considerable facility with informal or public language, and this is expressed best in unstructured, spontaneous situations; they verbalize more freely around action and things they can see; they understand more language than they speak; their non-verbal forms of expression are more highly developed; and they often have imaginative associations to words.

Furthermore, a home environment, which lacks intellectual stimulus, concept-developing experiences, and adequate reading materials operates to handicap the "culturally deprived" child in the acquisition of basic language skills.

Thus, educators are faced with the monumental task of providing equal educational opportunity for all classes of society, including those classes who suffer economical and cultural deprivation.

#### Summary

In the first part of the chapter, the nature of the reading process has been described and the importance of the able individual, to the nation, has been indicated.

In the second part of the chapter, summarized evidence has been cited to show that, in general, the able learner as compared with the average member of his group, possesses -- superior mental endowment, superior physical development, and superior psycho-social adjustment.

In the third part of the chapter, the opinion of educators has been cited to show that regardless of the superior qualities which

characterize the able learner, the severely retarded students in the schools are the gifted.

In addition, five types of underachievers have been defined, and the underlying causes of reading underachievement as related to the study have been discussed.

The concern of the current study is to determine whether or not the level of reading achievement of able seventh grade students is related to certain psycho-social variables. Chapter III includes a discussion of the subjects, procedures, and instruments employed in the study.

## CHAPTER III

### SUBJECTS, PROCEDURES, AND INSTRUMENTS

The general conditions under which the research was done and the procedures employed are presented in Chapter III. First, the subjects and their environment are described; second, the subjects are classified into two groups -- retarded readers and accelerated readers; third, the criteria and procedures used to select the subjects for the two classifications are discussed; and fourth, the instruments used to classify the subjects and to study the psycho-social variables are indicated and defined.

#### The Subjects and Their Environment

The subjects of the investigation are seventh grade students enrolled in the Roosevelt Junior High School of Oklahoma City, Oklahoma; the West Junior High School of Ponca City, Oklahoma; and the Junior High School of Stillwater, Oklahoma, in the fall of 1962. The subjects range in chronological age from eleven years five months, to thirteen years three months.

Examination of the school health records indicates no significant abnormalities in the health histories of the subjects, such as: inherited mental deficiency, prolonged severe illness, or irregular physical development. The health records do reveal some cases of visual impairment,

due to refraction, but the individuals concerned have been benefited by surgical procedures and the use of glasses.

The total development of the child is influenced by the environment in which he functions -- the home, the school, and the community. A study of the data in Table I, which follows, depicts certain areas of the social and economic environment in which the subjects function. An examination of the data shows the greatest variance pertains to the total population of the three cities used in the study. The percentage of those native to Oklahoma from the three cities ranges from 61.0 per cent in Oklahoma City to 64.5 per cent in Stillwater. Further study of the table shows that the three cities are fairly comparable in two educational areas. There are: (1) percentage of persons 14 to 17 years old in school -- Oklahoma City 87.3 per cent, Ponca City 94.1 per cent, and Stillwater 88.5 per cent; (2) median school years completed of persons 25 years and over -- Oklahoma City 12.1 years, Ponca City 12.1 years, and Stillwater 12.9 years. A study of the table reveals two economic factors relating to family income. The median family income ranges from \$4,530 in Stillwater to \$6,000 in Ponca City. The percentage of families with income over \$10,000 are: Oklahoma City 14.4 per cent, Ponca City 11.8 per cent, and Stillwater 10.9 per cent.

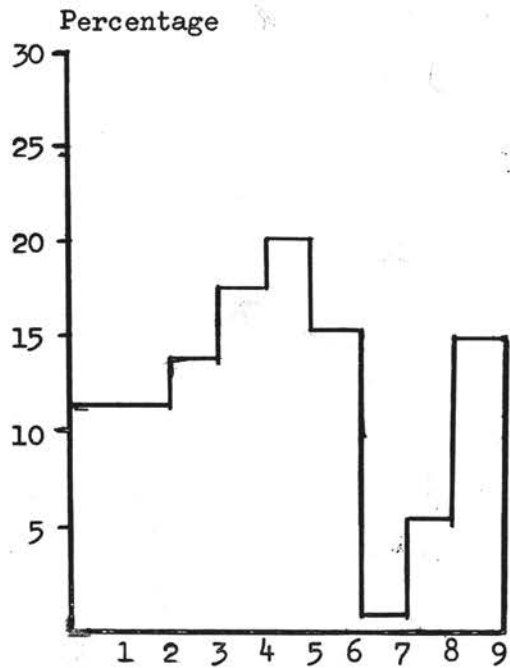
The occupation of the father affects the social and economic environment of the home and the social status of the family in the community. Gillen (1951, p. 10) states: "... research shows clearly a substantial relationship exists between intelligence, occupation, and education." A study of the data presented in bar diagram, Figure 1, shows the occupational distribution profile for the three cities involved in the study. Nine occupational groups for each city are shown in the

TABLE I  
SOCIAL AND ECONOMIC CHARACTERISTICS OF THE THREE CITIES

City	Total Population	Native Population <sub>1</sub> per cent residing in State of Birth	Education <sub>1</sub>		Families <sub>2</sub>	
			per cent of persons 14 to 17 years old in school	median school years completed of persons 25 and over	median income (dollars)	per cent with income over \$10,000
Oklahoma City	324,253	61.0	87.3	12.1	5,600	14.4
Ponca City	24,411	61.0	94.1	12.1	6,000	11.8
Stillwater	23,965	64.5	88.5	12.9	4,530	10.9

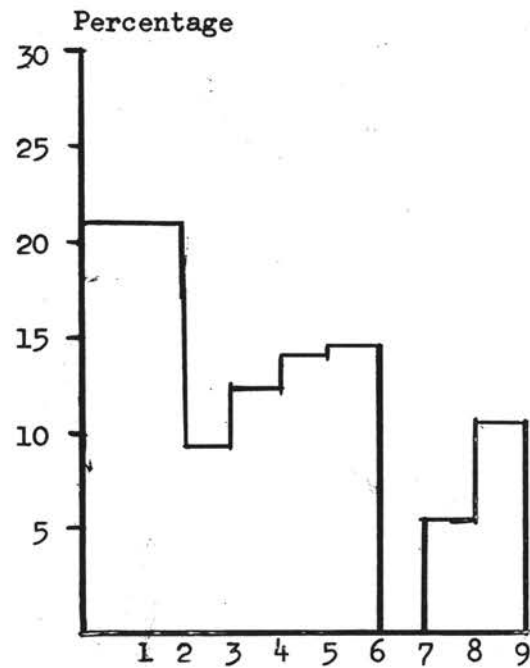
<sup>1</sup>Adapted from Table 32. - (p. 38-139) United States Census of population 1960  
Oklahoma General Social and Economic Characteristics, U. S. Department  
of Commerce, Bureau of the Census.

<sup>2</sup>Adapted from Table 38. - (p. 38-140).



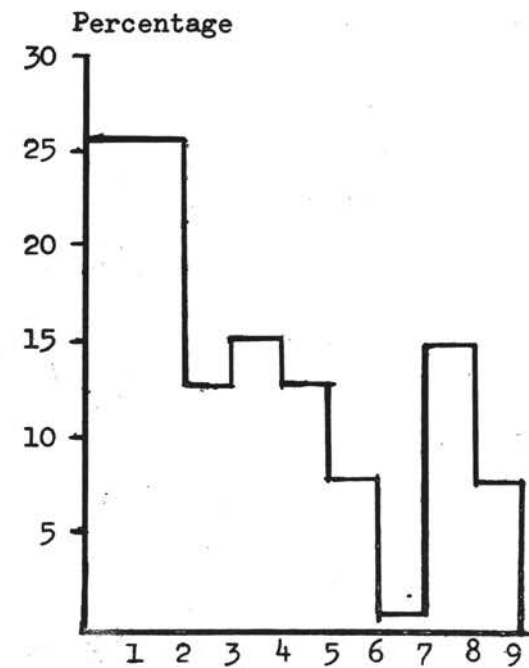
Oklahoma City, Oklahoma

- 1. Professional
- 2. Semiprofessional
- 3. Proprietors



Ponca City, Oklahoma

- 4. Clerical
- 5. Crafts
- 6. Operatives



Stillwater, Oklahoma

- 7. Domestic Service
- 8. Service
- 9. Laborers

Figure 1. Occupational Profiles of the Three Cities  
From Which the Subjects for the Study Were Drawn



profile. (United States Census Report, 1960, p. 38-185). Gillen (1951, p. 23) explains:

The occupational distribution profile for a city may be readily determined from data given for the above nine groups. The percentage of workers in each of the broad occupational categories may be calculated using the number of employed workers as a base. With these results, a bar diagram may be constructed.

An inspection of the profiles, Figure 1, reveals that the percentage of males employed in professional and semiprofessional occupations are: (1) Oklahoma City, 11.8 per cent; (2) Ponca City, 20.6 per cent; and (3) Stillwater, 26.3 per cent. Percentage of males from the three cities employed in proprietary, clerical, and domestic service occupations are fairly comparable. Further study of the profiles shows decided differences in percentage of males employed as craftsmen, operatives, non-domestic workers, and laborers.

Appendix A, Tables A-I to A-III, gives the socio-economic status of the families of the children selected for the study, as determined by the Warner Revised Scale for Rating Occupations. (Warner, Meeker, and Eells, 1949, pp. 140, 141).

#### Classification of the Subjects

The subjects selected for the study from the three junior high schools were classified into two groups -- Group I, retarded readers; Group II, accelerated readers. The subjects were classified on the basis of the difference between their reading grade achievement level and their reading expectancy level. Bond and Tinker (1957, p. 79) explain:

A child in the latter part of the intermediate grades (i.e., 5.5 grade and above) is usually classified as a disabled

reader if his reading grade is one and a half years or more below his reading expectancy level.

Data showing the composition of Study Group I are presented in Table II. This group consists of 52 able retarded readers, students reading one or more grades below their reading expectancy level.

TABLE II

WECHSLER INTELLIGENCE MEAN SCORES, GATES READING MEAN SCORES, READING EXPECTANCY MEAN SCORES, AND READING RETARDATION MEAN SCORES FOR STUDY GROUP I

City	Number	Wisc I.Q. Score	Gates Score	Reading Grade Expectancy	Reading Grade Retardation
Oklahoma City	14	117	6.435	8.372	1.937
Ponca City	19	120	7.121	8.580	1.459
Stillwater	19	123	7.120	8.750	1.630
	n = 52	Mean 120	6.892	8.567	1.675

Data showing the composition of Study Group II are presented in Table III. This group consists of 58 able accelerated readers, students reading at or above their reading expectancy level.

A more detailed description of the two study groups is presented in Appendix B, Tables B-I to B-VI.

Examination of the data, in the tables mentioned above, shows that the two groups are relatively comparable with respect to intelligence quotient, reading expectancy level, and degree of reading retardation or

reading acceleration; however, the two groups show a difference of 3.5 grades in reading achievement level.

TABLE III

WECHSLER INTELLIGENCE MEAN SCORES, GATES READING MEAN SCORES,  
READING EXPECTANCY MEAN SCORES, AND READING ACCELERATION  
MEAN SCORES FOR STUDY GROUP II

City	Number	Wisc I.Q. Score	Gates Score	Reading Grade Expectancy	Reading Grade Acceleration	
Oklahoma City	20	120	10.335	8.560	1.775	
Ponca City	18	126	10.138	8.950	1.180	
Stillwater	20	131	10.700	9.250	1.430	
n =	58	Mean	125	10.390	8.920	1.462

#### Rationale and Procedures Used to Select the Subjects

Four criteria were used in selecting the subjects for the study. These were: (1) The Gates Reading Survey Scores, for determining reading grade achievement level; (2) school standardized test scores, for determining school achievement; (3) the scores on the Wechsler Intelligence Scale for Children, for determining intelligence quotient; and (4) the Bond and Tinker reading expectancy formula for determining reading expectancy grade level. The steps taken were as follows:

1. The Gates Reading Survey Test (Form 2, 1958)

In November of 1962, the Gates Reading Survey Test was

administered to 780 seventh grade students enrolled in the three junior high schools selected for the study. The tests were scored and the results were tabulated (Appendix B, Tables B-I to B-VI).

2. School Achievement Records

The writer was able to differentiate tentatively the able retarded reader from the able accelerated reader by examining the Gates Reading Test scores and the standardized test scores obtained from the school records of the 780 seventh grade students from the three junior high schools.

3. The Wechsler Intelligence Scale for Children (1949)

On the basis of reading grade achievement level as measured by the Gates Reading Test and standardized test scores as obtained from school records sixty students, thirty males and thirty females, from each of the three junior high schools were selected for further study. The Wechsler Intelligence Scale for Children (Full Scale) was administered to the sixty students from each school in order to identify able students, students with intelligence quotients of 110 or above (Appendix B, Tables B-I to B-VI).

4. The Bond and Tinker Reading Expectancy Formula (1957)

The Bond and Tinker (1957, p. 79) reading expectancy formula, "(years in school x I.Q.) + 1," was used to calculate the reading expectancy grade level of students from the study group who earned an intelligence quotient of 110 or above. For example, a seventh grade student with an intelligence quotient of 110 in November of the school year would

have a reading expectancy score of 7.93 ( $[6.3 \times 1.10] + 1.0$ ) (Appendix B, Tables B-I to B-VI).

The problem of relating a child's reading growth to his mental growth is a complicated one. Nevertheless, in order to identify the underachiever in reading a quantifiable formula for measuring underachievement must be utilized. Winkley (1962, pp. 156-162) describes seven common useful indices or formulas for this purpose. They are as follows:

1. Mental Age Discrepancy
2. Expected Achievement Grade Placement Tables
3. Anticipated Achievement Calculator
4. Bond and Tinker Formula
5. Stanine Comparison
6. Deviation From Regression Line
7. Monroe Index.

Winkley (1962) used each of the seven formulas in a study of 500 fifth grade children to determine the percentage of the children that would be identified as underachievers by each formula. Winkley (1962, p. 1959) says, "It will be noted (Table 1) that this method [Bond and Tinker] identified the highest percentage [60] of the total number of underachievers found through the use of all the formulas.

#### Instruments Used in the Study

Certain instruments were selected in order to study whether or not the level of reading achievement of able seventh grade students is related to certain psycho-social variables. As previously stated, two criteria used to identify and classify the subjects for the study were

the Gates Reading Survey Test and the Wechsler Intelligence Scale for Children.

After the 110 subjects had been classified into two groups -- retarded readers, and accelerated readers -- instruments were chosen to study the psycho-social variables as stated in the hypotheses, Chapter I. The California Test of Personality was used to study the self and social adjustment of the subjects (Appendix C). Negative, positive, or neutral responses to the Rohde Sentence Completions Test were used to study emotional reactions of the subjects (Appendix D). The socio-economic status of the family was determined by the Warner Revised Scale for Rating Occupations; other data relating to socio-economic status was not available (Appendix A, Tables A-I to A-III).

1. Gates Reading Survey Test (Form 2, 1958)

The Gates Reading Survey Test was chosen because it is a good measure of silent reading ability. (Bond, 1957, p. 168). Holberg (1949, p. 487) states, "It is the writer's opinion that this test [the Gates] is the most valuable survey-type reading test at the present."

This test is designed to measure vocabulary, comprehension, and speed and accuracy of silent reading. It consists of three sub-tests: (1) vocabulary, which measures the range and difficulty level of the pupil's ability to work out the recognition and meaning of words; (2) comprehension, which indicates how difficult a passage the student can comprehend with reasonable thoroughness; and (3) speed and accuracy, which measures speed of reading and the accuracy of comprehension of thirty-six paragraphs of equal difficulty. The raw score of each subject is converted to grade level and age scores. The average grade score of

the three sub-tests was used in the study.

Three forms of the test are provided. Gates (1958, p. 1) states: "The three tests are equivalent to each other." The reliability coefficient for two alternate forms of the test for grade 8.8 are: (1) vocabulary .87, (2) comprehension .88, and (3) speed and accuracy .86. (Gates, 1958, pp. 1-4).

## 2. The Wechsler Intelligence Scale for Children (1949)

Individual intelligence tests, which provide estimates of verbal and non-verbal abilities, are most fitting for poor readers. De Haan and Havighurst (1961, p. 46) state:

The individual test gives a more reliable measure of intelligence than a group test does. The individual test allows for observation and clinical judgments to be made about the child. Hence, it increases confidence in the accuracy of the selection. (Most-used individual intelligence tests are the "Stanford-Binet Scales of Intelligence" and the "Wechsler Intelligence Scale for Children.")

The purpose of this test is to measure general intelligence of children from the age of five years to fifteen years, eleven months. Wechsler (1949, p. 5) explains:

The theory underlying the Wisc is that intelligence cannot be separated from the rest of the personality, and a deliberate attempt has been made to take into account the other factors which contribute to the total effective intelligence of the individual.

The Wechsler Intelligence Scale consists of twelve tests which are divided into two subgroups identified as Verbal Scale and Performance Scale. The six tests of the Verbal Scale are: Information, Arithmetic, General Comprehension, Digit Span, Similarities, and Vocabulary. The six tests of the Performance Scale are: Picture Completion, Picture Arrangement, Block Design, Object Assembly, Coding, and Mazes. The

author (1949, p. 6) says, "Ordinarily five Verbal and five Performance tests are administered to the subject, and the I.Q. tables are calculated on this basis." The Digit Span test of the Verbal series and the Mazes of the Performance series are considered as supplementary tests to be used as an alternate test or for other clinically valid reasons.

Wechsler (1949, p. 13) reports reliability coefficients of the individual tests and of the Verbal, Performance, and Full Scale Scores for children age thirteen years, six months as follows: Verbal Scale (without Digit Span) .96; Performance Scale (without Coding and Mazes) .90; Full Scale (without Digit Span, Coding, and Mazes) .94.

### 3. The California Test of Personality (Intermediate, Form AA, 1953)

The California Test of Personality was chosen to measure self and social adjustment. Symond (1941, p. 1213) says, "The California Test of Personality appears to be a carefully worked out set of questions designed to reveal the quality of the individual's adjustment."

This test is organized around the concept of life adjustment as a balance between self and social adjustment. The test purports to measure evidences of twelve components of personality, which are described in Appendix C. Thorpe, Clark, and Tiegs (1953, p. 3) explain, "The following components are not the names for so-called general traits; they are, rather, names for groupings of more or less specific tendencies to feel, think, and act."

The test consists of 180 questions to be answered "yes" or "no," by the subject, depending upon whether he regards the statement as true of himself or not. The score for each test is the number of "yes" answers.



The authors (1953, p. 4) report coefficients of reliability for the test as follows: Self Adjustment .93; Social Adjustment .94, and Total Adjustment .96.

#### 4. The Rohde Sentence Completions (1953)

Ives (1958, p. 77, 78) states:

The sentence completion method of investigation is a valuable addition to the repertoire of projective tests and Dr. Rohde has done as much as anyone to bring it to its present state of usefulness and general acceptance.

The purpose of this test is "to explore personality by a means which is less ego-threatening than direct questioning." Rohde (1957, p. 38). The test consists of sixty-five items (beginnings of sentences) which the subject is requested to complete in any way he wishes. Rohde (1957, p. 46) gives the general criteria for selecting and phrasing the stimulus items as follows:

1. The range of stimuli must be broad enough to elicit information from all areas and phases of behavior reaction.
2. Areas likely to be foci of conflict must be stimulated.
3. The responses must be controlled as little as possible by the stimulus phrases.
4. The items must be arranged to lead the subject from everyday life to the more inaccessible areas of personality, in order to avoid engendering resistance.
5. The stimuli must be comprehensible to persons of mental age ten, and up.
6. The total time required for the method must not exceed a period convenient for schedules of schools and other institutions.

Two groups of raters were used to determine reliability of the test. Rohde and one other judge rated independently the responses on thirty-six Sentence Completions protocols, and a comparison of the

scoring results showed 95 per cent total agreement in rating. Twelve of the above protocols were rated independently by three additional judges. The scoring results of all five judges showed 78 per cent total agreement in rating on the twelve protocols.

Validity was determined by comparison of test responses of fifty ninth grade girls and fifty ninth grade boys with the judgment of teachers and guidance record data. Rohde (1957, p. 119) reports, "A positive average correlation of .78 for the girls and .82 for the boys on the basis of this criteria."

##### 5. The Revised Scale for Rating Occupations

The purpose of the Revised Scale for Rating Occupation is to rate the occupation of the father, or head of the household, on a scale from one to seven following the method developed by Warner, Meeker, and Eells (1949, pp. 140, 141). The seven occupational classifications, with their respective ratings, used in the scale are: Professionals (1), proprietors and managers (2), business men (3), clerks and kindred workers (4), manual workers (5), protective and service workers (6), and farmers (7).

According to Warner, Meeker, and Eells (1949, p. 175), "The occupational rating of the father is the best single characteristic for predicting social-class placement." The occupational status rating scale has a correlation coefficient of .91 when compared with E.P. -- evaluated participation in the social class structure. (Warner, Meeker, and Eells, 1949, p. 168).

### Summary

The general conditions under which the research has been done and the procedures employed have been presented in Chapter III. The subjects and their environment have been described. Next, the subjects have been classified into two groups -- retarded readers and accelerated readers. The rationale used in the selection and the classification of the subjects has been presented. In the last part of the chapter, the instruments used in the study have been indicated and defined.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

Two statistical techniques were used to determine whether or not the able retarded reader and the able accelerated reader differ with respect to certain psycho-social variables. The results obtained from the California Test of Personality and the Warner Revised Scale for Rating Occupations were analyzed statistically by the use of the analysis of variance. The responses obtained from the Rohde Sentence Completions were analyzed statistically by the use of chi-square.

A null hypothesis was tested; namely, the hypothesis that there are "no" true differences among the six study groups. (Garrett, 1960, p. 286). The .05 level of confidence was chosen as the level which the F ratio must equal in order for the hypothesis to be accepted. (Tate, 1955, p. 381). Analysis of variance was used to make over-all comparisons between the Group I subjects and the Group II subjects. Whenever the over-all comparisons yielded a statistically significant F ratio, specific comparisons were made between subjects in Group I and subjects in Group II from each of the three cities.

An important assumption underlying the analysis of variance technique is that of homogeneity of subgroup variance. Therefore, the Bartlett Test for the homogeneity of variance assumption was applied to the Wechsler Intelligence Scores of the six subgroups. (Downie and

Heath, 1959, pp. 165, 166). The chi-squares obtained are presented in Tables IV and V.

TABLE IV  
CHI-SQUARE AND DEGREES OF FREEDOM FOR THE WECHSLER  
INTELLIGENCE SCORES -- TOTAL GROUPS

Test	$\chi^2$	df
Wechsler Intelligence Scores	13.149*	5

\*Significant at the .05 level of confidence.

TABLE V  
CHI-SQUARE AND DEGREES OF FREEDOM FOR THE WECHSLER  
INTELLIGENCE SCORES -- TOTAL GROUPS EXCEPT  
STILLWATER GROUP II

Test	$\chi^2$	df
Wechsler Intelligence Scores	3.649	4

Not significant at the .05 level of confidence.

A study of the results of the Bartlett Test reveals that the chi-square obtained from the Wechsler Intelligence Scores from the six subgroups was significant at the .05 level of confidence. However, when Stillwater Study Group II was eliminated, and the remaining five study

groups were tested by the Bartlett Test, the chi-square obtained was not significant at the .05 level of confidence. Consequently, the assumption of homogeneity of variance was met by all the subgroups except Stillwater Group II.

#### Statistical Analysis Using Analysis of Variance

In order to determine if there were statistically significant sex differences relating to Wechsler Intelligence Scores within Groups I and II from each city, a comparison of the scores of the males and females was made by means of analysis of variance. The results of the three comparisons are shown in Tables VI, VII, and VIII.

TABLE VI  
COMPARISON OF WECHSLER INTELLIGENCE SCORES OF  
MALES AND FEMALES OF GROUPS I AND II --  
OKLAHOMA CITY

Source of Variation	df	SS	MS	F
Total	33	1202.12		
Between Groups	3	269.40	89.80	2.88
Within Groups	30	932.72	31.09	

Not significant at the .05 level of confidence.

TABLE VII

COMPARISON OF WECHSLER INTELLIGENCE SCORES OF MALES AND FEMALES  
OF GROUPS I AND II -- PONCA CITY

Source of Variation	df	SS	MS	F
Total	36	2,244.00		
Between Groups	3	416.54	138.84	2.50
Within Groups	33	1,827.46	55.37	

Not significant at .05 level of confidence.

TABLE VIII

COMPARISON OF WECHSLER INTELLIGENCE SCORES OF MALES AND FEMALES  
OF GROUPS I AND II -- STILLWATER

Source of Variation	df	SS	MS	F
Total	38	4,065.75		
Between Groups	3	1,041.45	347.15	4.02*
Within Groups	35	3,024.30	86.40	

\*Significant at .05 level of confidence.

The comparison of Wechsler Intelligence Scores of males and females of Groups I and II showed the obtained F ratio for the Oklahoma City and Ponca City study groups was not significant, thus indicating that there are no significant sex differences relating to Wechsler Intelligence

Scores in these two study groups. However, the obtained F ratio for the Stillwater Study Group was significant at the .05 level of confidence. A further analysis was made of the sum of squares between groups of the Stillwater sample. The results are shown in Table IX.

TABLE IX  
FURTHER COMPARISON OF WECHSLER INTELLIGENCE SCORES  
OF MALES AND FEMALES GROUPS I AND II --  
STILLWATER

Source of Variation	df	SS	MS	F
Total	38	4,065.75		
Sex	1	71.00	71.00	.720
Groups I and II	1	680.15	680.15	7.87 **
Interaction	1	290.42	290.42	3.36
Within Groups	35	3,024.30	86.4	

\*\*Significant at .01 level of significance.

The failure of the F ratio for sex to meet the requirement of significance indicates there are no significant sex differences relating to Wechsler Intelligence Scores in the Stillwater Study Group; but, there are significant differences in Wechsler Intelligence Scores between Groups I and II, as indicated by the highly significant F ratio for the two groups.



Analysis with respect to hypotheses one, two, and four will be presented first. The findings from the statistical treatment of the data of each hypothesis will be given in accompanying tables.

#### Hypothesis I

Hypothesis I was that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ with respect to self adjustment: the extent to which the student reveals his self-concept by his responses to the California Test of Personality.

Over-all comparison was made by means of the F test to ascertain if there were significant differences among the six study groups relating to the California Test of Personality Self Adjustment Scores. The results are presented in Table X.

TABLE X  
COMPARISON OF CALIFORNIA TEST OF PERSONALITY  
SELF ADJUSTMENT SCORES OF  
GROUPS I AND II --  
TOTAL GROUPS

Source of Variation	df	SS	MS	F
Total	109	25,871.00		
Between Groups	5	1,485.00	297.00	1.26
Within Groups	104	24,386.00	234.48	

Not significant at the .05 level of confidence.

The over-all comparison of the California Test of Personality Self Adjustment Scores for Groups I and II yielded an F ratio of 1.26 which is not significant at the .05 level of confidence.

Further comparisons were made by means of the F Test to ascertain if there were significant differences between Groups I and II relating to the six component self adjustment scores of the California Test of Personality. The results of the six comparisons are presented in Table XI (on the following page).

The significant F ratio obtained on component, Nervous Symptoms, for Groups I and II were further analyzed. Specific comparison was made between Groups I and II from each of the three cities. The results are presented in Tables XII, XIII, and XIV.

TABLE XII  
COMPARISON OF COMPONENT F -- NERVOUS SYMPTOMS  
GROUPS I AND II -- OKLAHOMA CITY

Source of Variation	df	SS	MS	F
Total	33	235.49		
Between Groups	1	32.94	32.94	5.2*
Within Groups	32	202.55	6.33	

\*Significant at .05 level of confidence.

TABLE XI  
 COMPARISONS OF CALIFORNIA TEST OF PERSONALITY  
 SELF ADJUSTMENT COMPONENT SCORES  
 OF GROUPS I AND II --  
 TOTAL GROUPS

Source of Variation	df	SS	MS	F
<b>Component A - Self Reliance</b>				
Total	109	1,029.50		
Between Groups	5	135.10	27.020	3.14*
Within Groups	104	894.40	8.600	
Group I	2	6.10	3.050	.354
Group II	2	83.00	41.500	4.82 **
Group I versus Group II	1	46.00	46.000	5.34 *
*Significant at the .05 level of confidence.				
**Significant at the .01 level of confidence.				
<b>Component B - Personal Worth</b>				
Total	109	1,067.00		
Between Groups	5	78.00	15.600	1.64
Within Groups	104	989.00	9.500	
Not significant at the .05 level of confidence.				
<b>Component C - Personal Freedom</b>				
Total	109	1,010.00		
Between Groups	5	26.90	5.380	
Within Groups	104	983.10	9.450	1.75
Variance within groups is greater than the variance between groups. Not significant at .05 level of confidence.				
<b>Component D - Feeling of Belonging</b>				
Total	109	1,219.50		
Between Groups	5	55.20	11.040	
Within Groups	104	1,164.30	11.190	1.01
Variance within groups is greater than the variance between groups. Not significant at .05 level of confidence.				
<b>Component E - Withdrawing Tendencies</b>				
Total	109	1,391.10		
Between Groups	5	26.80	5.360	
Within Groups	104	1,364.30	13.117	2.440
Variance within groups is greater than the variance between groups. Not significant at .05 level of confidence.				
<b>Component F - Nervous Symptoms</b>				
Total	109	1,104.37		
Between Groups	5	145.78	29.150	3.160*
Within Groups	104	958.59	9.217	
Group I	2	78.02	39.010	4.230*
Group II	2	64.44	32.220	3.490*
Group I versus Group II	1	3.32	3.320	.360
*Significant at the .05 level of confidence.				

TABLE XIII  
 COMPARISON OF COMPONENT F -- NERVOUS SYMPTOMS  
 GROUPS I AND II -- PONCA CITY

Source of Variation	df	SS	MS	F
Total	36	467.73		
Between Groups	1	4.35	4.35	
Within Groups	35	463.38	13.23	3.04

Variance within groups greater than the variance between groups. Not significant at .05 level of confidence.

TABLE XIV  
 COMPARISON OF COMPONENT F -- NERVOUS SYMPTOMS  
 GROUPS I AND II -- STILLWATER

Source of Variation	df	SS	MS	F
Total	38	382.36		
Between Groups	1	89.70	89.70	11.34**
Within Groups	37	292.66	7.91	

\*\*Significant at .01 level of confidence.

The comparisons of self adjustment component scores between Groups I and II of the California Test of Personality yielded the following F ratios as previously presented in Tables XI, XII, XIII, and XIV:

- 1A. Self Reliance -- Over-all comparison, total groups, 3.14  
(significant at the .05 level of confidence).
- 1A. Self Reliance -- Specific group comparisons, Group I, .354  
(not significant at the .05 level of confidence); Group II,  
4.82 (significant at .01 level of confidence; Group I  
versus II, 5.34 (significant at the .05 level of confidence).
- 1B. Personal Worth -- Over-all comparison, total groups, 1.64  
(not significant at the .05 level of confidence).
- 1C. Personal Freedom -- Over-all comparison, total groups, 1.75  
(variance within groups greater than the variance between  
groups).
- 1D. Feeling of Belonging -- Over-all comparison, total groups,  
1.01 (variance within groups greater than the variance  
between groups).
- 1E. Withdrawing Tendencies -- Over-all comparison, total groups,  
2.44 (variance within groups greater than the variance  
between groups).
- 1F. Nervous Symptoms -- Over-all comparison, total groups, 3.16  
(significant at the .05 level of confidence).
- 2F. Nervous Symptoms -- Specific comparisons between the three  
cities; Oklahoma City, 5.2, (significant at the .05 level of  
confidence; Ponca City, 3.04 (variance within groups greater  
than variance between groups); Stillwater, 11.34 (significant  
at the .01 level of confidence).

Thus, the hypothesis that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement

is at or above reading expectancy level differ with respect to self adjustment was not verified when comparison was made on the basis of the total California Personality Self Adjustment Test scores.

When further comparisons were made between Groups I and II within the framework of the six self adjustment components of the California Test of Personality, the comparison on the component, Self Reliance, yielded an F ratio of 5.34, which is significant at the .05 level of confidence. Thus, indicating a significant difference between Groups I and II in their ability to act independently, as measured by the California Test of Personality. An examination of the mean scores of the six study groups revealed that students from Group II tended to be more self-reliant than students from Group I.

The specific comparisons on the component, Nervous Symptoms, made between Groups I and II from each of the three cities yielded inconclusive results. Although comparisons yielded significant F ratios in two cities (Oklahoma City and Stillwater), an examination of the mean scores on the component, Nervous Symptoms, of the four study groups showed: Group I from Oklahoma City had the higher self adjustment score; while Group II from Stillwater had the higher self adjustment score.

#### Hypothesis II

Hypothesis II was that able seventh grade students whose level of reading is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ with respect to social adjustment: the extent to which the student reveals his self-concept in relationship to others by his responses to the California Test of Personality Social Adjustment Scores.

The over-all comparison of the California Test of Personality Social Adjustment Scores for the six study groups is presented in Table XV.

TABLE XV  
COMPARISON OF CALIFORNIA TEST OF PERSONALITY  
SOCIAL ADJUSTMENT SCORES OF  
GROUPS I AND II --  
TOTAL GROUPS

Source of Variation	df	SS	MS	F
Total	109	15,158.78		
Between Groups	5	716.75	143.35	1.000
Within Groups	104	14,442.03	138.96	

Not significant at .05 level of confidence.

The over-all comparison of the California Test of Personality Social Adjustment Scores for Groups I and II yielded an F ratio of 1.00, which is not significant at the .05 level of confidence.

Further comparisons were made by means of the F test to determine if there were significant differences between Groups I and II relating to the six component social adjustment scores of the California Test of Personality. These comparisons are shown in Table XVI (on the following page).

The comparisons of social adjustment component scores between Groups I and II, of the California Test of Personality yielded the

TABLE XVI  
 COMPARISONS OF CALIFORNIA TEST OF PERSONALITY  
 SOCIAL ADJUSTMENT COMPONENT SCORES OF  
 GROUPS I AND II -- TOTAL GROUPS

Source of Variation	df	SS	MS	F
<b>Component 2A -- Social Standards</b>				
Total	109	269.50		
Between Groups	5	16.54	3.308	1.36
Within Groups	104	252.96	2.432	
Not significant at the .05 level of confidence.				
<b>Component 2B -- Social Skills</b>				
Total	109	617.32		
Between Groups	5	80.58	16.120	3.1 *
Within Groups	104	536.74	5.160	
Group I	2	11.52	5.760	1.11
Group II	2	8.30	4.150	.80
Group I versus Group II	1	60.76	60.760	11.77**
*Significant at the .05 level of confidence. **Significant at the .01 level of confidence.				
<b>Component 2C -- Anti-Social Tendencies</b>				
Total	109	1,300.78		
Between Groups	5	98.29	19.660	1.70
Within Groups	104	1,202.49	11.560	
Not significant at the .05 level of confidence				
<b>Component 2D -- Family Relations</b>				
Total	109	1,188.37		
Between Groups	5	16.15	3.230	
Within Groups	104	1,172.22	11.270	3.48
Variance within groups is greater than the variance between groups. Not significant at .05 level of confidence.				
<b>Component 2E -- School Relations</b>				
Total	109	869.00		
Between Groups	5	17.74	3.550	
Within Groups	104	851.26	8.190	2.30
Variance within groups is greater than the variance between groups. Not significant at the .05 level of confidence.				
<b>Component 2F -- Community Relations</b>				
Total	109	531.18		
Between Groups	5	3.45	.690	
Within Groups	104	527.73	5.074	7.35
Variance within groups is greater than the variance between groups. Not significant at the .05 level of confidence.				



following F ratios as previously presented in Table XVI.

- 2A. Social Standards -- Over-all comparison, total groups, 1.36 (not significant at the .05 level of confidence).
- 2B. Social Skills -- Over-all comparison, 3.1 (significant at the .05 level of confidence).
- 2B. Social Skills -- Specific group comparisons; Group I, 1.11 (not significant at .05 level of confidence); Group II, .80 (variance within groups greater than variance between groups); Group I versus Group II, 11.77 (significant at the .01 level of confidence).
- 2C. Anti-Social Tendencies -- Over-all comparison, 1.70 (not significant at the .05 level of confidence).
- 2D. Family Relations -- Over-all comparison 3.48 (variance within groups greater than variance between groups).
- 2E. School Relations -- Over-all comparison 2.30 (variance within groups greater than variance between groups).
- 2F. Community Relations -- Over-all comparison 7.35 (variance within groups greater than variance between groups).

Thus, the hypothesis that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ with respect to social adjustment was not verified when comparison was made on the basis of the total California Personality Social Adjustment scores.

When further comparisons were made between Groups I and II within the framework of the six social adjustment components of the California Test of Personality, the comparison on the component, Social Skills,

yielded an F ratio of 11.77, which is significant at the .01 level of confidence. Thus, indicating a significant difference between Groups I and II as relating to social skills, as measured by the California Test of Personality. A comparison of the means of Groups I and II revealed that students in Group I seemed to be more socially skillful than students in Group II.

#### Hypothesis IV

Hypothesis IV was that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ with respect to socio-economic status of family: the extent to which the occupations of the fathers differ as classified on the Warner Revised Scale for Rating Occupations.

Over-all comparison was made by means of the F test to ascertain if there were significant differences among the six study groups relating to the Warner classifications. The result of the comparison is presented in Table XVII.

TABLE XVII

COMPARISON OF WARNER OCCUPATIONAL CLASSIFICATIONS  
OF GROUPS I AND II -- TOTAL GROUPS

Source of Variation	df	SS	MS	F
Total	109	346.69		
Between Groups	5	97.10	19.420	8.10**
Within Groups	104	249.59	2.400	

\*\*Significant at the .01 level of confidence.

The obtained F ratio of 8.10 was significant at the .01 level of confidence and indicated a significant difference among group means.

Three other over-all comparisons were made within the framework of the occupational classifications in order to analyze the variation associated with the six study groups. Comparisons were made of: (1) the occupational classifications of subjects in Group I; (2) the occupational classifications of subjects in Group II; and, (3) the occupational classifications of subjects in Group I versus the occupational classifications of subjects in Group II. These comparisons are shown in Table XVIII.

TABLE XVIII

FURTHER COMPARISONS OF WARNER OCCUPATIONAL CLASSIFICATIONS --  
GROUP I, GROUP II, AND GROUP I VERSUS GROUP II

Source of Variation	df	SS	MS	F
Total	109	346.69		
Between Groups	5	97.10	19.420	8.10**
Within Groups	104	249.59	2.400	
Group I	2	28.82	14.42	6.21**
Group II	2	50.82	25.41	10.59**
Group I versus Group II	1	17.45	17.45	7.27**

\*\*Significant at the .01 level of confidence.

The three further comparisons within the framework of the occupational classifications yielded F ratios significant at the .01 level of

confidence as follows: Groups I, 6.21; Groups II, 10.59; and Groups I versus Groups II, 7.27. The significant F ratios indicated variability within Groups I and II, as well as variability of Group I versus Group II.

In order to determine if there were statistically significant differences between Group I and Group II, relating to the Warner occupational classifications, further comparisons were made of the groups by cities. The results of these comparisons are presented in Tables XIX, XX, and XXI.

TABLE XIX

COMPARISON OF WARNER OCCUPATIONAL CLASSIFICATIONS OF  
GROUPS I AND II -- OKLAHOMA CITY

Source of Variation	df	SS	MS	F
Total	33	85.56		
Between Groups	1	8.00	8.00	3.30
Within Groups	32	77.56	2.42	

Not significant at the .05 level of confidence.

The comparison of the occupational classifications of Groups I and II from Oklahoma City yielded an F ratio of 3.30 which is not significant. In order to be significant at the .05 level of confidence, the obtained F ratio must be 4.19.

TABLE XX  
COMPARISON OF WARNER OCCUPATIONAL CLASSIFICATIONS OF  
GROUPS I AND II -- PONCA CITY

Source of Variation	df	SS	MS	F
Total	36	111.62		
Between Groups	1	1.92	1.92	
Within Groups	35	109.70	3.13	1.63

The comparison of the occupational classifications of Groups I and II from Ponca City indicated a variance within groups greater than a variance between groups. Not significant at .05 level of confidence.

TABLE XXI  
COMPARISON OF WARNER REVISED SCALE FOR RATING OCCUPATIONS  
GROUPS I AND II -- STILLWATER

Source of Variation	df	SS	MS	F
Total	38	77.44		
Between Groups	1	15.10	15.10	8.98**
Within Groups	37	62.34	1.68	

\*\*Significant at the .01 level of confidence.

The comparison of the occupational classifications of Groups I and II from Stillwater yielded an F ratio significant at the .01 level of confidence.

The specific comparisons of the occupational classifications of

Group I and II from each of the three cities yielded the following F ratios: (1) Oklahoma City, 3.3 (not significant at .05 level of confidence); (2) Ponca City, 1.63 (variance within groups greater than the variance between groups); (3) Stillwater, 8.98 (significant at the .01 level of confidence). Thus, the hypothesis asserting that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ with respect to which the occupations of the fathers differ as classified on the Warner Revised Scale for Rating Occupations, was not verified with the Oklahoma City and Ponca City Groups. However, the F ratio of 8.98 for the Stillwater Groups was highly significant which indicates that the level of reading achievement may be positively related to occupational status of the father in certain social-economic levels.

#### Statistical Analysis Using Chi-Square

Chi-square was used to analyze statistically the responses obtained from the Rohde Sentence Completions. Since chi-square test of independence is based on the assumption that the responses of two like groups will not distribute themselves dissimilarly, a null hypothesis was tested. Each of the Rohde Sentence Completions items was tested for no difference among Group I and Group II, and it was assumed that differences were not statistically significant unless they were at or above the .05 level of confidence.

The tabulated responses to the Rohde Sentence Completions and the criteria for rating the responses negative, neutral, and positive are given in Appendix D.

### Hypothesis III

Hypothesis III was that able seventh grade students whose level of reading achievement is one or more grades below reading expectancy level and able seventh grade students whose level of reading achievement is at or above reading expectancy level differ in respect to emotional reactions: the extent to which the student reveals by negative, neutral, and positive responses his emotional reactions to the Rohde Sentence Completions.

Three of the sixty-five items on the Rohde Sentence Completions were found to be statistically significant at the .05 level of confidence. They were items 3, 27, and 42. The chi-square values for each item are presented in Table XXII.

Item three states, "I want to know." Students from Group I made nine positive responses to this item while students from Group II made only one positive response. There were no negative responses from students in Group I but Group II students made four negative responses. Thus, it appears that able students who are reading below reading expectancy level may react more positively toward stimuli relating to new experiences than students reading at or above reading expectancy level.

Item twenty-seven states, "Many of my dreams." Responses on this item indicated twice as many negative responses from students in Group I as students in Group II. Moreover, 40 per cent of the students from Group II responded positively to this item as compared to 20 per cent of the students from Group I. Thus, it appears that able students who are reading at or above reading expectancy level respond more positively toward their dreams and aspirations than do able students reading below reading expectancy level.

TABLE XXII  
 CHI-SQUARE FOR NEGATIVE, NEUTRAL, AND POSITIVE RESPONSES  
 TO ROHDE SENTENCE COMPLETIONS --  
 STUDY GROUPS I AND II

Sentence	$\chi^2$
1. My schoolwork _____.	.598
2. The future _____.	1.824
3. I want to know _____.	9.450*
4. Our family _____.	3.480
5. I feel _____.	3.009
6. The training _____.	.319
7. Much of the time _____.	1.505
8. Money often _____.	4.879
9. If I _____.	1.102
10. Working _____.	.797
11. I suffer _____.	1.751
12. Friends _____.	3.806
13. My mother _____.	1.542
14. There are times _____.	1.421
15. Eating _____.	.099
16. My mind _____.	.245
17. I sleep _____.	2.397
18. My greatest longing _____.	.183
19. God _____.	.554
20. My imagination _____.	.219
21. Most boys (men) _____.	1.598
22. My clothes _____.	.515



TABLE XXII (Continued)

Sentence	$\chi^2$
23. The laws we have _____.	.887
24. I fear _____.	.765
25. My greatest trouble _____.	5.002
26. Earning my living _____.	.603
27. Many of my dreams _____.	6.871*
28. Secretly I _____.	1.123
29. My stomach _____.	1.844
30. I cannot understand what makes me _____.	1.485
31. Most people _____.	3.127
32. My father _____.	4.440
33. Religion _____.	1.617
34. My worst _____.	1.461
35. I am very _____.	4.691
36. My childhood _____.	.753
37. Suicide _____.	.514
38. I envy _____.	2.304
39. At night _____.	.349
40. My looks _____.	2.913
41. The dark _____.	2.755
42. My chief worry _____.	7.588*
43. When I _____.	4.128
44. Fighting _____.	.746
45. Children _____.	4.142

TABLE XXII (Continued)

Sentence	$\chi^2$
46. My health _____.	1.018
47. I feel most proud of _____.	1.279
48. Girls usually _____.	.853
49. Death _____.	5.098
50. My greatest ambition _____.	.465
51. I like best _____.	.675
52. My habits _____.	1.354
53. I try to get _____.	.400
54. Love in my life _____.	2.405
55. I get pleasure from _____.	1.112
56. My teachers _____.	2.711
57. I am sorry _____.	2.123
58. At home _____.	3.844
59. I feel hurt _____.	4.886
60. Often I think _____.	2.014
61. I become embarrassed _____.	1.814
62. My head _____.	3.593
63. No one _____.	1.023
64. I am ashamed _____.	2.570
65. My education _____.	.327

\*Significant at the .05 level of confidence.

Item forty-two states, "My chief worry." Group I and II made an equal number of neutral responses on this item. However, 65 per cent of the students in Group I made negative responses to the item while only 48 per cent of the students in Group II responded negatively. The positive responses to the item were: Group I, 8 per cent; Group II, 27 per cent. Thus, it appears that able students who are not reading up to reading expectancy level tend to have more worries than able students who are reading up to expectancy level.

#### Summary

A presentation and analysis of data are included in Chapter IV. First, the Bartlett Test for the homogeneity of variance assumption is applied to the Wechsler Intelligence Scores of the six subgroups and the obtained chi-squares are reported. Next, results obtained from the California Test of Personality and the Warner Revised Scale for Rating Occupations are analyzed statistically by the analysis of variance technique, and the significance of the findings is discussed. The results of the statistical analysis of the responses to the Rohde Sentence Completions by means of chi-squares are presented in the latter part of the chapter.

## CHAPTER V

### INTERPRETATION OF RESULTS

#### Summary of the Study

The main purpose of the present study was to determine whether or not the level of reading achievement of able seventh grade students was related to certain psycho-social variables as described in Chapter I. A second purpose of the study was to present the findings in such a manner as to aid educators in developing reading programs designed to prevent and correct reading retardation of able seventh grade students.

Subjects consisted of 110 able seventh grade students enrolled in the Roosevelt Junior High School of Oklahoma City, Oklahoma; the West Junior High School of Ponca City, Oklahoma; and the Junior High School of Stillwater, Oklahoma. The Wechsler Intelligence Scores of the 110 subjects ranged from 110 to 151.

The subjects were classified on the basis of the difference between their reading grade achievement levels and their reading expectancy levels. Group I consisted of 52 able retarded readers; Group II consisted of 58 able accelerated readers.

The instruments used to study the psycho-social variables were: (1) The California Test of Personality, (2) The Rohde Sentence Completions, and, (3) The Revised Scale for Rating Occupations.

Two statistical techniques were used to analyze the data. They

were analysis of variance and chi-square.

### Findings of the Study

Statistical analysis of the data by means of analysis of variance and chi-square revealed the following results:

1. No significant difference was found between subjects in Group I and subjects in Group II with respect to self adjustment as measured by the California Test of Personality when total self adjustment scores were analyzed. However, a significant difference was found between subjects in Group I and subjects in Group II with respect to Self Reliance, one component of the California Test of Personality self adjustment test. The obtained F ratio of 5.34 was significant at .05 level of confidence.
2. No significant difference was found between subjects in Group I and subjects in Group II with respect to social adjustment as measured by the California Test of Personality when total social adjustment scores were analyzed. However, a significant difference was found between subjects in Group I and subjects in Group II with respect to Social Skills, one component, of the California Test of Personality social adjustment test. The obtained F ratio of 11.77 was significant at the .01 level of confidence.
3. A significant difference was found between subjects in Group I and subjects in Group II with respect to socio-economic status of family as rated by the Warner Revised

Scale for Rating Occupations of the fathers. The obtained F ratio of 8.10 was significant at the .01 level of confidence.

- a. No significant difference was found between subjects in Group I and subjects in Group II from Oklahoma City, Oklahoma, with respect to the Warner occupational classifications of the fathers.
  - b. No significant difference was found between subjects in Group I and subjects in Group II from Ponca City, Oklahoma, with respect to the Warner occupational classifications of the fathers.
  - c. A significant difference was found between subjects in Group I and subjects in Group II from Stillwater, Oklahoma, with respect to the Warner occupational classifications of the fathers. The obtained F ratio of 8.98 was significant at the .01 level of confidence.
4. A significant difference was found between subjects in Group I and subjects in Group II with respect to emotional reactions as revealed by responses to three items on the Rohde Sentence Completions. The items were:
- a. Item 3, "I want to know ...."
  - b. Item 27, "Many of my dreams ...."
  - c. Item 42, "My chief worry ...."

## Conclusions

The following conclusions are based on the findings of the current study. These statements are valid only within the populations from which the subjects were selected, and caution should be exercised in applying them to other populations. The conclusions are:

1. Self adjustment scores of able seventh grade students obtained on the California Test of Personality are not significantly related to level of reading achievement. Scores on Self Reliance, one component, of the California Test of Personality self adjustment test may be related to level of reading achievement.
2. Social adjustment scores of able seventh grade students obtained on the California Test of Personality are not significantly related to level of reading achievement. Scores on Social Skills, one component, of the California Test of Personality social adjustment test may be related to level of reading achievement.
3. Ratings on the Warner Revised Scale for Rating Occupations of the father may be related to level of reading achievement in certain socio-economic groups.
4. Emotional reactions as indicated by negative, neutral, and positive responses to three items on the Rohde Sentence Completions may be related to reading achievement.

### Comparison of Findings With Past Research

In general, research in the field of reading has been concerned

with three areas -- reading in the elementary school, reading disabilities of slow learners, and reading studies based on reading disability as related to grade level, rather than to the potential level of the learner.

The present study dealt with reading achievement and underachievement of able seventh grade students. The students were classified as achievers or underachievers on the basis of the difference between their reading grade achievement level and their reading expectancy level.

The present study found no significant difference between Group I and Group II with respect to over-all personality development as determined by the California Test of Personality. Thus, the study tends to support previous findings as described by Gates (1941), Homes (1961), and Johnson (1957) that variability of personality structure will be found within groups of both achieving and underachieving readers. However, significant differences were found on two components of the California Personality Test: Self Reliance and Social Skills. The successful readers appeared to be more self reliant than the unsuccessful readers, while the unsuccessful readers tended to be more skillful in social situations than their successful classmates.

The present study revealed a significant difference between subjects in Group I and II from Stillwater, Oklahoma, with respect to socio-economic status as determined by the Warner Revised Scale for Rating Occupations. Thus, the study tends to support the findings of Coleman (1940), Sexton (1961), and Mengoia (1962) that economical and environmental conditions may affect reading achievement. On the other hand, the present study revealed no significant difference between



subjects in Group I and II from Oklahoma City, Oklahoma, and Ponca City, Oklahoma, with respect to socio-economic status as determined by the Warner Revised Scale for Rating Occupations. Likewise, Keshian (1962), found that socio-economic status and reading success were not related.

An inspection of the means of Group I and II from the three cities revealed the following differences: (1) Stillwater, 1.244; (2) Oklahoma City, .985; and (3) Ponca City, .404. This would seem to indicate that the greater the mean difference between groups, on the occupational status rating of the father, the greater the difference in level of reading achievement of the children.

#### Educational Implications and Recommendations

The investigator makes the following recommendations:

1. Reading programs designed to prevent and correct reading retardation among able students should be developed at the junior high school level.
2. Educational programs designed in terms of the socio-economic status of able students, as well as in terms of their academic potential, should be developed at the junior high school level.
3. Further study should be made of socio-economic factors that seem to impede reading and academic progress.
4. The analysis of a single variable or of a composite of variables is not completely satisfactory for determining the causes of underachievement in reading. Therefore, complete case histories of retarded and accelerated

readers should be investigated to determine the complex causal relationships that are inherent in cases of reading underachievement.

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APPENDIX A  
SOCIO-ECONOMIC CLASSIFICATION OF  
THE SUBJECTS

TABLE A-I

SOCIO-ECONOMIC CLASSIFICATION OF OKLAHOMA CITY STUDENTS ON THE WARNER  
REVISED SCALE FOR RATING OCCUPATIONS OF FATHERS

Group I		Group II	
Student No.	Socio- economic Status	Student No.	Socio- economic Status
1	5	1	3
2	4	2	2
3	5	3	6
4	4	4	6
5	6	5	5
6	5	6	3
7	5	7	3
8	5	8	2
9	6	9	1
10	6	10	4
11	7	11	3
12	3	12	7
13	3	13	4
14	3	14	5
		15	4
		16	4
		17	2
		18	6
		19	1
		20	5
n = 14	4.785	n = 20	3.80

TABLE A-II

SOCIO-ECONOMIC CLASSIFICATION OF PONCA CITY STUDENTS ON THE WARNER  
REVISED SCALE FOR RATING OCCUPATIONS OF FATHERS

Group I		Group II	
Student No.	Socio- economic Status	Student No.	Socio- economic Status
1	3	1	4
2	2	2	7
3	7	3	5
4	5	4	7
5	4	5	3
6	2	6	3
7	5	7	6
8	4	8	4
9	2	9	3
10	4	10	2
11	5	11	1
12	4	12	3
13	1	13	2
14	3	14	3
15	4	15	1
16	5	16	1
17	5	17	1
18	5	18	4
19	1		
n = 19		n = 18	
3.737		3.333	

TABLE A-III

SOCIO-ECONOMIC CLASSIFICATION OF STILLWATER STUDENTS ON THE WARNER  
REVISED SCALE FOR RATING OCCUPATIONS OF FATHERS

Group I		Group II	
Student No.	Socio- economic Status	Student No.	Socio- economic Status
1	1	1	1
2	2	2	1
3	7	3	1
4	3	4	1
5	3	5	2
6	1	6	3
7	4	7	1
8	2	8	1
9	4	9	1
10	1	10	4
11	4	11	2
12	4	12	3
13	4	13	1
14	5	14	1
15	2	15	1
16	1	16	2
17	2	17	1
18	2	18	3
19	3	19	1
		20	2
n = 19	2.894	n = 20	1.650

APPENDIX B

DATA AND TEST SCORES USED TO CLASSIFY

THE 110 SUBJECTS

TABLE B-I

DATA AND TEST SCORES OF 14 SEVENTH GRADE OKLAHOMA CITY JUNIOR HIGH SCHOOL STUDENTS RETARDED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Retardation
1	F	12-3	112	6.6	8.06	1.46
2	F	12-2	114	6.0	8.18	2.18
3	M	12-9	130	5.3	9.19	3.89
4	M	12-8	114	6.1	8.18	2.08
5	F	12-9	120	6.7	8.56	1.86
6	M	12-5	120	7.5	8.56	1.06
7	M	12-2	116	5.1	8.31	3.20
8	M	12-3	121	7.6	8.62	1.02
9	M	12-10	115	5.5	8.25	2.75
10	M	12-5	116	7.0	8.31	1.31
11	M	13-1	110	6.6	7.93	1.33
12	M	12-2	115	7.1	8.25	1.15
13	M	12-1	110	6.2	7.93	1.73
14	M	12-2	125	6.8	8.88	2.08
Mean			117	6.435	8.372	1.935

TABLE B-II

DATA AND TEST SCORES OF 19 SEVENTH GRADE PONCA CITY JUNIOR HIGH SCHOOL  
STUDENTS RETARDED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Retardation
1	M	12-4	114	7.0	8.18	1.18
2	M	12-5	129	8.0	9.13	1.13
3	F	12-7	114	6.5	8.18	1.68
4	M	12-3	112	5.8	8.06	2.26
5	F	13-0	125	7.7	8.88	1.18
6	F	12-3	128	6.8	9.06	2.26
7	F	12-9	122	7.6	8.69	1.09
8	M	12-6	120	7.5	8.56	1.06
9	M	12-7	123	7.6	8.75	1.15
10	M	12-5	117	6.4	8.37	1.97
11	M	12-7	120	7.0	8.56	1.56
12	M	13-0	115	7.2	8.25	1.05
13	F	12-3	117	7.0	8.37	1.37
14	F	12-6	124	6.3	8.81	2.51
15	F	12-11	115	7.2	8.25	1.05
16	M	12-2	114	6.8	8.18	1.38
17	F	12-3	116	7.3	8.31	1.01
18	F	13-0	128	7.7	9.06	1.36
19	F	12-7	133	7.9	9.38	1.48
Mean			120	7.121	8.58	1.459

TABLE B-III

DATA AND TEST SCORES OF 19 SEVENTH GRADE STILLWATER JUNIOR HIGH SCHOOL  
STUDENTS RETARDED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Retardation
1	F	12-8	123	6.8	8.75	1.95
2	M	12-11	129	7.2	9.13	1.93
3	M	12-3	117	5.6	8.37	2.77
4	F	12-5	133	7.8	9.38	1.58
5	M	13-0	115	6.8	8.25	1.45
6	F	12-8	132	7.4	9.32	1.92
7	F	12-8	133	7.6	9.38	1.78
8	F	12-9	115	6.9	8.25	1.35
9	M	12-7	120	7.4	8.56	1.16
10	M	12-2	115	6.5	8.25	1.75
11	F	12-2	110	6.5	7.93	1.43
12	M	12-10	125	7.1	8.88	1.78
13	M	12-7	120	6.4	8.56	2.16
14	F	12-5	127	7.9	9.00	1.10
15	M	12-3	128	7.0	9.06	2.06
16	M	12-9	128	7.7	9.06	1.36
17	M	13-3	115	7.1	8.25	1.15
18	M	12-11	131	8.0	9.25	1.25
19	F	12-11	119	7.5	8.50	1.00
Mean			123	7.12	8.75	1.63



TABLE B-IV

DATA AND TEST SCORES OF 20 SEVENTH GRADE OKLAHOMA CITY JUNIOR HIGH SCHOOL STUDENTS ACCELERATED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Acceleration
1	M	12-5	116	9.0	8.31	.69
2	F	12-4	115	9.1	8.25	.85
3	M	12-9	125	11.0	8.88	2.12
4	F	12-4	116	11.0	8.31	2.69
5	F	12-3	111	10.6	7.99	2.61
6	F	13-2	115	11.4	8.25	3.15
7	M	12-5	131	10.4	9.25	1.15
8	F	13-0	118	11.8	8.43	3.37
9	F	12-9	111	9.7	7.99	1.71
10	F	12-2	118	9.8	8.43	1.37
11	F	12-10	124	10.9	8.81	2.09
12	M	12-2	123	11.7	8.75	2.95
13	M	12-11	123	10.8	8.75	2.05
14	F	13-0	117	10.4	8.37	2.03
15	M	12-2	120	11.1	8.56	2.54
16	M	12-8	131	10.7	9.25	1.45
17	F	13-0	121	9.1	8.62	.48
18	F	12-8	119	9.9	8.50	1.40
19	F	12-3	131	10.0	9.25	.75
20	F	12-4	115	8.3	8.25	.05
Mean			120	10.335	8.56	1.775

TABLE B-V

DATA AND TEST SCORES OF 18 SEVENTH GRADE PONCA CITY JUNIOR HIGH SCHOOL  
STUDENTS ACCELERATED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Acceleration
1	M	12-9	120	10.5	8.56	1.94
2	F	12-10	119	9.3	8.50	.80
3	M	13-0	135	11.9	9.51	2.39
4	M	12-7	130	10.1	9.19	.91
5	F	12-11	121	9.7	8.62	1.08
6	F	12-2	128	11.5	9.06	2.44
7	F	12-5	115	8.9	8.25	.65
8	F	12-8	138	10.9	9.69	1.21
9	M	12-6	125	8.9	8.88	.02
10	F	13-0	135	10.8	9.51	1.29
11	F	12-9	141	9.89	9.88	.01
12	M	12-6	131	9.6	9.25	.35
13	F	12-3	125	10.0	8.88	1.12
14	M	13-0	136	11.2	9.57	1.63
15	M	12-9	117	10.6	8.37	2.23
16	M	12-9	125	10.6	8.88	1.72
17	F	13-0	119	8.8	8.50	.30
18	F	13-0	112	9.2	8.06	1.14
Mean			126	10.138	8.95	1.18

TABLE B-VI

DATA AND TEST SCORES OF 20 SEVENTH GRADE STILLWATER JUNIOR HIGH SCHOOL  
STUDENTS ACCELERATED IN READING

Student No.	Sex	C.A.	Wisc I.Q.	Gates Reading Grade Level	Reading Expectancy	Reading Acceleration
1	M	13-1	136	10.8	9.57	1.23
2	F	12-6	127	9.2	9.00	.20
3	F	12-6	118	10.5	8.43	2.07
4	F	12-8	151	12.5	10.51	1.99
5	M	12-3	138	10.3	9.69	.61
6	M	12-3	126	11.4	8.94	2.46
7	F	12-7	115	10.7	8.25	2.45
8	M	12-2	144	11.2	10.07	1.13
9	M	12-3	141	10.8	9.88	.92
10	M	12-6	128	9.7	9.06	.64
11	F	12-9	116	8.7	8.31	.39
12	F	13-0	115	11.5	8.25	3.25
13	M	12-1	131	11.3	9.25	2.05
14	M	12-3	136	11.0	9.57	1.43
15	M	11-5	139	11.1	9.76	1.34
16	M	13-1	135	10.3	9.51	.79
17	F	12-10	150	11.7	10.45	1.25
18	F	12-10	135	10.4	9.51	.89
19	F	13-1	129	10.3	9.13	1.17
20	F	13-0	115	10.6	8.25	2.35
Mean			131	10.7	9.27	1.43

APPENDIX C

CALIFORNIA TEST OF PERSONALITY

## APPENDIX C

### CALIFORNIA TEST OF PERSONALITY (FORM AA, 1953)

#### I. Self Adjustment

- 1A. Self-Reliance -- An individual is said to be self-reliant when his overt actions indicate that he can do things independently of others.
- 1B. Sense of Personal Worth -- An individual possesses a sense of personal worth when he feels capable and reasonably attractive.
- 1C. Sense of Personal Freedom -- An individual enjoys a sense of personal freedom when he is permitted to have a reasonable share in setting the general policies that govern his life.
- 1D. Feeling of Belonging -- Enjoys the love of his family and a cordial relationship with people in general.
- 1E. Withdrawing Tendencies -- An individual who is said to withdraw is characteristically sensitive, lonely, and given to self-concern.
- 1F. Nervous Symptoms -- An individual who is classified as having nervous symptoms may suffer from a variety of physical symptoms, such as, loss of appetite, inability to sleep, or a tendency to be chronically tired.

## II. Social Adjustment

- 2A. Social Standards -- An individual who has come to understand the rights of others and who appreciates the necessity of subordinating certain desires to the needs of the group.
- 2B. Social Skills -- A socially skillful person is one who subordinates his egoistic tendencies in favor of interest in the problems and activities of his associates.
- 2C. Anti-Social Tendencies -- An anti-social individual is one who endeavors to get his satisfactions in ways that are damaging and unfair to others.
- 2D. Family Relations -- The individual who exhibits desirable family relationships is one who feels that he is loved and has a sense of security and self-respect in connection with the various members of his family.
- 2E. School Relations -- The individual who is satisfactorily adjusted to school is one who feels that his teachers like him, who enjoys being with other students, and who finds the school work adapted to his level of interest and maturity.
- 2F. Community Relations -- The individual who is making good adjustments in his community is one who mingles happily with his neighbors, who takes pride in community improvements.

APPENDIX D

NEGATIVE, NEUTRAL, AND POSITIVE RESPONSES  
OF STUDY GROUPS I AND II TO ROHDE  
SENTENCE COMPLETIONS

## APPENDIX D

### ROHDE SENTENCE COMPLETIONS

The tabulated responses to the Rohde Sentence Completions are presented in Appendix D. The responses of the 110 subjects are classified as negative, neutral, or positive, as explained by Rhode (1957, pp. 116, 117).

Objects which were accepted, or for which an attachment was expressed, are classified under the heading of positive cathexions. Objects for which dislike or revulsion was expressed are classified under negative cathexions. If neither acceptance or rejection was indicated, it was classified as neutral.



TABLE D-I

THE NEGATIVE, NEUTRAL, AND POSITIVE RESPONSES OF STUDY GROUPS I AND II  
TO ROHDE SENTENCE COMPLETIONS

Sentence Number	Group I			Group II		
	Negative	Neutral	Positive	Negative	Neutral	Positive
1	20	4	28	26	3	29
2	2	31	19	5	37	16
3	0	43	9	4	53	1
4	3	24	25	3	24	31
5	7	13	32	15	15	28
6	11	22	19	10	27	21
7	6	33	13	5	43	10
8	17	25	10	28	26	4
9	11	35	6	16	38	4
10	27	11	14	26	12	20
11	36	6	10	40	8	10
12	6	5	41	7	10	41
13	5	11	36	8	8	42
14	38	12	2	43	13	2
15	4	20	28	4	24	30
16	8	38	6	10	40	8
17	4	34	14	8	27	23
18	6	34	12	6	35	17
19	0	27	25	0	26	32
20	4	44	4	6	47	5
21	9	17	26	9	21	28
22	9	15	28	7	17	34

TABLE D-I (Continued)

Sentence Number	Group I			Group II		
	Negative	Neutral	Positive	Negative	Neutral	Positive
23	25	9	18	25	8	25
24	42	4	6	46	7	5
25	47	1	4	49	7	2
26	22	17	13	21	20	17
27	12	30	10	6	29	23
28	7	37	8	9	36	13
29	8	39	5	14	41	3
30	29	20	3	28	27	3
31	6	14	32	13	10	35
32	1	24	27	6	19	33
33	3	26	23	1	29	28
34	33	18	1	39	19	0
35	18	9	25	19	20	19
36	5	14	33	5	12	41
37	38	14	0	42	15	1
38	34	12	6	43	7	8
39	6	41	5	8	43	7
40	12	28	12	21	29	8
41	18	22	12	27	16	15
42	34	14	4	28	14	16
43	14	34	4	15	32	11
44	40	8	4	44	7	7
45	7	19	26	4	25	29

TABLE D-I (Continued)

Sentence Number	Group I			Group II		
	Negative	Neutral	Positive	Negative	Neutral	Positive
46	2	11	39	5	13	40
47	1	10	41	2	7	49
48	14	20	18	15	27	16
49	22	21	9	13	32	13
50	2	19	31	2	18	38
51	2	27	23	2	26	30
52	17	26	9	15	28	15
53	6	34	12	6	41	11
54	4	20	28	10	22	26
55	1	16	35	2	13	43
56	8	7	37	15	4	39
57	12	17	23	20	19	19
58	4	22	26	11	26	21
59	36	15	1	46	8	4
60	10	37	5	18	35	5
61	34	17	1	43	12	3
62	10	37	5	21	34	3
63	9	37	6	13	36	9
64	41	9	2	41	10	7
65	3	11	38	3	10	45

VITA

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