This is to certify that the

dissertation entitled

A COMPARATIVE STUDY OF SEVENTH AND EIGHTH GRADE POOR AND GOOD READERS

presented by

Anna-Maria Ignatovich

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Education

Lois G. Bader
Major professor

Date May 16, 1988

A COMPARATIVE STUDY OF SEVENTH AND EIGHTH GRADE POOR AND GOOD READERS

By

Anna-Maria Ignatovich

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

College of Education

1988

ABSTRACT

A COMPARATIVE STUDY OF SEVENTH AND EIGHTH GRADE POOR AND GOOD READERS

By

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The purpose of this study was to compare poor and good readers of Middle School age with regard to vision, visual and auditory discrimination, language processing skills, family influences, oral language development, a writing sample, and a set of five questions dealing with pre-reading experiences, number of magazines purchased regularly in the home and whether books are given as presents in the family in order to determine what differences exist between the two groups of readers.

Specifically, the purpose was to identify the various deficits of each individual to determine what differences existed between individuals identified as poor and good readers.

The population consisted to seventh and eighth grade students attending a middle school in central

Michigan. The selected sample consisted of a group of thirty poor and thirty good readers.

Four instruments were used for the gathering of data: The Keystone Telebinocular Visual Screening Test, A Coded Checklist Inventory, the Bader Reading and Language Inventory, a set of five questions and the TOLD-I. A writing sample of self-selected topic and length was obtained from each student.

T-tests were used to compare means when appropriate, and chi-square tests were used to determine association or relationships between categorical variables.

The statistical tests supported the following findings:

1. Poor readers have more auditory discrimination problems than do good readers.

2. The fathers of poor readers, while finishing high school, have fewer years education than do the fathers of good readers.

3. Poor readers do not receive books as presents as often as do good readers.

4. Poor readers are not as proficient in oral language skills as good readers.

5. Poor readers are not as proficient in written language skills as good readers.

6. When writing, poor readers make more spelling and grammatical errors than do good readers.

7. Poor readers exhibit more anomalies than do good readers.

ACKNOWLEDGEMENTS

A number of people have provided assistance and support throughout my doctoral program. Many others have provided the encouragement needed to begin and complete this program.

I would like to thank Dr. Lois A. Bader, who served as my academic advisor and dissertation committee chairperson. Her interest, caring and encouragement contributed greatly throughout my program. I would also like to thank Drs. Ben Bohnhorst, Michael W. Casby, and Eugene Pernell for serving as members of the doctoral committee.

I am grateful to the members of my family and the many friends who provided love, support and constant encouragement.

Finally, I want to thank my husband for his help, love and patience and my children for their understanding, encouragement and love.

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CHAPTER I

THE PROBLEM

Introduction

For more than eighty years intensive research into the causes of reading problems has been conducted. By and large, researchers have followed a single-causation theory, initially assuming that most children with reading problems who were apparently normal in other respects were suffering from some physical defect, such as visual or auditory. Additional single-causation research, however, has shown that there are many reasons why children fail to learn to read at a level consistent with their capabilities. Such other factors as brain damage, neurological dysfunction, mixed-lateral dominance, as well as emotional, psychological, environmental, and instructional influences have been studied as possible causes of reading problems. A child may successfully compensate for a single handicap, but when several such factors exist simultaneously, it may be impossible for the child to overcome them in order to become a proficient reader.

Unfortunately, although many studies have been done to determine the differences between poor and good readers, only a few have considered a multiple-causation theory by testing several variables and their effect on readers. Helen Robinson's study (1946) is a classic in the study of causes and remediation of reading problems. One of the purposes of her study was to examine the

various causes that operate in each case rather than by studying a single factor in isolation.

She found that students severely retarded in reading exhibited not one but numerous anomalies. Robinson's findings are supported by a more recent study (Bader and Pearce, 1984) which also found that numerous anomalies (i.e. visual acuity problems, poor attendance, and language processing deficits) contribute or are related to reading problems.

A variety of handicaps, both alone and in combination, have been suggested as the cause of reading difficulty, without any consensus of opinion as to which are the most important. Since such unanimity is lacking, it is important that continued research be conducted with regard to what factors contribute to reading disability. The comparative study of poor and good readers reported here grew out of a need for additional information in this area.

Background

A small suburban school, located in a primarily lower middle class bedroom community outside a small midwestern city (also serving as the state capitol), the Denton Middle School (as this school and district will be called for the purposes of this study) was chosen as the sight of this study when the Superintendent of the school district requested help in determining why approximately ten percent of the non-special education seventh and

eighth grade students enrolled in school scored two or more years below grade level in comprehension on the Gates-MacGinitie Reading Test given in October of the current school year. Most of the students included in the ten percent figure had been attending school in the Denton system since kindergarten. The Superintendent questioned why these students, exposed to the same teachers, teaching methods and materials, and school environment as good readers, failed to achieve grade level scores on the reading test.

Purpose of the Study

The purpose of this study was to compare poor and good readers of middle school age with regard to vision (as measured by the Keystone Telebinocular Vision Screening Test), visual and auditory discrimination, language processing skills (as measured by portions of the Bader Reading and Language Inventory), family influences, oral language development (as measured by a Test of Language Development-Intermediate [TOLD-I]), a writing sample, a set of five questions, pre-school reading experiences, number of magazines regularly purchased in the home, and whether books are regularly given as presents in order to determine what differences exist between the two groups of readers.

Specifically, the purpose was to identify the various deficits of each individual to determine what differences existed between individuals identified as poor

readers and those identified as good readers.

Research Questions

It was the purpose of this study to compare poor and good readers in the Denton Middle School. The major research questions explored are:

1.0 Do poor and good readers differ with regard to vision, visual and auditory discrimination problems?

1.1 Do poor and good readers differ with regard to vision and visual discimination problems?

1.2 Do poor and good readers differ with regard to auditory discrimination problems?

2.0 Do family environmental and educational background differ between poor and good readers?

2.1 Does the mean educational level of the fathers of poor readers differ from those of good readers?

2.2 Does the mean educational level of the mothers of poor readers differ from those of good readers?

2.3 Does the mean number of siblings per family differ between poor and good readers?

2.4 Does the number of magazines purchased on a regular basis in the homes of poor

readers differ from those of good readers?

2.5 Do poor readers differ from good readers with regard to being read to as preschoolers?

2.6 Does the number of poor readers who regularly receive books as presents differ from good readers?

3.0 Does oral language ability as measured by a standardized test differ between poor and good readers?

4.0 Do poor and good readers differ in language processing skills as measured by selected tests of the Bader Reading and Language Inventory?

4.1 Do poor readers differ from good readers selected portions of the Phonics and Word Analysis Test?

4.2 Do poor readers differ from good readers in the number of errors on the two diagnostic spelling tests of ten words each?

4.3 Do poor readers differ from good readers on the Cloze IV?

5.0 Does writing ability on a sample of self-selected topic and length differ between poor and good readers?

5.1 Does the mean number of words per sample differ between poor and good readers?

5.2 Does the mean number of words per T-unit differ between poor and good readers?

5.3 Does the mean number of T-units per sample differ between poor and good readers?

5.4 Does the mean number of spelling errors per sample differ between poor and good readers?

5.5 Does the mean number of grammatical errors per sample differ between poor and good readers?

6.0 Do poor and good readers differ with regard to the number of anomalies they exhibit?

Overview of the Research Procedure

This study, a comparative study of thirty poor readers and thirty good readers, used students from the seventh and eighth grades of Denton Middle School. The group of thirty poor readers is the population (with the exception of five eighth grade students for whom parents would not give permission for inclusion in the study) of seventh and eighth grade poor readers for this district but may be thought of as a sample of poor readers from comparable school districts. The group of thirty good readers consists of a random sample of the population of good readers. To obtain the random sample each seventh and eighth grade student in the school who scored on or above grade level on the Gates-MacGinitie Reading Test

was assigned a number. The numbers were then selected from a table of random numbers.

The Keystone Telebinocular Vision Screening Test was used to test vision acuity and binocular coordination; the Bader Reading and Language Inventory (Bader, 1983) was used to collect information regarding visual and auditory discrimination; the Test of Language Development, Intermediate (TOLD-I, Hammill & Newcomer) was used to obtain a measure of oral language development with regard to each seventh grade student's abilities in Sentence Combining, Characteristics, Word Ordering, Generals, and Grammatic Comprehension; and a writing sample of self-determined length and topic was taken from each student. A set of five questions was asked of each student to determine whether the student was read to as a preschooler, the number of magazines purchased in the home, and whether the student regularly receives books as presents.

In addition, each student's CA-60 school file was examined for information regarding parents' education and number of siblings.

Scores for the Gates-MacGinitie Reading Test (1965), given at the beginning of the school year, were used to determine reading comprehension levels, from which selections for the two groups were made.

Additional tests from the Bader Reading and Language Inventory were used to provide information regarding each

student's language processing skills.

Generalizability

The students identified as poor readers in this study were seventh and eighth graders from a middle school with a total population of 391, grades six through eight. The good readers with whom they were compared were selected randomly in direct proportion to the number of poor readers identified in the two grades. The city used for the study is located near the state capitol of Michigan and has population of approximately 3,100. Much of the information for this study was obtained from school permanent cumulative record files, and it was assumed that all statistical reporting recorded therein was accurate and current. Additional information was obtained through the administration of a visual screening test, a standardized language development test and an accepted Informal Reading Inventory. It may, therefore, be concluded that the findings in this study can be generalized to populations in other school systems with similar seventh and eighth grade students having a similarity of educational and socio-economic backgrounds.

As stated previously, no consensus of opinion exists with regard to which factors or combination of factors contribute most to reading difficulties. (More will be said about this in Chapter II). If the factors identified in this study are helpful in identifying certain salient characteristics or deficits of poor readers,

insight may be gained with regard to the anticipation and remediation of reading problems.

Because the information contained in the files, the vision test, standardized language test and the Informal Reading Inventory are readily available and accessible to school personnel, the research approach and methodology may have the most generalizability.

Limitations

Due to a limited sample, the findings of this study are not necessarily widely generalizable, although there will be no proof that they are not.

The study may yield results unique to the Denton School system. However, the Denton Middle School is a fairly typical midwest middle school, and the results could provide some insight in comparable schools.

In addition, a comparison of the results of this study with those of others, such as Robinson (1946) and Bader and Pearce (1984), may increase the generalizability of the findings if they are similar.

Definition of Terms

The reader may better understand this study if certain terms are initially clarified.

1. Poor reader is defined as a student who tested as reading at least two years below present grade level.

2. Good reader is defined as a student who tested as reading on or above grade level (including those students who scored on the twelfth grade level on the

reading test).

3. Visual acuity is defined as sharpness or keenness of vision as measured by a standard target at a standard distance.

4. Visual discrimination is defined as the ability to match letters and words in selected written materials.

5. Auditory discrimination is defined as the ability to hear major or slight differences in sounds, specifically between words.

6. Anomalies refers to those factors contributing to reading problems.

7. Family educational background is defined as the years of schooling successfully completed by both parents.

8. Family environmental background, for the purposes of this study, refers to the number of siblings of each student, the number of magazines purchased, and the reading done with the student as a pre-schooler, and books received as presents.

9. T-Units (minimal terminal units) are the shortest grammatically terminable units into which a connected discourse can be segmented without leaving any fragments as residue.

Organization of Subsequent Chapters

The content of Chapter I has included the background of the problem, purpose of the study, research questions to be explored, overview of the research procedure,

generalizability of the findings, limitations of the study, and definitions of terms.

In Chapter II, pertinent research and literature relating to the subject content of this study will be reviewed.

In Chapter III, a description of the design and methodology used in the study will be discussed.

In Chapter IV, presentation of the data collected and analyzed will be reported and discussed.

In Chapter V, a summary of the study, appropriate conclusions, and recommendations for future research will be presented.

CHAPTER II

RELATED LITERATURE

Introduction

With regard to many of the variables as discussed in the purpose of this study (vision, auditory discrimination, oral language development, and family influences), research is divided as to their contribution to reading problems. Part of the reason for this division is that many studies have compared poor and good readers relative to an isolated variable. It needs to be pointed out at this time that there are many factors which seem to have a close relationship with reading problems. However, although many studies confirm such a relationship, it is difficult to establish any factor as having a direct causal relationship.

Early research into the causes of reading disability was concerned mainly with discovering the contributing reason why some children fail to learn to read at a level consistent with their capabilities. Single-syndrome research paradigms focused on isolated problems in an effort to discover the defect peculiar to poor readers. One area given a great deal of attention was that of visual defects. It was natural for researchers to concentrate on visual problems since the complex process of reading, involving the use of abstract symbols, requires highly disciplined eye movements and close, concentrated attention for prolonged periods of time. Such research,

however, was inconclusive and contradictory (Spache, 1976).

Although visual problems may be a factor in the reading difficulties experienced by some students, additional research has shown that the causes of reading disabilities differ among students, with each student evidencing a different combination of intellectual, physical, psychological and environmental problems. These problems may be "inherent in the child himself or they may be external factors related to conditions at home, in the community, or at school" (Pollack and Piekarz, 1963).

Single-syndrome theories have persisted however. Frostig (1965, 1972), and others attributed reading problems and learning difficulties to visual perception difficulties. Bender (1957) has argued that maturational lag (where specific brain centers involved in reading have not developed apace with the rest of the brain) is the specific cause of reading disability. Attentional deficits and difficulties in concentrating, major components in the reading process, were emphasized by Kinsbourne and Caplan (1979), as well as by Dykman (1971) before them as the cause of reading problems. Vellutino (1979) has refuted the claims of those favoring the single-causation theory of visual perception, while promoting his idea of language deficits or specific deficits in verbal processing as the cause of reading disabilities.

Perhaps the most widely discussed and influential

theory has been that of Samuel T. Orton (1937), who proposed the cerebral dominance theory of laterality with regard to reading problems.

Researchers in the single-syndrome theory have found that there is an occurrence of one factor or another in some cases of reading disability. However, a claim that a particular factor is responsible for all reading problems cannot be made. According to Johnson (1957), "the consensus among those who have carried on studies of reading disability occurring in cases of adequate capacity is that rarely is there a single causal factor which can be found" (p. 1).

The multiple-syndrome theory states that usually a combination of negative factors are responsible for reading problems experienced by individual students. Very often, a child with a single deficit or handicap learns to compensate for it in a manner which enables him/her to learn to read successfully. Helen Robinson's (1946). examination of many factors having a bearing on reading problems greatly influenced this study and the decision to examine several variables with regard to their relationship to reading problems.

Although this study is concerned with multiple factors associated with reading problems, it is important to review the literature concerned with each of the factors being studied. Therefore, this review of literature is organized under the headings of each variable.

Vision

Since the complex process of reading involves the successful identification of abstract visual symbols, good vision is extremely important. The process of reading requires highly disciplined eye movements, and single clear vision is achieved when both eyes are focused correctly. Six muscles control the movement of the lens in each eye, and as the eyes move, the twelve muscles work together to realign the eyes to permit clear vision with a single image. Because reading requires considerable convergence of the eyes in order to follow lines of print at a distance of twelve to fourteen inches, it is evident that binocular coordination, as well as visual acuity is necessary.

The most common visual irregularities, reported by some researchers as the cause of reading problems, are faulty acuity, which refers to myopia (nearsightedness) and hypermetropia (farsightedness); astigmatism, which refers to blurred or distorted images resulting from an uneven distribution of light rays over the retina due to an uneven curvature of the front of the eye; and binocular coordination difficulties.

The findings and conclusions of numerous research studies dealing with visual defects are most disparate. While some researchers assert that visual defects are important causative agents of reading problems, others see little or no relation between them. The literature

dealing with the relationship of visual defects and reading problems is so extensive that to summarize it all would be more comprehensive than is necessary for the purpose of this study. Therefore, a brief description of the findings of the more notable studies indicating no relationship or significant difference between reading problems and visual defects and those reporting significant differences will be included in this review of pertinent literature.

In a study that is representative of those comparing visual defects in good and poor readers, Monroe (1932) found that a lack of adequate visual acuity did not distinguish poor readers from good readers. However, while she concludes that visual acuity does not necessarily disrupt the learning process, she states that it certainly can be a hindrance to reading, causing eyestrain and discomfort in individual cases. This supports the findings of Gray, who, as early as 1917, reported, after an intensive investigation of 59 cases, that "eye defects have nothing to do with reading ability" (p. 122).

Eames (1932) studied 114 reading disability cases and 143 unselected cases and found no significant difference between them with regard to visual acuity. But he did find that the reading disability cases showed greater exophoria (divergence of lines of vision due to muscle imbalance).

Farris (1936) found that 44 percent of 1,685 seventh

graders evidenced visual defects but concluded that such defects do not always lead to problems in reading. He did note, however, that hyperopia and strabismus are associated with less than normal progress in reading.

Witty and Kopel (1936), using the Keystone Telebinocular Screening Test, concluded that "the visual defects studied do not appear to cause or contribute to reading disability" but "further research is essential to determine those visual defects that most directly affect reading achievement" (p. 457).

Gates and Bond (1936), Swanson and Tiffin (1936), Goodsell (1937), and Betts and Austin (1941) found no significant difference between visual defects and reading difficulties.

Imus, et al (1938) grouped subjects according to a diagnosis of ocular defects and found they showed no significant difference in gains or performance on reading tests.

Dalton (1943) studied the vision of 5,000 children in grades three through twelve, using the Keystone Telebinocular Screening Test and found that "on the average, there is very little, if any, general relationship between normal or defective vision and scholastic achievement" (p. 94). Dalton reports an interesting sidelight resulting from his study: stereopsis, as measured by the Keystone, develops very rapidly after the first grade, and, therefore, it is important that visual

screening tests be given at various grade levels.

Jackson and Schye (1945), and Nadel, et al. (1957), studying the relationship of reading and vision in high school students, report no relationship between the two.

Robinson and Huelsman (1953) found no significant relationship between measures of vision of reading but did find differences on measures of vision in fourth and seventh grade students when divided into groups of good and poor readers. More than half of the poor readers had vision problems. Although the finding did not reach the level of significance, Robinson and Huelsman assert that the high incidence of visual problems among poor readers is sufficient to warrant a careful consideration of the defects.

In a more recent study Robinson (1968) measured thirteen aspects of vision in 800 students, grades one through eight, and found no statistically significant correlations between reading and vision scores.

In the 1970's Rutter (1970) and Martin (1971) also found that vision is not related to reading difficulties.

Although Malmquist (1958) also reported no significance between reading and vision, her study can viewed as a bridge between those finding no significance and those which find to the contrary, as well as illustrate the importance of taking multiple causation factors into consideration in any study of the reasons for reading problems. Malmquist asserts that "a combination of

different defects, which includes visual defects, can prove such an impediment and so difficult to compensate for, that they may give rise to reading disability" (p. 252).

As with the studies showing no relationship, there is a preponderance of studies showing a relationship between visual defects and reading ability during the 1930's, 1950's and 1960's with fewer studies being reported during the 1940's, 1970's, and 1980's.

Betts (1934) found that some visual defects are more common among poor readers than among good readers. He constructed the Keystone Telebinocular to get a better measure of vision at reading distance.

Selzer (1933) reported that ninety percent of the reading disability cases he studied suffered from fusion irregularities and muscular imbalances.

Eames (1932) demonstrated a greater incidence of fusion irregularities among disabled readers which proved statistically significant. In 1938 he found that one half of 350 poor readers had coordination difficulties at near point. And, in his study (1943) of fifty unselected reading failures, ages six years, seven months to thirteen years, Eames found that when vision was corrected reading improved.

Fendrick (1935) found visual acuity to be a differentiating factor between sixty-four good and an equal number of poor readers.

Helen Robinson (1946) reported that over fifty percent of the disabled readers she studied were suffering from visual anomalies which contributed to their reading failure. In her comprehensive review of research Robinson states that "among the visual difficulties most frequently linked with reading inability and apparently in need of more careful investigation are hyperopia, hyperopic astigmatism, binocular inco-ordination, visual fields, and aniseikonia if younger children are being studied" (p. 29). And in her study of 1968, Robinson found a significant difference between groups of poor and good readers with regard to the incidence of hyperopia, even though she reported no statistically significant relationship between visual problems and reading impairment. In an unselected population of 225 students in grades one through eight, Park and Burri (1943) found a positive correlation between reading disabilities and visual defects.

Steinbaum and Kurk (1958) reported a tendency for above average readers to surpass below average readers in visual performance.

Johnson (1957) found that eye muscle imbalance and faulty fusion problems are more frequent among poor readers.

A significant correlation between reading achievement and scores on the Ortho-Rater Visual Screening Test

was found by Steinberg and Rosenberg (1956).

In a study of eighty-seven children in grades one through six with severe deficits in reading and/or language arts, Coleman (1968) found that fifty percent had either sight or visual-perceptual dysfunctions.

Hurst's (1960) study of 2,000 children demonstrated that convergence ability was significantly impaired in children with reading problems.

After a three-year-study of reading disability, Krippner (1971) concluded that poor visual skills are the largest single etiological factor involved in reading impairment.

Spache and Tillman (1962) in a study involving 114 reading impaired and 101 normal readers found a significant difference in near point acuity between the two groups.

Gupta, et al (1978) found that differences are found between good and poor readers in match-to-sample problems composed of letters rather than unfamiliar visual forms.

Summary

Review of the related literature in this section has been concerned with the relationship between visual defects and reading ability. Since vision is such an important factor in the reading process, such a plethora of research is understandable. The great majority of researchers seem to have concluded that the relation between vision and reading is unimportant. However,

other researchers report significant positive relations between the variables.

Because so many studies found no greater incidence of vision deficits in a reading disabled population than in a normal population, researchers of the 1970's and 1980's, with very few exceptions, abandoned hypotheses that reading disability is caused by visual defects, in spite of the fact that a causal role was demonstrated in a number of individual cases.

The major portion of studies finding no relationship between vision and reading were single-syndrome studies, focusing on visual problems exclusively. Many of the multiple-syndrome studies, such as Robinson's, concluded that vision defects did have some bearing on the reading ability of students tested. And, it is "only when clusters of skills are recognized as interacting functions can we expect to determine the true relationships with reading" (Spache, 1976, p. 47).

Auditory

In contrast to the large number of studies concerned with investigating the relationship between visual defects and reading problems, there have been relatively few studies done to ascertain the relationship between auditory defects and reading problems, and the majority of those have focused on auditory acuity, especially with regard to early elementary school students.

This study did not deal with auditory acuity (the

ability to hear various frequencies at various intensities of loudness) but did concern itself with auditory discrimination (the ability to hear major or slight differences in sounds, specifically between words).

This study included auditory discrimination in its examination of factors related to the reading problems of seventh and eighth grade students. However, it is important to remember that auditory discrimination skills improve as students mature. But, according to Ekwall (1976), while it would be difficult to establish a percentage of the reading failures caused as a result of inaccurate auditory discrimination, "the evidence from various research studies do, however, indicate that auditory discrimination is a factor that should be tested in attempting to diagnose difficulties with reading" (p. 6).

Robinson (1946) reported that inadequate auditory discrimination was a contributing factor in four percent of her severely retarded readers.

In her longitudinal study Thompson (1963) concluded that at the end of the second grade approximately twenty-four percent of the 105 students in the study had auditory discrimination problems. Of this group, approximately half were classified as poor readers.

Bond (1935) found significant differences between his group of reading disabled students and a control group of normal readers with regard to auditory acuity, blending, auditory perception techniques and auditory

discrimination. The disabled readers were inferior to the normal readers in all areas tested.

Poling (1953) and Reynolds (1953) found no significant differences between auditory discrimination abilities and reading problems.

Wheeler and Wheeler (1954) found positive relationships between discriminating simple and complex sounds and reading ability in middle and upper elementary students. They could not, however, report a significant difference.

Robinson (1955) reported that a study done by Sister Mary James Harrington indicates that the influence of auditory discrimination was second to that of visual discrimination with regard to the reading ability of second grade students.

Johnson (1957) reported that the most direct relationships found were between auditory discrimination and reading ability. His study confirms the findings of earlier studies done by Monroe (1932), Bond (1935), Kennedy (1942), and Ewers (1950).

The studies of Wepman (1960) and Goetzinger, et al (1960) found that poor readers are significantly inferior to good readers with regard to auditory discrimination.

Birch and Belmont (1964) showed significant relationships between the ability to make judgments of auditory-visual equivalence and reading ability of first and second grade students.

Beery's (1967) research findings are comparable to Birch and Belmont (1964) but are not dependent on age group, nationality, form or length of test or manner in which stimuli are presented.

Ford (1967) found a significant relationship between the Auditory-Visual task and reading achievement of fourth grade students. Kahn and Birch (1968), using a better instrument for older children (grades 2-6) found that auditory discrimination and reading are positively associated.

Katz and Deutsch (1973) found that poor readers have auditory and visual discrimination problems.

Summary

Review of the related literature in this section has been concerned with the relationship between auditory discrimination and reading ability. About forty-five different basic sounds in various combinations comprise the spoken English language. Many of the sounds in words are very similar as are many of the words they represent. It is important to be able to hear the differences between words like big and bad, noon and none, led and lad, etc.

While some researchers reported a low but positive correlation between auditory discrimination and reading ability, others found a significant relationship. A few studies found no relationship between the two variables.

SOCIAL FACTORS

A great number of social factors have been studied in relation to reading failure. The factors of interest in this paper deal with the effect of being read to as a pre-reading, pre-school child, the number of reading materials in the home (specifically magazines), receiving books as presents, the educational background of the parents, and the number of siblings in the home on reading ability.

Read To, Number of Magazines in Home, Reading Interests and Receiving Books as Presents

Reading narrative or other types of prose to children acquaints them with the function of print and sensitizes them to the structure and nature of written language. With regard to reading aloud to children, research evidence indicates that it "significantly improves their vocabulary knowledge and their reading comprehension. It also demonstrates that hearing literature read can affect reading interests and the quality of a child's language development" (McCormick, 1977, p. 139). Most of the research, however, has been concentrated on the lower grades, and very little has been done with older students. A great deal of the research has focused on the effect of spending time reading aloud in the school to lower elementary students experiencing reading problems. For example, Cohen (1968) and Porter (1970) found that reading aloud to economically disadvantaged students

on a regular basis significantly increased their quantity of vocabulary growth, knowledge of word meanings, visual decoding, motor encoding and total score on the Illinois Test of Psycholinguistic Abilities, and reading comprehension achievement.

As early as 1937 Gray believed that a child who grows up in an environment where there is an abundance of books and where much reading is done has a better prospect of becoming a good reader than the child who grows up in a home where reading materials are scant. Parr (1932) concluded from his study of a 100 college students that a lack of reading material in the childhood home had been contributory to the handicap of a number of poor readers.

From questionnaires completed by seventy-five tenth graders, Ketcham (1966) concluded that "a home environment most apt to be associated with good reading achievement might be described as one where" parents "buy and read quality magazines, buy books for ... their children" (p. 67).

Sutton (1964) studied early elementary school children and found "there was a significant difference in the number of reading children who had older brothers and sisters who read to them. Fifty-two percent of the reading children and thirty-five percent of the non-reading children enjoyed this advantage. Slightly more of the reading children enjoyed having an adult read to them,

and they had been read to at a decidedly earlier age than had their non-reading classmates" (p. 237).

Durkin (1966) found that all seventy-nine good readers in her study were read to by parents. Her findings are supported by Almy (1950), Plessas and Oakes (1964), Gardner (1970), Clark (1976), King and Friesen (1972), and Briggs and Elkind (1973). The children in these studies had access to easy reading material in the home and were given books by parents.

Based on their study of 868 students, Sheldon and Carrillo (1952) report that "as the number of books in the home increases, the per cent of good readers increases and the per cent of average and of poor readers decreases" (p. 265).

Witty and Kopel (1939) concluded that "the books and magazines available in the home have been found to influence children's reading preferences and habits; moreover, the parents' attitude toward books is indubitably significant in fostering or impeding desirable growth" (p.231).

Malmquist (1958) found "a statistically significant relation between the number of books in the home and reading ability" (p. 213) and that the poor readers tended to come from homes where there were considerably fewer books than did the medium or good readers.

Goodacre (1968) in studying teachers' perceptions found that teachers identified "good homes" as those where there was an abundance of reading materials in the

home and parents or older siblings read to the pre-schooler.

Laosa (1982) states that the amount of time parents spend reading to their child may have important consequences for the child's intellectual development. Becher (1985) confirms that reading to the child is significantly related to positive attitudes toward reading and reading achievement.

Summary

Review of the related literature in this section has been concerned with the relationship between reading ability and the amount of time a pre-schooler was read to, the number of magazines in the home, and the receiving of books as presents.

The overwhelming consensus of opinion by researchers is that there is a positive relationship shown among the variables.

Parents' Education and Family Size

The effect of family influences upon the academic achievement of school children has been of interest to researchers for many years. Most studies of family characteristics associated with academic achievement and intelligence have been concerned with such variables as socioeconomic status (which includes education, occupation and income), achievement press of parents, foreign languages spoken in the home and family size. Very few studies have been specifically concerned with the effect

of the family on reading ability, and even fewer have been done with respect to the relationship between the education level of the parents and children's reading ability. Several of the studies reported here have included both the education of parents and size of family in their studies.

Sheldon and Carrillo (1952) included in their study a parent questionnaire and found that "good readers come more often from homes where the parents have reached higher levels of educational attainment" (p. 269). They also found that poor readers tended to come from larger families and that the smaller the family the greater the percent of good readers--with the exception of only children.

Laosa (1982) discovered that better readers tended to come from families where the parents were more highly schooled. He suggested that a possible reason that children from such families were better readers is that "the more highly schooled mothers and fathers read to their children more frequently than did those with less schooling" (p. 802).

Mosteller and Moynihan (1972) assert that "children whose parents had less than eight grades of education scored lower" on a variety of achievement tests "than those whose parents had a college education" (p. 24). They found that parents' education and number of siblings

are significant in all of the factors they were examining. Miller (1969) discovered that good readers tended to come from families where the mother had attended college. This confirmed Durkin's (1963) findings that the educational level of mothers of early readers was higher than that of non-early readers. Durkin also found that early readers tended to come from smaller families. An earlier dissenting view was expressed by Bennett (1938), who said that there was no significant relationship between reading ability and the educational level of mothers and fathers.

Several researchers have reported an association between family size and educational attainment (Douglas, 1964; Nisbet and Entwistle, 1967; Davie, et al, 1972). Fogelman (1975) reports that "the difference in reading attainment between those children with no older children in the household and those with three or more was equivalent to a gain of fourteen months" (p. 50). Although no causal relationship can be established, Fogelman asserts "the analysis of variance results demonstrate that there remains a strong association between family size and reading...attainment" (p. 56).

Lees and Stewart (1957) found that boys, who are neither the first or last born, raised in families of three or more siblings are the least able with regard to scholastic achievement.

Summary

Review of the related literature in this section has been concerned with the relationship between reading ability and the level of education attained by parents, as well as between reading ability and the number of siblings in the home.

It would appear from the research that the education level of parents and the number of siblings in the home have some relationship to reading ability. However, it is difficult to assert a direct causal relationship between the variables. Considerable additional research is necessary in this area before such a relationship can be established.

Oral Language

The period during which language is acquired has been the focus of the great majority of research on language functioning. Although more recently researchers have been focusing on older children, little attention had been given to the oral language development of students who are in upper elementary, middle or secondary school.

The main purpose of much of the research that was done in the area of language development in the 1950's and 1960' was to provide a baseline for normal language development which served as a basis for comparison of students deviating from the norm. Contemporary researchers do not focus on norms in child language

development.

Identification of specific deviations can be used for remediation purposes, as well as, it is hoped, early identification of students with problems.

Another focus of the majority of research in this area has been with learning disabled (LD) children. This research is pertinent to this study, however, because a large number of children who are enrolled in public school LD programs are discipline problems or under-achievers in reading (Kirk and Elkins, 1975).

Many researchers have believed that "oral language, cognition, and reading are closely interrelated processes. The only question is how they are related" (Reid and Hresko, 1980, p. 55).

The results of some researchers have supported the idea that proficiency in oral language underlies children's future success in reading (Furness, 1957; Carroll, 1966; Durkin, 1972; Otto, et al, 1974).

The general relation between oral language development and reading ability has been described by such researchers as Jansky and deHirsch (1972), Vogel (1974), and Liberman (1980).

Artley (1948) suggested that speaking and reading, writing and listening are inextricably associated, and any limitation or facility in one is reflected to some degree in the others.

Sampson's (1962) follow-up of her longitudinal study

of speech and language development in fifty children showed an association between oral language and reading. A causal relationship could not be established however.

Loban's longitudinal study (1963, 1966, 1967) covered early elementary school through twelfth grade and revealed that initial weaknesses in oral language persist through twelve years of school and that such weaknesses correlated with poor performance in reading and written expression.

Newcomer and Magee (1977), using the Test of Language Development, investigated the spoken language skills of thirty-eight reading disabled children between the ages of six years, seven months and eight years, eleven months. They concluded that children with reading disabilities are not as proficient in spoken language tasks as are children who read well.

Reid and Hresko (1980) investigated the developmental and group differences in sixty-five six- and seven-year-old learning disabled children and sixty-five normally achieving children on measures of oral and written language. The scores of the LD and normally achieving children on measures of oral language and early reading were significantly and meaningfully correlated.

DeSoto and DeSoto (1983) examined the relationship between the ability to process verbal information and reading ability in achieving and non-achieving fourth grade readers. The achieving readers performed better on

all measures except automatic word processing. Once again a direct causal relationship could not be established.

Edmiaston (1984) investigated the relationship between oral language and reading comprehension with seventy-seven third grade students, using the Test of Language Development (Newcomer and Hammill, 1977) and the Test of Reading Comprehension (Brown, Hammill, and Wiederholt, 1978). Although a cause-and-effect relationship cannot be inferred, her findings support the existence of a functional relationship between the two variables.

Anastasiow and Hanes (1976) concluded that "it has been well documented that the child's language development is related to his ability to learn how to read" (p. 145). Lieberman and Shankweiler (1979) and others (i.e. Fox and Routh, 1975) have demonstrated that the ability to segment spoken words into phonemes is highly correlated with reading achievement in beginning readers and is deficient in children with reading disability.

However, the explicit relationship between oral language and reading seen by these researchers is not confirmed by others (Winter, 1957; Stedman and Adams, 1972; and Robeck and Wilson, 1974). These reading experts feel that the "lack of oral language background is almost never found as a cause of reading difficulty" (Durrell, p. 45).

Martin (1955), working with first-grade children at

the beginning and again at the end of the year, felt that the "relationship of the oral language which was used by children to achieve reading readiness at the beginning and reading achievement at the end of first grade was virtually negligible" (p. 171).

Bougere (1969) analyzed the language of children into T-units and concluded that the findings did not support strong positive relationships between language measures and reading ability.

In their 1981 review of the literature, Hammill and McNutt concluded that little or no relationship exists between oral language and reading.

Summary

Review of the related literature in this section has been concerned with the relationship between oral language and reading ability.

There is a great deal of contradictory evidence regarding the relationship between oral language and reading. While many researchers cannot establish a direct causal relationship between the two variables, they do suggest the existence of a functional relationship between oral language and reading ability. Johnson and Myklebust (1967) have asserted that learning to read is a part of total language development. Monroe (1932) has suggested that defective speech may be considered a factor in reading disability, either as one cause of the reading defect or as a result of a common cause.

Other researchers feel that no claim for a relationship between oral language and reading ability can be supported.

In examining the relationship between oral language development and reading ability, studies that have investigated "children with frank language disorders have observed such a relation, while studies of linguistically normal children have only observed a tendency toward such a relation" (Menyuk and Flood, 1981, p. 17).

Writing

Just as the language processes oral language and reading can be assumed to be related to one another, so also can one assume there is a relationship between writing and reading. However, the specific nature of such a relationship is, as yet, undetermined.

There has been a paucity of research correlating measures of writing ability with measures of reading ability. Much of the research that does exist focuses on the relationship between writing performance and reading instruction and/or reading performance and writing instruction. Such a focus is beyond the scope of this study.

Loban's longitudinal study (1963, 1966) is the most extensive investigation of the relationship between reading achievement and writing ability. In his earlier study of upper elementary students, Loban found that "those who read well also write well; those who read

poorly also write poorly" (p. 75). In his later study of these same students when they reached ninth grade Loban found that "the relationship between reading and writing become more pronounced as the years pass" (p. 82).

In a study of ninety-five seventh graders, Fishco (1966) found a significant correlation between reading comprehension scores and ratings of a sample of creative writing. He found, however, when separating the scores of the girls and boys in his study, that only the girls' creative writing scores correlated significantly with reading comprehension scores.

Maloney (1967) studied children in the second grade and found that poor writers scored significantly lower than superior writers in tests of reading comprehension.

In a more extensive study Woodfin (1968) looked at the relationship between language ability, socioeconomic status, intelligence, reading level, and sex and the free writing of over five hundred students in the third grade. He found that the best predictors of writing quality were reading ability and language scores.

The results of Grimmer's (1970) experimental program with second grade students showed a significant relationship between composition quality and reading achievement.

Bippus (1977) found significant correlations between reading comprehension, productivity of writing and certain aspects of quality of written language of fourth and sixth grade students.

In a study of ninth grade students, D'Angelo (1977) found a significant correlation between reading scores and writing achievement.

Calhoun (1971), Thomas (1976), Campbell (1976), and Grobe and Grobe (1977) found significant relationships between reading comprehension and writing achievement in college freshmen.

Other studies have found significant relationships between reading ability and measures of syntactic complexity in the compositions of students.

Zeman (1969) reported that the use of compound and complex sentences increased as the level of reading comprehension increased.

Heil (1976) studied the relationship between reading comprehension and several grammatical variables in the writing of children in grades one through three found that T-unit length correlated significantly with comprehension.

In his examination of syntactic elements in the expository writing of college freshmen, Heller (1979) found that low readers produced shorter T-units, and the writing of high readers was characterized by long T-units.

Johnson (1981), using a free writing sample from students in grades three through six to assess the relationship between syntactic writing maturity and reading comprehension, found that his measures of syntactic

writing (words per T-unit, number of words per clause, and number of clauses per T-unit) correlated significantly with one or more of the reading measures.

Some studies have found no positive correlations between measures of reading ability and measures of syntactic complexity in writing. Siedow (1973) found no correlations between reading achievement and measures of syntactic maturity in the writing of students in the fourth, eighth and twelfth grades.

Fuller (1974) found no significant differences on T-unit measures in the writing of poor and good readers at the junior college level.

Evans (1979) found an inverse correlation between reading achievement and measures of written syntactic complexity in a study of students in the eighth and twelfth grade and in the senior year in college.

Both Siedow and Evans used cloze passages written at three levels of syntactic complexity and the rewriting of a kernel sentence passage. It is possible that their findings are " an artifact of the cloze procedure on the syntactically manipulated reading passages that were used" (Stotsky, p. 631). Neither study used samples of free writing for its analyses of T-units.

Summary

Review of the related literature in this section has been concerned with the relationship between writing ability and reading ability.

The correlational studies indicate that good readers tend to be better writers and tend to produce more syntactically mature writing than poor readers.

Chapter Summary

According to Johnson (1957), "the consensus among those who have carried on studies of reading disability occurring in cases of adequate capacity is that rarely is there a single causal factor which can be identified" (p. 1). Investigators using a multiple-syndrome research paradigm (Monroe, 1932; Robinson, 1946; Malmquist, 1958; and Bader and Pearce, 1984) found there was no one factor which was operative in all of the disability cases. However, some factors, although not statistically significant in distinguishing between poor and good readers, might still be factors which impede the progress of certain students in learning to read. They suggest that specific reading problems are probably a result of the fact that the number and severity of the negative factors exceeds the number and strength of the positive. Doehring, et al. (1981) write that "the possibility that there might be more than one type of reading disability, which had been raised in the 1960's on both theoretical and empirical grounds (Ingram, 1960; Johnson and Myklebust, 1967; Kinsbourne and Warrington, 1963; Wierner and Cromer, 1967) gained further support in the 1970's" (p. 21).

It is not possible to construct an explanation of

reading disability by putting together the results of single-syndrome studies. In a discussion of learning disabilities, Jules Abrams (1970) has asserted,

> There is no one single etiology for all learning disabilities. Rather, learning problems can be caused by any number of a multiplicity of factors, all of which may be highly interrelated. Unfortunately, all too often the child who is experiencing learning disorders is approached with a unitary orientation so that extremely important aspects of his unique learning problem may very well be ignored. The tendency of each professional discipline to view the entire problem "through its own window of specialization" often obscures vital factors which may contribute to, or at least exacerbate, the basic difficulty. It is just as invalid to conceive of one cure, one panacea, applied randomly to all types of learning disorders (p. 299).

In her discussion of the multiple factors involved in reading diagnosis, Margaret Early (1969) offers the best summary of the issue of single-syndrome versus multiple-syndrome research. She states,

> Causes of reading disability are multiple. All research points to this conclusion, either directly as in Robinson's study, or indirectly by the very inconclusiveness of studies related to single factors. 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 (p. 61).

A number of factors affect a student's reading ability. Many of these factors cannot be completely isolated since they often appear in conjunction with other contributing factors. It is, therefore, imperative that researchers study various factors with regard to reading disability.

CHAPTER III

METHODOLOGY

Introduction

This section describes and elaborates on the methodology used in conducting the study. The population and the sample are identified and defined. The data gathering procedures are outlined, the statistical treatment of the data is explained, and the methods of reporting are expounded.

Population of Interest

The population under investigation consisted of 134 seventh and 148 eighth grade children in the Denton Middle School located in central Michigan. The Denton community has a population of 3,165, and the middle school enrollment was 391 at the time of this study. Thirty-five seventh and twenty-five eighth grade students were used in the study. The Denton Middle School was selected for the study on the basis of consent and an expressed desire on the part of the Superintendent of Schools for the study to be conducted. He was concerned that approximately ten percent of the seventh and eighth grade students at the middle school had scored two or more years below grade level on the recently given Gates-MacGinitie Reading Test.

The Denton Middle School is a small suburban school, located in a primarily lower middle class bedroom community on the outskirts of the state capitol.

Selection of the Sample

The sample selected included fifteen seventh and fifteen eighth grade students who were identified as poor readers by their scores on the Gates MacGinitie Reading Test as having a reading comprehension level two or more grade levels below current grade level (see Appendix D for comprehension scores). Thirty-five poor readers were identified in all. The parents of five eighth grade students did not consent to have their children involved in the study. The remaining thirty students were the population of poor readers identified by the reading test.

A sample of thirty seventh and thirty eighth grade students, identified as good readers by their scores on the Gates MacGinitie Reading Test as having a reading comprehension level on or above grade level, was selected randomly from a pool of 350 students, 101 and 249, respectively. However, due to a disproportionate consent response from the parents of good readers, the final group of good readers consisted of twenty seventh grade and ten eighth grade students.

The poor reader group contained eighteen boys and twelve girls, and the good reader group contained twelve boys and eighteen girls. The total number of children involved in the study was sixty.

Procedures

The principal of the Denton Middle School was asked personally by the researcher for permission to conduct

the study. The purpose of the study was explained and all procedural questions were answered.

Since the sources of data for this study consisted of individual testing of each student and examination of student permanent cumulative record files, the principal felt it was important to obtain a letter of consent from the parent(s)/guardian of each student involved in the study. A letter explaining the purpose of the study and the procedures to be followed was sent to the parent(s)/guardian of each student. The letter encouraged questions and requested that an enclosed consent form be returned to the school. Follow up phone calls were made where necessary.

A brief meeting was held with the reading specialist who explained that the Gates MacGinitie Reading Test was given each year to the students in each grade level. She also confirmed that the students selected were accurately identified as poor and good readers.

Assurance was given to administrators and parents that all information of a personal nature obtained from the testing procedures and files would be held in the strictest confidence and that names of children, teachers, administrators, and school would all remain anonymous.

Data Gathering Instruments

Five instruments were used for the gathering of data: The Keystone Telebinocular Visual Screening Test, A

Coded Checklist Inventory, the Bader Reading and Language Inventory (Bader RLI), a set of five questions (see Appendix A), and the Test of Language Development: Intermediate (TOLD-I). A writing sample of self-selected topic and length was obtained from each student.

The Keystone Telebinocular Vision Screening Test

The Keystone tests measure fourteen basic visual skills. In addition to visual acuity, the tests measure binocular functioning, eye position and possible imbalance, and even check such skills as depth perception and color discrimination.

Coded Checklist Inventory

In order to record data from the CA-60 files in an orderly, systematic, and convenient manner, the Coded Checklist Inventory was developed to record pertinent information (see Appendix B). The name of the school was not identified on the checklist. Students involved in the study received a coded number in order to eliminate any reference to name or the possibility of identification at a later date. Poor readers received the coded designation, "PR", beginning with the number 1 and continuing through 30. Good readers received the coded designation, "GR", and were assigned numbers beginning with 31 through 60.

The format of the Coded Checklist Inventory contained three major headings: (1) Personal Characteristics, (2) Family Characteristics, and (3) Visual and

Auditory Deficiencies.

Personal characteristics included sex, age of entry into first grade, and number of siblings in the family. The number of siblings in the family were divided into categories of older, younger and total.

Family characteristics consisted of the years of education for both mother and father.

Visual and Auditory Deficiencies included a designation for glasses, the results of the Keystone Telebinocular Screening Test, and the results of the Bader RLI visual and auditory discrimination tests.

The results of the selected portions of the Bader RLI Phonics and Word Analysis Tests were also recorded.

Bader Reading and Language Inventory

The Bader RLI was designed to determine appropriate placement of students in instructional materials by reading specialists, resource teachers, and classroom teachers. It also serves as a diagnostic tool to evaluate reading behavior in depth.

The items used from the test battery were:

1. The Graded Word List--administered to each student in order to establish a starting point for administering the graded reading passages.

2. The Graded Reading Passages--used to estimate each student's reading level and to confirm the level achieved on the Gates-MacGinitie Reading Test. Students were asked to read one passage orally and one passage

silently at selected levels, beginning with the level established by the results of the Graded Word List. They were asked comprehension questions following the completion of each reading. Correct responses were noted.

3. Selected portions of the Phonics and Word Analysis Test--used to obtain information regarding each student's knowledge of sound-symbol association, ability to blend sounds, and knowledge of structural analysis. The portions used were: Long Vowel Sounds, Reversals, Common Vowel Digraphs, Blending Sounds in Syllables, Compound Words, Common Prefixes, Common Suffixes, Phonograms: Silent Letters, and Syllabication.

4. Two Diagnostic Spelling Tests of ten words each:

   a. List Six - Spelling Rules and Conventions, sampling students' knowledge of spelling rules and conventions.

   b. List Seven - High-Frequency Words Commonly misspelled by older students with spelling difficulties.

5. The Grammatical Closure Test (Cloze IV)--given to identify those students whose speech seems to be inadequately developed.

6. The Visual Discrimination II Test--requiring students to match letters and words.

7. The Auditory Discrimination of Word Pairs Test--requiring students to listen to two words to determine if they are alike or different. A tape recording was used

of the pairs of words in order to assure uniformity of presentation.

Set of Questions

Five questions (Appendix A) were asked of each student in order to determine whether the student was read to as a pre-schooler, if books are given as presents, and what magazines are purchased regularly in the home.

Test of Language Development: Intermediate

Of the four principal uses of the TOLD-I, two are pertinent to this study: (1) to identify children who are significantly below their peers in language proficiency and (2) to determine specific strengths and weaknesses in language skills. It is a standardized test with established reliability and validity and may be used with students between the ages of 8 years, 6 months and 12 years, 11 months. Therefore, the TOLD-I was only given to the seventh grade students in this study.

All five subtests were used: Sentence Combining, Characteristics, Word Ordering, Generals, and Grammatic Comprehension. Standard scores were recorded because they provide the clearest indication of a student's performance on the test. For each of the five subtests, the mean score is set at 10 and the standard deviation is fixed at 3. The scores for each subtest are comparable because standard scores provide equivalent indices for each subtest.

Writing Sample

It was explained to each student that the researcher wanted a sample of his/her writing ability. Each student was instructed to pick a topic of interest and write about it. No length was specified. If a student asked about the length, he/she was told to write as much as he/she wanted to write. Part of the purpose of obtaining a writing sample was to examine the grammatical structures that are characteristic of poor and good readers when they are asked to write freely. While not specifying length made it more difficult to analyze such structure, it was considered important to get an indication of any differences that existed between poor and good readers with regard to the amount of writing each did.

The writing sample was segmented into T-units (Minimal Terminable Units), developed by Kellogg W. Hunt (1965). This consisted of segmenting the writing sample into the shortest units which it is grammatically allowable to punctuate as sentences. It consisted of dividing the body of writing into each main clause with attached subordinate clauses and calculating their mean length in words. In comparison with other measures, including sentence length, the T-unit correlates best with age.

Data Collection

The information recorded on each checklist inventory, the Bader Reading and Language Inventory, and the TOLD-I was tabulated on a coding form. The coded data

were then transferred by keypunch to IBM computer cards.

Data Analysis

The analyses consisted of t-tests and chi-square tests. T-tests were used in situations where both a qualitative independent variable and a quantitative dependent variable were present. They permitted the researcher to determine whether the sample means differed significantly from one another.

The SPSS-X program was used to run the t-tests. Within the program, provision is made for a test of the homogeneity of variance for the sample groups. When this F-ratio indicates homogeneity of variance, a standard t-value is calculated. Also produced is a t based on a separate variance estimate, which is used when the F test indicates the absence of homogeneity of variance. This is done so that the t-value may be approximated given the absence of homogeneity of variance.

The chi-square tests were used as a means to look at relationships between two or more qualitative variables. They were used to compare obtained frequencies on the cross tabulation of variables with expected frequencies, thus providing an indication of the probability of a significant association or relationship between the variables.

The level of significance for all tests was set at $p = .05$, two-tailed test.

Research Questions

The following research questions were constructed to guide the study:

1.0 Do poor and good readers differ with regard to vision, visual and auditory discrimination problems?

- 1.1 Do poor and good readers differ with regard to vision and visual discrimination problems?
- 1.2 Do poor and good readers differ with regard to auditory discrimination problems?

2.0 Do family environmental and educational background differ between poor and good readers?

- 2.1 Does the mean educational level of the fathers of poor readers differ from those of good readers?
- 2.2 Does the mean educational level of the mothers of poor readers differ from those of good readers?
- 2.3 Does the mean number of siblings per family differ between poor and good readers?
- 2.4 Does the number of magazines purchased on a regular basis in the homes of poor readers differ from those of good readers?
- 2.5 Do poor readers differ from good readers with regard to being read to as

preschoolers.

2.6 Does the number of poor readers who regularly receive books as presents differ from good readers?

3.0 Does oral language ability as measured by a standardized test differ between poor and good readers?

4.0 Do poor and good readers differ in language processing skills as measured by selected tests of the Bader Reading and Language Inventory?

4.1 Do poor readers differ from good readers on selected portions of the Phonics and Word Analysis Test?

4.2 Do poor readers differ from good readers in the number of errors on the two diagnostic spelling tests of ten words each?

4.3 Do poor readers differ from good readers on the Cloze IV?

5.0 Does writing ability on a sample of self-selected topic and length differ between poor and good readers?

5.1 Does the mean number of words per sample differ between poor and good readers?

5.2 Does the mean number of words per T-unit differ between poor and good readers?

5.3 Does the mean number of T-units per sample differ between poor and good readers?

5.4 Does the mean number of spelling errors differ between poor and good readers?

5.5 Does the mean number of grammatical errors per sample differ between poor and good readers?

6.0 Do poor and good readers differ with regard to the number of anomalies they exhibit?

Summary

A description of the methodology involved in conducting the study was presented in this chapter.

The population consisted of seventh and eighth grade students attending Denton Middle School in central Michigan. The selected sample consisted of a group of thirty poor readers and thirty good readers.

Both good and poor readers were identified by their scores on the Gates MacGinitie Reading Test, given early in the school year by the school reading specialist.

Permission was received from administrators and parent(s)/guardians to conduct tests and obtain information from CA-60 files in order to determine if differences existed between the two groups of readers on selected variables.

Five instruments were used for the gathering of data: The Keystone Telebinocular Visual Screening Test, A coded checklist, selected portions of the Bader RLI, a

set of five questions, and a writing sample of self-selected topic and length was obtained from each student.

T-tests were used to compare means when appropriate, and chi-square tests were used to determine association or relationships between categorical variables.

Chapter Four presents an analysis of the data.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The purpose of this study was to collect, analyze, and compare data regarding two groups of seventh and eighth grade students: poor and good readers. Sixty students and their CA-60 files were examined on a number of variables in order to determine what differences exist between the two groups of readers.

Each student was asked to read selected graded passages from the Bader Reading and Language Inventory in order to confirm the score obtained on the Gates-MacGinitie Reading Test. The scores between the two tests for the group of poor readers tended to be about a grade lower on the Bader RLI than on the Gates-MacGinitie. The scores for the good readers were also somewhat lower on the graded passages.

Since the purpose of administering the graded passages was only to confirm the scores on the Gates-MacGinitie Reading Test, no statistical analyses comparing the two groups were run.

Research Questions and Statistical Analysis

Visual and Auditory Anomalies

1.0 Do poor and good readers differ with regard to vision, visual and auditory discrimination problems?

In answering the research question, three variables

were analyzed for significance: (1) vision, (2) visual discrimination, and (3) auditory discrimination. Only auditory discrimination was found to be statistically significant.

Each secondary question relating to visual and auditory anomalies will be specifically addressed, analyzed, and interpreted for significance.

1.1 Do poor and good readers differ with regard to vision and visual discrimination problems?

Five poor readers (17%) and two (7%) good readers demonstrated problems on the vision screening test. Twenty percent of poor readers and thirty-four percent of good readers wore glasses.

Chi-square was used to test statistically the difference between poor and good readers with regard to performance on the Keystone vision screening test. The chi-square score was calculated at .64690 with a probability level of .4212, which was not statistically significant.

The t-test was used to test statistically differences between the mean number of incorrect responses on the visual discrimination test of poor readers as compared to good readers. The poor readers were found to have a mean score of incorrect responses of 1.9667, compared with good readers with a mean of .5667. The t-value of 1.65 with a probability level of .109 was not statistically significant. Means for total group differences are presented in Table 1.

1.2 Do poor and good readers differ with regard to auditory discrimination problems?

Nine (30%) and eight (27%) poor and good readers, respectively, responded incorrectly on one or two items. Six (20%) of the poor readers responded incorrectly on three to five items, and one student scored ten incorrect responses.

The t-test was used to test statistically the differences between the mean number of incorrect responses on the auditory discrimination test of poor readers as compared to good readers. Out of a possible thirty incorrect responses, the poor readers were found to have a mean score of 1.9000, compared with good readers with a mean of .2333. The t-value of 4.18 with a probability level of .000 was statistically significant. Means for total group differences are presented in Table 1.

Table 1 Means for Differences of Incorrect Responses Visual and Auditory Discrimination

	Reader				
	Poor	Good	t	df	P-value
Visual	1.9667	.5667	1.65	30	.109
Auditory	1.9000	.2333	4.18	31	.000*

* ($p \leq .05$)

Family Educational and Environmental Background

2.0 Do family environmental and educational background differ between poor and good readers?

In answering the research question, six variables were analyzed for significance: (1) education level of fathers, (2) educational level of mothers, (3) number of siblings, (4) number of magazines purchased in the home, (5) students who were read to as pre-schoolers, and (6) number of students receiving books as presents. Of the six variables, only the education level of the father and the number of students receiving books as presents were found to be statistically significant.

Each secondary question relating to Family Educational and Environmental Background will be specifically addressed, analyzed, and interpreted for significance.

2.1 Does the mean educational level of the fathers of poor readers differ from those of good readers?

The fathers of three (10%) poor readers and one good reader had less than a high school education. Seven (23%) and five (17%) fathers of poor and good readers, respectively, had more than a high school education without completing college. Of the poor readers only one father had completed college, whereas seventeen (57%) of the fathers of good readers had completed college.

The t-test was used to test statistically the differences between the mean number of years of education of

the fathers of poor readers as compared to the mean number of years of education of the fathers of good readers. The fathers of poor readers were found to have a mean of 12.2222 years of school, compared with 14.5000 years of school for fathers of good readers. The t-value of -4.94 with a probability level of .000 was significant. Means for differences are presented in Table 2.

2.2 Does the mean educational level of the mothers of poor readers differ from those of good readers?

Two (7%) of the poor readers' and none of the good readers' mothers had less than a high school education. Five (17%) and twelve (40%) of the poor and good readers' mothers, respectively, had more than a high school education without finishing college. Two (7%) mothers of poor readers and five (17%) of good readers had completed college.

Table 2 Means for Differences in Educational Level of Fathers and Mothers and Number of Siblings

	Readers				
	Poor	Good	t	df	P-Value
Fathers	12.2222	14.5000	-4.94	55	.000*
Mothers	12.3571	13.1000	-1.74	55	.087
Siblings	1.5714	2.0800	-1.03	35	.309

* ($p \leq .05$)

The t-test was used to test statistically the differences between the mean number of years of education of the mothers of poor readers as compared to the mean number of years of education of the mothers of good readers. The mothers of poor readers were found to have a mean of 12.3704 years of school, compared with 13.1000 years of school for mothers of good readers. The t-value of -1.74 with a probability level of .087 was not significant. Means for differences are presented in Table 2.

2.3 Does the mean number of siblings per family differ between poor and good readers?

Four (13%) poor readers and four (13%) good readers were found to have three or more siblings in the family.

The t-test was used to test statistically the differences between the mean number of siblings in the families of poor readers as compared with good readers. Poor readers were found to come from families with a mean of 1.5714 siblings, compared with good readers who came from a family with a mean of 2.0800 siblings. The t-value of -1.03 with a probability level of .309 was not significant. Means for differences are presented in Table 2.

2.4 Does the number of magazines purchased on a regular basis in the homes of poor readers differ from good readers?

Zero to one magazines were purchased in the homes of sixteen (53%) poor and eight (27%) good readers. Two

magazines were purchased in the homes of nine (30%) poor and nine (30%) good readers. In the homes of five (17%) poor readers and thirteen (43%) good readers three or more magazines were purchased.

Chi-square was used to test statistically the difference between poor and good readers with regard to the number of magazines purchased in the home. The chi-square was calculated as 7.63419 with a probability level of .2661, which was not significant.

2.5 Do poor readers differ from good readers with regard to being read to as pre-schoolers?

Twelve (40%) poor and twenty (67%) good readers reported being read to either Very Often or Often. Eighteen (60%) poor and ten (33%) good readers reported being read to either Seldom or Never.

Chi-square was used to test statistically the difference between poor and good readers with regard to whether they were read to as pre-school children. The chi-square was calculated as 4.42667 with a probability level of .2189, which was not significant.

2.6 Does the number of poor readers who regularly receive books as presents differ from good readers?

Fourteen (47%) poor and five (17%) good readers reported that they did not regularly receive books as presents from family members. Sixteen (53%) poor and

twenty-five (83%) good readers did receive books as presents.

Chi-square was used to test statistically the difference between poor and good readers with regard to whether they receive books as presents. The chi-square was calculated as 4.92940 with a probability level of .0264, which was significant.

Summary

Six family educational and environmental characteristics of thirty poor readers were studied and compared with those of thirty good readers. Differences in the data were computed and analyzed for statistical significance.

Two characteristics, the mean educational level of fathers and the number of readers receiving books as presents, were found to be statistically significant. Thus, it would appear that poor readers came from families where the fathers had fewer years of education and where there seemed to be evidenced a less positive attitude regarding books (as evidenced by a fewer number of poor readers receiving books as presents on a regular basis).

Four characteristics, mean educational level of mother, number of siblings, number of magazines purchased, and how often the student was read to as a preschooler were not found to be statistically significant.

Oral Language Ability

3.0 Does oral language ability as measured by a standardized test differ between poor and good readers?

The t-test was used to test statistically the differences between the mean number of correct responses (standard score) on the TOLD-I, Total Spoken Language Score, of seventh grade poor readers as compared to seventh grade good readers. The poor readers were found to have a mean score of 47.3333, compared with good readers with a mean of 57.2000. The t-value of -4.84 with a probability level of .000 was statistically significant. Both means are in the average range as designated by the TOLD-I. However, the means for poor and good readers are in the low average and high average range, respectively. One poor reader (7%) and zero good readers scored in the below average range. Zero poor readers and seven (35%) good readers scored in the above average range.

The Total Spoken Language Score combines all five subtests: Sentence Combining, Characteristics, Generals, Word Ordering, and Grammatic Comprehension. Of the five subtests, only Characteristics did not achieve statistical significance. Means for differences are presented in Table 3.

Table 3 Means for Differences in TOLD-I Subtests

	Readers				
	Poor	Good	t	df	P-value
SC	10.4667	12.3000	-2.84	33	.008*
CH	9.6667	9.1500	.80	33	.429
WO	9.6667	12.0500	-2.63	33	.013*
GL	9.4667	13.0500	-6.71	33	.000*
GC	8.0667	10.6500	-4.11	33	.000*

* ($p \leq .05$)

The means for poor and good readers on Sentence Combining were in the mid average and high average range, respectively. One poor reader (7%) and zero good readers had standard scores below average, and one poor reader (7%) and two good readers (10%) had standard scores above average.

The means for poor and good readers on Characteristics were both in the mid average range, with no readers in either group with standard scores below or above average.

The means for poor and good readers on Word Ordering were in the mid average and high average range, respectively. Three poor readers (20%) and one good reader (5%) had standard scores in the below average range, and two

poor readers (13%) and seven good readers (35%) had standard scores in the above average range.

The means for poor and good readers on Generals were in the mid average and high average range, respectively. Zero readers in either group scored below average, and nine good readers (45%) scored in the above average range, with zero poor readers having standard scores in the above average range.

The means for poor and good readers on Grammatic Comprehension were in the low average and mid average range, with no poor or good readers scoring below average and only one good reader (5%) obtaining a standard score in the above average range.

The means for differences for the Listening (Characteristics and Grammatic Comprehension), Speaking (Sentence Combining, Word Ordering, and Generals), and Syntax (Sentence Combining, Word Ordering and Grammatic Comprehension) composite standard scores are presented in Table 4.

The means for the standard composite scores for Listening for both groups of readers were in the average range, with no readers scoring in the below or above average range.

The mean for the standard composite scores for Speaking for poor readers was in the average range, while the mean for good readers was in the above average range. No readers scored in the below average range, and ten

good readers (50%) scored in the above average range.

Table 4 Means for Differences in TOLD-I Composite Scores

	Readers				
	Poor	Good	t	df	P-value
Listening	17.7333	19.8000	-2.22	33	.033*
Speaking	29.6000	37.4000	-5.26	33	.000*
Syntax	28.2000	35.00	-4.30	33	.000*

* ($p \leq .05$)

The mean for the standard composite scores for Speaking for poor readers was in the average range, while the mean for good readers was in the above average range. No readers scored in the below average range, and ten good readers (50%) scored in the above average range.

The means for the standard composite scores for Syntax for poor and good readers were in the average range. Three poor readers (20%) scored below average, and nine (45%) scored above average.

Language Processing Skills - Bader RLI

4.0 Do poor and good readers differ in language processing skills as measured by selected tests of the Bader Reading and Language Inventory?

In answering the research question, eleven variables were analyzed for significance: (1) performance on nine

tests selected from the Phonics and Word Analysis Test, (2) performance on the two diagnostic spelling tests, and (3) performance on the Cloze IV. All of the variables, with the exception of Compound Words, achieved statistical significance.

Each secondary question relating to the Bader RLI will be specifically addressed, analyzed, and interpreted for significance.

4.1 Do poor readers differ from good readers on the selected portions of the Phonics and Word Analysis Test?

The t-test was used to test statistically the differences between the mean number of incorrect responses of poor readers on the Phonics and Word Analysis Test as compared with good readers. Statistical significance was achieved on eight of the nine tests. Only the scores on the Compound Words test did not achieve significance. Each of the nine tests selected are presented below, and means for differences of each test are presented in Table 5.

Table 5 Means for Differences of Incorrect Responses Phonics and Word Analysis Test

	Reader				
	Poor	Good	t	df	P-value
Long Vowels	4.3667	2.3333	3.74	48	.000*
Reversals	.3000	0	2.76	58	.008*
Vowel Dig.	2.1000	.7000	4.97	43	.000*
Blend. Snds.	3.8000	1.2333	3.72	42	.001*
Comp. Words	.2000	.0667	1.52	48	.134
Common Pref.	.4000	0	3.53	58	.001*
Common Suff.	1.2667	.4667	3.36	42	.002*
Silent Letrs.	.4333	.0333	2.92	32	.006*
Syllab.	5.3000	3.7000	2.66	58	.010*

* ($p \leq .05$)

Long Vowels

The t-test was used to test statistically the difference between the mean number of incorrect responses on the Long Vowels test of poor readers as compared with good readers. Out of a possible eighteen incorrect responses, the poor readers were found to have a mean score of 4.3667 (24.3%), compared with good readers with a mean of 2.333 (13 %). The t-value of 3.74 with a probability level of .000 was statistically significant.

Reversals

The t-test was used to test statistically the difference between the mean number of incorrect responses on the Reversals test of poor readers as compared with good readers. Out of a possible twelve incorrect responses, the poor readers were found to have a mean score of .3000 (3%), compared with good readers with a mean of 0. The t-value of 2.76 with a probability level of .008 was statistically significant.

Vowel Digraphs

The t-test was used to test statistically the difference between the mean score of incorrect responses on the Vowel Digraphs test of poor readers as compared with the mean score of incorrect responses of good readers. Out of a possible eight incorrect responses, the poor readers were found to have a mean score of 2.1000 (26%), compared with good readers with a mean score of .7000 (9%) . The t-value of 4.97 with a probability level of .000 was statistically significant.

Blending Sounds

The t-test was used to test statistically the difference between the mean score of incorrect responses on the Blending Sounds test of poor readers as compared with the mean score of incorrect responses of good readers. Out of a possible twenty-one incorrect responses, the poor readers were found to have a mean score of 3.8000 (18.1%), compared with good readers with a mean score of

1.2333 (6%) . The t-value of 3.72 with a probability level of .001 was statistically significant.

Compound Words

The t-test was used to test statistically the difference between the mean score of incorrect responses of poor readers as compared with the mean score of incorrect responses of good readers on the Compound Words test. Out of a possible six incorrect responses, the poor readers were found to have a mean score of 2.000 (33.3%), compared with good readers with a mean score of .0667 (.3%). The t-value of 1.52 with a probability level of .134 was not statistically significant.

Common Prefixes

The t-test was used to test statistically the difference between the mean score of incorrect responses of poor readers as compared with the mean score of incorrect responses of good readers on the Common Prefixes test. Out of a possible twelve incorrect responses, the poor readers were found to have a mean score of .4000 (3.33%), and the good readers had a mean score of 0. The t-value of 3.53 with a probability level of .001 was statistically significant.

Common Suffixes

The t-test was used to test statistically the difference between the mean score of incorrect responses of poor readers as compared with the mean score of incorrect responses of good readers on the Common Suffixes test.

Out of a possible fourteen incorrect responses, the poor readers were found to have a mean score of 1.2667 (9.1%), compared with good readers with a mean score of .4667 (3.33%) . The t-value of 3.36 with a probability level of .002 was statistically significant.

Silent Letters

The t-test was used to test statistically the difference between the mean score of incorrect responses of poor readers as compared with the mean score of incorrect responses of good readers on the Silent Letters test. Out of a possible twelve incorrect responses, the poor readers were found to have a mean score of .4333 (3.6%) , compared with good readers with a mean score of .0333 (.28%). The t-value of 2.92 with a probability level of .006 was statistically significant.

Syllabication

The t-test was used to statistically test the difference between the mean score of incorrect responses of poor readers as compared with good readers on the Syllabication test. Out of a possible ten incorrect responses, the poor readers were found to have a mean score of 5.3000 (53%), compared with good readers with a mean score of 3.7000 (37%). The t-value of 2.66 with a probability level of .010 was statistically significant.

4.2 Do poor readers differ from good readers in the number of incorrect responses on the two diagnostic spelling tests of ten words each?

The t-test was used to test statistically the difference between the mean number of incorrect responses on each of the two spelling tests of poor readers as compared with good readers. The poor readers were found to have a mean score of incorrect responses on spelling test number one of .8000, compared with good readers with a mean of .3000. The t-value of 2.42 with a probability level of .020 was statistically significant. On spelling test number two the poor readers were found to have a mean score of 6.0333, compared with good readers with a mean of 3.2667. The t-value of 5.28 with a probability level of .000 was statistically significant. Means for differences are presented in Table 6.

Table 6 Mean Differences of Incorrect Responses Spelling Tests I, II, Cloze IV

	Reader				
	Poor	Good	t	df	P-value
Spelling I	.8000	.3000	2.42	44	.020*
Spelling II	6.0333	3.2667	5.28	58	.000*
Cloze IV	1.2333	.5333	2.90	58	.005*

* ($p \leq .05$)

4.3 Do poor readers differ from good readers on the Cloze IV?

The t-test was used to test statistically the difference between the mean score of incorrect responses of poor readers as compared with the mean score of incorrect responses of good readers. The poor readers were found to have a mean score of incorrect responses of 1.2333, compared with good readers with a mean score of .5333. The t-value of 2.90 with a probability level of .005 was statistically significant. Means for differences are presented in Table 6.

Summary

Three sections of the Bader Reading and Language Inventory were used to test the differences between poor and good readers with regard to language processing skills. They were: (1) nine tests of the Phonics and Word Analysis Test, (2) two diagnostic spelling tests, and (3) the Cloze IV. Eleven tests were found to be statistically significant. Only the Compound Words test of the Phonics and Word Analysis Test did not achieve significance. Thus it would appear that the language processing skills of poor readers are not as well developed as those of good readers.

Writing

5.0 Does writing ability on a sample of self-selected topic and length differ between poor and good readers?

In answering the research question, a total of five variables were analyzed for significance: (1) mean number of words per sample, (2) mean number of words per T-unit, (3) mean number of T-units per sample, (4) mean number of spelling errors per sample, and (5) mean number of grammatical errors per sample. Of the five only the mean number of spelling errors per sample and the mean number of grammatical errors per sample were found to be statistically significant.

Each secondary question relating to Writing will be specifically addressed, analyzed, and interpreted for significance.

5.1 Does the mean number of words per sample differ between poor and good readers?

The t-test was used to test statistically the difference between the mean number of words per writing sample of poor readers as compared with good readers. The poor readers were found to have a mean of 42.2000, compared with good readers with a mean of 49.7667. The t-value of -1.41 with a probability level of .164 was not significant. Means for total group differences are presented in Table 7.

5.2 Does the mean number of words per T-unit differ between poor and good readers?

The t-test was used to test statistically the difference between the mean number of words per T-unit of poor readers as compared with good readers. The poor

readers were found to have a mean of 10.9443, compared with good readers with a mean of 9.9106. The t-value of 1.18 with a probability level of .243 was not significant. Means for total group differences are presented in Table 7.

5.3 Does the mean number of T-units per sample differ between poor and good readers?

The t-test was used to test statistically the difference between the mean number of T-units per sample of poor readers as compared with good readers. The poor readers were found to have a mean of 4.3333, compared with good readers with a mean of 5.1333. The t-value of -1.42 with a probability level of .161 was not significant. Means for total group differences are presented in Table 7.

5.4 Does the mean number of spelling errors per sample differ between poor and good readers?

The t-test was used to test statistically the difference between the mean number of spelling errors per sample of poor readers as compared with good readers. The poor readers were found to have a mean number of spelling errors of 2.8667, compared with good readers with a mean of 1.5000. The t-value of 2.14 with a probability level of .038 was statistically significant. Means for total groups differences are presented in Table 7.

5.5 Does the mean number of grammatical errors per sample differ between poor and good readers?

The t-test was used to test statistically the difference between the mean number of grammatical errors per sample of poor readers as compared with good readers. The poor readers were found to have a mean number of grammatical errors of 2.4667, compared with good readers with a mean of 1.2000. The t-value of 2.67 with a probability level of .010 was statistically significant. Means for total group differences are presented in Table 7.

Table 7 Mean Differences in Writing Sample

Number of	Reader Poor	Good	t	df	P-value
Wds./Sample	42.2000	49.7667	-1.41	50	.164
Words/T-unit	10.9443	9.9106	1.18	45	.243
T-units/Sample	4.3333	5.1333	-1.42	58	.161
Spelling Errors/Sample	2.8667	1.5000	2.14	47	.038*
Grammatical Errors/Sample	2.4667	1.2000	2.67	49	.010*

* ($p \leq .05$)

Summary

Five writing variables taken from writing samples of thirty poor readers were studied and compared with those of thirty good readers. Differences in the data were computed and analyzed for statistical significance.

Two variables, mean number of spelling errors and

mean number of grammatical errors, were found to be statistically significant. It would seem that although poor readers write about the same number of words per T-unit and per sample and also write the same number of T-units per sample as good readers, there is a difference in the spelling and grammar skills exhibited between the two groups.

6.0 Do poor and good readers differ with regard to the number of anomalies they exhibit?

In answering the research question, a total of twenty-one categories were used: Vision test, visual and auditory discrimination, the two spelling tests, the Cloze IV, the nine portions of the Bader RLI, zero to one magazines purchased, three or more siblings, never read to, less than college education--father, less than college education--mother, and whether a student regularly received books as presents. The twenty-one categories were designated as a Problem Index.

The students were categorized as having a Problem or No Problem if:

1. they did or did not have a problem on the vision test.

2. they scored two or more errors on the visual and auditory discrimination tests, the two spelling tests, the Cloze IV, and the nine portions of the Phonics and Word Analysis Test.

3. they lived in homes where zero to one magazines

were purchased on a regular basis.

4. if they had three or more siblings in the family.

5. if they responded "Never" to the question of whether they had been read to as a pre-school child.

6. if their father and/or mother had less than a college education.

7. if they responded "No" to the question of whether they regularly received books as presents.

Chi-square was used to test statistically the difference between poor and good readers with regard to each of the twenty-one categories. Table 8 lists the chi-square values.

Of the twenty-one variables, ten were statistically significant: Spelling tests I and II, Cloze IV, Auditory Discrimination, Syllabication, Long Vowels, Blending Sounds, Common Suffixes, Fathers with less than a college education, and readers who did not receive books as presents. One other variable came close to achieving significance: 0-1 Magazines.

The t-test was used to test statistically the difference between poor and good readers on the total Problem Index. The poor readers were found to have a mean of 11.5333, compared with good readers with a mean of 6.8333. The t-value of 7.48 with a probability level of .000 was significant. Means for total group differences are presented in Table 8.

Table 8 Crosstabulation Chi-square Values for Problem Index Categories

Category	Number Poor	Number Good	Chi-square	df	P-Value
Vision Test	5	2	.64690	1	.4212
Spelling I	8	1	.47058	1	.0301*
Spelling II	30	23	5.82210	1	.0158*
Cloze IV	12	3	5.68889	1	.0171*
Auditory Dis.	14	0	15.74534	1	.0001*
Visual Dis.	7	3	1.08000	1	.2987
Syllabication	30	23	5.82210	1	.0158*
Long Vowels	28	21	4.00742	1	.0453*
Reversals	2	0	.51725	1	.4720
Vowel Digraphs	20	4	15.62500	1	.0001*
Blend. Sounds	20	11	4.27141	1	.0388*
Compound Words	0	0	0	1	0
Common Prefixes	2	0	.51724	1	.4720
Common Suffixes	10	1	7.12430	1	.0076*
Silent Letters	4	0	2.41071	1	.1205
Less Than College Education:					
Mother	26	25	.00000	1	1.0000
Father	26	13	10.54945	1	.0012*
Never Read To	2	1	.00000	1	1.0000
0-1 Magazines	16	8	3.40278	1	.0651
Three or More Sibs	4	4	.00000	1	1.0000
Did Not Receive Books/Presents	14	5	4.92940	1	.0264*

* ($p \leq .05$)

Total Problem Index	Mean	t	df	P-value
Poor Reader	8.8667	7.32	58	.000*
Good Reader	4.7667			

* ($p \leq .05$)

In order to compare the two groups with regard to performace on the the writing sample, an average was obtained for the combined scores of good and poor readers

in each of the five categories.

Chi-square was used to test statistically the difference between poor and good readers with regard to each of the five categories. Table 9 lists the chi-square values. None of the categories achieved statistical significance.

Table 9 Chi-Square Values for Writing Sample

Category	Number Poor	Number Good	Chi-Square	df	P-Value
Writing Sample:					
No. Words/Sample Less than Mean	16	19	.27429	1	.6005
No. Words/T-unit Less than Mean	17	17	.0000	1	1.0000
No. T-units/Sample Less than Mean	16	13	.26692	1	.6054
Spelling Errors More than Mean	11	7	.71429	1	.3980
Grammar Errors More than Mean	17	9	3.32579	1	.0682

($p \leq .05$)

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this study was to collect, analyze, and compare data regarding selected variables pertaining to poor and good seventh and eighth grade readers in the Denton Middle School.

Thirty poor readers, representing approximately ten percent of the seventh and eighth grade students and thirty randomly selected seventh and eighth grade students in the middle school were the subjects used in the study. The sixty students and their CA-60 files were examined on a number of variables in order to determine what differences exist between the two groups of readers.

In this chapter, major results of the study, implications and recommendations for further research will be presented.

Major Results and Discussions

Within the limits of setting, population sampling, and methodology, the findings of this study are presented. Specific results are reported under the headings of each major research question explored. The level of significance for all tests was set at .05.

Visual and Auditory Anomalies

Visual difficulties, the center of much controversy, were not proven to differentiate significantly between

poor and good readers. However, poor and good readers did differ significantly with regard to auditory discrimination.

Of the poor readers, five demonstrated some problems with vision on the Keystone vision screening test, specifically binocular incoordination. The findings indicating no statistical difference between poor and good readers with regard to vision are in agreement with studies done by such researchers as Farris (1936), Witty and Kopel (1936), Dalton (1943), Malmquist (1958) and Robinson (1968). It may be important to note, however, that six of the poor readers had gotten glasses within the year of the testing, and, quite possibly, statistical significance would have been achieved if the testing had been done during the previous school year. They may have experienced uncorrected vision problems during their elementary school years, but valid assumptions cannot really be made about their pre-corrected vision.

Poor readers and good readers alike completed the visual discrimination test in under one minute. Although there was no statistical difference between the two groups, it is important to note that the students with the most errors scored above the mean were the five poor readers who demonstrated vision problems on the Keystone Telebinocular Vision Screening Test.

There was a significant difference between poor and

good readers with regard to auditory discrimination. The finding is in agreement with the results reported by Robinson (1946), Johnson (1957), Wepman (1960), Goetzinger, et al (1960), Kahn and Birch (1968), and Katz and Deutsch (1973).

Family Environmental and Educational Background

Poor and good readers differed significantly with regard to two of the family environmental and educational background variables: educational level of fathers and number of poor and good readers receiving books as presents.

Contrary to the findings of Durkin (1963) and Miller (1969), the poor readers in this study were not found to be significantly different from the good readers with regard to the education level of their mothers. The mothers of poor readers averaged one year less schooling than the mothers of good readers, and only two of the mothers of poor readers did not finish high school. Mosteller and Moynihan (1972) found that there was a difference between poor and good readers when they compared parents with less than eight grades of education to college educated parents. Although all the fathers of the poor readers in this study had completed more than eight grades of school many of the fathers did not go beyond high school, whereas most of the fathers of the good readers completed one or more years of college. There

was a significant difference between poor and good readers with regard to fathers' level of education.

With regard to the number of siblings in the home, a significant difference was not found between poor and good readers. Both groups of readers tended to come from smaller families, which may explain why no significant difference was found. The finding conflicts with the results of studies done by Sheldon and Carrillo (1952), Durkin (1963), and Fogelman (1975) who found that better readers tend to come from smaller families.

Lack of magazines purchased in the home could not be considered to differentiate between good and poor readers. Some students were exposed to very little, while others had the opportunity to be in contact with many magazines in the home. It is interesting to note that while poor and good readers were alike with regard to the purchase of one or two different types of magazines, they differed with regard to the purchase of three or more different types of magazines, with more magazines being purchased in the homes of good readers. The lack of significance on this variable is contrary to the results obtained by other researchers, such as Ketcham (1966). Perhaps setting a specific minimum number, such as three or more, would yield a score achieving significance.

More good readers said they were read to Often and Very Often and remembered more stories read to them than

poor readers. However, contrary to the results of studies done by various researchers (e.g., Sutton, 1964; Durkin, 1966; Cohen, 1968; Porter 1970; Laosa, 1982; Briggs and Elkind, 1977), this study was unable to find significant differences between poor and good readers with regard to having been read to as pre-schoolers.

With regard to the number of poor students receiving books as presents as compared with good readers, there was a significant difference. The finding indicating that good readers receive more books than poor readers is in agreement with researchers, such as Ketcham (1966); Durkin (1966); Gardner (1970); King and Friesen (1972). The giving of books as presents reflects a parental attitude toward reading that can, according to Witty and Kopel (1939), foster or impede desirable reading growth.

Oral Language

On four out of the five subtests of the TOLD-I, a significant difference was found between poor and good readers. The good readers performed better than poor readers on the measures of Sentence Combining, Word Ordering, Generals, and Grammatic Comprehension. The findings are in agreement with researchers who have found that oral language ability correlates closely reading ability, especially the longitudinal study done by Loban (1963, 1966, 1967). The poor readers were not as proficient in spoken language tasks as were good readers,

which is in agreement with the results of studies by Loban (1967), Newcomer and Magee (1977), and Edmiaston (1984). However, it must be remembered that basically the standard scores for both groups were in the average range for most of the subtests. The poor readers tended to score in the lower average range, and the good readers scored in the upper average range, closer to above average standard scores. It appears, therefore, that while the poor readers are not as proficient as good readers in spoken language tasks, they are, with a few exceptions, within the normal or average range of performance on the TOLD-I.

Language Processing Skills

Poor and good readers differed significantly on ten of the eleven variables. Only score on Compound Words did not achieve significance.

With regard to the Phonics and Word Analysis Test, it would appear from the findings that as a group poor readers lack the knowledge and ability to analyze words not immediately recognized.

Spelling Test I contained words that older students with spelling difficulties often misspell. They are high-frequency function words vital for success in reading. Poor students differed significantly from good with regard to knowledge of the ten words on this test.

Spelling Test II contained words that sampled

students' knowledge of spelling rules and conventions. Poor readers had considerable difficulty with the ten words on this test, missing an average of approximately six words out of ten. The finding is in agreement with the findings of the Phonics and Word Analysis Test.

Poor students differed significantly from good readers on the Cloze IV, a grammatical closure test. The finding is in agreement with the results of the TOLD-I, Grammatic Comprehension test. The language processing skills of poor readers appear to be not as well developed as those of good readers.

Writing

Poor readers were not found to differ significantly from good readers with regard to mean number of words per sample, mean number of words per T-unit, and mean number of T-units per sample. Poor readers did differ significantly from good readers with regard to mean number of spelling and grammatical errors per sample.

Students were not given a specific topic about which to write or a designated number of words. They were encouraged to write as much as they desired on a topic of their own choosing. These writings were used to determine if there would be a difference between the two groups with regard to length of writing sample. Good readers wrote a little more than poor readers and tended to use more compound and complex sentences, which agrees

with Zeman's (1969) findings. The lack of significant difference of T-unit length is contrary to the findings of Heil (1970) and Heller (1979) but supports Fuller (1974). Perhaps significance would have been found if a specific number of words had been required.

Poor readers made significantly more spelling errors than good readers, which is not surprising considering the findings of the Phonics and Word Analysis Test and the two Spelling Tests. Loban (1966), Grimmer (1970) and Bippus (1970) also found a correlation between reading comprehension and the spelling and grammar of written language of poor and good readers.

Poor readers made significantly more grammatical errors than good readers. The grammatical errors consisted mainly of punctuation, capitalization, tense, and noun agreement errors.

Do poor and good readers differ with regard to the number of anomalies they exhibit?

Poor readers exhibited significantly more anomalies than good readers in several categories (See Appendix D). T.e readers with the lowest reading scores tended to exhibit the most anomalies. This finding agrees with the results of Monroe, 1932; Robinson, 1946; Johnson, 1957; Malmquist, 1958; and Bader and Pearce, 1984. There was no one factor which was operative in all of the disability cases, except for scores on the two spelling tests.

All of the poor readers demonstrated spelling problems, which would indicate some sound-symbol correspondence difficulties.

Some factors, although not statistically significant in distinguishing between the two groups, might still be factors which pose difficulties for certain students with regard to reading. For example, sixteen (53%) poor readers reported having zero to one magazines purchased on a regular basis in their homes.

Not having such reading materials in the home, in combination with several other factors, could negatively affect a student and impede reading progress. It can be speculated that a student who comes from a home where reading is not emphasized (for whatever reason) and has not experienced hearing the more formal language of printed materials would have more difficulty when encountering it in school.

Perhaps significance would have been achieved in more areas if the sample had been larger. This should be a consideration for doing further research.

Summary

There have been numerous investigations indicating a greater incidence of visual problems among poor readers than among good or unselected readers and numerous studies indicating quite the opposite. In addition, good readers are often discovered to suffer from visual diffi-

culties. In this study five poor and two good readers were found to have uncorrected vision problems on the vision screening test. The results of several studies indicate, however, that vision alone is not necessarily a contributory factor towards reading disability. Reading problems, most often, are the results of the accumulated influence of many factors operating together. Of the five poor readers experiencing vision problems, four demonstrated visual and auditory discrimination problems as well. All five had a large number of incorrect responses on the Phonics and Word Analysis Test and the Spelling Tests.

It is generally accepted that most social factors do not lend themselves very well to quantitative treatment. Statistical results can only give some indication of where differences in the characteristics of poor and good readers exist. An awareness of individuals with specific characteristics identified as contributing to reading problems, i.e. level of education of parents, and amount of reading materials in the home, can help teachers and other school personnel attend to, at an earlier, students who may experience reading difficulties.

Fourteen of the thirty poor readers were categorized as having a combination of three or more negative social factors. For example, two students had more than three siblings in the home, were not read to as pre-school

children, and lived in homes where zero to one magazines were purchased on a regular basis. Others came from homes where fathers and/or mothers had less than a high school eduction, where books were not given as presents, where they were not read to as pre-school children, and where zero to one magazines were purchased on a regular basis. The combinations were quite different and did not achieve significance when considered individually. Once again, statistical significance may very well have been achieved if the sample had been larger.

Implications of the Findings

The information secured from this study has important implications for anyone concerned with diagnosis and remediation of students experiencing reading problems. While it is important to know and understand what factors contribute to reading disability, it is vital to gain additional knowledge about the characteristics of individual poor readers.

First, the findings lend support to the theories of educators (e.g., James Moffett) who have long maintained that language skills are integrated and interrelated. One implication of this viewpoint for educators is that educators need to integrate listening, speaking, reading, writing and thinking skills. Beginning with the initial limits of each student, the role of the teacher must be to "help students expand their cognitive and verbal

repertory as far as possible" so that students will become "capable of producing and receiving an increasingly broad range of kinds of discourse, compositional forms, points of view, ways of thinking, styles, vocabulary, and sentence structure" (Moffett, 1968, p. 12).

Some of the poor readers in this study demonstrated an ability to translate print into speech effectively when they read the graded passages. But they were, however, unable to grasp the main idea or important facts, draw conclusions, or make inferences. According to Moffett, such students have a thinking problem, not a reading problem. These students performed adequately in school until reaching middle school where the linguistic demands increased significantly. They now encountered text materials of greater concept density and syntactic complexity, requiring more than simple decoding skills. Such students need subject-matter instruction to help them master the concepts, vocabulary, and knowledge context of the material they are experiencing. If a student can accurately decode but lacks vocabulary, concepts, and general knowledge, in addition to reading many activities incorporating listening, speaking, writing, and thinking can be used.

Other poor readers demonstrated decoding problems, which included sound-spelling relations. As a result, they have not only missed the meanings of individual

vocabulary words but of entire sentences and paragraphs because of an inability to quickly and accurately decode. These students need remediation in speech-print correspondences, as well as total language experiences. Letter-sound associations have to be made.

Secondly, while it is necessary to impress upon parents the importance of reading to children regularly and of developing positive attitudes by such things as giving books as presents and having an abundance of reading materials in the home, it is unrealistic to assume that it will occur in all homes. There are many reasons for parents not to purchase reading materials either for themselves or their children. Some may be attitudinal but some may be financial. Therefore, it is necessary for the schools to pick up the slack by providing books to students and making them available to pre-schoolers and their parents, as well as to students enrolled in school. The earlier students have good language experiences, the better with regard to performance in school. It is important for children to have language experiences prior to the formal teaching of reading.

Third, there are implications for remedial programs. It is unrealistic to think that a remedial program offered for a single term will benefit students with reading problems. While the majority of poor readers in this study demonstrated a deficiency of phonics and word

attack skills, it is clear that many more factors have to be considered before prescribing a remedial program. As this and other studies have indicated, no one factor can be said to cause reading problems for all students. Therefore, individual diagnosis that considers vision, auditory, language processing skills (oral and written), and family background and environment is essential.

The earlier problem readers can be identified, the better. It is unfortunate that students can go through seven or eight years of schooling before any reading problems are identified. By that time the student may become frustrated and develop negative attitudes toward the entire reading process. Any remediation begun at this time has to also deal with attitudinal problems, as well as reading problems.

Recommendations for Further Research

This study has revealed more problems requiring further study than it has resolved. Some of the more important problems are listed below:

1. An extension of the type of study reported here is needed, since data based on thirty students in each reading group do not provide an altogether adequate basis for valid conclusions concerning many of the factors considered. Such an extension is necessary because of the continuing need for additional clarification concerning the reasons for success or failure in reading. The more

information reading specialists and classroom teachers have available, the more precise and accurate they can be in diagnosing and remediating students with reading problems.

2. The research should be replicated in other regions of the country to determine the generalizability of the salient characteristics identified in this study.

3. Additional oral language tests should be used to test the older middle school students.

4. Remediation of several factors should be a part of the study in an effort to establish a causal relationship between the variables being studied and reading ability.

5. This study determined pre-reading, pre-school experiences with being read to on the basis of student report. A parent report form would substantiate the recollections of students.

APPENDIX A

APPENDIX A

Set of Five Questions

1. What magazines are regularly purchased in your home?
2. Do you often receive books as presents from your family? (For example, on birthdays or special occasions--or for no special reason at all.)
3. When you were little, a pre-schooler, before you learned to read, how often would you say your parents or an older brother or sister read to you?

_____Very Often _____Often _____Seldom _____Never

4. Did your parents or an older brother or sister read to you at bedtime when you were a pre-schooler?

_____Yes _____No

5. What were your favorite bedtime stories?
(Or what were your favorite stories?)

_____

_____

_____

_____

_____

APPENDIX B

APPENDIX B

Coded Checklist

PR No. _____ Date of Birth: _____

GR No. _____ Present Age: _____

Personal Characteristics

Sex: M F Handedness: L R

Age entered first grade: years _____ months _____

Number of siblings in the family:

_____older _____younger _____total

_____older girls _____older boys _____total

_____younger girls _____younger boys _____total

Family Characteristics

Years of Educations: _____mother _____father

Visual and Auditory Problems

Glasses: _____no _____yes _____how long?

Keystone results: _____normal _____referred

Visual discrimination-Number incorrect: _____

Auditory discrimination-Number incorrect: _____

Bader RLI

Spelling Test I-Number incorrect: _____

Spelling Test II-Number incorrect: _____

Cloze IV - Number incorrect: _____

Phonics and Word Analysis - Number incorrect

Long Vowels	_____	Common Prefixes	_____
Reversals	_____	Common Suffixes	_____
Vowel Digraphs	_____	Silent Letters	_____
Blending Sounds	_____	Syllabication	_____
Compound Words	_____		

Coded Checklist Continued

TOLD-I (Seventh Grade)	Number Correct
Sentence Combining	_____
Characteristics	_____
Word Ordering	_____
Generals	_____
Grammatic Comprehension	_____

APPENDIX C

APPENDIX C

Reading Scores--Grade Level
Gates-MacGinitie Reading Test

Poor	Reader	Score	Good	Reader	Score
7th	1	3.0	7th	31	12.7+
	2	3.9		32	8.9
	3	3.0		33	12.0+
	4	3.2		34	12.0+
	5	3.5		35	12.0+
	6	3.0		36	12.0+
	7	3.7		37	12.0+
	8	4.5		38	12.0+
	9	3.7		39	12.0+
	10	3.0		40	12.0+
	11	3.5		41	12.0+
	12	4.3		42	12.0+
	13	3.7		43	11.0
	14	4.3		44	12.0+
	15	4.7		45	12.0+
8th	16	5.5		46	12.0+
	17	6.0		47	12.0+
	18	4.5		48	12.0+
	19	4.1		49	12.0+
	20	4.1		50	9.2
	21	4.7	8th	51	8.9
	22	5.3		52	11.0
	23	4.3		53	8.6
	24	5.3		54	10.0
	25	5.0		55	11.0
	26	5.5		56	9.2
	27	5.5		57	9.2
	28	3.9		58	11.0
	29	3.5		59	11.0
	30	5.3		60	11.0

APPENDIX D

APPENDIX D

ANOMALIES OF POOR READERS

		SPELL		CL	AUD.DIS		VIS.DIS		BADER RLI							MO	FA	READ TO		MAGS.			SIBS	BKS?
NO.	VT	I	II	IV	2-3	4+	2-3	4+	SY	LV	RV	VD	BS	CP	CS	SL	M	16	VO/O	S/N	0-1	2	3+	3+	NO
1		X	X	X					X	X		X	X			X	X	X		X	X				X
2			X	X					X	X		X	X	X	X					X		X			
3			X		X				X	X		X	X		X		X	X		X		X			
4	X		X						X	X			X				X	X	X		X				
5		X	X						X	X		X	X		X		X	X		X	X				
6			X						X								X	X	X		X				
7			X	X	X			X	X	X		X	X	X	X		X	X	X				X		X
8			X						X	X			X				X	X		X		X			
9			X	X					X	X							X	X		X	X				X
10			X		X			X	X	X		X	X		X					X			X		
11			X						X	X							X			X		X			X
12			X						X	X									X			X			
13		X	X	X					X	X			X		X		X	X		X	X				
14		X	X	X	X				X	X	X	X	X		X	X		X		X	X				
15			X	X			X		X	X		X	X				X	X		X		X		X	X
16	X		X		X				X	X			X				X	X	X			X			
17			X			X			X			X	X				X	X		X		X			
18	X		X				X		X	X		X			X		X	X		X	X				X
19	X		X				X		X	X		X			X		X	X		X	X				
20		X	X	X	X				X	X							X	X	X				X	X	
21	X	X	X			X		X	X	X		X	X			X	X	X		X		X			X
22		X	X				X		X	X		X	X				X	X		X	X				X
23			X	X					X	X		X	X				X	X	X				X		X
24			X		X				X	X		X	X				X	X	X		X				X
25			X	X		X		X	X	X		X	X				X	X		X	X				
26		X	X						X	X	X	X	X			X	X	X		X	X				
27			X	X	X				X	X		X					X	X	X		X			X	X
28			X	X					X	X		X	X				X	X		X	X			X	X
29			X						X	X		X					X	X	X			X			X
30			X		X				X	X							X	X		X	X				X

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