STATEMENT OF PERMISSION TO COPY

In presenting this professional paper in partial fulfillment of the requirements for an advanced degree at Montana State University, I agree that the Library shall make it freely available for inspection. I further agree that permission for extensive copying of this professional paper for scholarly purposes may be granted by my major professor, or, in his absence, by the Director of Libraries. It is understood that any copying or publication of this professional paper for financial gain shall not be allowed without my written permission.

Signature Elizabeth M. Emerson

Date August 8, 1974

HOW THE READING PROGRAMS OF FIVE RURAL SCHOOLS IN GALLATIN COUNTY, MONTANA MEET THE INDIVIDUAL NEEDS OF THE STUDENTS

by

ELIZABETH MAYKUTH EMILSSON

A professional paper submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF EDUCATION

with concentration in

Elementary Education

Approved:

Willis Vandivier
Chairman, Examining Committee

Head, Major Department

Henry L Parsons
Graduate Dean

MONTANA STATE UNIVERSITY
Bozeman, Montana

August, 1974

ACKNOWLEDGMENT

The completion of this study would not have been possible without the help of many people. Appreciation is extended to Mrs. Margaret Brown, the Gallatin County Superintendent of Schools, and to the rural teachers and students who cooperated and participated in this study. Special thanks are also due to family and friends who helped in many ways. Their support and encouragement is remembered. Finally, appreciation is extended to Dr. Willis Vandiver for his time, patience and guidance.

TABLE OF CONTENTS

Page

LIST OF TABLES vi

LIST OF FIGURES x

ABSTRACT xi

Chapter

1. INTRODUCTION 1

Statement of the Problem 2

Need or Purpose of this Study 2

General Questions to be Answered 3

General Procedure 4

Limitations of the Study 5

Definition 6

Summary 7

2. RURAL EDUCATION IN AMERICA 8

Introduction 8

The Status and Achievement of Rural Education From 1960 to 1971 9

Advantages, Disadvantages, and Problems in the Rural Schools 10

The Needs of Rural Students 13

Recommendations for Rural Education 14

Summary 16

3. PROCEDURES 17

Introduction 17

Chapter Page

Population Description 17

Categories of Investigation Procedures 18

Method of Collecting Data. 19

Methods of Organizing Data 21

Statistical Hypotheses 22

Analysis of Data 23

4. ANALYSIS OF DATA. 26

Introduction 26

Survey of the Reading Programs in the Five Schools . 27

The Comparison of Reading Expectancy to Reading Achievement. 39

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS. 61

Summary. 61

Conclusions. 62

Recommendations. 63

BIBLIOGRAPHY. 65

APPENDIXES. 68

LIST OF TABLES

Table		Page
1.	The Basal and Supplementary Reading Materials Used in Each Grade in the Five Selected Schools for the School Year 1973-74	31
2.	The Amount of Time in Minutes Spent in Reading Instruction for Each Grade in Each of the Five Selected Schools	37
3.	Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in School #1, Spring 1974 (N=6)	41
4.	Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in School #2, Spring 1974 (N=10).	42
5.	Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in Grade 1, School #4, Spring 1974 (N=15).	43
6.	Incidence of Reading Disability, Underachievement, Reading Near Expectancy and Over Achievement as Occurred in Grade 2, School #4, Spring 1974 (N=12).	44
7.	Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 3, School #4, Spring 1974 (N=10).	45
8.	Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 4, School #4, Spring 1974 (N=13).	46
9.	Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 5, School #4, Spring 1974 (N=15).	47

Table Page

10. Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 6, School #4, Spring 1974 (N=11) 48

11. Incidence of Reading Disability and Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grade 7, School #4, Spring 1974 (N=15) 49

12. Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 8, School #4, Spring 1974 (N=10) 50

13. Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grades 1 and 2, School #5, Spring 1974 (N=11) 51

14. Incidence of Reading Disabilities, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in Grades 3 and 4, School #5, Spring 1974 (N=9) 53

15. Incidence of Reading Disability, Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grades 5 and 6, School #5, Spring 1974 (N=11) 54

16. Incidence of Reading Disability, Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grades 7 and 8, School #5, Spring 1974 (N=12) 56

3a. A Comparison of the Reading Achievement to the Reading Expectancy in School #1 (N=6) 70

4a. A Comparison of the Reading Achievement to Reading Expectancy in School #2 (N=10) 71

5a. A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 1 in School #4 (N=15) 72

Table		Page
6a.	A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 2, School #4 (N=12).	73
7a.	A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 3, School #4 (N=10).	74
8a.	A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 4, School #4	75
9a.	A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 5, School #4 (N=15).	76
10a.	A Comparison of Reading Expectancy to Reading Achievement of the Students in Grade 6, School #4	77
11a.	A Comparison of Reading Achievement to Reading Expectancy of the Students in Grade 7, School #4, Spring 1974 (N=15).	78
12a.	A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 8, School #4 (N=10).	79
13a.	A Comparison of Reading Expectancy to Reading Achievement of the Students in Grade 1 & 2, School #5 (N=11).	80
14a.	A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 3 & 4, School #5 (Spring 1974) (N=9)	81
15a.	A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 5 & 6, School #5 (Spring 1974) (N=11).	82
16a.	A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 7 & 8, School #5 (Spring 1974) (N=12).	83

Table Page

17. The First Grade $\bar{X}$ (Mean Reading Achievement in Percentile from the Metropolitan Achievement Test of Five Rural Schools for the Years 1969-1973 84

18. The Second Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Metropolitan Achievement Test 1969-1973. 85

19. The Third Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 86

20. The Fourth Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 87

21. The Fifth Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 88

22. The Sixth Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 89

23. The Seventh Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 90

24. The Eighth Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills 91

LIST OF FIGURES

Figure — Page

1. The Line of Regression Showing the Correlation of the Reading Expectancy Age to the Reading Age in the Four Participating Rural Schools 58

2. A Comparison of the $\overline{X}$ (mean) Reading Achievement in Percentile of the Five Rural Schools to the $\underline{M}$ (Mean) of the Standardized Achievement Tests. 60

ABSTRACT

The research for this study has been concerned with determining if the reading programs of five selected rural schools in Gallatin County, Montana meet the individual needs of the students. A review of related literature was conducted for this investigation. The review included a study of advantages and disadvantages of rural education and the problems besetting rural education in the United States.

Data from the standardized achievement tests used by the Gallatin County rural schools were obtained to determine the reading achievement of the total population of the five schools. A comparison of reading expectancy to reading achievement was made with four participating schools in which the reading expectancy formula gives weight to the mental age of the child. Information for this formula was collected by giving intelligence tests by this investigator and by using the reading portion of the standardized achievement tests, given by the Superintendent of the county rural schools.

Analysis of the data included tables and graphs used to illustrate the outcome of the hypotheses. The difference of mean achievement in reading each year; the difference between the mean achievement of the five schools and the 50th percentile of the standardized achievement; and the high correlation of the reading expectancy formula to the reading achievement indicated a rejection of the null form of the hypothesis in each instance.

Chapter 1

INTRODUCTION

At the present time, there are twelve operating rural schools in Gallatin County, Montana. Some stand as a reminder of yesteryear's little country school, while others appear as modern and well equipped, on a smaller scale, as most urban schools.

On occasion, the local newspapers have published projections of a continuing influx of population into the Bozeman/Gallatin Valley area. If these predictions are accurate, the possibility of a continued growth of the non-farm rural population is indicated. Rural schools such as Monforton, Lamotte and Ophir have already expanded beyond the traditional one room school in just a few years.

The growth of the rural population may mean that more children will be affected by the present reading programs of the rural schools. The materials being used, the quality of instruction, and the organization of each school can be factors effecting the reading achievement of each child (Heilman, 1967:16-21).

Because of their close proximity to the expanding Bozeman and Big Sky area, five schools have been selected for this study. The students of these schools have two things in common: their reading achievement is measured by standardized achievement tests administered by the Gallatin County Superintendent each spring; and at the ninth grade level, they will enter the Bozeman Junior-Senior High School.

There is a variation in the population of the selected schools. Two of the schools have lost population in the years between 1972-1974. Two of the schools have shown a continued growth over the same period, (one has experienced dramatic changes); and one school has had a relatively static population during this time.

Statement of the Problem

The problem of this study was to determine if the present reading programs of five selected rural schools in Gallatin County, Montana meet the individual needs of the elementary students.

The study was extended to include a description of the reading programs being used and how the materials were selected; the time spent in reading instruction, the methods used, how much supervision is available for the schools and teachers, and a comparison of each school's mean achievement in reading for each grade from 1969-1973. Also included in this study is a comparison of individual students' Reading Expectancy Age to their Reading Age and their Reading Expectancy Quotients to their Reading Quotients, as determined by intelligence and standardized achievement tests.

Need or Purpose of this Study

This study may be of some interest to the rural schools, the teachers and the community, in that it offers a review of the present reading programs that are being used in their schools, and discusses

the advantages and disadvantages as the teachers view their programs.

By comparing the Reading Expectancy Age to the Reading and the Reading Expectancy Quotient to the Reading Quotient of each student, the incidences of reading disabilities and underachievement have been identified in four of the selected schools. More meaning can be given to the evaluation of reading achievement than by standardized tests alone.

In the event of a greater population increase, the rural communities may wish to explore some alternatives to their present programs that may insure greater pupil success, such as team-teaching, non-grading, use of student teachers, para-professionals, reading consultants and supervisors in the expanding schools (Franseth, 1965).

General Questions to be Answered

What basal reading programs are being used at each grade level in each of the schools? What criteria were used in the selection of materials? What advantages or disadvantages have been found in using the materials?

What methods of reading instruction are being used? How much time is spend in reading instruction for each classroom or grade in the multi-grade classroom?

What type of reading expertise is available if the teachers experience difficulties? Is there a felt need or desire for a reading consultant or supervisor?

Are each of the students reading to their potential? Is there a high positive correlation between the Reading Expectancy Age and the Reading Age of the student population participating?

Has the mean achievement of each grade level increased, decreased or remained the same in the years from 1969-1973.

General Procedure

Literature and studies of rural education had been reviewed to give the investigator an awareness of the types of existing problems that effect the quality of rural education and to enable the investigator to recognize effective instructional practices in the rural schools.

The questionnaire, shown in Appendix A, was developed for the purpose of surveying the reading programs in the five schools by personal interviewing the teachers.

Permission was obtained from Mrs. Margaret Brown, the Gallatin County Superintendent, for the use of the scores of the Iowa Test of Basic Skills and the Metropolitan Achievement Test for the years 1969-1973. Also permission was granted by the rural teachers and their school boards for administering the Kuhlman-Finch Tests to measure the mental age of the students.

The scores of the 1974 achievement tests were also used in this study to determine the Reading Age of each student for the purpose of comparing the Reading Age to the Reading Expectancy Age. This procedure is described in greater detail in Chapter 3.

After the test scores had been compiled, graphs and tables were constructed to show the mean achievement for each grade level in each school for the years 1969-1973.

The comparison of the student's Reading Expectancy Age to the Reading Age, and the Reading Expectancy Quotient to the Reading Quotient was tabulated. Included in the tables are the chronological age (CA), the mental age (MA), the Reading Expectancy Age (REA), the Reading Age (RA), the Reading Expectancy Quotient (REQ) and the Reading Quotient (RQ).

Limitations of the Study

The review of literature has been limited to the research bulletins, periodicals, micro-film and books obtained from the library of Montana State University.

Faculty reluctance, in one school, to grant time for personal interviews, other than one lunch hour for a group interview, appeared to reduce the opportunity of expressing individual candor and openness that was present during the personal interviews in the other schools.

The allowed amount of time for testing in some of the classrooms was also a limiting factor in the selection of the intelligence

test. Since the county superintendent's office was administering the standardized achievement tests during the same period of time, some teachers expressed a fear that a lengthy intelligence test "would test the kids to death."

The Kuhlman Finch Test was chosen because the testing time is 25 minutes and the same set of directions are used for grades 4-8. The disadvantage in using this test, is that the mental age and intelligence quotient are determined by the median score rather than a composite of the tests (Burros, 5th Edition, 1970:349). The tests do indicate if the abilities are good, average or low.

Although school #3 did allow their students to be tested, the teachers would not allow them to be identified on the intelligence tests except by number. Due to the failure of the investigator to insure trust in the confidentiality of the study, this school will not be included in the study and evaluation of the individual reading achievement of each student.

The achievement test scores were available only in the grade equivalent and percentile scores of the test norms. This is of less advantage than using the raw or standard scores in computing the mean achievement and standard deviation of each grade level.

Definition

The term "non-farm rural population" applies to anyone not engaged in farming; "living in that part of America located in areas

lying outside of urban centers or places having 2,500 or more inhabitants (Franseth, 1965:7)."

The term "reading program" refers to the materials used, particularly the basal test, the methods of instruction and the philosophy set forth by the teacher's manual of the text.

Summary

As the non-farm rural population continues to grow in Gallatin County, many of the rural schools may affect the reading achievements of a larger percentage of students with their reading programs.

The status and achievement, the advantages and disadvantages of rural education as cited by literature will be discussed in the next chapter. Included in the discussion is the recommendations for the future of rural education based on national studies.

Chapter 2

RURAL EDUCATION IN AMERICA

Introduction

In the organization of the literature reviewed, the status and achievement of rural education in the United States from 1960-1972 has first been provided. Included in this "track record" is a composite picture of the rural community as a whole.

The disadvantages and advantages of rural schools have been reviewed as presented by different national and international conference reports on rural education. This will include the various problems of rural education and their contributing factors.

The individual needs of the rural students, with a focus on reading has been included in the literature review. The literature describes the programs and the recommendations designed for improving instruction. Also the description of the types of innovations that are being considered and/or implemented in different rural areas throughout the United States.

The literature reviewed was pertinent to this study in that it enables the identification of the types of problems that may exist in the rural schools located in Gallatin County. There may also be some value in the recognition of quality programs and the implementation of innovations which may be considered or are being used in these schools.

The Status and Achievement of Rural Education From 1960 to 1971

Much of the research on rural poverty commissioned by President Johnson in 1964, reveals a rather dismal commentary on rural education in this country:

> Rural adults and youth are the product of an educational system that has historically short-changed rural people. The extent to which they have been denied the quality of educational opportunity is evident from both the products of the education system and the resources that go into the system. On both counts, the quality of rural education ranks low (People Left Behind, 1967:40).

The achievement of rural youth compared to that of urban youth is included in the following list:

> 1) Only 11% of rural population had any college education compared with 19% of urban population (USDA, 1966:20).
>
> 2) Twenty-eight percent (28%) of rural non-farm youth and 23% rural farm youth (ages 14-24) drop out of school before graduation. This compares with 21% of urban youth who drop out (Cowhig, USDA, 1963:24).
>
> 3) Percentage of urban youth who go to college after highschool was twice as high in 1960 as the rural youth (DHEW, 1965:117).
>
> 4) Rural students scored lower on college entrance exams and more often had deficiencies in preparation that had to be made up (People Left Behind, 1967:21).

On the surface, it might be inferred that rural education carries a "poor track record." As Marklund points out, "In countries where there are differences between town and country, the rural areas lag behind in development (Marklund, 1969:295)." The contributing

factors of this lag will be reviewed in greater detail under subsequent subheadings.

Advantages, Disadvantages, and Problems in the Rural Schools

Some larger school systems have begun to take a second look at the advantages offered by the one-room school. The structure of the one-room school lends itself to what is now considered by some as the newer concepts of multi-age, multi-level class rooms.

A teacher from Larchmont, New York writes:

> By being cognizant of the real world of a child and through innovative techniques, we have attempted to create a learning environment that is stimulating and exciting for both children and teachers. The multi-age class may incorporate in its philosophy some vital elements needed to improve the quality of education in tomorrow's schools (Mitchell, 1971:61).

The "Little Red Schoolhouse" concept was adapted as part of an experimental program of the Huntly Elementary School in Appleton, Wisconsin. The author reports after five years there has been a measure of success. Academic gains of the multi-age groups compared to counterparts in graded classrooms were significantly greater (Reston, 1966:110).

Among the advantages observed in the Huntley Elementary School Programs were the following:

> 1) Program allows teachers more flexibility in grouping within the class since the range of ability is likely to be greater. A child can work at his level of achievement in any subject area.

2) Stereotype of students is eliminated. For example, the tallest, shortest, fastest, slowest, fattest, etc., does not necessarily remain in this position year after year. A child may be smallest in the first year, but in the next year, others will enter the class who may be smaller.

3) Children are in a more natural neighborhood-like social situation, in a mixed group rather than being in a place with all others the same age, which is an unnatural setting.

4) Better judgment can be made regarding acceleration or retention since the child can be observed for a longer period of time.

5) A more natural transition can be made for the child who is accelerated for an extra year and for the child who is retained for another year since in neither case are they caste into a new situation (Retson, 1966:108-109).

Other advantages were presented by the Geneva Conference on Rural Studies in 1961:

a) initiative and individual studies of students are encouraged;

b) training in comradeship, helpfulness, and responsibility;

c) individual attention and better contacts between teacher and students;

d) better co-ordination and continuity in instruction;

e) this type of school makes it possible for siblings to be taught together (Marklund, 1969:299).

Marklund also noted that in some regions of the world, even where it was possible to establish a larger school with several teachers, instead several one-room schools were organized.

There are many problems besetting rural education contributing to some disadvantages. Sparse population and rural poverty generally

contributes to the lack of school financing (Northern California Supplement, 1969:18). Provincial attitudes influence school systems who are either unwilling, or unable to devote funds for educational expertise (People Left Behind--Four Years Later, 1971:105).

Other problems that have been cited are:

1. Low teachers salaries. Rural schools are not able to attract and hold better teachers. "The percentage of rural teachers not properly certified is about twice as high as for urban teachers (People Left Behind, 1967:41)."

2. Lack of supervision. Supervision has been found useful in improving the quality of instruction. Montana was listed as one of the nine states having few if any supervisors serving rural schools (Franseth, 1965:58).

3. Inadequate teacher education. Too many large universities do not prepare teachers for rural education (Tamblyn, 1971:24).

4. Substandard facilities. Over 10,000 schools in 1967, were listed as having substandard facilities. Since then, in 1971, many of these schools were closed because of the move to consolidated school districts (People Left Behind, 1967:41;. . . Four Years Later, 1971:109).

Disadvantages resulting from these problems include poor quality of instruction, inferior methods and materials, insufficient social services and substandard facilities.

If the advantages of rural education are to outweigh the disadvantages, new programs and techniques based on the individual needs of the students must be considered.

The Needs of Rural Students

In making recommendations for program changes, the needs of the students were to have been identified. In the Northern California Supplement, 1969, certain needs in the area of reading were identified in various ESEA proposals. A few of these are:

> 1) To create a program relevant to the environmental background of children. . . that will improve the reading performance as measured by standardized tests (Northern California Supplement, 1969:51).
>
> 2) To develop better comprehension in content areas. Many children leave the primary grades with deficient skills to comprehend printed materials (Northern California Supplement, 1969:38).
>
> 3) To improve reading achievement of children with perceptual handicaps (Northern California Supplement, 1969:38).
>
> 4) To introduce individualized materials that will significantly increase performance level of individual children as measured by standardized tests (Northern California Supplement, 1969:44).
>
> 5) To design a system that will allow the continuous progress of the students in reading and writing skills (Northern California Supplement, 1969:57).

Needs of children in other areas than reading were found in a documentary prepared by the Maine State Department of Education.

> 1) Physical, speech and hearing therapy, eye examinations, coupled with counseling services are a part of the Operation Bright Peaks. For success as a learner, children must be freed from preoccupation with physical, social and emotional problems which often result in discouraging school experiences (1972).
>
> 2) Project Open Door offers aid for children from economically deprived, sparsely populated areas. The project offered diagnostic and remedial programs for children with learning disabilities. Special education classes were also provided (1972).

These and many other needs were considered in the recommendations made at the national, state and local levels.

Recommendations for Rural Education

The President's National Advisory Commission on Rural Poverty made some recommendations for the purpose of upgrading rural education across the United States. In 1967, it was proposed that each school have access on a continuing basis to specialists in the early education of socially and economically disadvantaged children. It was hoped that the schools would be encouraged to experiment with techniques of meeting education needs.

Innovations to be considered were longer school days, summer programs, teacher assistants, tutoring programs, use of diagnostic instruments, and developing more effective instructional materials.

Better classroom teachers were also a goal of the commission. This could be accomplished by increasing salaries; improving the training of teachers; and providing better equipment and facilities for them to be effective.

The commission recommended that an educational extension service be created to facilitate the adoption and effective use of new education technology in the elementary and secondary schools. It was proposed that a national network of twenty regional Education Laboratories be set up to provide extension service with state and local school systems who need assistance.

Also the provision of better guidance and counseling at both elementary and secondary levels was recommended. This counseling service would provide intensive personal counseling service to children in all grades; assist all students to make rational choices regarding future educational and occupational alternatives; consult with teachers and administrators; and involve parents and students in a meaningful way of planning a school program (People Left Behind, 1967:41-44).

In the follow-up study conducted by the Economic Research Service in 1971 revealed that very little progress had been made in the implementation of these particular recommendations at the National level (People Left Behind--Four Years Later, 1971:106-109).

On the state and county level, the use of supervisors in the rural schools was recommended. Many states now using effective supervision of instruction have observed a general improvement of instruction.

Purposeful supervisory duties would include helping in the classroom, attending to problems considered important by the teacher, helping the teacher plan with students and helping her understand the students besides working with individual children.

Other duties would involve helping a staff meeting; being a resource person for materials and expertise; taking part in action research; and helping to build community schools by providing specialized help. If supervision is effective, teaching improves and learning opportunities for children become richer (Franseth, 1965:22-32).

Summary

It is believed that the many problems causing a substandard education system in the rural areas may be offset through the use of better education technology. The trends of providing extension service, better classroom supervision, and attracting better qualified teachers, may offer a more promising future for rural education.

In Chapter 3, the discussion of procedures will describe how the data was collected to determine the status and achievement of five selected rural schools for meeting the needs of the elementary students in reading.

Chapter 3

PROCEDURES

Introduction

The problem of this study was to determine if the present reading programs of five selected rural schools meet the needs of the elementary students. The procedures discussed in this chapter were used to conduct the investigation.

Also in this chapter the population of the five schools is described.

This study investigated the existing reading programs in the five schools. A survey of the methods and materials used by the teachers was collected by personal interviews using the semi-structured instrument shown in Appendix A.

This chapter also includes the description of how the data from the survey and the scores from the standardized tests given in the rural schools was organized for this study.

For questions answered with hypotheses, the null form and the alternative hypotheses have been stated. Methods of analyzing the data, followed by a summary concludes the chapter.

Population Description

The population surveyed in the five rural schools included the teachers and the students for the 1973-1974 school year. The variance in population from school to school is shown in the following tabulation:

School	Teachers	Students
#1	1	7
#2	2	14
#3	4	59
#4	7	116
#5	4	49
Total: 5	18	245

The total student population of schools #1, 2, 4, and 5, with the exception of absent students, were used to compare the individual student's Reading Age (RA) to his Reading Expectancy Age (REA) and his Reading Quotient (RQ) to his Reading Expectancy Quotient (REQ). (School #3 preferred not to have the identity of their students in relation to the mental age be made available to the investigation). The methods of computation and tabulations are discussed later in this chapter.

Categories of Investigation Procedures

The investigation procedure has been presented in the following categories:

1) Description of survey. This includes a description of the current reading programs for each school;

2) The mean ($\overline{X}$) level of reading achievement for each grade level in each school determine by the reading portion of the standardized test scores;

3) The comparison of the REA to the RA and the REQ to the RQ of the students of four schools.

These categories were used to describe the methods of data collecting and organization.

Method of Collecting Data

Eighteen teachers participated in the survey of the reading programs in the five schools. The interviews were arranged in the school setting to survey the facilities and the materials being used. The criteria for selecting the materials and the methods of teaching were also included in the survey.

The semi-structured questionnaire included open-ended questions for the purpose of surveying the teachers' attitudes toward their present reading materials, and their feelings concerning a possible need for a reading resource person.

To measure the reading achievement of the rural elementary students, the Gallatin County Superintendent administers two standardized achievement tests in the spring of each year. The Metropolitan Achievement Tests are given to grades one and two in each school, and the Iowa Tests of Basic Skills are given to the students in grade three-eight. The scores of the April/May, 1974 tests were obtained to determine the present RA (Reading Age) and RQ (Reading Quotient) of the students enrolled in grades 1-8.

Teachers should direct their reading instruction to the REA (Reading Expectancy Age) rather than the chronological age of the students because this is the indicator of what the student's reading achievement should be. By knowing the student's REA, the teacher will know if the student is underachieving his potential or working up to his capacity. It will also help alert the teacher to make adjustments in finding suitable materials for the slower students or to recognize students who should be accelerating in the reading program.

In order to compute the REA of each student, the Kuhlman-Finch Test was given to students of the five schools. This determined the Mental Age (MA) of each student and was applied in the following formula:

$$REA = \frac{2MA + CA}{3}$$

Where: MA= Mental Age
CA= Chronological Age
REA= Reading Expectancy Age
→ Expressed in years and tenths.

This is a formula which recognizes other age-related factors in reading expectancy yet gives priority to the importance of intelligence (Harris, 1973:212).

The Reading Age (RA) is determined by the grade equivalent scores of the reading portion of the standardized test and adding 5.2 which tends to be the regular difference between age and grade

placement, the assumption being the typical child is 6.2 years old when he enters school, and is promoted regularly.

The Reading Expectancy Quotient indicates if the student is reading above, below, or at his expectancy. In this formula the RA and the REA are expressed in years and tenths:

$$REQ = \frac{RA \times 100}{REA}$$

To understand the differences between children who simply cannot read up to grade level and the children who are not reading up to expectancy, the Reading Expectancy Quotient is compared to the Reading Quotient.

The Reading Quotient (RQ) is used to show the relationship between the actual age or CA of the child and his Reading Age (RA) (Harris, 1973:212-213).

The following formula is used to find the RQ:

$$RQ = \frac{RA \times 100}{CA}$$

The scores of the Metropolitan and Iowa Tests from the years 1969-1973 have been obtained for the purpose of comparing the mean achievement for each grade of the five schools for these years.

Methods of Organizing Data

The data that was collected by personal interviews have been described and summarized.

Tables have been constructed showing the CA, MA, REA, RA, REQ, and the RQ of each student for schools #1, 2, 4 and 5.

Tables also have been constructed to show the $\overline{X}$ (mean) achievement of the five school's standardized test scores. Graphs have been constructed to show a yearly comparison of the mean reading achievement for each grade in each school.

Statistical Hypotheses

There were three questions in this study that are answered by a statement in the hypotheses.

To determine the status of the present rate of achievement in reading for each of the five schools, the $\overline{X}$ (mean) of each grade was compared to the reading portion of the test norms. If a child is reading at grade level as determined by the standardized test, he fits in the 50th percentile of the test norms. In the null form, the hypothesis states there is no difference between the $\overline{X}$ (mean) achievement scores of the rural schools and the $\underline{M}$ (Mean) or 50th percentile of the standardized achievement tests.

Based on the research reviewed in the literature, the alternative hypothesis was stated that the $\overline{X}$ (mean) reading achievement from the rural schools will show a difference than the national norms of the standardized test.

null: $H_o: \overline{X}_r - M = 0$

alternative: $H_1: \overline{X} - M \neq 0$

In comparing the rates of reading achievement for each year between 1969-1973, the null form of the hypothesis was stated as having no differences in the reading achievement from year to year. The alternative hypothesis was stated as having a difference of $\overline{X}$ (mean) achievement for each grade each year.

$$\text{null: Ho: } \overline{X}_{(1969)} = \overline{X}_{(1970)} = \overline{X}_{(1971)} = \overline{X}_{(1972)} = \overline{X}_{(1973)}$$

$$\text{alternative: Hi: } \overline{X}_{(1969)} \neq \overline{X}_{(1970)} \neq \overline{X}_{(1971)} \neq \overline{X}_{(1972)} \neq \overline{X}_{(1973)}$$

In determining the significance of the correlation between the Reading Expectancy Age and the Reading Age, the null hypothesis is stated that the value of the correlation coefficient is equal to zero. The alternative is stated that the coefficient is not equal to zero.

$$\text{null: Ho: } P = 0$$

$$\text{alternative: Hi: } P \neq 0$$

Analysis of Data

The first and second hypotheses have been illustrated by graphs. The first graph has been constructed to show the outcome of the first hypothesis, by including the $\overline{X}$ (mean) achievement of the five schools for the years 1969-1973, and comparing it with the M (Mean) or the 50th percentile of the Standardized Test norms.

The outcome of the second hypothesis is illustrated by showing the yearly mean achievement for each grade level of each school, as compared to the M (Mean) or the 50th percentile of the Standardized Test norms.

The purpose of comparing the Reading Expectancy Age to the Reading Age and using these plus the Chronological Age to determine the Reading Expectancy Quotient and Reading Quotient was to provide a statistical study to find the frequency of occurrence of reading disabilities and underachievement as they occurred in the rural school population.

The difference between reading performance and expectancy is considered to fall within the normal limits when the Reading Expectancy Quotient is between 90-110.

A Reading Expectancy Quotient below 90 indicates failure to read up to expectancy and the presence of a disability is indicated.

Above 110 indicates greater than average effort and practice or very superior instruction.

When an individual whose Reading Expectancy is below 90 and his Reading Quotient is below 90, he is significantly below the performance for his age and his own expectancy and therefore properly classified as a case of reading disability.

Those whose Reading Expectancy Quotient is below 90 but whose Reading Quotient is above 90 are usually able to cope with their

reading assignments in school. although they are failing to make full use of superior potential or aptitude; for them the term "under-achiever" seems preferable (Harris, 1973:212-213).

To find the value of the correlation coefficient between the Reading Expectancy Age and the Reading Age, a t test was used. A high positive correlation indicates a predominance of students reading up to their ability in the four rural schools. A low or negative correlation may indicate a greater frequency of underachievement in the schools.

The description of the reading programs, the summary of the survey and the analysis of the data is presented in Chapter 4.

Chapter 4

ANALYSIS OF DATA

Introduction

The data collected for this study has been organized, analyzed and is presented in the following categories:

1) The survey of the reading programs in the five schools; the basal texts and other instructional material and why they were selected; the time spent in instruction and the methods of instruction; the advantages and disadvantages of using the material and the teacher's attitude about a reading resource person available in the county;

2) The comparative studies of the individual student's Reading Expectancy Age to his/her Reading Age, and the correlation for the whole group between these two scores; using the Reading Expectancy Quotient and the reading quotient in determining the frequency of reading disabilities or underachievement as they may occur; and the appropriate tables for each grade level; and

3) The Comparison of the mean achievement in reading for each grade level in each school for the years 1969-1973; tables and graphs are included to illustrate the comparative study.

The total school population for the five schools and the five years are represented in the comparative studies of the mean achievement in reading. Eighteen teachers participated in the survey for the five schools. The total population for four of the schools were

represented in the Reading Ability study with the exception of the absentees who were not present for the Kuhlman-Finch tests.

Survey of the Reading Programs in the Five Schools

The basal texts and how they were selected. Four of the five schools used the Lippencott series for their basal texts for grades one through eight. School #5 used three different series which will be discussed later in the chapter.

Of the fourteen teachers using Lippencott, only five (36%) were involved in the selection of the program. When asked what was the selling points of this program over others, the following responses were given:

1. Better salesmanship was the first reason given by everyone who was involved in the selection. The comments were: "We liked the salesman better." "The salesman was the only one who would come out to talk to us." "He was the only one who would come and explain his program to us."

2. The second reason most frequently given was they liked the "heavy" phonics (some said linquistic) approach in the series.

3. Some liked the levels approach better for the multi-grade classrooms.

4. The salesman promised a follow-up consultant service, (which had not yet materialized at the time of the interviews).

All four of the schools had adopted Lippencott approximately the same time and had been using the series for three years. School #4 had planned to introduce series to grade one the first year, grade two the second year, and each grade each consecutive year, but had to introduce the whole school into the program the second year because they felt their books would be outdated by five years if they didn't use them soon.

In addition to the basal texts, the teachers in the primary and the intermediate grades also used the Lippencott Masters for Phonics and the workbooks which are included in the Lippencott programs. At the intermediate levels, the workbooks included Reading for Comprehension.

The first and second grade teachers in School #4 were the only primary teachers who mentioned using the Code Book by Lippencott which was used to reinforce the phonics introduced and designed for the students experiencing difficulty and in need of more practice.

The teachers at the seventh and eighth grade levels in Schools #3 and 4 used just the text and the workbooks in their instruction.

In School #5 different basal texts were used at the different grade levels. The first and second grades used the SRA Beginning Reading Program. The teacher liked the material because it had a "linguistic approach." Workbooks, pre-primers and primers were used in addition to the Laboratory.

At the third grade level, the students completed work in the SRA and then began work in the Ginn 360 program during the second half of the year. The fourth grade also worked in Ginn 360. The teacher favored the Ginn 360 program over the SRA because the SRA materials seemed more difficult. She "felt compelled to complete work in SRA" however, before beginning work in Ginn.

The fifth and sixth graders also worked in the Ginn 360 program. The teacher liked the program but commented that the material was too difficult for some at their grade level. She also felt there were some problems because, to her knowledge, none of the students began reading in the Ginn 360 initially.

At the seventh and eighth grade level, the teacher used the old Ginn literature books. In addition to the Ginn, he used the SRA Reading Laboratory because "not everyone is reading up to grade level."

The four teacher's interviewed in School #5 had not participated in the selection of the materials. All of them had been hired in January, 1974 and did not know the rationale of why different programs were being used in the same school. They were all dissatisfied over the lack of continuity in the reading program and were favoring the Ginn 360 for the overall program for the next year.

Supplementary materials. All of the teachers using Lippencott used supplementary materials in their programs. In some instances, the teachers took groups of individuals completely out of the Lippencott

program for a time and use other materials to develop readiness for the next level of Lippencott.

The first and second grade teacher in School #3 started her first graders in the Open Court materials for the first half of the year. She believed that "the students can handle the Lippencott better if they begin in Open Court."

The third and fourth grade teacher of School #3 used the old Ginn for a "parallel series" for the slow groups of her two grade levels. She felt "the slower groups needed the lighter vocabulary load and couldn't handle the Lippencott materials as well after Level G."

The fourth grade teacher in School #4 also found it necessary to take her slower students out of Lippencott between Levels H and I and put them into the old Scott Foresman books because the vocabulary was too difficult in Lippencott.

In School #1, the teacher used the Open Highway Books by Scott Foresman for the students in the intermediate and seventh and eighth levels who are experiencing difficulty in reading.

The complete list of supplementary and basal materials which is shown in Table 1 (page 31) included the Scholastic paper back books, library books, the Reader's Digest Skill Builders and the SRA Reading Laboratories.

School #5 was in the process of extending the materials in their library and had a good selection of books and reference materials

Table 1

The Basal and Supplementary Reading Materials Used in Each Grade in the Five Selected Schools for the School Year 1973-74

SCHOOLS:	#1	#2	#3	#4	#5
Grade 1					
Basal	Lip. LPM Lwb	.....	Lip. LPM Lwb	Lip. LPM LCB Lwb	SRA Kit, WB Texts
Supplementary	LB BLSSS RDSB	.....	OC LB	LB	LB
Grade 2					
Basal	.....	.....	Lip. LPM Lwb	Lip. LPM Lcb Lwb	SRA Kit WB Texts
Supplementary	.....	.....	LB	LB Spb	LB
Grade 3					
Basal	.....	Lip. LPM Lwb	Lip. LPM Lwb	Lip. LPM Lwb	SRA & Ginn 360 GSHB
Supplementary	.....	LB	Ginn, LB, SRA RDSB	Spb LB	LB
Grade 4					
Basal	.....	Lip. LPM Lwb	Lip. LPM Lwb	Lip. LPM Lwb	Ginn 360 GSHB
Supplementary	.....	Ginn LB	Ginn LB SRA RDSB	SF Spb LB	LB

Table 1 (continued)

SCHOOLS:	#1	#2	#3	#4	#5
Grade 5					
Basal	.....	.....	Lip. LPM Lwb	Lip. LPM Lwb	Ginn 360 GSHB
Supple-mentary	.....	.....	Ginn RDSB,SRA LB,	SF SB LB	LB
Grade 6					
Basal	Lip. LPM,Lwb	Lip. Lwb	Lip LPM Lwb	Lip LPM Lwb	Ginn 360 GSHB
Supple-mentary	RDSB LB BLSSS Spb	LB Spb	Ginn, RDSB,SRA LB	Spb, SSwb LB	LB
Grade 7					
Basal	.....	Lip. Lwb	Lip. Lwb	Lip. Lwb	Ginn Lit. SRA
Supple-mentary	OHwWB LB BLSSS RDSB	Spb LB	LB	SPB LB	LB
Grade 8					
Basal	Lip. Lwb	Lip. Lwb	Lip. Lwb	Lip. Lwb	Ginn Lit. SRA
Supple-mentary	LB RDSB BLSSS	Spb LB	LB	Spb LB	LB

BASAL MATERIALS:
- Lip. = Lippencott
- LPM = Lippencott Phonic Masters
- Lwb = Lippencott Workbook
- LCB=Lippencott Code Book
- GSHB=Ginn,Skills Handbook
- SRA=Science Research Hndbk.
- Lab.or Kit=Self Directive Handbook

SUPPLEMENTARY MATERIALS:
- LB=Library Books
- OC=Open Court
- OH=Open Highways
- Spb=Scholastic Paper Backs
- RDSB=Reader's Digest Skill Builders
- SSwb=Scholastic Skills Workbook
- SF=Scott Foresman
- BLSSS=Barnhardt & Loft Specific Skill Series

available in different reading levels. The teachers had access to the SRA Labs, but only the seventh and eighth grade teacher used it as supplementary material.

The advantages and disadvantages of using the material. Of the fourteen teachers using the Lippencott Program, nine had not participated in choosing the materials. Six of the teachers said that if given the opportunity they would have chosen Lippencott. Three indicated they would like the opportunity of comparing other reading programs to Lippencott.

On the whole, the majority of the teachers seemed satisfied with the Lippencott Program. They gave the following as advantages in using Lippencott.

1. The first graders get a faster start in phonics and vocabulary.

2. The phonics have a "broader scope." The phonics lessons are introduced in the text.

3. The stories are "fun" for the children.

4. The first graders get more practice in writing.

5. The students can move at their own rate because it is a levels system.

6. The stories are taken from literature especially at the intermediate levels.

7. The manual is easy to use.

Some of the advantages as seen by some teachers were seen by others as disadvantages. Given as disadvantages in using Lippencott are the following:

1. The material is too difficult for beginning first graders. "There is too much new vocabulary too soon."

2. Lippencott is too difficult for the slower students. (This was a frequent comment from the teachers who taught third grade and up.)

3. "Every child who moved into this area had adjustment problems using the Lippencott." (This comment was made by a teacher whose school has a high mobility rate in the student population each year.)

4. "The manual doesn't give enough help."

In School #5, the teachers had not used the material long enough to develop strong feelings either pro or con. The first and second grade teacher said she liked the SRA program because it had a "linguistic approach." The teachers using Ginn 360 liked the materials because the books were attractive and the content was appealing. They did not give any disadvantages other than expressing a need for more continuity in their reading program.

The methods of reading instructions in the five schools. The methods of reading instruction varied with the school populations. The teachers of the multi-grade classrooms and few students used an individualized and personalized approach to reading instruction.

In schools #1 and 2, the teachers had only six or seven students with whom to work. The students who experienced difficulty

were given material at their own instructional level. The teacher in school #1, as mentioned previously in the chapter, used materials other than the basal text to match the needs of her students. In school #2, the students, who were able, accelerated in their reading and the slower students worked at their own pace with individual instruction from the teacher.

In schools #3 and 5, the teachers had two grade levels in their classroom. The first and second grade teacher in school #3 used small grouping in her classroom with individual help for the students who experience difficulty. The third and fourth grade teacher and the fifth and sixth grade teacher, used small grouping in their classroom with one or two individuals working alone. The seventh and eighth grade teacher of school #3 used small groupings for some types of reading instruction and the whole group works together for other types of reading activities.

In school #5, the first and second grade teacher had the students working at their individual rates in the SRA material with some small group instruction in phonics. She also did some whole group activities in phonics and writing with both the first and second grades. The 3rd and 4th grade teacher of school #5 used small group instruction within the grade levels. She had one individual working at a slower pace and gives him individual help. The 5th and 6th grade teacher had the 5th grade working together and the sixth

grade was grouped for instruction. She didn't mention using different materials for the different individuals who had problems, but she did mention that several of the sixth graders were having problems with the Ginn 360 material.

The seventh and eighth grade teacher in school #5 had the students working individually in the SRA materials and grouping by grade level in their literature books.

The classrooms in school #4 had one grade level in them. The teachers in grades 1-6 used small groupings in their reading instruction. The teacher in grades 7 and 8 had an aide who gave individual help to the students who had problems. There was some small grouping done in the seventh grade but not in the eighth grade.

The amount of time spent in reading instruction also varied with school population. The teachers with the smaller class size used the older students to help give practice for the beginning readers. The teachers of the primary grades spent more time in reading instruction than the teachers of the intermediate grades and they in turn spent more time in reading instruction than the teachers who taught only the seventh and eighth grade levels. Table 2 shows the amount of time each grade level in each school spends in reading.

Table 2

The Amount of Time in Minutes Spent in Reading Instruction for Each Grade in Each of the Five Selected Schools

Grade	1	2	3	4	5	6	7	8
School #1	135	...	...	...	...	90	90	90
School #2	...	...	45	45	...	60	45	45
School #3	135	135	90	90	...	60	45	45
School #4	95	95	60	60	60	60	45	45
School #5	105	105	90	90	60	60	45	45

In the multi-grade classroom, the time spend in reading for primary level was simultaneous to the time spent in the upper grades. In some upper grades, the students were often working in other language arts activities during the lengthier reading periods.

Teacher attitudes regarding reading resource expertise and supervision. The teachers were asked, "If you should encounter a problem with an individual or in the use of materials, to which resource persons could you refer?" The answers varied from within each school and from school to school.

The school boards of schools #1, 3, and 4 hired the services of Mrs. Shirley Beck for the 1973-74 school year, for the purposes of evaluating the teachers and act in part as a reading consultant. The

teachers of these schools were generally enthusiastic about this service and the ones who took advantage of Mrs. Beck's expertise felt this was extremely beneficial to their program.

Two of the teachers said they would refer to Dr. Willis Vandiver at Montana State University, and felt it was an advantage to have the University in the locality as a resource.

Four teachers said they could refer to Mrs. Brown, the Gallatin County Superintendent. They felt Mrs. Brown could refer them to whatever expertise that is available in the county.

Two teachers did not anticipate any problems, and felt it would be inconvenient to try to "track down some help" if there were problems.

Only the faculty of school #3 felt there was enough reading resource people available. They thought the University was the best resource. In contrast, some of the teachers in school #4 felt that they wouldn't be able to count on the services of Montana State University because of a possible cutbank in the education program.

The following results show that 67% of the teachers interviewed favored a county reading resource person who would be available to work with the teachers on a regular basis. Thirty-three percent of the teachers were not in favor of hiring additional personnel.

	Yes	No
Teachers favoring or opposing a reading resource person for county schools:	12	6
Percentage of those favoring or opposing:	67%	33%

The twelve teachers who indicated they would like additional help specified diagnostic testing, intelligence testing, and help in locating appropriate materials as part of the service they would need. The teachers of schools #2 and 5 said they would like to have the consultant come out to the schools and help in the classroom. Although not highest in their list of priorities, the teachers indicated an interest in a "honest" evaluation of their reading instruction.

The second part of this chapter will include the tables showing the comparison of Reading Expectancy to Reading Achievement of the students in four of the schools.

The Comparison of Reading Expectancy to Reading Achievement

The student population of four schools represented in this study totaled 160. One school was not included in this portion of the study because the teachers wished the identity of the students to their intelligence quotient remain anonymous to the investigation.

Tables 1-16 indicate the incidence of reading disability, underachievement, reading at grade level, overachievement, and/or superior instruction.

If a student's Reading Expectancy Quotient is below 90 but his Reading Quotient is above 90, he is considered an underachiever. If the Reading Quotient and the Reading Expectancy Quotient are both below 90, the student is a disabled reader. The student who has a Reading Expectancy above 90 and a Reading Quotient below 90 will be working below grade level but near his capacity and should probably not be considered a priority candidate for reading remediation (Harris, 1973: 217).

If the student's Reading Expectancy Quotient is within the 90-110, the student is working near capacity or expectancy within the normal limits. If the Reading Quotient is between 90 - 110, the student is working at grade level and should be able to cope with the assignments of his grade level.

If the student is reading above grade level, his Reading Quotient will be above 110. If his Reading Expectancy Quotient is above 110, the student is considered an overachiever, or the instruction is superior.

Table 3 indicates the frequency and percentage of students in school #1, whose Reading Expectancy Quotients and Reading Quotients fall below, within, or above the normal limits of 90 - 110.

Table 3

Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in School #1, Spring 1974 (N=6)

Range of Scores	Below 90		90-110		Above 110	
Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	2	2	4	3	0	1
% of School	33%	33%	67%	50%	0%	17%
Implication:	UA = REQ RBG = RQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Read Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 3a (Appendix B) shows one student has both a Reading Expectancy Quotient and a Reading Quotient below 90 indicating a reading disability. One student has a Reading Expectancy Quotient below 90 and a Reading Quotient above 90 indicating underachievement. One student is reading below grade level but near expectancy. Three students may be considered competent readers.

The number and percentage of students in the combined grades of school #2 whose reading achievement falls below, within, or above the normal limits of 90 - 110 in the Reading Expectancy Quotient and the Reading Quotient is indicated in Table 4.

Table 4

Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in School #2, Spring, 1974 (N=10)

Range of Scores	Below 90		90-110		Above 110	
Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	4	0	6	7	0	3
% of School	40%	0%	60%	70%	0%	30%
Implication:	RD = REQ+RQ UA = REQ RBG = RQ		RNE = REQ RNG = RQ		OA/SI = REQ RAG= RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Read Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 4a, Appendix C, shows the comparison of reading achievement to reading expectancy in school #2. As shown in Table 4a, there are no readers that are considered disabled, but 40% of the students in school #2 can be considered underachievers. Three of the students are reading above grade level, but none of the students are over-achievers.

Table 5 shows the number and percentage of students in grade 1 of school #4 whose reading achievement falls below, within, or above the normal limits of 90 - 110 in the Reading Expectancy Quotient and the Reading Quotient.

Table 5

Incidence of Reading Disability, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in Grade 1, School #4, Spring 1974 (N=15)

Range of Scores	Below 90		90-110		Above 110	
Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	1	1	12	11	2	3
% of class	7%	7%	80%	73%	13%	20%
Implication:	RD = REQ+RQ UA = REQ RBG = RQ		RNE = REQ RNG = RQ		OA/SI = REQ RAG = RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Read Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 5a, Appendix D, reveals that one child is working below grade level but near his expectancy; one child is working below his expectancy but is working near grade level.

Ten children are reading within the 90 - 110 limits of the Reading Expectancy Quotient and the Reading Quotient; and three children are reading above the 110 limit of their reading expectancy which indicates superior instruction in this classroom.

Shown in Table 6 are the number and percentage of the students whose Reading Expectancy Quotients and Reading

Quotients fall below, within, or above the normal limits in grade 2, school #4.

Table 6

Incidence of Reading Disability, Underachievement, Reading Near Expectancy and Over Achievement as Occurred in Grade 2, School #4, Spring 1974 (N=12)

Range of Scores	Below 90		90-110		Above 110	
Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	1	1	6	2	5	9
% of class	8%	8%	50%	17%	42%	75%
Implications:	UA = REQ RBG = RQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE=Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

In comparing the students' Reading Achievement to Reading Expectancy for grade 2, school #4 on Appendix E, Table 6a shows that one child may be considered a disabled reader. Of the twelve children in this classroom, six are reading within the normal limits of their Reading Expectancy, and of these six, four students have Reading Quotients above 110 which indicates reading above grade level. Five of the twelve students have Reading Expectancy Quotients and Reading

Quotients well above the 110 limit indicating overachievement and superior instruction in this classroom.

Table 7 shows the number and percentage of the students in grade 3, school #4, whose reading achievement falls below, within, or above the normal limits of 90 - 110 on their Reading Expectancy Quotients and their Reading Quotients

Table 7

Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 3, School #4, Spring 1974 (N=10)

Range of Scores	Below 90		90-110		Above 110	
Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	2	1	8	5	0	4
% of class	20%	10%	80%	50%	0%	40%
Implications:	RD = REQ+RQ UA = REQ RBG = RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA = REQ SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Of the ten third grade students in school #4, Table 7a, Appendix F, reveals the following: one child has a Reading Expectancy Quotient and a Reading Quotient below 90 indicating disability; one child has a

Reading Expectancy Quotient below 90 but a Reading Quotient above 90 indicating underachievement; four children have Reading Expectancy Quotients and Reading Quotients within the 90 - 110 limits; four children have Reading Expectancy Quotients between 90 - 110 but have Reading Quotients above 110 which indicated they are reading above grade level.

Table 8 shows the number and percentage of students in grade 4, school #4, whose Reading Expectancy Quotient and Reading Quotient fall below, within, or above normal limits of 90 - 110.

Table 8

Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 4, School #4, Spring 1974 (N=13)

Range of Scores	Below 90		90-110		Above 110	
N = 13 Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	2	3	11	7	0	3
% of class	15%	23%	85%	54%	0%	23%
Implications:	UA = REQ RBG = RG RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 8a, Appendix G, shows that of the children in grade 4, school #4 whose Reading Expectancy Quotient and/or Reading Quotient fell below 90, one child may be considered a disabled reader, one child would be considered an underachiever and the two children are reading near expectancy but is below grade level.

Six of the children have both Reading Expectancy Quotients and Reading Quotients within the 90 - 110 limits. Three children in grade 4, school #4 have Reading Expectancy Quotients within the 90 - 110 limits and Reading Quotients over 110 indicating they are reading above grade level.

Table 9 shows the number and percentage of students whose Reading Expectancy Quotients and Reading Quotients fall within, above or below the normal limits of 90 - 110 in grade 5, school #4.

Table 9

Incidence of Reading Disability, Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 5, School #4, Spring 1974 (N=15)

Range of Scores	Below 90		90-110		Above 110	
(N=15)	REQ	RQ	REQ	RQ	REQ	RQ
Frequency of Distribution	5	5	10	7	0	3
% of class	33%	33%	67%	47%	0%	20%
Implications:	UA = REQ RBG = RQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 9a, Appendix H, shows that 3 students have Reading Expectancy Quotients and Reading Quotients below 90 indicating reading disability. Two students in grade 5, school #4 can be considered underachievers, and two are achieving up to expectancy but are reading below grade level. Five of the 15 students in grade five may be considered competent readers because both their Reading Expectancy Quotient and their Reading Quotients fall within the 90 - 110 limits. Three students have Reading Expectancy Quotients with the 90 - 110 limits and have Reading Quotients above 110 indicating they are reading above grade average.

Table 10 shows the frequency and percentage of students in grade 6, school #4 whose Reading Expectancy Quotients, and Reading Quotients fall below, within, or above the normal limits of 90 - 110.

Table 10

Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 6, School #4, Spring 1974 (N=11)

Range of Scores	Below 90		90-110		Above 110	
(N=11) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	6	2	5	9	0	0
% of class	55%	18%	45%	81%	0%	0%
Implications:	UA = REQ RBG = RQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

In grade 6, school #4, Table 10a, Appendix I, shows that two children have Reading Expectancy Quotients and Reading Quotients below 90, indicating reading disabilities. Four students fit the description of underachievers. Of the eleven students in grade 6, five are reading within the normal limits.

The frequency and percentage of students in grade 7, school #4, Expectancy Quotients and Reading Quotients fall below, within or above normal limits of 90 - 110 are shown in Table 11.

Table 11

Incidence of Reading Disability and Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grade 7, School #4, Spring 1974 (N=15)

Range of Scores	Below 90		90-110		Above 110	
(N=15) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	9	2	6	12	0	1
% of class	60%	13%	40%	80%	0%	7%
Implications:	RD = REQ+RQ UA = REQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 11a, Appendix J, shows that in grade 7, school #4, two students may be considered disabled readers, six students were reading at grade level but below 90 in reading expectancy and one student was reading above grade level, but was reading below 90 in reading expectancy. These seven students may be considered underachievers. Of the fifteen students, six have Reading Expectancy Quotients and Reading Quotients within the normal limits.

Table 12 shows the frequency and percentage of the students in grade 8, school #4, whose Reading Expectancy Quotients and Reading Quotients, fall below, within, or above the normal limits of 90 - 110.

Table 12

Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grade 8, School #4, Spring 1974 (N=10)

Range of Scores	Below 90		90-110		Above 110	
(N=10)	REQ	RQ	REQ	RQ	REQ	RQ
Frequency of Distribution	5	1	5	8	0	1
% of class	50%	10%	50%	80%	0%	10%
Implications:	RD = REQ+RQ UA = REQ RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/REQ RAG/SI = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA - Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 12a, Appendix K, shows that of the ten students in grade 8, school #4, one student fits the description of a disabled reader. Four students maybe considered underachievers, even though they were reading at grade level. Four students have Reading Expectancy Quotients and Reading Quotients within the normal limits. One student was reading near expectancy and above grade level.

Table 13 shows the frequency and percentage of the students in the combined grades 1 and 2 of school #5 whose Reading Expectancy Quotients and Reading Quotients fall below, above or within the normal limits of 90 - 110.

Table 13

Incidence of Reading Disability and Underachievement, Reading to Expectancy, and Over Achievement as Occurred in Grades 1 and 2, School #5, Spring 1974 (N=11)

Range of Scores	Below 90		90-110		Above 110	
(N=11) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	0	0	7	6	4	5
% of class	0	0	64%	55%	36%	45%
Implications:	RD = REQ+RQ UA = REQ RBG = RG		RNE = REQ RNG = RQ CR = REQ+RQ		OA = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

The teacher in grades 1 and 2 of school #5 personally felt the mental age of each of her students was much higher than was measured by the Kuhlman Finch test. With respect to the teacher evaluation, it may be noted that Table 13a, Appendix L, shows a rather close relation between the Reading Expectancy Age and the Reading Age of each student. It was also interesting to the investigator that in this class of eleven, none of the children have Reading Expectancy Quotients or Reading Quotients below 90. Seven of the students had Reading Expectancy Quotients within the normal limits of 90 - 110. Two of the six had Reading Quotients above 110. Four students had Reading Expectancy Quotients above 110. Three of these students also had Reading Quotients above 90 and one appeared to be reading above expectancy but at grade level. This indicated superior instruction and practice in this classroom.

Table 14 shows the frequency and percentage of the students in the combined grades of 3 and 4, school #5 whose Reading Expectancy Quotients and Reading Quotients fall below, within, or above the normal limits of 90 - 110.

Table 14

Incidence of Reading Disabilities, Underachievement, Reading Near Expectancy, and Over Achievement as Occurred in Grades 3 and 4, School #5, Spring 1974 (N=9)

Range of Scores	Below 90		90-110		Above 110	
(N=9) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	1	2	7	5	1	2
% of class	11%	22%	78%	56%	11%	22%
Implications:	UA = REQ RBG = RG RD = REQ+RQ		RNE = REQ RNG = RQ CR = REQ+RQ		OA/SI = REQ RAG = RQ SR = REQ+RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 14a, Appendix M shows a comparison of the individual student's Reading Expectancy to Reading Achievement in grades 3 and 4 of school #5. Of the nine students in the combined grades, one student had a Reading Expectancy Quotient below 90, and a Reading Quotient above 90 indicating Underachievement. Two students had Reading Expectancy Quotients above 90, and Reading Quotients below 90, indicating reading below grade level but near expectancy, and should probably not be considered as priority candidates for remediation.

Of five students who had Reading Expectancy Quotients with in the normal limits, four also had Reading Quotients within the normal

limits and one had a Reading Quotient above 110. One student had a Reading Expectancy Quotient and a Reading Quotient above 110 which indicated superior reading.

Table 15 shows the frequency and percentage of the students in the combined grades 5 and 6, school #5, whose Reading Expectancy Quotients and Reading Quotients fall below, within, or above the normal limits of 90 - 110.

Table 15

Incidence of Reading Disability, Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grades 5 and 6, School #5, Spring 1974 (N=11)

Range of Scores	Below 90		90-110		Above 110	
(N=11) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	4	2	7	7	0	2
% of class	36%	18%	64%	64%	0%	18%
Implications:	RD = REQ+RQ RBG = RQ UA = REQ		RNE = REQ RNG = RQ		OA = REQ RAG = RQ SI = REQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

In comparing the individual student's Reading Expectancy to Reading Achievement in the combined grades 5 and 6, Table 15a, Appendix N, shows that of four students who had Reading Expectancy Quotients below 90, two also had Reading Quotients below 90 indicating reading disabilities. One of the four had a Reading Quotient at 90 and the fourth had a reading quotient above 110 indicating underachievement but functioning above grade level in reading.

Six students had Reading Expectancy Quotients and Reading Quotients within the normal limits. One student had a Reading Expectancy Quotient at 110 and his Reading Quotient was above 110 indicating superior reading.

Table 16 shows the frequency and percentage of students in the combined grades 7 and 8, school #5 whose Reading Expectancy Quotients and Reading Quotients fall below, within, or above the normal limits of 90-110.

Table 16

Incidence of Reading Disability, Underachievement, Reading to Expectancy and Over Achievement as Occurred in Grades 7 and 8, School #5, Spring 1974 (N=12)

Range of Scores	Below 90		90-110		Above 110	
(N=12) Frequency of Distribution	REQ	RQ	REQ	RQ	REQ	RQ
	4	1	8	7	0	4
% of class	33%	8.3%	67%	58.3%	0	33.3%
Implications:	RD = REQ+RQ UA = REQ RBG = RQ		RNE = REQ RNG = RQ		OA = REQ RAG = RQ	

Where: UA = Underachievement
RBG = Reading Below Grade
RD = Reading Disability
RNE = Reading Near Expectancy
RNG = Reading Near Grade
OA = Over Achievement
RAG = Reading Above Grade
SI = Superior Instruction
CR = Competent Reader
SR = Superior Reader

Table 16a, Appendix O, shows the comparison of Reading Expectancy to Reading Achievement of the individual students in the combined grades 7 and 8, school #5.

Of the twelve students in grades 7 and 8, one student may be considered a reading disability and two students fitted the description of underachievers. A third student had Reading Expectancy below 90 and his Reading Quotient was above 120, which appeared to be a very special type of underachievement.

Eight students had Reading Expectancy Quotients within 90 - 110. Five of these had Reading Quotients within the normal limits and the other three had Reading Quotients that fall above 110.

To find the correlation coefficient between the Reading Expectancy Age, and the Reading Age, the following formula was used:

$$r = \frac{N\Sigma X \quad Y \quad - \Sigma X \Sigma Y}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

The computations were made using a Hewlitt-Packard Calculator. By entering the paired observations successively, the terms ΣXY, ΣX^2, ΣY^2, ΣX, and ΣY were obtained in a single operation.

Figure 1, page 58, shows the line of regression between the REA (Reading Expectancy Age) and the RA (Reading Age). The correlation is +.6587 which is significant at the .01 level, which rejects the null.

Comparison of the mean reading achievement of the five schools for the years 1969 - 1973. The yearly mean achievement for each grade level in each school for the years 1969-1973 is shown on Tables 17 - 24 beginning in Appendix P. In the study of the tables, the reader may note the mean achievement in reading (stated in the percentiles) had not increased or decreased in an apparent pattern in any one grade or school, but the total population tended to show a decrease in the

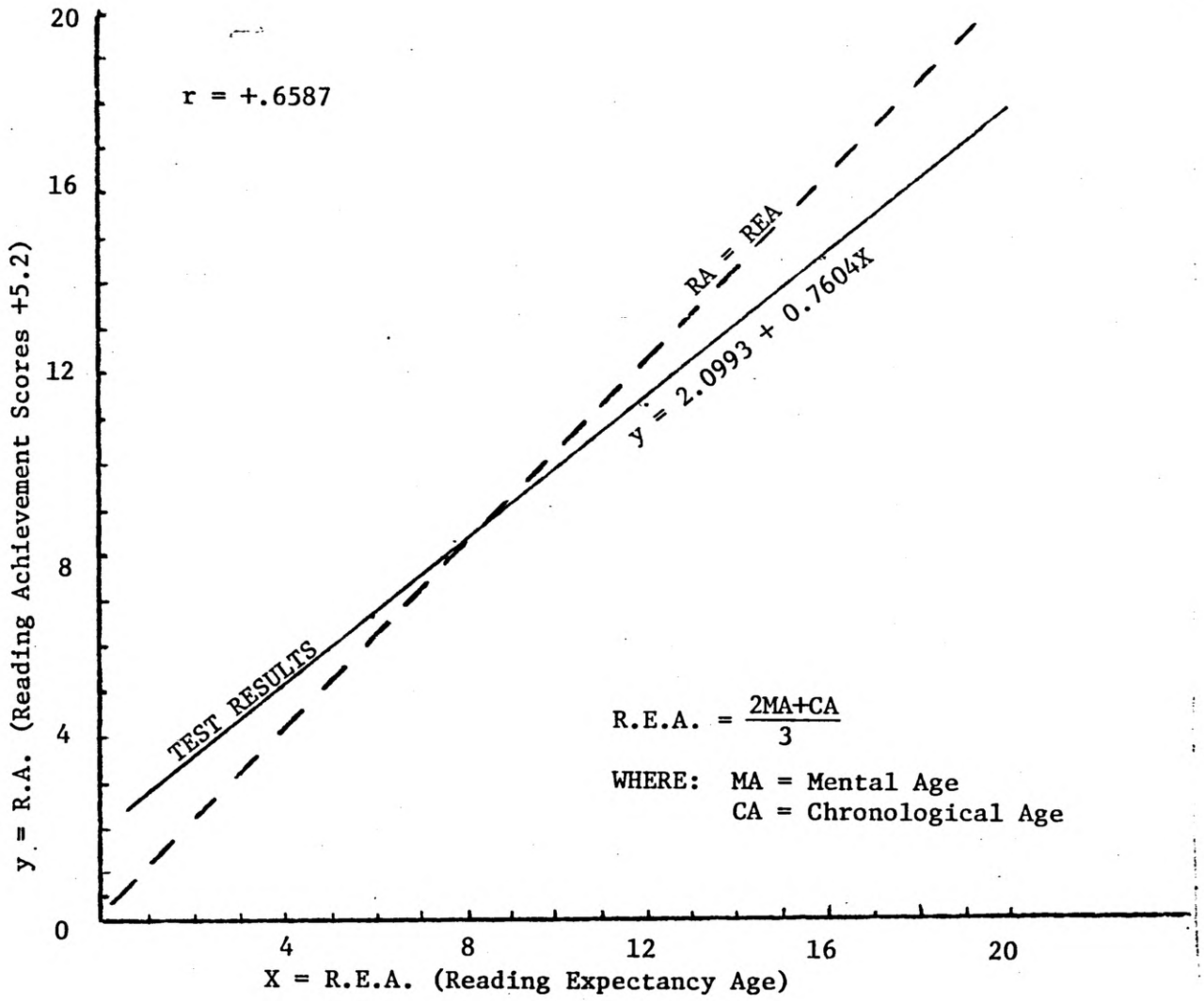


Figure 1. The Line of Regression Showing the Correlation of the Reading Expectancy Age to the Reading Age in the Four Participating Rural Schools

reading mean achievement. This would reject the null hypothesis which states: There will be no difference in the reading achievement from year to year.

Figure 2, page 60, shows a higher mean achievement for the total population and each grade level of the five schools for the years 1969-1973 in comparison to the 50th percentile or the national M (Mean) of the standardized achievement tests. The null hypothesis states: There will be no difference between the $\overline{X}$ (mean) reading achievement of the five schools and the M (Mean) of the standardized achievement tests. Therefore, the null may be rejected. A decrease from the 69.4 percentile to the 60.7 percentile in the mean reading achievement for the five years is also revealed in Figure 2.

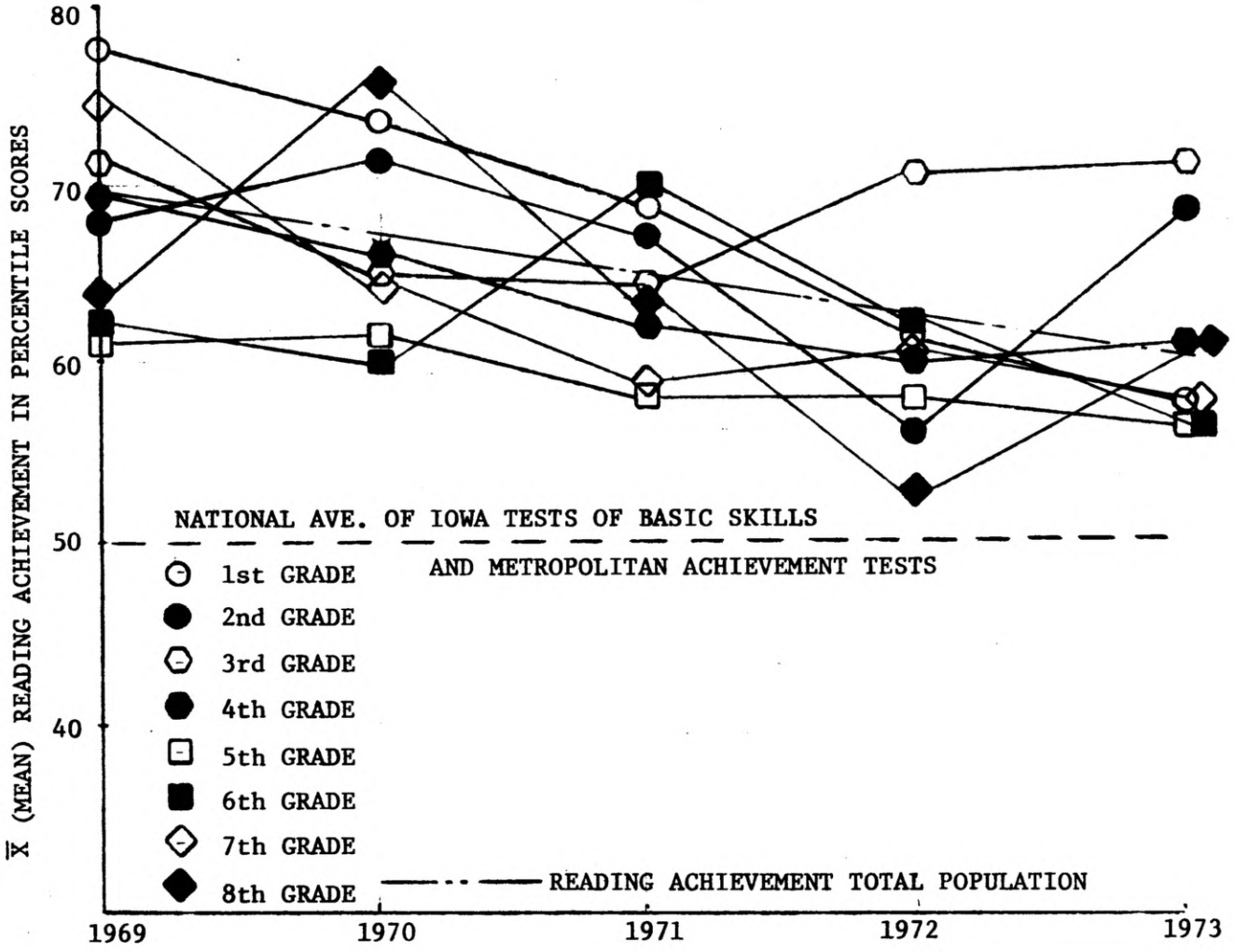


Figure 2. A Comparison of the $\bar{X}$ (mean) Reading Achievement in Percentile of the Five Rural Schools to the $\underline{M}$ (Mean) of the Standardized Achievement Tests

Chapter 6

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The research for this paper has been concerned with the question: "Do the reading programs of five selected Gallatin County rural schools meet the individual needs of the elementary students?" The total population of the five schools was used in one part of the study. One school was exempted from another part of the study because of teacher preference to keep the identity in relation to intelligence of their students from the investigation. The investigation was completed in May and June of 1974.

A survey of the reading programs was completed by interviewing eighteen teachers in the five schools. From this information, a description of the present reading program and the methods and materials was made.

Data pertinent to the study was collected from the Gallatin County Superintendent's Office and by administering intelligence tests in the five schools. This data included 1969-1973 test results of the two achievement tests administered by the County Superintendent, the Iowa Tests of Basic Skills and the Metropolitan Achievement tests. The mental age of the students was based on the Kuhlman Finch Tests given April and May, 1974, and the reading achievement was based on the above mentioned achievement tests given also in April and May, 1974.

A t-test was used to find the correlation that exists between the Reading Expectancy Age, a predictor, and the actual reading achievement of the total population of four schools, #1, 2, 4, and 5.

Tables and a graph were used to illustrate the outcome of the hypothesis which stated that in comparing $\overline{X}$ (mean achievement of the five rural schools to the M (Mean) of the standardized tests for each grade level for the years 1969-1973, there would be no difference.

Conclusions

From the information gained from the survey, the following generalizations were made about the reading instructional programs of the five schools:

1. Although the teachers found advantages and disadvantages to their programs, most of the teachers expressed satisfaction with their basal materials and did not indicate a desire to change programs at the present time.

2. Many of the teachers interviewed are following the sound reading principle of "not forcing or expecting their students to read materials that are too difficult," by finding easier supplementary material for the children who are experiencing difficulty (Heilman, 1968:7).

3. More teachers tend to match materials to meet individual differences in grades 1-4 than in grades 5-8.

4. More time is spent in reading instruction and reading/ language related activities in the primary grades than in grades 4-8.

5. The majority of teachers express a favorable attitude supporting additional reading expertise to be made available to their schools.

The study revealed that 64% of the children had a higher Reading Expectancy Age than an actual Reading age. It may be concluded that only 36% of the children were reading to their full capacity or potential (Harris, 1973:213). However, the correlation coefficient of +.6587 indicates a predominance of children reading near expectancy. It also shows a close relationship between the Reading Expectancy Age formula which gives weight to the mental age and the Reading Age (achievement in the grade equivalent plus 5.2).

Contrary to the historical achievement record of the nation's rural schools, the five schools in Gallatin County have a higher $\overline{X}$ (mean) achievement in reading than the national $\underline{M}$ (Mean) of the standardized achievement tests, as evidenced in the graph in Figure 2. Also evident is a decline from the 69.4 percentile of the 60.7 percentile in reading achievement of the total population during the period of 1969-1973.

Recommendations

The rural schools may find some value in initiating a testing program to determine the mental age of the students. Using the

Reading Expectancy Age formula would have value in identifying the disabled readers and underachievers in the schools.

A program of providing teacher evaluation and supervision in reading instruction should be initiated based on the study results that showed 64% of the children not reading to expectancy or making full use of their potential.

The factors that may effect reading achievement such as mobility, home stability, family income, father's occupation and teacher performance, were not represented in this investigation. Further study of the factors that effect reading achievement is recommended if the achievement rate continues to show a decline.

BIBLIOGRAPHY

BIBLIOGRAPHY

Books

Burros, Oscar. Mental Measurement Yearbooks, 5th Edition, Gryphon Press, 1959.

Economic Research Service, USDA. The People Left Behind--Four Years Later. U. S. Government Printing Office, 1971.

Franseth, Jane. Supervision in Rural Schools: A Report on Belief and Practices. U. S. Department of Health, Education and Welfare, Office of Education, 1965.

Harris, Albert J. How to Increase Reading Ability, 5th Edition. David McKay Company, Inc., 1973.

Heilman, Arthur W. Principles and Practices of Teaching Reading, 2nd Edition. Charles E. Merrill Publishing Company, 1968.

President's National Advisory Commission of Rural Poverty. The People Left Behind. U. S. Government Printing Office, 1967.

Tamblyn, Lewis R. Rural Education in the United States. Rural Education Association, 1971.

Government Documents

Butte County Superintendent of Schools and Chico State College. Northern California Supplement. PACE Center, 1969.

Maine--A Documentary of Title III ESEA Projects in Maine. Teaching is for Kids. Maine State Department of Education, August, 1972.

Periodicals

Cummings, John. "Back to the Sticks for Student Teaching!," Journal of Teacher Education, XXII, 3 (Fall, 1971), 294-297.

Marklund, Sixten. "School Organization, School Location and Student Achievement," International Review of Education, XV, 3 (1969), 295-320.

Mitchell, Joy. "Multi-Age Classroom," Grade Teacher, March, 1971, 55-61.

Retson, James R. "Are We Back to the Little Red Schoolhouse," Grade Teacher, February, 1966, 108-110.

APPENDIXES

APPENDIX A

QUESTIONNAIRE DEVELOPED FOR PERSONAL INTERVIEWS

1. Do you use <u>one</u> basal test in your reading program? (Name).
2. Were you involved in the selection of the reading materials used in your classroom?
3. If so, on what criteria or "selling points" did you base the selection?
4. How long have you used these materials in your school?
5. What materials do you use in your reading instruction?
6. What, if any, supplementary materials do you use?
7. Do you find your present reading program satisfactory?
8. What are the strengths or advantages in using your program?
9. Have you encountered any problems or disadvantages in using the program's materials?
10. What is your "modus operandi" in reading instruction?

    Individualized? Grouping? Personalized?
11. How much time do you spend in reading instruction each day?
12. Do you feel there is enough reading resource people available if you should encounter difficulties in meeting the needs of students having problems in reading?
13. Do you feel it would be an advantage to have additional reading expertise available in the county to help with diagnosis of reading problems, evaluation of reading instruction and other problems that may occur?

APPENDIX B

Table 3a

A Comparison of the Reading Achievement to the Reading Expectancy in School #1 (N=6)

Grade	Student	CA	MA	REA	RA	REQ	RQ
1	A	6.8	7.8	7.5	7.3	97.5	106.9
6	B	12.5	15.25	14.3	13.8	96.3	110.4
6	C	12.3	15.3	14.3	12.8	89.5	104.1
6	D	13.1	12.6	12.7	11.6	91.4	89.1
7	E	13.4	13.8	13.7	11.9	86.6	88.4
8	F	14.2	16.9	16.0	15.8	98.5	111.2

APPENDIX C

Table 4a

A Comparison of the Reading Achievement to Reading Expectancy in School #2 (N=10)

Grade	Student	CA	MA	REA	RA	REQ	RQ
3	A	8.8	11.8	10.8	9.9	92.1	113.1
4	B	9.4	13.6	12.2	12.1	99.2	128.7
4	C	10.0	9.6	9.7	9.0	92.8	90.0
6	D	12.3	13.8	13.3	11.3	84.9	91.9
6	E	11.3	16.6	14.9	11.6	77.9	102.6
6	F	12.0	13.8	13.2	13.0	98.5	108.3
6	G	10.9	18.7	16.9	14.4	85.2	132.1
7	H	13.9	13.1	13.7	13.1	95.6	94.2
7	I	13.9	21.0	18.6	14.5	78.0	104.3
7	J	13.5	15.9	15.1	14.7	97.4	108.9

APPENDIX D

Table 5a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 1 in School #4 (N=15)

Student	CA	MA	REA	RA	REQ	RQ
A	7.1	7.6	7.4	8.8	118.9	123.9
B	6.8	8.1	7.6	8.7	114.5	127.9
C	7.3	8.0	7.8	7.1	91.6	97.9
D	7.9	8.1	8.0	7.7	96.3	97.5
E	6.8	7.2	7.0	7.7	110.0	113.2
F	7.7	6.9	7.2	7.3	101.2	94.8
G	7.5	7.8	7.7	7.3	94.8	97.3
H	6.6	7.0	6.8	6.7	98.5	101.5
I	7.2	6.9	7.0	6.7	95.7	93.6
J	6.8	6.5	6.6	6.6	100.0	97.1
K	6.6	7.4	7.1	7.1	100.0	107.6
L	6.8	7.6	7.3	6.6	90.4	97.1
M	6.8	6.3	6.5	6.6	101.5	97.7
N	7.4	6.4	6.8	6.5	95.6	87.8
O	6.8	7.3	7.1	6.3	88.7	92.6

APPENDIX E

Table 6a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 2, School #4 (N=12)

Student	CA	MA	REA	RA	REQ	RQ
A	7.5	8.0	7.8	8.2	105.1	109.3
B	7.5	8.3	8.0	8.6	107.5	114.0
C	7.6	8.4	8.1	9.2	113.6	121.05
D	8.2	9.0	8.7	9.2	105.7	112.19
E	8.5	8.8	8.7	11.8	135.6	138.8
F	8.5	8.3	8.3	7.9	95.5	92.9
G	8.6	8.0	8.1	7.1	87.0	82.1
H	7.9	8.6	8.4	9.1	108.3	115.18
I	7.6	9.7	8.9	10.0	112.4	131.5
J	9.1	10.0	9.7	10.9	112.3	119.7
K	7.8	9.6	9.0	8.7	96,6	111.53
L	7.6	8.8	8.4	9.7	115.5	127.6

APPENDIX F

Table 7a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 3, School #4 (N=10)

Student	CA	MA	REA	RA	REQ	RQ
A	9.8	10.6	10.3	9.1	88.3	92.9
B	9.1	11.8	10.9	10.8	100.0	118.9
C	7.6	11.1	9.9	10.0	101.0	131.6
D	9.1	11.1	10.4	9.6	92.3	105.48
E	8.8	9.6	9.3	10.1	108.6	114.77
F	8.8	10.1	9.7	9.0	92.8	102.3
G	9.3	11.1	10.5	10.1	96.2	109.9
H	8.5	11.1	10.23	11.1	108.0	130.0
I	9.3	11.5	10.8	10.3	95.4	110.0
J	9.3	9.2	9.2	7.6	82.6	81.72

APPENDIX G

Table 8a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 4, School #4

Students	CA	MA	REA	RA	REQ	RQ
A	9.6	12.3	11.4	11.1	97.4	115.6
B	10.5	10.9	10.8	10.5	97.1	99.7
C	10.5	11.2	10.9	9.3	85.1	88.7
D	10.2	10.9	10.7	10.3	96.1	100.1
E	11.3	10.3	10.6	10.6	100.0	94.2
F	11.3	9.8	10.3	9.4	91.2	83.1
G	10.0	11.6	11.1	11.3	101.8	112.5
H	9.6	11.6	10.9	10.6	97.1	110.4
I	10.6	11.2	11.0	11.10	101.3	104.9
J	10.8	9.6	10.0	9.6	95.7	88.4
K	9.8	11.1	10.6	11.1	103.8	112.8
L	9.9	12.6	11.7	10.9	93.2	110.1
M	9.8	11.6	11.0	9.2	83.6	93.9

APPENDIX H

Table 9a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 5, School #4 (N=15)

Students	CA	MA	REA	RA	REQ	RQ
A	10.9	13.0	12.3	9.6	77.7	87.6
B	10.5	11.3	11.1	10.4	94.1	99.0
C	11.0	14.4	13.3	9.9	74.2	89.5
D	11.7	13.9	13.0	13.0	100.0	116.5
E	10.6	11.9	11.5	11.3	97.8	106.1
F	11.8	11.6	11.7	9.0	76.6	76.2
G	10.8	12.3	11.8	10.4	87.7	96.3
H	12.8	12.2	12.4	11.3	91.0	88.3
I	11.6	13.3	12.8	12.9	100.9	111.2
J	11.4	12.3	12.0	10.5	86.9	91.6
K	10.6	13.9	12.8	13.1	102.0	123.6
L	11.3	11.9	11.7	11.8	100.3	104.0
M	11.8	10.3	10.6	9.8	92.6	83.4
N	11.3	12.8	12.3	11.9	96.7	105.3
O	11.3	12.8	12.3	11.3	91.8	100.0

APPENDIX I

Table 10a

A Comparison of Reading Expectancy to Reading Achievement of the Students in Grade 6, School #4

Student	CA	MA	REA	RA	REQ	RQ
A	13.0	15.4	14.6	11.7	80.1	90.0
B	11.9	11.8	11.9	11.8	99.5	99.2
C	11.9	14.0	13.3	10.9	81.5	91.2
D	12.6	13.5	13.2	10.8	81.7	85.7
E	11.9	12.8	12.5	12.6	100.6	105.9
F	12.3	16.8	14.1	12.6	89.0	102.0
G	11.9	13.8	13.2	12.4	94.8	104.2
H	11.3	12.6	12.2	11.7	95.8	100.0
I	13.0	12.3	12.5	9.6	73.2	70.4
J	12.3	13.5	13.1	12.6	95.9	102.44
K	13.0	13.8	13.6	12.1	89.3	93.1

APPENDIX J

Table 11a

A Comparison of Reading Achievement to Reading Expectancy of the Students in Grade 7, School #4, Spring 1974 (N=15)

Students	CA	MA	REA	RA	REQ	RQ
A	12.6	16.1	15.0	11.7	78.0	92.9
B	12.9	16.9	15.6	13.7	87.6	105.8
C	13.0	15.3	14.5	11.9	82.1	91.5
D	12.9	13.2	13.1	13.2	100.5	101.9
E	12.9	19.0	16.9	13.1	77.2	101.6
F	14.3	15.3	14.9	12.2	81.7	85.3
G	13.0	16.9	15.6	12.7	81.0	97.3
H	13.1	14.1	13.8	12.4	90.2	94.1
I	13.5	15.9	15.1	13.1	86.4	96.7
J	12.9	12.0	12.3	12.6	102.4	97.7
K	13.9	12.5	13.0	13.1	100.6	93.88
L	13.1	13.4	13.3	12.2	91.3	92.9
M	13.4	14.2	13.9	11.9	85.5	88.7
N	12.9	20.6	18.0	14.6	81.8	115.2
O	12.8	14.8	14.1	13.7	97.1	107.0

APPENDIX K

Table 12a

A Comparison of the Reading Achievement to the Reading Expectancy of Students in Grade 8, School #4(N=10)

Student	CA	MA	REA	RA	REQ	RQ
A	14.6	14.6	14.6	12.4	85.0	85.0
B	14.3	13.6	13.7	13.1	94.2	91.6
C	14.5	16.4	15.8	15.8	100.0	108.6
D	14.5	14.4	14.5	14.0	96.5	96.2
E	14.5	19.6	17.9	15.3	85.2	105.5
F	13.8	16.1	15.9	14.1	88.3	102.2
G	14.9	16.2	15.7	14.1	89.4	94.3
H	13.9	19.3	17.5	14.6	83.6	101.3
I	14.4	15.9	15.4	15.4	99.9	106.9
J	12.8	14.8	14.1	16.3	109.3	127.3

APPENDIX L

Table 13a

A Comparison of Reading Expectancy to Reading Achievement of the Students in Grade 1 & 2, School #5 (N=11)

Grade	Student	CA	MA	REA	RA	REQ	RQ
1	A	6.9	6.5	6.6	6.7	110.1	97.1
1	B	7.0	7.4	7.3	8.3	114.6	118.6
1	C	7.6	7.8	7.6	7.6	100.0	100.1
1	D	7.3	8.0	7.8	8.1	104.4	110.0
2	E	8.1	8.8	8.5	9.2	108.3	114.2
2	F	8.3	7.8	7.9	9.5	119.6	114.7
2	G	8.8	7.4	7.9	9.6	122.2	109.1
2	H	8.0	8.8	8.6	8.9	104.1	111.3
2	I	8.3	8.2	8.2	8.3	101.7	101.0
2	J	7.4	7.5	7.5	8.4	112.2	112.8
2	K	8.8	8.3	8.4	8.1	96.3	92.1

APPENDIX M

Table 14a

A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 3 & 4, School #5 (Spring 1974)(N=9)

Grade	Student	CA	MA	REA	RA	REQ	RQ
3	A	8.8	9.9	9.6	10.5	109.9	118.9
3	B	9.1	8.6	8.7	7.9	90.4	87.0
3	C	7.3	9.6	8.9	10.2	114.3	138.5
3	D	9.4	7.8	8.4	8.6	102.4	90.9
3	E	10.4	9.4	9.7	10.3	105.2	98.5
4	F	9.7	12.3	11.4	10.1	87.8	104.0
4	G	10.0	12.3	11.6	10.7	92.6	107.0
4	H	9.7	10.3	10.1	9.4	93.5	97.9
4	I	10.4	8.4	9.1	8.5	93.7	81.6

APPENDIX N

Table 15a

A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 5 & 6, School #5 (Spring 1974) (N=11)

Grade	Student	CA	MA	REA	RA	REQ	RQ
5	A	11.0	11.3	11.2	11.2	99.4	101.4
5	B	10.4	10.3	10.4	9.8	94.2	93.7
5	C	10.8	13.4	12.6	13.7	110.4	127.9
6	D	12.0	11.4	11.6	11.3	97.4	94.2
6	E	10.6	12.3	11.7	11.2	95.8	105.9
6	F	11.8	17.7	15.7	13.8	87.7	116.2
6	G	12.4	13.2	12.9	11.2	86.4	89.8
6	H	12.4	14.0	13.5	11.3	83.5	90.7
6	I	13.3	11.4	12.1	8.5	70.5	63.8
6	J	12.3	12.3	12.3	12.3	100.0	100.0
6	K	12.0	14.5	13.7	12.5	91.1	103.8

APPENDIX O

Table 16a

A Comparison of Reading Achievement to the Reading Expectancy of the Students in Grades 7 & 8, School #5 (Spring 1974) (N=12)

Grade	Student	CA	MA	REA	RA	REQ	RQ
7	A	12.2	13.1	12.8	12.4	97.0	102.0
7	B	13.4	16.9	15.8	14.6	92.4	108.5
7	C	12.4	16.0	14.8	13.1	88.1	105.2
7	D	12.8	13.9	13.6	13.0	95.7	101.3
7	E	13.3	17.1	15.8	15.1	95.6	113.9
7	F	12.4	17.6	15.9	13.0	81.3	104.3
7	G	13.3	20.8	18.3	15.9	87.1	120.0
8	H	14.4	15.1	14.9	12.7	85.1	87.8
8	I	13.8	16.3	15.4	14.3	92.3	103.0
8	J	13.8	15.1	14.7	13.8	94.1	100.0
8	K	13.7	16.7	15.7	15.3	97.3	111.63
8	L	13.9	16.9	15.9	16.5	103.6	118.6

APPENDIX P

Table 17

The First Grade $\bar{X}$ (Mean) Reading Achievement in Percentile from the Metropolitan Achievement Test of Five Rural Schools for the Years 1969-1973

	1969		1970		1971		1972		1973		5-yr. total	
School	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$
#1	3	75.3	0	-	0	-	1	59.0	0	-	4	71.15
#2	5	87.0	2	58.33	3	74.0	1	87.0	1	86.5	12	78.46
#3	7	82.7	10	76.8	2	42.3	7	58.6	9	54.3	24	65.84
#4	6	64.1	12	73.7	13	73.8	8	63.9	14	63.64	53	68.02
#5	1	91	1	94.5	1	56	5	56.0	7	49.3	15	57.77
TOTAL	22	77.9	25	74.2	19	69.1	22	61.2	31	58.4	118	67.3

APPENDIX Q

Table 18

The Second Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Metropolitan Achievement Test 1969-1973

	1969		1970		1971		1972		1973		1974	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	1	90.5	3	87.7	1	46	1	87	1	86	7	81.8
#2	3	86.0	6	88.9	0	-	2	64.3	1	47.5	12	80.63
#3	7	73.4	8	51.2	9	78.1	4	70	7	79.8	35	70.7
#4	8	54.4	10	68.4	16	60.4	14	48.0	15	64.8	63	64.8
#5	0	-	2	93.6	1	95	-	84	0	-	4	91.63
TOTAL	19	68,2	29	71.6	27	67.0	22	56.8	24	69.3	121	66.9

$\overline{X}$ is expressed in percentiles

APPENDIX R

Table 19

The Third Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr. total	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	1	94.5	1	96.5	0	-	0	-	0	-	2	95.5
#2	2	64.8	3	89.2	4	80.9	0	-	2	57	11	75.86
#3	7	60.9	7	66.4	8	58	9	72.2	3	86.7	34	66.63
#4	8	76.4	9	52.5	13	62.1	14	68.5	12	70.29	56	65.9
#5	1	98	0	-	2	72.6	2	82	0	-	5	81.5
TOTAL	19	71.5	20	65.0	27	64.4	25	70.9	17	71.6	109	67.83

APPENDIX S

Table 20

The Fourth Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr.total	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	1	70.5	1	93	0	-	2	74.7	0	-	4	78.2
#2	5	67.7	2	46.5	3	80.7	4	71.6	0	-	14	68.57
#3	5	76.4	8	60.6	7	71.8	8	54.7	10	65.85	48	65.8
#4	5	58.9	10	67.7	12	53.4	12	56.3	20	59.7	59	59.03
#5	1	90.5	1	94	1	55.0	4	66.1	3	58.5	10	68.4
TOTAL	17	69.1	22	65.5	23	62.6	30	60.4	33	61.4	125	62.9

APPENDIX T

Table 21

The Fifth Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr.total	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	2	81.5	1	79.5	0	-	2	55.75	0	-	5	70.8
#2	3	60	3	60.8	2	39	3	70.2	5	70.2	16	62.7
#3	8	60.8	8	72	8	54.2	7	69.6	8	58.2	39	62.8
#4	7	56.4	9	48.7	9	60.3	15	49.2	11	48.7	51	52.01
#5	0	-	1	91.5	1	87.5	4	55.4	6	56.50	12	61.63
TOTAL	20	61.2	22	62.1	20	57.0	31	57.0	30	56.3	123	58.51

APPENDIX U

Table 22

The Sixth Grade $\bar{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr.total	
School	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$
#1	1	93	1	82	0	-	1	85.5	0	-	3	86.8
#2	1	73.5	2	47.0	6	69.8	2	44.8	3	62.0	14	61.5
#3	6	67.9	8	57.3	6	74.3	5	53.3	6	58.8	36	61.2
#4	9	61.1	11	55.1	13	54.7	7	58.4	16	44.3	56	53.3
#5	2	77	0	-	2	81.3	2	71.2	8	59.1	14	67.0
TOTAL	19	62.75	22	60.35	27	70.0	19	62.6	33	56.1	123	58.51

APPENDIX V

Table 23

The Seventh Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr.total	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	0	-	0	-	0	-	0	-	0	-	0	-
#2	1	68.5	2	60.8	2	52.5	6	67.3	2	48.0	13	61.1
#3	5	73.6	6	76.4	7	59.9	8	67	9	54.78	35	64.7
#4	7	76.4	11	56.5	13	58.9	12	50.4	8	65.8	51	59.9
#5	3	86.5	1	90.5	0	-	5	66.9	5	56.1	14	68.9
TOTAL	16	76.9	20	64.6	22	58.6	31	60.6	24	58.1	113	62.6

APPENDIX W

Table 24

The Eighth Grade $\overline{X}$ (Mean) Reading Achievement in Percentiles from the Results of the Iowa Tests of Basic Skills

	1969		1970		1971		1972		1973		5-yr.total	
School	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$	N	$\overline{X}$
#1	0	-	0	-	0	-	0	-	0	-	0	-
#2	1	44	1	75.5	1	58	0	-	5	64.9	8	62.8
#3	1	46.0	4	75.6	7	69.1	6	60.6	4	72.4	22	67.5
#4	1	92.5	5	76.6	12	56.5	14	51.4	11	53.0	43	57.12
#5	1	73.0	1	70.5	1	89	1	35	5	66.9	9	66.9
TOTAL	4	63.8	11	75.5	21	62.3	21	53.2	25	61.2	82	61.8