REMEDIAL READING PROGRAM:
AN EXPERIMENTAL STUDY IN THE WASCO, CALIFORNIA, UNION ELEMENTARY SCHOOL DISTRICT

by
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A Thesis
submitted in partial fulfillment of the requirements for the degree of Master of Arts in the School of Education
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This study was undertaken because of a desire to find a better way to help the underachievers in reading in our school district. My feeling was that a thorough study of reading research would help familiarize me with current trends and successful methods of teaching reading. The experimental study was done to test some of those methods on children in this particular geographical area.

I wish to acknowledge with grateful thanks the help of the Wasco Union Elementary School District for allowing me to conduct the experimental study in this district. Particularly I wish to thank Mr. John Prueitt, district superintendent, for giving me a teaching assignment which made the study possible; Mr. Robert McConnell, principal, for allowing the use of the school records and aides; Mr. Austin Hunter, psychologist, for his help with testing; and Mr. Frank Long, math instructor, for his help with statistics.

I also wish to thank Dr. I. Ace Griffiths, Fresno State College Advisor, for his help as committee chairman and advisor, without which the work could not have been completed.

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CHAPTER I

THE INTRODUCTION AND THE PROBLEM

I. THE INTRODUCTION

In the public school system of the United States there have always been some children who did not learn to read as well as others. Educators have long recognized this and worked to alter the situation. Many and varied methods have been developed; and research has been carried on to determine their effectiveness.

Nothing would be nicer than to be able to say that a guaranteed way to insure that every child will learn to read effectively had been found. Unfortunately, this way has not yet been discovered. Work toward this goal will be continued.

An ever-increasing amount of research has been done over the past years in an attempt to locate the reasons why some children learn to read while other equally bright children do not learn as readily. Research has also been done to determine which of the two basic teaching methods is best: the sight word method or the phonics method. The findings of this research will be discussed in Chapter Two.

In the past few years, much emphasis has been placed
by the Federal Government on special programs for the disadvantaged. Opinion has been that the home surroundings of children affect their readiness for school-oriented activities such as reading. Their future performance and outlook on life have also been affected by home environment. The culturally disadvantaged students have not had the basic experiences needed to prepare them to succeed in schools structured for the middle class. This belief has been evidenced by the many Acts of Congress which have budgeted funds for education. Schools throughout the nation have applied for and received these funds in an all out effort to help remedy the existing situation.

As a result of these available funds, many preschool and early school programs aimed at the culturally deprived and the economically underprivileged children have been innovated. Sufficient time has not yet passed to evaluate the effectiveness of these programs in terms of their later school progress. Nor have these programs involved all of the children with reading difficulties. Therefore, the problem of children who do not read as well as they should continues to remain with educators of today.

In an attempt to alleviate this situation in
California, the Miller-Unruh Act\textsuperscript{1} was passed by the State Legislature and signed by Governor Edmund C. Brown. This act focuses on:

1. the diagnosis of actual or anticipated reading disability,

2. the prevention of potential and the correction of actual reading disability,

3. the assessment of the developmental aspects of child growth and development as these may affect beginning reading, and

4. the development of positive attitudes toward reading.

The major feature of the act provides school districts with the opportunity to obtain specialist teachers of reading for grades one, two and three. Hopefully, this would help remediate these students before they drop so far behind that they can not easily catch up with the rest of the students.

One of the schools which has taken advantage of the Miller-Unruh Act is the Wasco Union Elementary School District in Wasco, California. This school is in an agricultural community of about 7,900 people, located twenty-seven miles northwest of Bakersfield in Kern County, California.

Wasco schools consist of two public elementary schools.

\textsuperscript{1}Senator George Miller and Assemblyman Jesse Unruh, "The Miller-Unruh Reading Act," Education Code, (Division 7, Chapter 2.5, Section 7770, Enacted 1965 from Senate Bill 205, Amended 1967 in Assembly Bill 272).
(preschool through fifth), one junior high school (sixth through eighth), and one high school (ninth through twelfth). There is also one Catholic elementary school (first through eighth).

According to the 1960 census 18 per cent of Wasco's population was foreign born or of foreign or mixed parentage. Approximately 65 per cent of this population segment is from Mexico or Mexican parentage.²

According to a survey of school records, the school population includes approximately 28 per cent Mexican-Americans and 12 per cent Negroes. A labor camp on the edge of town houses migrant workers throughout the spring and summer and into the fall.³

A large portion of the population has been employed in jobs related to farming and agricultural research. The labor force for these activities has changed because of many technological advancements in farming. The problem faced by this community and other communities is to train the


children of these laborers and to prepare them for the future.

Reading with ease and understanding is one of the primary items affecting skills for the technical preparation of workers. A desire to increase the reading level of the remedial students prompted the Wasco Union Elementary School District to apply for aid through the Miller-Unruh Act. This program went into effect at the beginning of the 1966-1967 school year. Teachers, one at each of the two neighborhood elementary schools were qualified as reading specialists. The program has been in operation for two complete school years.

II. THE PROBLEM

Statement of the Problem. The purpose of this study was to determine the effect of the remedial reading program on the second grade students at the Palm Avenue School in the Wasco Union Elementary School District, California, during the 1967-1968 school year.

Analysis of the Problem. Several questions were foremost, and will be answered in Chapter IV:

1. What would be the effect of this program on the different, specific areas of a diagnostic reading test?

2. What would be the effect of the program on the Verbal Intelligence Quotient and Mental Age as measured by the Peabody Picture Vocabulary Test?
3. How will the experimental group compare with the control group on the reading section of the Stanford Reading Achievement Test?

4. What would be the total effect on the students involved in a regular, systematic reading program given in addition to their regular classroom reading program?

**Importance of the Study.** Reading retardation is one of the more common problems in education today, is prevalent at all grade levels, and exists in all parts of the nation. Many innovative approaches to the teaching of reading have been tried recently in the United States and are reviewed in Chapter II. This study was conducted to determine the effectiveness of the program which has been used in this school district for the past two years. Corroborative research is essential to justify continuation of a program.

**Hypothesis.** This study investigated the hypothesis that the second grade students in the remedial reading program in the Wasco Union Elementary School District would show a significant improvement, at the .05 level of confidence, when compared with the control students, as a result of the remediation treatment.

**Basic Assumptions.** An assumption was that the variant factor of remedial instruction would be the only treatment difference for the remedial group as compared with the control group. The regular classroom instruction would be the same for both groups commensurate with their grouping within their own room.
A second assumption was that the average second grade student, not classified as remedial, would make a full year's growth during an academic school year. This would be interpreted on a standardized test score as a 1.0 gain. In order for the hypothesis to be supported, the remedial students would have to make a gain of more than one year.

**Delimitations.** The study was limited to the second grade students in the remedial reading classes at the Palm Avenue School in the Wasco Union Elementary School District. This limitation was placed on the study to eliminate the different teacher variable.

A further limitation was to exclude those second grade remedial students with severe language or speech handicaps as well as those who had been definitely identified as emotionally handicapped children. The opinion was that the scores of these children might influence the results.

The review of literature was limited to that having to do with primary school reading projects. The studies concerning beginning and remedial reading projects were given preference. Much of the review was taken from *The Reading Teacher*, a publication of the International Reading Association. Except for a brief history of education and reading, the review was limited to studies conducted during the years 1960 to 1967.

**Procedures.** The population of the study was composed of twenty-three second grade students in the remedial reading
classes at the Palm Avenue School in the Wasco Union Elementary School District.

They were chosen after having been referred to the reading specialist by their classroom teachers, who felt that the children were having excessive difficulty in learning to read. A battery of tests was then administered to determine the children's reading achievement level, their total intelligence, their vocabulary quotient, and their reading disabilities. The test results were then evaluated. If the student was below grade level, or showed definite deficiencies in strategic areas, the student became a member of the remedial reading class, and a part of the sample of the population for the study.

The independent variable for the experimental group was the total remedial reading program which consisted of programmed reading materials, teaching machines, small class size and work in phonics. With the exception of work in phonics, none of these variables were to be found in the regular classrooms.

The dependent variable was the raw score made on the Stanford Reading Achievement Test. This was administered in May, 1967, and again in May, 1968.

The basic design for the experiment was to use an experimental group and a control group. The groups were matched on the basis of intelligence as shown on the California Short-form Test of Mental Maturity and total reading
achievement as reflected on the May, 1967 Stanford Reading Achievement Test.

III. DEFINITION OF TERMS USED

Remedial Reader. A remedial reader was interpreted to be one who was a year or more below grade level according to the reading section of the Stanford Reading Achievement Test. The term also designates students whose teachers felt that they were having excessive difficulties in learning to read.

Remediation. This term was used to include the various techniques employed in the remedial reading program. The techniques were designed to create consistent mental patterns through sequentially planned micro-units of available successes.

Perception. Throughout this thesis, the term perception will be interpreted as being the act of seeing an object as it actually is, without distortion. The word would be synonymous with visual motor perception. This is one of the first requisites for learning to read.

Retarded Reader. A retarded reader was regarded as one who was behind the expected pattern of achievement. This included all persons who had achieved less than normal.**

Reading Disability. A reading disability case was the individual who achieved significantly below his ability level. He would be a logical candidate for remedial instruction.  

Corrective Reading. Remedial reading instruction carried out by the regular classroom teacher has been termed corrective reading. This provides a program of special assistance for those who find the assigned material difficult.  

Remedial Reading. Remedial instruction conducted outside the framework of the regular classroom is called remedial reading. This could be done by the regular teacher outside of regular class time or by a specialist teacher.  

Developmental Reading. A developmental reading program provides a systematic plan of instruction in all areas of language skills. This is the responsibility of every teacher within the framework of the regular classroom.  

Code-emphasis Method. In the teaching of reading,  

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5Ibid.  
6Ibid.  
7Eileen Marie Cronin, For the Problem Reader of Any Age (Fresno: Academy Guild Press, 1966), p. 4.  
8Ibid.  
a method where the alphabet and the representative sounds for the alphabet have been taught first was referred to as a code-emphasis method. Any form of phonetic teaching would be code-emphasis.\(^\text{10}\)

**Meaning-emphasis Method.** Any method of teaching reading that places the emphasis on context clues, configuration of the words and basic sight words has been called a meaning-emphasis method. This has been used to a large extent by the basal text-book writers.\(^\text{11}\)

**Augmented-Roman Alphabet.** A method which used different symbols for the various sounds of the letters of the alphabet was the Augmented-Roman Alphabet. This was one of several different methods which used variant spellings for words in beginning reading.\(^\text{12}\)

**The Hawthorne Effect.** The knowledge that one is taking part in an experiment may alter his performance and affect the results of the test. This has been referred to as the Hawthorne Effect.\(^\text{13}\)

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\(^{10}\) **Ibid.**

\(^{11}\) **Ibid.**


Reading. The act of accurately perceiving and understanding symbols which represent letters and sounds will be the meaning of reading in this paper. This is one of the more simple interpretations of the word. Various authorities\(^1\) range in their definition of reading from simple meanings similar to this one to complex psychological and sociological interpretations.

IV. ORGANIZATION OF REMAINDER OF STUDY

Chapter Two is devoted to a review of the literature pertinent to reading. The procedures for the study are detailed in Chapter Three. The program to be researched is described in complete detail. Chapter Four is concerned with the specific results of the experimental program. Statistical results are presented in written and tabular form, and comparisons are made between the control and experimental groups. Chapter Five contains a brief review of the problem. This is followed with the results, conclusions and recommendations drawn from the investigation.
CHAPTER II

REVIEW OF THE LITERATURE

I. THE INTRODUCTION

This portion of the experimental study has been devoted to a study and review of the literature that was pertinent to the problems of reading. A difference between regular reading and remedial reading has been the age at which the basic reading skills were attained. Therefore, literature was reviewed which dealt with beginning reading as well as remedial reading.

There has been a steady decline in the average school age of children who are by grade, since 1910. Research data has indirectly suggested that more children have been making normal progress recently than in earlier years. This trend is discussed in the first portion of the chapter, followed by the history of reading research. The causes of remedial reading, the characteristics of a remedial reader, and the needs for a successful reader are discussed. Research studies are reviewed.

II. HISTORY OF READING

The reading of written symbols had its origin when man first began to use pictures to send messages and record happenings. The transition from pictures to letters which represented certain sounds came slowly and after much effort. The Egyptians had analysed words into sounds and syllables and had developed symbols to represent them as early as twenty-five centuries B. C. The Phoenician alphabet was
developed by the Semites. From this alphabet came the Greek letters and the Roman alphabet.¹

Prior to 1850 in the United States, students in the schools progressed on an individual basis. By 1860 all the schools were graded. Each grade had its quota of work to be done. Promotion policies had been defined and a substantial number of the students were making retarded progress. The children were considered to be making retarded progress when they had repeated one or more grades.²

There has been a steady decline in the average school age of children, grade by grade, since 1918. Research data has indirectly suggested that more children have been making normal progress recently than in earlier years. This trend would be expected in view of the changing classification and promotion practices.³

The best view of age-grade status and trends has been an analysis by Lennon and Mitchell in which the best and broadest-based data from five surveys between 1918 and 1952 were used. The variability of ages within grades was reduced


³Ibid.
by approximately 40 per cent between 1918 and 1952. The correlation between age and grade status changed from .85 in 1918 to .93 in 1952.4

Research during the 1930's brought the realization that schools must increase their holding power. Doubts concerning strict grading standards increased comparative studies between regular promotion and retention. Provision was made for greater individual differences.5

In 1952, achievement in silent reading was found to be at least as great as, and probably greater than, achievement was several decades ago. The proportion of personal reading was found to be about the same as thirty years ago. Evidence does not indicate whether or not the quality of material read has improved. The quality of instruction has continued to improve.6

III. HISTORY OF READING RESEARCH

Reading research began in the laboratories of Europe as early as 1884. This was followed with studies by Cattell, Erdmann, Dodge and others. These early researchers found that material was read by phrases, words or letters depending on the reader's familiarity with the material, his ability in

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4 Ibid.
5 Ibid.
6 Ibid.
reading, and the degree of difficulty of the reading matter.

The next series of studies grew out of an interest in the movement of the eyes while reading. These studies indicated that the eyes moved in a series of alternate movements and pauses.

The number of research studies in education increased greatly between 1911 and 1920. They numbered almost six times as many as in the three previous decades. This increase in research has continued to the point where a hundred or more studies are published each year.

Studies made prior to 1910 formed the basis for two present day reforms in teaching reading: (1) the definite distinction between oral and silent reading and (2) the recognition of differences among children of a given age or grade in their ability to learn and their reading interests and habits.

The years 1911 to 1920 were a transition period. Research was done on specific ideas encompassed in the teaching of reading such as: (1) how children learn to read, (2) the value of phonics, (3) relative merits of the

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7 Ibid.
8 Ibid.
9 Ibid.
10 Ibid.
best way to teach reading and (4) the content of courses of study. New methods of investigation were started. Some studies were concerned with the organization, standardization and application of reading tests.\textsuperscript{11}

After 1920 the scope continued to broaden until there had been included research on problems from preschool through adult education. Following World War II, scientific methods have been used to attack problems being faced in promoting and increasing literacy throughout the world.\textsuperscript{12}

IV. CHARACTERISTICS OF POOR READERS

Authorities have long recognized that most of the remedial readers will be boys. Sex differences in reading achievement have been of interest to educators and researchers since the beginning of research in education. Several causes have been given for the high ratio of boys to girls in remedial reading. Boys have a slower maturation rate than girls. Boys and girls have had different cultural expectations and experiences. Treatment from the teacher has been said to be different. Finally, there is a great lack of men

\textsuperscript{11}Ibid.

\textsuperscript{12}Ibid.
13 Significant differences have been found favoring the girls in tests of visual perception.

Other characteristics of poor readers have been noted in research. They have often not attained the stage of spontaneous verbal mediation. 15 A poor reader usually dislikes school, rejects reading, becomes discouraged easily, acquires unfortunate adjustment patterns, and becomes increasingly less able to learn. His self-image is poor and he nearly always acquires emotional reactions. 16 These students often


16 Cronin, loc. cit.
lack energy and have a short attention span. They usually
do not assume responsibility and are seldom relaxed. They
often daydream and they seldom complete their assignments.
Poor readers usually work at a slow rate of speed and have
writing and spelling difficulties. They have a poor auditory
memory and reverse letters. This has been attributed to the
wide range of maturation age associated with these parts of
the neopallium which control lateral dominance, handedness,
eyedness and auditory and visual symbol recognition.\textsuperscript{1}

According to McMurray the lack of eye-hand coordination and
the inability to maintain the dominant eye or hand, along
with either hyperactivity or lethargy has also been noted.

V. CAUSES OF READING DISABILITY

Causes for reading disability have been given as:
(1) the rate of development of the central nervous system,
(2) organic impairment, (3) bio-chemical irregularities,
(4) prenatal injury, (5) genetic influence, (6) illness,
operations and injuries, and (7) reading disorganizations.
These would all be physical types of causes, and would
require clinical treatment.\textsuperscript{18}

\textsuperscript{17}J.G. McMurray, "Some Correlates of Reading Difficulty in Satisfactory and Disabled Readers, A Preliminary Study in Grade 3," \textit{Ontario Journal of Educational Research}, IV (Spring, 1963), 149-57; Monroe, \textit{loc. cit.}; Hunt, \textit{loc. cit.}

\textsuperscript{18}Mary Walsh Small, "Just What Is Dyslexia?" \textit{The Instructor}, (August/September, 1967), 54-57.
limited intelligence, vision handicaps, severe hearing loss, severe emotional reactions, and poor teaching have been cited as other reasons for retarded reading.19

Socioeconomic status was given as a cause for reading problems by two authorities. They found a positive relationship between reading performance and socioeconomic status. Socioeconomic class was claimed as the single most important factor in reading progress. This claim was based on a survey of twelve hundred teachers across the nation. The lack of participation in the imaginative life of symbols was the reason given for the lack of reading progress from the lower socioeconomic groups.20

No person has found one single reason for reading difficulties. The ones reported have been many and varied, but they could be classified. Many of the researchers have found physical causes which could be corrected with proper training. Emotional problems have also been found to contribute to the problem of poor reading. The intellectual or mental ability of the poor reader has also been found to be a factor. Most of the causes mentioned could be placed in one

19Doris E. Nason, "Remedial Instruction in Reading," The Reading Teacher, XXI (May, 1968), 740-44.

of the three categories: (1) physical, (2) mental and (3) emotional.

VI. NEEDS FOR SUCCESSFUL READING

Auditory Discrimination. One of the requirements for success in reading has been found to be good auditory discrimination. This particular skill develops gradually, and often is not developed until the age of eight. Auditory blending has been found to be particularly important in the area of word recognition and analysis. Adequate function of visual memory, visual discrimination, visual association and auditory discrimination must be present or reading retardation in varying degrees will occur.

Visual Perception. The importance of sufficient visual perception was investigated in nine different studies. The researchers found it to be one of the necessities for readiness in reading. Visual perception appeared to have more predictive weight than intelligence in the first grade. The ability to find small differences in words showed a fairly high positive correlation with reading. Visual perception and auditory perception, as well as phonics, were found to have a

fairly high positive correlation with reading. Visual perception, auditory perception and phonics were found to be significantly related to reading success in one study involving five hundred second grade children. The development of visual memory was cited as a need for achievement both in and out of school. Learning to perceive was deemed prerequisite to all kinds of learning. Good readers improve with perceptual training. Early intensive formal visual and auditory discrimination programs cannot be over-emphasized. Training in visual perception may enable rural pupils to work more effectively in subjects requiring visual discrimination and may cause an increase in intelligence scores. Remedial students will often have to be given a program of perceptual training, dominance establishment and/or motor coordination before remedial work will be of value.22

In addition to the skills of discrimination a successful reader must be able; (1) to recognize the sight words, (2) to sound out regularly spelled words, (3) to use word building clues and (4) to check for the meaning demanded by the context. 23

**Reading Readiness.** Reading readiness was cited as a need for reading. Pestalozzi, Dewey and Patrick all wrote about readiness prior to the year 1900 although they did not use the term. Dewey and Patrick both thought that reading and writing were not suitable subjects for the early primary years. The first major study on readiness was done by Deputy in 1930. Since that time numerous studies in readiness have been done. Thorndike clearly stated that the satisfaction or frustration of a person was dependent largely on what he was prepared to do. A person has been considered ready for a learning experience when he has a suitable set for that experience; he was not ready when he did not have that set. To be ready for a learning experience a child must want to learn; he must be sufficiently mature physiologically; he must have appropriate mental abilities; and he must have the

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right kind of educational background.  

An attempt was made to determine the effect of an intensified and extensive reading readiness program in thirty-two first grade classes in eight Florida schools. The subjects were in two groups—one white and one Negro. The findings indicated that girls experienced rapid growth earlier than boys, more mature groups made rapid growth sooner than less mature groups and white subjects had rapid growth before the Negro subjects. The experimental subjects using intensive readiness work did better than the control groups using the basal reader method. The experimental program was more successful with the Negro pupils than with the white pupils.  

Reading readiness tests have been developed and used in an effort to predict success in reading. These tests have done well in identifying the very good and the very poor reader. They have not been accurate in predicting the achievement in reading of the middle group of scores. The numbers subtest on a readiness test appears to be a good predictor of achievement.  

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24 Harris, loc. cit.  

25 George D. Spache, et al., "A Longitudinal First Grade Reading Readiness Program," The Reading Teacher, XIX (May, 1966), 580-84.  

Some signs of readiness have been found. To be considered ready, a child should be able to orally construct an occasional long structured sentence, should show interest in the printed page, and should be able to identify and to write the letters of the alphabet and his name.27

The lack of reading readiness is so frequently associated with anxiety and other behavior disorders that remedial reading has been described as psycho-therapy.28

**Motivation.** Another need for successful reading is motivation. In a specific attempt to determine the effect of attitude on reading achievement, the attitude toward reading was changed for the experimental group, but they did no better on the reading criterion test than did the control group.29

In another study, however, the findings were different. Students with eye disorders who were told that this was the sole reason for their reading difficulties improved significantly in an experimental study.30

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28 Harris, loc. cit.

29 David Gurney, "The Effect of an Individualized Reading Program on Reading Level and Attitude Toward Reading," The Reading Teacher, XIX (January, 1966), 277-80.

VII. RESEARCH IN READING PROGRAMS

With the advent of Federal Aid to Education, many experimental programs were conducted in and by school districts, in single buildings, in total districts, on a county-wide basis, and on a state-wide basis. Programs have been designed to test one method, two methods, two methods with variations, and as many as four methods at one time.\(^{31}\)

**Programmed Instruction.** Programmed instruction has been widely advertised in the past few years. Programming is an attempt to present information in small, sequential learning units with immediate reinforcement. A study was made of current programs. The programs were then compared against ten criteria which had been established:

1. Subject matter is broken into frames,
2. Student response is required,
3. Response is checked immediately,
4. Rate of progression varies with student,
5. Frames are placed in careful sequence,
6. Learning goals are specific,
7. Audience is specific,
8. Programs are tried out, then revised,
9. Proof of learning is desirable,
10. Information is furnished about author, average working time, table of contents, pretests, posttests, readability level, basis of curriculum, context, and type of branching.

\(^{31}\) These experimental designs were used in the twenty-seven United States Office of Education First Grade Studies which were begun in 1965-66, extended to 1966-67, and extended again in 1967-68. These studies were reported in the May issues of *The Reading Teacher* in 1966, 1967 and 1968.
Most of the current programs met the first four requirements. The last six points determined whether or not a program was really good. 32

In a study which compared the Sullivan Programmed Reading, Series I, and the Betts' basal text reading program, no significant differences were found in the effectiveness of the two programs. The conclusion was that the programmed reading could take its place along with the basal reader method as one more way to teach remedial reading. 33

Teaching machines could be classified as one type of programming. A study which used the Language-Master with first grade students was conducted. The study determined that at the beginning stage of reading help from the teacher was more important than help from a mechanical device. 34

Phonics and Reading Disability. In the United States phonics has been a way of teaching reading since formal reading instruction began. This method has involved teaching the names of the letters and their sounds prior to the teaching

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32 Edward Fry, "Programmed Instruction in Reading," The Reading Teacher, XVII (March, 1964), 453-60.


of word reading. Extensive phonics work has been found to be particularly helpful to children with specific learning disabilities.35

Orton took Broca's (France, 1861) theory that language was controlled by the hemisphere of the brain opposite the more skilled hand and connected this theory to the field of education and specific language disabilities. Handedness was found not to be always left or right, but with varying degrees of ambidexterity. He questioned that the opposite hemisphere was always in control, but believed that the records on the same side as the preferred hand sometimes asserted themselves. This would produce reversals and mirror writing. If the two brain recordings collided, the result was confusion.36

Gillingham studied under and worked with Orton for a number of years. He developed and she wrote and researched one phonetic method of teaching the disabled reader. This in essence was a multi-sensory approach to phonics which involved: (1) seeing the symbols, (2) hearing the sounds, (3) repeating the sounds, (4) tracing the symbol, (5) writing the symbol and (6) checking the work. This procedure was


36Ibid.
followed with all the phonograms in the English language. When all the symbol-sounds had been mastered, the disabled readers could sound out all except the most unphonetic words. These were then learned by sight.\textsuperscript{37}

She found that approximately 10 per cent of the school population had enough difficulty with reading and spelling to be seriously handicapped in their school work. Another 5 to 10 per cent were on the borderline, falling in skill far below their ability to understand the content. Since the evolution of language has been the same everywhere, the general proportion of children with a reading difficulty should be the same all over the world.\textsuperscript{38}

Another pupil of Orton, Spaulding, developed a similar approach called \textit{The Writing Road to Reading}. This method also was multisensory, and followed the same general framework. She used seventy phonogram flash cards and went through the see-hear-write-check procedure. In addition to this the students kept an individual notebook in which they listed the phonograms and phonetic rules which applied to them. She taught writing as they learned the phonograms. The method has also been referred to as the unified phonics method. Claims have been made that the using of this method

\textsuperscript{37} Ibid.

\textsuperscript{38} Ibid.
will teach all children in a group to master the English language through writing the sounds from the start of school. Spalding also claims that this method has prevented nonreaders and eliminated the need for remedial reading.39

Both Orton trainees have used their respective methods over a period of many years. They have worked in schools with total classrooms, with small groups, and with individual students. Other educators have also used these methods and have claimed excellent results.40

The works of Spalding and Gillingham grew out of Orton's dominance concept. The most important contribution of this concept was the emphasis on neural function as a cause of reading disability.41

Another investigator agreed that phonics taught in a systematic manner may be superior for low achievers while functional phonics is superior for average and high achievers.42

Code-emphasis has been the general term used to


40 Ibid.; Gillingham, loc. cit.

41 Spalding, loc. cit.; Gillingham, loc. cit.

describe all methods of teaching phonics. Research from 1912 to 1965 indicated that the code-emphasis method produced better results than did the meaning-emphasis method. Research has not indicated that any particular code-emphasis method was better than any other.43

Studies in Beginning Reading. In 1962 Downing and Gardner did a comparison study. They compared two groups. The control group used a basal reader while the experimental group used the Augmented Roman Alphabet. The highly significant differences favored the experimental procedure.44

A research study of four hundred twenty first grade students divided into large (thirty-six or more) and small (thirty or less) classes was made to determine class size effect on beginning reading. "Large" classes were more "ready" according to the results of the Metropolitan Reading Readiness Test. "Small" classes were less ready, but older chronologically than the large classes. At the end of the study, the small classes did significantly better at the .01 level of confidence than the large classes, and had less


student retention than the large classes.\footnote{In 1965, twenty-seven first grade research studies in sixteen states throughout the United States were made. They tested different methods of teaching beginning reading. The general coordinator for all the programs was Guy Bond. The projects were sponsored by the United States Office of Education, using Federal funds. All projects ran for one hundred forty days. There were no complete duplications, although the same methods were used in many of the studies.}

\footnote{Jack R. Frymier, "The Effect of Class Size Upon Reading Achievement in First Grade," \textit{The Reading Teacher}, XVIII (November, 1964), pp. 90-93.}

Methods involved in the studies were: (1) the linguistic approach, (2) some form of phonics, (3) a modified alphabet, (4) the language-experience approach and (5) the basal reader method. In some projects two methods were compared, in others three methods or more were compared. They were tested in many different combinations. The programs tested were not clearly different. In most projects, phonics, the alphabet and writing experiments were all used:

Related Writing Methods of Reading Instruction in First Grade,” The Reading Teacher, XIX (May, 1966), 611-616; Katherine A. Morrill, “A Comparison of Two Methods of Reading Supervision,” The Reading Teacher, XIX (May, 1966), 617-21; Arthur W. Heilman, “Effects of an Intensive In-Service Program on Teacher Classroom Behavior and Pupil Reading Achievement,” The Reading Teacher, XIX (May, 1966), 622-626; Robert B. Hayes, “ITA and Three Other Approaches to Reading in First Grade,” The Reading Teacher, XIX (May, 1966), 627-630; Albert J. Harris and Blanche L. Serwer, “Comparing Reading Approaches in First Grade Teaching with Disadvantaged Children,” The Reading Teacher, XIX (May, 1966), 631-35; Harold J. Tanyzer and Harvey Alpert, “Three Different Basal Reading Systems and First Grade Reading Achievement,” The Reading Teacher, XIX (May, 1966), 636-642; James B. MacDonald, Theodore L. Harris, and John S. Mann, “Individual Versus Group Instruction in First Grade Reading,” The Reading Teacher, XIX (May, 1966), 643-646; J. Wesley Schneyer, “Reading Achievement of First Grade Children Taught by a Linguistic Approach and a Basal Reader Approach,” The Reading Teacher, XIX (May, 1966), 647-52; Robert B. Ruddell, “Reading Instruction in First Grade with Varying Emphasis on the Regularity of Grapheme-Phoneme Correspondences and the Relation of Language Structure to Meaning,” The Reading Teacher, XIX (May, 1966), 653-60; Nita M. Wyatt, “The Reading Achievement of First Grade Boys Versus First Grade Girls,” The Reading Teacher, XIX (May, 1966), 661-65; Edward Bernard Fry, “First Grade Reading Instruction Using Diacritical Marking System, Initial Teaching Alphabet and Basal Reading System,” The Reading Teacher, XIX (May, 1966), 666-69; Roy McCanne “Approaches to First Grade English Reading Instruction for Children from Spanish-speaking Homes,” The Reading Teacher XIX (May, 1966), 670-75.
but not in the same way or to the same degree. The state adopted basal reader approach was usually the control group.47

Results in these programs mostly favored the experimental method involved, which varied from program to program. There was a possibility that the Hawthorne Effect was responsible for this consistent result.48

A general conclusion was that the testing instruments involved could be better; but the ones used were among the best which were available. Other conclusions were that all the children involved were better readers as a result of the projects and the teachers involved had received valuable inservice training. This widespread research project with one coordinator proved that cooperative research was feasible.49

In summarizing the total study, Bond said, "The results show... in one sentence... that it's the teacher that makes the difference. No one method has been shown to be consistently and significantly superior to any other method." He went on to say, "No one approach is so distinctly better in all situations and respects than others that it

47 Ibid.
48 Ibid.
49 Guy Bond and Robert Dykstra, "Final Report on X-001, Coordinating Center for First Grade Reading Instruction Programs," The Reading News Report, (1967), 113-44.
should be the one to be used exclusively."  

Studies in Second Grade. Several of the first grade studies were extended into the second year. The methods again included: (1) basal reader, (2) language experience, (3) linguistics, (4) modified alphabet and (5) phonics. These were again combined in various ways, just as in the preceding year.  

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50 Ibid.

The Initial Teaching Alphabet was involved in four of the studies. The other method in each case was the basal reader method. In one project the Initial Teaching Alphabet group did significantly better, particularly with the lower third of the students. There was no difference in the other three studies.\(^{52}\)

The Language Experience Method was one of the tested methods in three of the studies. There were no consistent differences reported.\(^ {53}\)

All nine studies used the basal reader method as one of the groups. The results of the studies were not consistent. Usually there were no significant differences.\(^ {54}\)

The results of the second year extension studies were computed at the end of the second year. Little difference was found between the United States Office of Education first year studies and their second year extensions. Both studies pointed out the importance of teacher competence. Another factor of great importance was the general intelligence of the children. This factor affects gains made under any method.\(^ {55}\)

\(^{52}\)Ibid.

\(^{53}\)Ibid.

\(^{54}\)Ibid.

\(^{55}\)Ibid.
The students who were involved in the United States Office of Education Second-Year Studies did show an improvement. The significant fact is that the improvement was as great with one method as with another. No one method was consistently better than any other method.  

A review of the literature indicated that second grade remedial children could significantly improve their reading level in a carefully planned and systematic program. Research has indicated that well planned programs, regardless of the method, have proved successful.

Special Reading Programs. Two ways to work with a child who needed special reading help have been used. He has been helped in his own classroom by his teacher (corrective) or he has been taken out of the classroom regularly for help from a specialist (remedial). The specialist usually has a separate room and works with a small group of children with similar problems at one time. The specialist could and did confer with the classroom teacher and the school psychologist.


58 Albert J. Harris, "Reading Clinic," The Reading Teacher, XVIII (March, 1961), 232-35.
Many educators have felt that this has not been sufficient to meet all the needs of a troubled reader. The suggestion has been made that the reading clinic as an organized group of professional people working together has possibilities which are greater than a reading specialist working alone. The group would include a full-time psychologist, a full-time psychiatric social-worker, a part-time psychiatrist, a clerk and a sufficient number of reading counselors to work with the severely remedial student and the teachers of those who needed some remedial help.59

Another less complex plan would involve a counselor to locate the problem and a reading specialist to diagnose specific disabilities and plan a program to correct them. The classroom teacher would carry out the program. Ideally, the counselor and specialist should be located in the same room. Independent and group therapy, role-playing and other counseling techniques should be used to stabilize the child. Only after this has been done should he be taught to read.60

Another investigator also recommended that remedial reading be accompanied by psychotherapy for the very severely retarded reader. The contention was that emotional problems induced the reading problems and both problems

59Ibid.

60Doris M. Kilanski, "A Reading and Guidance Center," The Reading Teacher, XXI (May, 1968), 754-57.
must be treated before the child's reading would improve.  

A proposal has been made, and the theory tested, that 
group-guidance of the mothers of retarded readers would 
benefit the attitude and achievement of the readers. Guidance 
of the mothers was done in an effort to change the mothers' 
attitude toward the boys involved and their progress in school, 
their attitude toward school in general and their attitude 
toward themselves.

During the three-month guidance period, the mothers' 
negative attitudes toward their sons improved. The majority 
of the boys' attitudes toward reading also improved. The 
boys whose attitudes improved made the greatest gains in 
reading. When the group guidance stopped, the boys' attitudes 
regressed.

Studholme concluded that serious reading deficiencies 
were closely related to psychological adjustment as well as 
to educational efforts.

A clinically-instructed group was compared with a

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61 Stanley Krippner, "Sociopathic Tendencies and 
Reading Retardation in Children," *Exceptional Children*, XXIX 
(February, 1963), 258-66.

62 Janice MacDonald Studholme, "Group Guidance with 
Mothers of Retarded Readers," *The Reading Teacher*, XVII 
(April, 1967), 528-30.

63 Ibid.

64 Ibid.
remedial group whose teachers worked with them on the basis of suggestions given them by the clinicians. The students had been diagnosed in the clinic. After a period of five semesters, no difference was found in the two groups. 65

After instruction had been stopped for sixteen months in the Reading Centres (England), the reading quotients of the students had decreased between the ending of the instruction and the follow-up testing. At the time of the follow-up testing the pupils were still in the bottom or next to the bottom streams (quartile). 66

Severe reading disability has not been corrected by short term intensive training. The improvement continues only as long as the training continues. 67

Pupils who had received remedial instruction made immediate post remedial reading gains which were significant. However, the long term gains were not significant, although they were present. The attitudes of the children were better. 68


66 K. Lovell, C. Byrne and B. Richardson, "A Further Study of the Educational Progress of Children Who Had Received Remedial Education," British Journal of Educational Psychology, XIV (February, 1963), 3-9.

67 Bruce Balow, "The Long-Term Effect of Remedial Reading Instruction," The Reading Teacher, XVIII (April, 1967), 581-86.

68 Ibid.
Continued growth appeared to depend upon continued treatment. A reading disability seemed to be a chronic condition that needed long term treatment. This treatment should be followed by supportive assistance.  

Miscellaneous Studies. There has been an apparent relationship between the low socioeconomic groups and a low level of success in school achievement. In large cities the low socioeconomic group has often consisted of minority groups of one kind or another. The Philadelphia School System has attempted to provide a better educational program in the inner city schools with a special program. Emphasis was placed upon (1) on-the-spot consultant service, (2) adequate instructional materials, (3) reduced class size, (4) academic areas and (5) fully qualified and experienced teachers. 

Test results indicated a superiority over the control group. The superiority favored (1) females, (2) those with kindergarten experience, (3) permanent students and (4) those with experienced and permanent teachers. Reduction of class size appeared to be of great help as did the consultants and 

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69 Theodore A. Buerger, "A Follow-up of Remedial Reading Instruction," The Reading Teacher, XXI (January, 1968), 329-34.

This program has been suggested as one approach to the high quality education that should be the birthright of all children.72

Schools in New York City have attacked this problem by establishing summer schools in disadvantaged areas for retarded readers. Pupils who were at least two years below grade level were chosen, were placed in classes of twenty and were given the most outstanding teachers. A broad language arts program was used with the focus on reading. Gains were made in all subject areas and a very positive change in attitude occurred.73

The findings in another summer school remedial program indicated that more progress was made in the summer school than in the winter school, month for month. Younger and brighter students made the greatest gains.74

Summary of Research. Reading began when man first introduced symbols to represent sounds. The first reading

71 Ibid.
72 Ibid.
was picture reading. After the invention of the alphabet the teaching of reading began. Students in schools were first taught on an individual basis. Later they were organized according to grade, and to a degree, age. As the years passed, children became younger, grade by grade. Research data has indicated that more children have been making normal progress recently than in earlier years. Recent emphasis has been on more individual attention.

Studies have been made on almost every aspect of reading. These studies have included research on the eyes and their movements, the affect of sex differences on reading achievement, physical causes of reading difficulty, mental causes for reading difficulties, characteristics of poor readers, cultural background and reading achievement, and many others. No one reason for reading difficulty has been found.

Different methods of teaching reading have been studied. The methods fall roughly into two groups: (1) phonics and (2) basic sight word. Both methods have many variations. No one method has proved to be consistently superior to any other method. A multitude of variables affect the outcome of the use of any of the methods researched. The most important variable mentioned has been that of teacher competence.

Motivation, reading readiness and visual perception
have been found to be three needs for successful reading. Most authors agree on the need for these things. Other needs are cited by some authors.

Much research has been accumulated in the field of reading during the past sixty years. Many of the studies have been repetitious, some have not been thorough, new trends have not been researched enough. In order to ascertain the value of new theories and methods, research must be conducted. The studies must be impartial, thorough, scientific and statistical in nature. Educator's must be trained to do continuing, related research of this type.

A minimum of two thousand dollars should be budgeted for equipment alone. This would not include furniture and/or remodeling procedures.

Tests should be administered to determine an accurate instructional level for each child in any remedial program. The children should progress from one level to another individually, as they are ready. A formal testing program should be carried out throughout the program.

When the program has been organized, the retarded readers should be identified. Those readers who can be helped

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CHAPTER III

EXPERIMENTAL PROCEDURES

I. THE INTRODUCTION

Certain steps have to be followed in setting up a successful remedial reading program. A well qualified and dedicated remedial reading teacher must be selected, and the decision made as to how that teacher will operate. Adequate space to work must be provided. The case load of the teacher should be no more than twenty-five students. The related services and diagnostic procedures should be spelled out. A minimum of two thousand dollars should be budgeted for equipment alone. This would not include furniture and/or remodeling procedures.

Tests should be administered to determine an accurate instructional level for each child in any remedial program. The children should progress from one level to another individually, as they are ready. A formal testing program should be carried out throughout the program.

When the program has been organized, the retarded readers should be identified. Those readers who can be helped

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in the classroom should be worked with there. The severely retarded readers should be helped outside the classroom in the established program. An individual diagnosis of reading difficulties should be completed. On the basis of the diagnosis, remedial training should be given to the children. A continual appraisal of improvement must be carried out.  

II. REASONS FOR EXPERIMENTAL STUDY

The Miller-Unruh Act of 1965 provided that school districts could add reading specialists to their staffs. The specialists would work with individuals or small groups of children who had difficulty with reading. A district which took advantage of the Miller-Unruh Act was the Wasco Union Elementary School District. During the 1966-67 school year, two reading specialists worked with children who needed remedial help in reading. The same procedure was followed in the 1967-68 school year. A specialist had to be replaced. The investigator of this study volunteered to fill the position. The intent was to keep detailed statistical records to determine the effectiveness of the program.

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4 Senator George Miller and Assemblyman Jesse Unruh, "The Miller-Unruh Reading Act," Education Code, (Division 7, Chapter 2.5, Section 7770, Enacted 1965 from Senate Bill 205, Amended 1967 in Assembly Bill 272.)
Educators have kept abreast of current trends since education began. New methods have been introduced in an effort to reach all children. These methods have been tested over a period of time. The reason for this study was to see if the children receiving specialist help made more progress than a like group that received no special help.

III. THE POPULATION

The population consisted of twenty-three second-graders in the experimental group and twenty-three second-graders in the control group. Both groups were students in the Palm Avenue School, Wasco Union Elementary School District.

Palm Avenue School was a kindergarten through fifth grade neighborhood school. Students represented all ethnic, racial, cultural and economic groups in the community.

The population was drawn from four second-grade rooms. These rooms were grouped according to reading ability to obtain some homogeneity.

The experimental group consisted of three Negro, ten Caucasian and ten Mexican children. There were fifteen boys and eight girls. Almost three-fourths of the group were from the lower—lower socioeconomic group. The remaining fourth were from the middle economic group.

The control group had three Negroes, fourteen
Caucasian and six Mexican students. There were thirteen boys and ten girls. Nearly one-half of the group's members came from the lower socioeconomic group. Another one-half were from the middle-class economic range.

IV. DESCRIPTION OF TESTING PROCEDURES

In May, 1967, each child in the school district was given the Stanford Achievement Test. When school began in September, 1967, the reading section of the Stanford Achievement Test was used as a preliminary screening device to place students in the remedial reading class.

After this initial screening procedure, teachers recommended students whom they felt needed extra help in reading. A master list of all students who had been recommended was made. These pupils were then given a battery of individual tests.

The individual tests served two purposes, (1) to determine if the child was a remedial case and (2) to diagnose the child's specific weaknesses. The results of the individual tests were used to select those students who would best benefit from remedial reading.

After the selection of the experimental group, the control group was picked. The California Short-Form Test of Mental Maturity was administered to all second grade students. The students were listed from high to low according to their scores.
the experimental group according to intelligence within five points. The matches chosen were those with the lowest reading achievement scores. An effort was also made to match the two groups in race, sex and socioeconomic status. The least successful matching was the socioeconomic status of the individual.

V. JUSTIFICATION OF TESTING INSTRUMENTS USED

The two tests on which the statistical data were computed were the Stanford Reading Achievement Test and the California Test of Mental Maturity. The reason for using those two particular tests will be developed in the succeeding paragraphs.

The Stanford Achievement Test is a series of very comprehensive achievement tests designed to measure the knowledges, skills and understandings which are accepted as being desirable outcomes of elementary education. The tests are intended to provide to school personnel dependable measures of these outcomes, comparable from subject to subject and from grade to grade, for use in connection with improvement of instruction, pupil guidance and evaluation of progress. They have been planned with a view toward simplicity of administration, scoring, and interpretation.  

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The first edition of *The Stanford Achievement Test* was issued in 1923. A thorough revision of the original edition was published in 1927 and was called the *New Stanford Achievement Test*. This edition was superseded in 1940 by entirely new forms. The present edition of *Stanford Achievement* is the fourth in the series of tests. These revisions have been undertaken to insure that the content of the tests may continue to be closely attuned to what is actually being taught in the schools; that the normative data may reflect accurately the current accomplishments of pupils of varying grades and ages; that the tests may keep abreast of those improvements in measurement theory and technique that permit more reliable appraisal and more convenient use; and that dangers arising from over-familiarity of test content as a result of repeated use may be avoided.

The present edition has been organized in four levels, or batteries, for various grades and covering various subjects. The Primary Battery is for use at the end of grade one, in Grade two, and in the first half of Grade three. The battery includes five tests in an eight page booklet. Tests which are included are: Paragraph meaning, Word meaning, Spelling, Arithmetic Reasoning and Arithmetic Computation. The Primary
Battery was the test battery used for this study. The test is particularly suited for year-to-year comparisons of achievement by virtue of the consistency of scores from one testing to another. Split-half reliability coefficients for single grades range from .807 to .930 for the various subtests of the tests. The development of the present edition of the Stanford Achievement Test encompassed more than four years. The work was done cooperatively by the authors, the publisher's editorial and research staff, and test experts in school systems throughout the country. The work made up four major phases:

1. Curriculum research, item writing, and editing of material for experimental forms.

2. Item analysis, to determine the effectiveness and proper placement of each test item. This was done in the administration of seven experimental forms to a tryout population totaling some 12,000 pupils from seventeen communities.

3. National standardization for establishment of norms. The standardization population, totaling 345,736 pupils, was drawn from 363 school systems in 38 states. This group was carefully balanced with respect to geographical distribution, size of school system and type of community.

4. Preparation of the final forms of the test, normative data, and other aids to interpretation and use of the tests results.

Ibid.
Ibid.
Ibid.
Normative data given in the Directions for Administering the test include (1) grade and age norms, and (2) percentile norms that permit interpretation of a pupil's performance in relation to that of other pupils of similar grade placement. Grade norms are given separately for total-grade and model-age groups. The norms provide school personnel with a reliable basis for evaluating the performance of class groups, schools, or entire grades throughout a school system in terms of current national standards of achievement.10

The Stanford Achievement Test was given twice to the population of the study. The first time, the Primary I-Grade I battery was given. The post-test used the Primary I-Grade II battery.

An intelligence test was administered to the entire second grade of the Palm Avenue School in order to be able to select a comparable group that would serve as a control. The California Short-Form Test of Mental Maturity was selected for this purpose.11

The California Short-Form Test of Mental Maturity is an instrument for appraising mental development or mental capacity. This test samples mental processes in four areas:

10Ibid.

spatial relationships, logical reasoning, numerical reasoning, and verbal concepts. Two summary scores, Language and Non-Language, together with the four factor scores, produce the significant interpretive data of the test. The test is now available in six levels: Preprimary, Primary, Elementary, Junior High Level, Secondary, and Advanced.  

The 1957 Edition of The California Short-Form Test of Mental Maturity, Primary Level, consists of seven tests. These tests sample various kinds of mental processes to establish the level and rate of mental development. Although most of the items and format have been retained from the previous edition, a number of technical improvements have been incorporated. The major feature of the new revision consists of a comprehensive restandardization of performance levels (mental ages and percentile norms). The clarification of directions to examinees and the improved art work assure that pupils react to test stimuli in a more standard manner. Some very definite changes were made in the norms to improve articulation, thus providing greater stability of intelligence quotients.

The reliability coefficients for The California Short-Form Test of Mental Maturity were computed by the split-halves

\[12\] Ibid.

\[13\] Ibid.
method and corrected by the Spearman-Brown formula. The reliability coefficient for the Language section was .72, for the Non-language section .82 and for the total test .87.\footnote{Ibid.}

The California Short-Form Test of Mental Maturity is a valid test, based on over twenty years of research and development. In that time, millions of individuals have been tested and hundreds of studies have been made, either using the Short-Form as a control or probing some aspect of its use.\footnote{Ibid.}

The California Test of Mental Maturity and the Short-Form have been outstanding group tests for years. Among the reasons for this have been their consistently high correlations with the Stanford-Binet. Some users have reported coefficients which approach test-retest results with the Stanford-Binet when different administrators have done the Binet testing.\footnote{Ibid.}

The validity of the CTMM and Short-Form has been further attested to by its high correlations with Intelligence Quotients obtained from the Wechsler Intelligence Scale for Children.\footnote{Ibid.}

In recent years several studies have been made that were devoted to validation of "culture fair" tests of intelligence that were designed to eliminate social and
cultural bias. The California Test of Mental Maturity and Short-Form were found to be as free of social and cultural bias as any of the others, particularly the Nonlanguage section. 17

The Standard Deviation for the Language section of The California Short-Form Test of Mental Maturity is 16.0 and the Standard Error of Measurement is 8.4. For the Non-Language section, the Standard Deviation is 14.5 with a Standard Error of Measurement of 6.2. The total Standard Deviation is 13.4 and the total Standard Error of Measurement is 4.9. 18

Both tests used for statistical analysis and growth comparison study are well known and reputable tests. The Stanford Reading Achievement Test is one of a group which is required for the testing program in the State of California. The California Short-Form Test of Mental Maturity was a part of that package for many years.

Peabody Picture Vocabulary Test. The Peabody Picture Vocabulary Test was designed to provide a well-standardized estimate of a person's verbal intelligence through measuring his hearing vocabulary. The test has special value with certain groups. The subject does not have to read to take the

17Ibid.
18Ibid.
test, therefore the instrument should be especially fair for non-readers and remedial reading cases. The scale can be given to any English speaking resident of the United States between the ages of two years, six months and eighteen years who is able to hear words, see the drawings, and indicate "yes" and "no" in any manner which communicates.  

The Peabody Picture Vocabulary Test has several advantages. Some of them are: (1) the test has high interest value which helps to establish rapport, (2) administration does not require specialized preparation, (3) the test can be given in ten to fifteen minutes, (4) scoring is completely objective and quickly accomplished, (5) the test is a power rather than a speed test, (6) no oral response is required. (7) alternate forms of the test are provided and (8) the test covers a wide range.  

An initial pool of 3,885 words whose meanings could be illustrated by line drawings were selected from the entries in the Merriam-Webster New College Dictionary. Approximately half of these words were illustrated for the initial series of plates and tried out using 360 subjects from ages two through eighteen years. Each of these items was then placed

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20 Ibid.
at the age level where 40 to 60 per cent of the appropriate age group passed the word. Following the leveling, two hundred pretest plates were developed to provide three forms of the test so that a substitute word would be available on each plate for making up the final Forms A and B of the scale. The forms were administered to 750 subjects in counter-balanced order. The results were analysed, substitutions and rejections were made where needed. Following this pattern, the final test battery of one hundred fifty plates was formed to make Forms A and B of the test. 21

The test was standardized on 4,012 cases. The alternate forms were counter-balanced for order of presentation. Precautions were taken to provide norms which should be useful throughout the United States. 22

Age norms were derived by the Mean Test Age Method. The standard score norms were derived by preparing separate raw score distributions for each age level in the standardization sample. The mean and standard deviation of raw scores was found for each distribution. An Intelligence Quotient of one hundred was assigned to the mean raw score at each level and the standard deviation set at fifteen I.Q. points. 23

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21 Ibid.
22 Ibid.
23 Ibid.
Reliability coefficients were obtained using Pearson's product-moment correlations on the raw scores for both forms at each age level. Standard errors of measurement were then calculated. Correlations ranged from a low of 0.67 at the six year level to a high of 0.84 at the eighteen year level, with a median of 0.77. The standard errors of measurement ranged from 6.00 to 8.61, with a median of 7.20.24

Validity data were obtained both for individual items and for the total test. "Content" validity was built into the test with a complete search for words which could be illustrated. A good cross section was obtained of words in common use today in the United States. Care was taken to keep the final selection of response and decoy items unbiased. The assumption was made that the product met adequate standards for a picture vocabulary test.25

"Item" validity was established by picking individual words where the percentage of subjects passing increased from one age group to the next. The effectiveness of the item selection was demonstrated when mean raw scores for the standardization population were calculated and plotted against age. Increase in raw scores with successive ages is indirect but not conclusive evidence of validity since physical

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24 Ibid.
25 Ibid.
strength, ossification, height, and weight also increase with age, yet they are not highly related to verbal intelligence.

"Congruent" validity is the extent to which one test compares with other well established measures of the same function. The Peabody Picture Vocabulary Test has been correlated with: (1) Revised Stanford-Binet Test of Intelligence, (2) Revised Van Alstyne Picture Vocabulary Test, (3) Ammons' Full-Range Picture Vocabulary Test, (4) Revised Columbia Mental Maturity Scale, (5) Henmon-Nelson Tests of Mental Ability and (6) California Tests of Mental Maturity. The range of correlations went from a low of 0.58 with the California Tests of Mental Maturity to a high of 0.94 with the Revised Van Alstyne Picture Vocabulary Test.

Spache Diagnostic Reading Scales. The Diagnostic Reading Scales are a series of integrated tests. They have been carefully developed over a period of eight years to provide standardized evaluation of oral and silent reading skills and of auditory comprehension. The tests are to be administered individually and may be used with normal or retarded readers at elementary school levels. They may also be used with retarded readers in junior and senior high
school groups.

The Spache tests have three sections: (1) vocabulary, (2) Reading and Comprehension and (3) Phonics. The word lists for vocabulary have been standardized and graduated in difficulty. There are twenty-two reading passages to be used to determine reading level and comprehension. The six supplementary phonics tests place the emphasis on skill mastery. Grade level placement can be determined for all three parts of the test from a crude scale. 29

Coefficients of reliability for the reading level were obtained by the test-retest method at intervals varying from four to ten weeks. This coefficient was 0.86. Word-recognition list coefficients were obtained from the Kuder-Richardson formula twenty-one. The coefficient for list one was 0.96, for list two 0.87 and for list three 0.91. 30

The validity of the Spache Scales was established during eight years of development and research. Reading materials were selected to be of the type and range of reading actually used at each grade level. The words for the vocabulary lists were chosen on the basis of appropriate


29 Ibid.

30 Ibid.
difficulty and adequate discrimination. Reading selections in the scales were also measured against passages from established reading diagnostic test. This was done by having pupils read first from the Diagnostic Reading Scales and then a corresponding passage from another scale. This was continued until all passages of the Spache Scales had shown their validity. All three variables of the Diagnostic Reading Scales yield scores that produce very substantial correlation coefficients with the California Reading Test. There was also considerable agreement with the Stanford Reading Achievement Test. 31

The Spache Diagnostic Reading Scales were used to determine the area in which each child in the study needed special help.

VI. DESCRIPTION OF READING PROGRAM

When the screening testing was completed and the selection of students made, the reading program for the experimental study was begun. The first step was to do additional testing for diagnostic uses. These tests were all given individually and record-sheets were used to record data. The Wide Range Achievement Test was used to determine knowledge of the alphabet and vocabulary. The Spache

31 Ibid.
Diagnostic Reading Test was administered to discover areas of weakness and the students knowledge of phonics. The Peabody Picture Vocabulary Test was selected to measure the speaking vocabulary of the students. The Bender-Gestalt Visual Perception Test identified the pupils who needed further testing and work in the area of visual perception. The Dolch 220 Basic Sight Word List found those students who needed help with sight words.  

Record sheets were designed for each child. These forms provided space for three years testing results. A master sheet was kept for each test administered on which data for all children in the study was kept. Space was provided to show results in raw scores and grade placement for pretests, posttests, and the difference between the two tests.  

Language Master. The reading program employed a multisensory approach. Language-Masters were used to allow the child to hear, see and record one word at a time. Some of the word cards used were prepared by the Bell and Howell Company; others were prepared by teachers' aides. These cards were coordinated with the Sullivan Programmed Materials. The Language-Master is a teaching machine developed by Bell and Howell Company in Chicago. Cards with recording tape mechanism are used. These cards have words, phrases or sentences recorded in the tape. The student sees the written words as he listens to the recorded voice of the instructor. The student stops the tape and repeats the procedure until he can read coordinated books; listens to stories while the students read coordinated books; listens and reads for enjoyment.

32 See Appendix A, p. 115
33 See Appendix A, p. 109
by Bell and Howell Company in Chicago. Cards with recording tape accompany the machine. These cards have words, phrases or sentences printed on them, and the instructor’s voice which repeats these imprints is locked onto the tape. The student sees the writing, hears the voice, and then records what he has heard. After recording, he listens again to his voice and compares what he said with what the instructor said. If they are not alike, he repeats the procedure until he sounds like the instructor.

Prepared cards are available from the same company. Each box of these cards contains one hundred cards of the same general type. Nouns may be found in one box, action words in another, sounds of the various letters or blends in still another.

This tool appeared to be better suited for the more mature child. More independent work skills are needed than the average second grade students have had time to acquire.

Tape Recorder. Students also worked with tape recorders. These were used in two ways. Upon completion of a Sullivan Programmed Book, the child would read coordinated material into the tape recorder and listen to himself read. The aim was to improve his reading with each succeeding book. The tape recorder was also used in small group sessions to listen to stories while the students read coordinated books; and also to listen to stories for enjoyment.
The children were most eager to use the recorder. They practiced on tape what they would read to the instructor the following day. This seemed to help give them confidence in their own reading ability.

Record Player. The record player was used along with story records. The children would listen to these stories individually and in small groups using earphones at the listening center. Phonics records with coordinated books were also used.

The phonics records used were a part of the Listen and Learn with Phonics, by Dorothy Taft Wilson and were published by the Americana Interstate Corporation. This program consists of four records and four books which are used to teach the sounds of letters and letter blends. Books One, Two and Three contain letters and blends, while Book Four contains short words and phonics rules. Each book is accompanied by a record which the child listens to as he reads the book.

Children who need additional special help can work alone using this material at a listening center while the teacher works with other children.

Sullivan Programmed Materials. The M. W. Sullivan Series of Programmed Material was published by Behavioral Research Laboratories of Palo Alto, California. This program consisted of a placement examination, the programmed
text, the progress tests and correlated text books to read.
The teacher's manual contained directions for starting
students in the program.

There are six series in this program. The first is
readiness material and has no number. This is followed by
Series I, Series II, Series III, Series IV, and Series V.
There are twenty-four programmed workbooks in the total
program. The first four books are A, B, C and D. The others
are numbered consecutively from one to twenty. No information
was available concerning the grade level of the various books
other than the readiness material.

Each child was placed in a workbook to proceed at his
own rate of speed. Periodic tests were given, and coordinated
books read at appropriate times. For motivational purposes
a bulletin board record was kept of books successfully read.

Much dishonesty was observed on the part of the
students. This resulted in their covering material that had
not been mastered. They did have to go back and do the
work again until they could successfully read the coordinated
book and pass the test over the material. The tendency was
to do the work the easy way--by checking the answer column
for the correct response before they marked their answer in
the box. This was easy to do since the answers were on the
left side of the page covered only by a card strip.

There appeared to be very little carry-over from
this activity to the other material used in the program. Words that were read successfully in this program would not be recognized when met in other material.

**Eye and Ear Fun for Developing Independence in Word Recognition.** This series of books was written by Clarence R. Stone and published by the Webster Division of McGraw Hill Company of St. Louis.

This series consists of four workbooks and can be used with pupils from grades one through eight. The set can be used to accompany any basic series of readers—or without a reader for remedial work. The books utilize three aids to word recognition: (1) meaning or context clues, (2) visual aids and (3) phonetic knowledge.

Some parts of these books can be used orally. The students enjoyed those parts, which were done in group activity very much. The oral reading progress was gauged by listening to the children reading these parts aloud. Each child was placed in an appropriate book for his reading level.

**Phonics Games.** These games were written by Edward Dolch and published by Garrard Publishing Company of Champaign, Illinois. These games and flash cards were used as a regular part of the reading program. They served to keep interest from flagging as well as for practice in phonics work. The students often could figure out sounds
in the games before they could identify the words in other places.

**Raskob Letter Box.** This box, which was published by Academy Guild Press of Fresno, California, was used as a part of the total program. The approach of the Raskob Learning Institute in using the letter box and exercises differs from other auditory-visual-kinesthetic techniques. The effort to reinforce the concept of an alphabetic-phonetic technique of reading therapy comes before writing, rather than after writing.

The vowel letters in the box are color-keyed for the long and short sounds. The consonant letters are color-keyed for voiced and unvoiced sounds and for special sounds.

The A-K-V steps are: (1) the student hears the teacher's voice, (2) the pupil repeats the sound, (3) he sees the letter that makes the sound, (4) he feels the vocal placement of the sounds, (5) he manipulates the letter and (6) finally he writes the letter in his tablet. This disciplined order of procedure is necessary to master the ability to concentrate and form orderly work habits. Only when these abilities have been mastered will the student begin to learn.

**Organization of Reading Program.** To keep the program moving smoothly a color-wheel was used. Each child had a
color, in which his name was written on a master chart. A card was made for each activity and placed around the movable color wheel. As the wheel was rotated daily, the child proceeded from one activity to another, moving with his color.

The reading specialist worked with the individual students, moving from one work area to another throughout the room. Biweekly formal conferences were held with the individual children. Usually, one formal conference per period was held. With each class group the time required to meet with everyone was ten days since one day each week was devoted to either group games or listening to a story record.

Those students who were found to need work with visual perception were given Frostig materials in their own rooms. Teachers' Aides conducted this work under the supervision of the home room teacher.

Conferences were held with the teachers of students involved as the need arose. Consultations were held weekly with the school psychologist to obtain assistance with the children who had counseling needs. Frequent conferences were also held with the school principal.

All pretesting procedures were done in September of 1967. The program began in October, 1967, and continued through April, 1968. All posttesting was done during May,
1968. The data were then computed.

VIII. DESCRIPTION OF STATISTICAL PROCEDURES

In order to compare the study population with test standardization populations, standard deviations were computed using the test results on the Stanford Reading Achievement Test, the Peabody Picture Vocabulary Test and the California Short-Form Test of Mental Maturity. A comparison was then made between the two standard deviations for each test to determine the likeness between the experimental and the standardization populations. The standard deviations in every instance were larger for the experimental population than for the standardization population.

Because the group involved was smaller than thirty and a "t" test might not be valid, another test for significance was used. This test was the F ratio, and it was computed for both the pre and post scores obtained on the Stanford Reading Achievement Test.

A comparison was made between the mean scores derived from the Peabody Picture Vocabulary Test. The comparison was made to determine whether or not the hearing vocabulary had increased as a result of the reading program.

A table was prepared to show individual growth in each of the three areas covered by the Spache Diagnostic Reading Test. The total score was also included. A
comparison was also made of the mean pre and post scores to
determine the average growth of the experimental population.

IX. SUMMARY

This chapter of the thesis has detailed the reasons
for conducting the program. The population has been identified
and described. Initial testing procedures have been out-
lined. Instruments used in the testing procedure have been
named and described. The reliability and validity of the
tests have been given. A general description of the
reading program was made. The posttesting procedure was
discussed. Statistical procedures used were explained, and
reasons were given for the use of those particular methods.

The purpose of this chapter is to identify the effect
of the remedial reading program on the students at
the high school.
CHAPTER IV

RESULTS OF THE STUDY

The purpose of this study was to determine the effect of the remedial reading program on the second grade students at the Palm Avenue School in the Wasco Union Elementary School District, California, during the 1967-1968 school year.

The investigator planned to find the answers to four questions concerning this study. They were:

1. What would be the effect of this program on the different, specific areas of a diagnostic reading test?

2. What would be the effect of the program on the Verbal Intelligence Quotient and Mental Age as measured by the Peabody Picture Vocabulary Test?

3. How will the experimental group compare with the control group on the reading section of the Stanford Achievement Test?

4. What would be the total effect on the students involved in a regular systematic reading program in addition to their classroom reading program?

The hypothesis was that the second grade students in the remedial reading program would show a greater improvement than the control group as a result of the remediation. This growth would be calculated by the use of the F ratio.

The assumption at the beginning of the study was that the average second grade student would make a full year's growth during an academic school year. In order to show greater improvement, the experimental group would have to make more than a full year's growth.
I. SPACHE DIAGNOSTIC READING SCALES

In an attempt to answer the questions raised, an intensive testing program was invoked. To answer question one concerning effect on specific areas of a diagnostic reading test, the Spache Diagnostic Reading Scales were used with the experimental group. A pretest was given at the beginning of the program, and again at the end of the study. The Spache Scales have three subheadings: word recognition lists, reading and comprehension, and phonics. The word recognition mean score increased 1.1 years. The reading and comprehension score increased 1.3 years and the phonics mean score increased 1.3 years. The total mean increase was 1.3 years. This information has been presented in Table I. These students should have been at the 2.0 level on the pretest and the 3.0 level on the posttest. On the initial test, the mean was eight months below the expected level; while on the posttest the mean was only five months below expectancy. The students made their full year's progress, plus some additional growth.

TABLE I

MEAN SCORES OF SPACHE DIAGNOSTIC READING SCALES

<table>
<thead>
<tr>
<th>Sections of Test</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Recognition List</td>
<td>1.4</td>
<td>2.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Reading and Comprehension</td>
<td>1.1</td>
<td>2.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Phonics</td>
<td>1.2</td>
<td>2.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Total</td>
<td>1.2</td>
<td>2.5</td>
<td>1.3</td>
</tr>
</tbody>
</table>
II. PEABODY PICTURE VOCABULARY TEST

Question two referred to the effect of the program on the Verbal Intelligence Quotient and the Mental Age of the student as measured by the Peabody Picture Vocabulary Test. The mean raw score of the test increased from fifty-eight to sixty, while the mental age went from six years, six months to six years, ten months. The mean Intelligence Quotient dropped from eighty-nine to eighty-six. Students were between eight and nine years old and they aged seven months during the study. These data have been illustrated in Table II.

TABLE II

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Intelligence Quotient</td>
<td>89</td>
<td>86</td>
<td>-3</td>
</tr>
<tr>
<td>Mean Raw Score</td>
<td>58</td>
<td>60</td>
<td>+2</td>
</tr>
<tr>
<td>Mean Mental Age</td>
<td>6-6</td>
<td>6-10</td>
<td>+.4</td>
</tr>
<tr>
<td>Mean Percentile</td>
<td>26</td>
<td>23</td>
<td>-3</td>
</tr>
</tbody>
</table>

All derived scores on this test are based on the raw score and the chronological age. In the tables for computing these data, the age brackets are in sections of eleven months. Some of the students were in the same age bracket on both the pretest and the posttest, while others moved from one age bracket to the next higher one. This could account for the discrepancy between an increased mental age mean and a decreased Intelligence Quotient.
Another possible reason for the variation between the two scores could be the standard error of the mean. The standard error of the mean was calculated for this test. This error was 3.2, and could account for the difference.

A check was also made on the validity of the instrument. According to the manual, the correlation between the Peabody Picture Vocabulary Test and the California Short-Form Test of Mental Maturity is .57. A correlation was figured between the two tests, using the results of the tests given to the experimental group. Pearson's Product Moment Correlation for ungrouped data was used, and a correlation of .61 was obtained. This would show that the obtained results were valid.

The results would also indicate that the program involved did very little to improve the verbal intelligence of the experimental population.

III. STANFORD READING ACHIEVEMENT TEST

A comparison between the experimental and control groups on the Stanford Reading Achievement Test was the subject of question three in the analysis of the problem. The two groups were compared on the basis of the mean raw scores, the mean grade placement and the F ratio.

According to the F ratio computed on the pretest scores, the two groups were not exactly alike at the beginning...
of the study. This finding was to be expected since the twenty-three students in the experimental group were the readers most in need of help in the second grade. It follows, then, that any students matched with them to make a control group would be better students.

The two groups in the study were matched on the basis of an Intelligence Quotient derived from the California Short-Form Test of Mental Maturity. They were matched within five I. Q. points. Where possible, they were also matched on beginning reading scores. This was not always possible. The control group had an advantage over the experimental group from the beginning. Consideration must also be given to the fact that members of the experimental group had more reading problems to overcome than did those in the control group. These factors must be kept in mind when considering the results from any of the tests used.

The mean raw scores for the pretest were: (1) the experimental group, twenty-five and (2) the control group, twenty-seven. There was a two point difference favoring the control group.

Raw score means for the posttest were: (1) twenty-six for the experimental group and (2) thirty-three and one-half for the control group. The difference of seven and one-half once more favored the control group. Raw scores were considered to be important because they were necessary to
compute the $F$ ratio.

The grade placement scores may have more meaning for educators. On the pretest, grade placement mean scores were: (1) experimental group, 1.5 and (2) control group, 1.6. Posttest means were, in the same order, 2.0 and 2.3.

The experimental group made a gain of five months, which put them one academic year behind the norms. Control group gains were seven months, which placed them seven months below the standardized norms of 3.0 for beginning third grade. The control group made, on the average, two months more growth in reading than did the experimental group. The findings from the Stanford Reading Achievement Test have been placed in Table III.

**TABLE III**

**FINDINGS FROM THE STANFORD READING ACHIEVEMENT TEST**

<table>
<thead>
<tr>
<th></th>
<th>Experimental</th>
<th></th>
<th>Control</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>Diff.</td>
<td>Mean Raw Score</td>
</tr>
<tr>
<td>25.0</td>
<td>26.0</td>
<td>+ 1</td>
<td></td>
<td>27.0</td>
</tr>
<tr>
<td>1.5</td>
<td>2.0</td>
<td>+ .5</td>
<td></td>
<td>1.6</td>
</tr>
</tbody>
</table>

To determine if sufficient differences existed between the reading scores of the two groups, the $F$ ratio$^1$ was applied to the raw scores of the two groups. When the ratio was

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applied to the final tests, the two groups were closer to achieving similar scores than they were at the beginning of the study.

The F ratio is recommended as the most valid test for likeness to use when small groups are being studied. Small groups were considered to be those with a population under thirty.

With \( S \) meaning variance from the mean (using raw scores) and the subscript numbers denoting the groups, the formula for the F ratio is: \( F = \frac{S_1^2}{S_2^2} \). The variance must first be determined for each group. The variance formula is: \( S = \frac{\sum x^2}{N - 1} \). This formula translates as the sum of the difference from the mean divided by the number in the population minus one.\(^3\)

When F ratio was applied to the beginning reading scores, F was equal to 1.18. This indicated that the groups were not alike at that time. They were, however, as much alike as they could be with the available population.

At the end of the study, the F ratio was applied to the posttests. The ratio was then 2.45. The groups were alike at the .05 level of confidence. This would reject the hypothesis that the experimental group would gain more than the control group during the program.

\(^2\)Ibid.

\(^3\)Ibid.
IV. ATTITUDE OF CHILDREN TOWARD READING

Question four of the analysis relates to the total effect of the remedial reading program on the students involved. The three preceding discussions have related to raw scores, means, grade placements and intelligence quotients. Other factors must also be considered when determining the success of a program. These factors must be based on the observation of the teacher.

When the program started most of the children had very little confidence in their ability to read. This was evidenced by their need for constant help and reassurance. By the end of the study they were much more confident, and would eagerly attempt things on their own. These attempts were successful much of the time, and were easily corrected when they were unsuccessful.

Interest in Reading. Very little interest in reading was shown at the start of the program. After achieving some early successes in their work, more interest was evident. This was shown by the manner in which the children approached their work. They were anxious to get their material for the day and get started. The children worked steadily, did better quality work, and worked without constant reassuring and urging. This was evidenced in the special reading class and in their own classroom according to the teachers.

Behavior of Students. The children's behavior at the
start of the experiment was characterized by several things: (1) a short attention span, (2) difficulty in sitting still, (3) frequent movements around the room, (4) sporadic work, and (5) much conversation not related to reading. This behavior pattern was noted by both the homeroom teacher and the reading specialist.

After the initial successes, the behavior of the students began to improve. They worked for longer periods of time without moving around, paid closer attention to their work, and talked less about unrelated things. According to the homeroom teachers, these behavior patterns carried over into their own rooms.

Although much improvement was made by the experimental group, they did not improve more than the control group. The initial hypothesis must then be rejected.

V. SUMMARY

Chapter four has reviewed the problem, the analysis of the problem, the hypothesis and the basic assumptions of the experimental study. The various test results pertinent to the study were presented. General findings were:

1. A full year's growth plus three months was made in specific reading skills according to the Spache Diagnostic Reading Scales, by the experimental group.

2. An average gain of four months Mental Age was shown on the Peabody Picture Vocabulary Test by the
experimental group. However, they are still considerably below the average.

3. According to the F ratio computed on the raw scores of the Stanford Reading Achievement Test, there was no significant difference in the reading ability of the two groups.

4. The experimental group gained five months during a seven month period according to the Stanford Reading Achievement Test, while the control group gained seven months in the same period.

5. General attitude toward reading, interest in reading and behavior in the classroom improved according to the classroom teachers and the reading specialist.

6. The students in the program showed average improvement in all areas except mental age. Even with the improvement, they are still below the expected grade level.

(1) specific reading skills, (2) verbal intelligence, (3) general reading ability and (4) the total child.

Importance of Study. This study was considered to be important and necessary, particularly to the Wasco Union Elementary School district, because of the prevalence of below-grade-level readers in the district. This study, as well as other projects, has helped in the search for solutions to the problem.

Hypothesis. The hypothesis was that the students involved in the program would show a significant improvement over the control group. They did not in fact do so. The hypothesis, then, must be rejected.

Procedure. The population for the study was chosen on the basis of test results and teacher recommendation.
CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

I. SUMMARY

The Problem. The purpose of this study was to discover the effect of an intensive remedial reading program on a selected group of second grade students in Wasco, California.

Analysis of the Problem. The study was designed to find the effect of the program on the students in four general areas. Those areas were: (1) specific reading skills, (2) verbal intelligence, (3) general reading ability and (4) the total child.

Importance of Study. This study was considered to be important and necessary, particularly to the Wasco Union Elementary School District, because of the prevalence of below-grade-level readers in the district. This study, as well as other projects, has helped in the search for solutions to the problem.

Hypothesis. The hypothesis was that the students involved in the program would show a significant improvement over the control group. They did not in fact do so. The hypothesis, then must be rejected.

Procedures. The population for the study was chosen on the basis of test results and teacher recommendation.
Once the selection had been made, more tests of a diagnostic nature were administered. The experiment was then begun. Intensive work in remedial reading was carried on for seven months. In late April, the posttesting was begun. Upon completion of this testing, an analysis of the results was conducted. The findings were then reported in this thesis.

**Summary of Research.** Research in reading began as a science early in the twentieth century. The first studies were very broad and general in nature. After statistics were refined to meet the needs of educators, the studies became more specific and thus they were more valuable.

Progress in the study and solution of significant research has been slow. Problems had to be identified and possible solutions developed. The solutions then had to be tested for feasibility and success.

Educational research needs to be refined still more. Much research has been fragmentary. Areas that have merely been dipped into need to be explored more fully.

The estimated number of retarded readers varied in the studies. The severely retarded reader estimate ranged from 5 per cent to 10 per cent. In addition to these students, another 10 to 20 per cent of the students were found to have varying degrees of retardation. Schools of today could have as much as 30 per cent of their population classified as retarded or remedial readers.
Passow made the statement that the responsibility for large groups of children showing great scholastic retardation must rest with the school, the difference at first grade level has not been great, but that it tended to increase as the children grew older. This increase can be seen by observing the cumulative records of these children.

Many authorities, among them Passow, Betts and Stauffer, agreed that the single most common finding in the studies reviewed related to the effectiveness of the teacher. Some authorities stated definitely that the result of any method or program depended upon teacher competence, training, interest and preparedness. From one study to another the experimental and control methods varied. No one method was consistently better than any other method. The only explanation for this seemed to be in the effectiveness of the teacher.

"The hope for children and society rests in the ability of teachers, the central figure in the learning climate, to understand children and themselves in a manner which will make effective learning possible." ¹

Available evidence indicated that reading was being taught at least as well as, and probably better than, a generation or more ago. Reading instruction has continued to improve.

Some form of grouping, either within a class or by
classes was found to produce better results. A single session
day was superior to a split session day.

II. CONCLUSIONS FROM STUDY

Intensive work in phonics, using a multimedia
approach can be beneficial for remedial readers. This was
useful to increase vocabulary, reading and comprehension,
and phonics sounds.

The vocabulary work performed in the experiment did
not raise the verbal Intelligence Quotient. A question
arose concerning the chronological age divisions. There
were eleven months in each age bracket, while the mental
age divisions were made on a monthly basis. Since some of
the children remained in one chronological age bracket
throughout the experiment while others moved into the next
bracket, there appeared to be a discrepancy in the results.

The experimental group made almost normal growth in
reading according to the Stanford Reading Achievement Test.
There was no significant difference at the end of the study.
The hypothesis was rejected.

A special program has much value in building self-
confidence, better work habits, more interest and better
behavior.
The Hawthorne effect probably played a part in any success the program had. The children were aware and proud that they left their own room to go to reading. They were most anxious to please the specialist.

III. RECOMMENDATIONS

The Harvard Report on Reading by Mary C. Austin and Coleman Morrison called present day reading programs mediocre, and suggested areas in which work should be done. Some urgent needs were:

1. A challenging developmental program for all children,
2. Better provision for individual differences,
3. More stimulating programs for the gifted,
4. Improved teacher preparation, and
5. More effective administrative leadership.

Other authorities listed different urgent problems still to be faced. Problems stressed were:

1. The cooperation of all agencies that could help in understanding reading deficiencies and their causes,
2. Wider experimentation to better the methods of diagnosis and remediation,
3. The careful study of the deficiencies and needs of pupils in regular classes to lower to a minimum those who need remedial treatment, and
4. The need for penetrating studies in particular areas.

There could be no quarrel with these listed needs.
for education. The lists were compiled after a thorough study of the available literature by prominent educators. However, some very important things have been omitted from the lists.

Most of the research for this report was conducted within the last five years. Much of it was conducted with the aid of federal funds. Therefore, a large part of the research was done in impacted school districts and dealt primarily with one segment of the population—those lower socioeconomic group, whose children so often have difficulty in achieving school success. Repeatedly the research pointed out that the teacher made the difference in the achievement of the children.

A primary problem of major concern should be to develop some method of determining which teachers have been most effective with the potential low achiever and finding what made them effective. The next step, then, would be intensive training of all teachers and future teachers in those particular attributes. If the natural talents possessed by the most effective teachers could be isolated and analysed, they could then be taught to other teachers. This would improve not only the instruction of the remedial students, but also that of every child enrolled in school everywhere. This should be the goal of all educators.
"If your plan is for one year, plant rice,  
For ten years, plant trees!  
For a hundred years, educate men."

—Confucius

Educators are in the profession of educating future men and women; all of them, not just those who learn easily and quickly. More research is a necessity in order that effective ways of teaching all children can be found and confirmed. This must become a major concern of all professional educators so that future citizens and leaders of tomorrow can receive the best training possible to carry on the tradition of democracy and capitalism.
ANNOTATED BIBLIOGRAPHY

A. BOOKS


A study of present-day reading programs with a presentation of urgent needs.


A textbook designed to aid research workers.


A textbook used to guide teachers in their reading instruction in the early grades.


A collection of articles showing the importance of self-image and how teachers can help students improve their own self-concept.


A book devoted to specific techniques to be used with children in need of remedial help. A multi-media approach was used.


A book to help teachers to help children read better.


A compilation of pertinent research in education. A new edition is issued each ten years.


A reading textbook for teachers.
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A book to help teachers to help children read better.

A compilation of pertinent research in education. A new edition is issued each ten years.

A reading textbook for teachers.


Zintz, Miles V. *Corrective Reading*. Dubuque: William C. Brown Company, Publishers, 1966. A book developing techniques and giving tests to be used by the regular classroom teacher with students who are in need of corrective help in reading.

B. PERIODICALS

Alden, Vernon, et. al. "Education and Poverty," *The Saturday Review*, (May 15, 1965). A collection of articles dealing with special plans that have been used with reluctant learners.


This article dealt with the carry-over of gain from remedial reading instruction into future years in school. Continued training was found to be necessary for continued improvement.


An article which dealt with the effectiveness of teachers today as compared with earlier times. Teacher effectiveness was found to be about the same now as then.

Bing, Lois B. "Vision and Reading," The Reading Teacher, XIV (March, 1961), 241-244.

A study of vision and reading and the relationship between them. In the retarded reader, vision was found to be strongly related to success in reading.


Article listed strengths, characteristics, language factors, and learning patterns for the culturally disadvantaged child. These were similar to those of the remedial reader, regardless of cultural background.


A study dealing with the importance of perceptual training in rural ungraded schools. The author suggested that perceptual training could enable pupils to work more effectively in areas that required visual discrimination, such as reading.


The author told how the coordinating office went about setting up and helping in the twenty-seven first grade studies sponsored by the United States Office of Education.

Bond, Guy L. and Roberta Dykstra. "Final Report on X-001, Coordinating Center for First Grade Reading Instruction Programs," The Reading News Report, I (1967), 13-44.

An analysis of the twenty-seven first grade studies which seemed to prove that the teacher made the difference—not the method.
This was the story of a long-range reading program which was implemented from first grade through twelfth grade. After four years, most of the students were working very close to grade level. The district felt that a well-planned, long-range, consistent program could improve the reading level of the children.

In this study dealing with visual perception and intelligence, visual perception appeared to have more weight than intelligence in beginning reading. Visual perception seemed to be a better predictor of reading success than reading readiness scores or intelligence in the first two grades.

Remedial instruction brought immediate significant gains in reading and attitude. Long-term gains were present, but not significant.

Programmed instruction was found to be an effective remedial reading technique; however there was no significant difference between programmed and basal instruction.

Carroll, Marjorie Wright. "Sex Differences in Reading Readiness at the First Grade Level," Elementary English, XXV (October, 1948), 370-375.
In an analysis of data from several sources, Carroll found that reading readiness scores favored the girls and that girls were significantly better than boys in visual perception.

Blending ability was found to have a substantial relationship to reading achievement, especially to word recognition and analysis. Poor auditory blending could signify a defect or lag in neuropsychological development.
Chall, Jeanne and Shirley Feldmann. "First Grade Reading: An Analysis of the Interactions of Professed Methods, Teacher Implementation and Child Background," The Reading Teacher, XIX (May, 1966), 569-75.

One of the twenty-seven first grade studies sponsored by the United States Office of Education.


Good readers were found to improve much more with perceptual training than without perceptual training.


Children enrolled in summer school remedial programs were found to make greater progress than those in winter school. The younger and brighter students made the most gain.

Cohn, Stella M. "Upgrading Instruction Through Special Reading Services," The Reading Teacher, XVIII (March, 1965), 477-81.

This was a study of a reading clinic with instructional and clinical services. Reading was not the only difficulty; boys outnumbered girls two to one; students had average intelligence, most children were one and one-half to two and one-half years retarded, prior median growth monthly growth .42, after admission monthly median growth was 1.25. When a child was stimulated by interest, encouraged by specialist and accepted by parents, he began to learn.


In a study dealing with the Augmented Roman Alphabet, the differences were highly significant favoring the experimental groups regardless of level of intelligence.


This author felt social class to be the most important single factor in progress in reading in school. He found six grades for children of the working-class, and especially severely for the lower-skilled and lower-paid class.
A study of programmed readers revealed that they are becoming available and can be used as a part of the reading program. Much caution should be used in selecting and using a program. Some are definitely superior to others.

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**First Grade Reading Instruction Using Diacritical Marking System, Initial Teaching Alphabet and Basal Reading System,** *The Reading Teacher*, XIX (May, 1966), 666-69.
One of the twenty-seven first grade studies sponsored by the United States Office of Education.

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**First Grade Reading Instruction Using Diacritical Marking System, Initial Teaching Alphabet and Basal Reading System—Extended to Second Grade,** *The Reading Teacher*, XX (May, 1967), 687-92.
Fourteen of the twenty-seven first-year studies were extended into second grade. This was one of them.

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Small classes that were less ready than large classes improved significantly more than did the large classes. Small classes had less than thirty students, large classes ranged in size from thirty to thirty-six students.

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Motivation was found to play a very significant part in reading improvement.

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Pupils in an individualized reading program showed more positive attitudes toward reading. They did not show a greater gain in reading ability when compared with a control group.

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Hahn, Harry T. "Three Approaches to Beginning Reading Instruction—ITA, Language Arts and Basic Readers," *The Reading Teacher*, XIX (May, 1966), 590-94.
One of the twenty-seven first grade programs sponsored by the United States Office of Education. Most of these studies showed no significant differences among methods. When differences were shown, they were not consistent from one another.

This was one of the second-grade studies which was carried over from the first grade. Most of the results were identical or nearly identical to those obtained in the first-grade studies.

Harrington, Sister Mary James, SCL and Donald Durrell. "Mental Maturity Versus Perception Abilities in Primary Reading," Journal of Educational Psychology, XLVI (1955), 375-80.

Visual and auditory perception and phonics ability were found to be significantly related to reading. Mental age had little influence on success in beginning reading.

Harris, Albert J. "Reading Clinic," The Reading Teacher, XIV (March, 1961), 232-35.

The reading clinic as an organized group of professional people working together has possibilities which are more than a remedial reading specialist working alone.


The results of this study agreed with those of other reviews for the same time period. They were that none of the methods used in the fourteen second-year studies were consistently better than any other method.
Hayes, Robert B. and Richard C. Wuest. "ITA and Three Other Approaches to Reading in First Grade," The Reading Teacher, XIX (May, 1966), 627-30.

This is another of the twenty-seven first-grade studies sponsored by the United States Office of Education. Results were inconclusive.


This was a second-year study that bore out the results of the first-grade studies; namely that there were no consistent differences in the methods.


Inconclusive evidence was again obtained in this first-year study.


The author names the needs of a young reader. These are actually the first steps of beginning reading.


Positive relationships were found between Socio-economic status and the reading sub tests at grades one and two. Sensory image and phonetic analysis showed the highest relationship.


Severe reading problems should be thought of as a chronic illness which requires long-term and supportive treatment.


A child who for any reason does not attain the stage of spontaneous verbal mediation will be mentally retarded in a functional sense. Children who are not verbally mediating spontaneously by the second grade will probably have much difficulty in school.

Results showed a superiority over control group in both reading and arithmetic. The superiority was in favor of females, those with kindergarten experience, those who stayed in one school all year and those with experienced and permanent teachers. This program is being looked upon as one approach to the high-quality education that is the birthright of all children.


Studies with second grade remedial children indicated that a carefully planned and systematic program could significantly raise the levels of such children.

Kasdon, L. W. "Establishing an Elementary School Remedial Reading Program," The National Elementary Principal, LVI (1967), 54-57.

This reference listed six steps which were necessary to establish a successful remedial reading program in the elementary school.


This was another United States Office of Education Study. Composite results of all of these are treated in a report by Guy Bond. Those results are much more meaningful than the results of any one study.


The author describes reading deficiency as a functional anomaly which is easy to identify with current psychoeducational tests.

Kilanski, Doris M. "A Reading and Guidance Center," The Reading Teacher, XXI (May, 1968), 754-57.

The author suggests that remedial reading alone is not enough to aid children to achieve to their capacity. Causes are often beyond the reach of a classroom teacher. A team approach is needed, utilizing the classroom teacher, a reading specialist, and a guidance counselor all working together to teach the child to read.

Remedial students will often have to be given a program of perceptual training, dominance establishment, and/or motor coordination before remedial work will be of value. Factors to be considered in remedial work are the intelligence of the child, the degree of his disability and the kind of disability he has. These factors will determine the treatment.

Lloyd, Helene M. "What's Ahead in Reading for the Disadvantaged," The Reading Teacher, XVIII (March, 1965), 471-76.

This article was devoted to the exploration of eight avenues to improve the level of reading achievement of the socially disadvantaged child. Improved tests, earlier language development, urban-oriented materials, better teacher training, increase special personnel, improve reading records, research studies and an extended school day and year were the avenues explored.


Sixteen months after instruction in the Remedial Centres (England) the reading quotients had decreased between the end of the treatment and the follow-up study. Over three fourths of the pupils were still in the bottom or next to the bottom streams.

McCanne, Roy. Approaches to First Grade English Reading Instruction for Children from Spanish-speaking Homes," The Reading Teacher, XIX (May, 1966), 670-75.

This study found the basal-reader approach to produce the highest achievement.

Identified remedial readers as those having repeated a grade, lacking energy, having a short attention span, lack of assuming responsibility, daydreaming, unrelaxed, and seldom completing assignments.

MacDonald, James B., Theodore L. Harris and John S. Mann. "Individual Versus Group Instruction in First Grade Reading," The Reading Teacher, XIX (May, 1966), 643-46. This was another of the twenty-seven first grade studies sponsored by the United States Office of Education.

Manning, John C. "Evaluation of Levels-Designed Visual-Auditory and Related Writing Methods of Reading Instruction in First Grade," The Reading Teacher, XIX (May, 1966), 611-16.

This study found that pupils of lower ability levels and of different cultural backgrounds can be taught to read effectively in the regular classroom. Early intensive formal visual and auditory discrimination programs cannot be over-emphasized.


Children who attained high scores through the presentation of material by one method tended to make correspondingly high scores using the second method. Those who did poorly using one method tended to also rank low using the second method.

Mazurkiewicz, Albert J. "ITA and TO Reading Achievement When Methodology is Controlled," The Reading Teacher, XIX (May, 1966), 606-10.

This was another of the twenty-seven first grade studies sponsored by the United States Office of Education.

__. "ITA and TO Reading Achievement When Methodology is Controlled—Extended Into Second Grade," The Reading Teacher, XX (May, 1967), 726-29.

This was a second year study of the United States Office of Education.


A learning disability is any condition which causes a child's school achievement to be substantially below his individually measured intellectual capacity regardless of regular classroom experiences sufficient for the majority of children to learn satisfactorily.
If the most reluctant learners are given the most outstanding teachers, they are no longer reluctant, but will begin to learn.


This first-grade study dealt with ways of working with the teachers to help them with the new methods. The children's reading levels were not different, the attitude and assurance of the teachers were different.

Murphy, Helen A. "Growth in Perception of Word Elements in Three Types of Beginning Reading Instruction," The Reading Teacher, XIX (May, 1966), 585-89.

This study is another of the twenty-seven studies coordinated by Guy Bond and sponsored by the United States Office of Education.

Nason, Doris E. "Remedial Instruction in Reading," The Reading Teacher, XXI (May, 1968), 740-44.

Careful diagnosis and evaluation could prevent many children from experiencing difficulty in learning to read. Instruction should be provided at any level for children who cannot profit from regular classroom work.


No difference was found between the eye-training and finger-training groups. Both groups did better than the group which merely repeated words. A suggestion was that attention rather than the tactual-kinesthetic approach may be the significant factor.


The results seem to substantiate the fact that confusions arise from rotations and reversals and not from close and break transformations. Some confusions were also caused by a high degree of formal similiarity.

This follow-up study found that over a three year period there was no significant difference in the reading improvement. Leadership and self-confidence appeared to have improved in the corrective groups and there were a reduced number of dropouts.

Reid, Hale C. "Teaching Reading to the Low Group in the First Grade," The Reading Teacher, XIX (May, 1966), 601-5.

This was another of the United States Office of Education's studies.


This was a second-year study conducted under the sponsorship of the United States Office of Education.

Hiessman, Frank and Arlene Hannah. "Teachers of the Poor," The PTA Magazine, (November, 1964),

Developing a style of teaching may be essential to making contact with these youngsters. The teacher must have a deep and utter commitment to the involvement of the youngsters. School is too often a bookish place--rigid, formalistic, prissy, negative feminine. We must take immediate steps to make it positively human.

Ruddell, Robert B. "Reading Instruction in First Grade with Varying Emphasis on the Regularity of Grapheme-Phoneme Correspondence and the Relation of Language Structure to Meaning," The Reading Teacher, XIX (May, 1966), 653-60.

This was another of the twenty-seven first-grade studies sponsored by the United States Office of Education.


This was one of fourteen first-grade studies which were extended into second-grade to validate first year findings.


Phonics taught systematically may be superior for low achievers while functional phonics is better for average and high achievers.

This was another of the United States Office of Education first-grade studies.

"Reading Achievement of First Grade Children Taught by a Linguistic Approach and a Basal Reader Approach—Extended Into Second Grade," The Reading Teacher, XX (May, 1967), 704-10.

A follow-up study of the first grade report.


The lack of ability to discriminate visually between words is a significant factor in retarding the reading success of children.


A first-grade study sponsored by the United States Office of Education in coordination with twenty-six other simultaneous studies.


This study was a second year continuation of the previous one.

Small, Mary Walsh. "Just What is Dyslexia?", The Instructor, (August/September, 1967), 54-57.

Children should be taught in a carefully worked out sequence of motor competencies that follows a definite plan of development. The goal should be the development of fine coordination in hands and eyes.


The phonics scores of teachers reflect upon the adequacy of pre-service training. Grade-level assignment does not affect teachers' knowledge of phonics, and years of teaching experience do not increase phonics knowledge.
The experimental readiness program was of significant value to Negro pupils, the achievement of the experimental control groups was quite similar.

Spencer, Doris U. "Individualized First Grade Reading Versus a Basal Reading Program in Rural Communities," The Reading Teacher, XIX (May, 1966), 595-600.

This was another of the twenty-seven first-grade studies sponsored by the United States Office of Education.

Stauffer, Russel G. "Reading Clinic," The Instructor, (May, 1966), 25.

The principle variable in a classroom is the teacher. All research supports this conclusion, including the twenty-seven United States Office of Education first grade studies.


Serious reading deficiencies are closely related to psychological adjustment as well as to educational efforts. Group guidance for remedial students and for their mothers is a remedial technique worthy of further study.

Tanyzer, Harold J. and Harvey Alpert. "Three Different Basal Reading Systems and First Grade Reading Achievement," The Reading Teacher, XIX (May, 1966), 636-42.

This study was one of the twenty-seven first-grade studies sponsored by the United States Office of Education.


A comparison of progress of a clinically instructed group and a diagnosis-only group. Population was made up of children referred to a Reading Clinic at the University of Iowa. Clinical-instructed group was not found to be significantly different from the diagnosis-only group that had help from their own teachers following diagnosis and suggestions from the clinic.

Retarded readers have greater difficulty with auditory symbolic learning than do average or advanced readers. The prospect of reward will improve performance of retarded readers more than it does average and above average readers. Some difficulty may result from the reduced ability to attend to stimuli and to a lower level of motivation.


The study involved the use of the Language-Master. Conclusions were that first grade students in the beginning stage of reading would benefit more from teacher help than from a mechanical device.


Sex differences in reading achievement have been of interest to educators and researchers since research in education has begun. Studies tended to report no significant differences in readiness, but by the end of the first grade there were significant differences in achievement.


Readiness measures identify extremes, they are not accurate predictors of achievement for the middle group of scores. The numbers subtest appeared to be a good predictor of achievement.


Children with poor discrimination tended to be poor readers and speakers. Speech therapy should be delayed until age eight. Reading instruction should be made agreeable with child's auditory discrimination. Many children are not ready for phonics in grade one and they can be identified.

Wyatt, Nita M. "The Reading Achievement of First Grade Boys Versus First Grade Girls," The Reading Teacher, XIX (May, 1966), 661-65.

Boys lag behind girls as a group in reading achievement in early years of school. As the boys mature, they tend to catch up with the girls. Not all of the boys overcome the early failure. From 75 per cent to 90 per cent of the children referred to remedial clinics are boys.