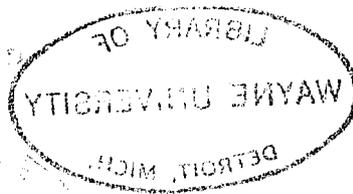


A STUDY OF AN EXPERIMENTAL READING READINESS
PROGRAM IN A LARGE CITY SCHOOL SYSTEM



by

Elmer William McDaid

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Charles L. Boyer*

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CHAPTER I

EDUCATIONAL AREA OF INVESTIGATION

Introduction

In September 1942, teachers and administrators of the Detroit Public Schools, conscious of the problem of failures in reading at the first grade level, decided to initiate a long range study to determine the advantages and disadvantages of a reading readiness program. The study was carried out in five distinct developmental stages beginning in September 1942, and terminating in June 1949. As a staff member of the Department of Instructional Research and later as a member of the Reading Readiness Committee, with the special function of assisting in the planning and executing of the experiment and the analysis of research data, the writer has been closely associated with the problem from its inception. Consequently, the general problems which are discussed in this dissertation largely coincide with the broad problem of the Reading Readiness Committee. The committee terminated its work and function in relation to the study in September 1946; but because of his own interest the writer decided to extend the study through a special project for an additional period, September 1946 through June 1949, to investigate

other aspects of the study.

The scope and purpose of this dissertation are therefore two-fold: first, to report the research findings through the first four stages of the study¹; second, to narrow and define the specific problem selected for the extended period of the study and to report findings and generalizations. The dissertation reports the findings of the entire study in sequential stages beginning with the work of the committee in 1942 through 1946, with special emphasis on the development of the writer's particular problem during the period of September 1946 through June 1949.

Chapter I is presented in two parts: (1) a setting of the overall reading problem in our nation's schools and its implications for teachers, administrators, and the general public; (2) a report of research studies bearing on the general problem of reading as narrowed to the specific area of reading readiness at the post-kindergarten level. This summary is made to orient the writer and the reader to the type and scope of investigation conducted in the field for the period 1930 through 1949.

Chapter II discusses stages one, two, three, and four of the study. These stages will include the "one school"

¹ This part of the purpose is a function assigned to the writer as a member of the Reading Readiness Committee.

beginning of the study, the appointment and work of Reading Readiness Committee, the tryout and validation of the reading readiness test in nineteen elementary schools, and finally, the pilot study designed to try out the recommended program in the fourteen experimental schools. Raw data of pupils and opinions and reactions by teachers, principals, and parents, are analyzed and evaluated.

In Chapter III the definition and delineation of the specific problem, which determines the fifth and final stage of the study, are presented. Limitations imposed on the problem are stated, nature and sources of data are discussed, and the geographical locations of the 116 schools involved in the fifth stage are described. The specific problem is not isolated from the overall study but is merely focusing attention upon one aspect that could not be studied adequately in the first four developmental stages.

In Chapter IV, the fifth and final stage of the study, the purpose is to measure more adequately the results of the expanded Reading Readiness Program in the fifty-eight experimental schools. This period is definitely defined as September 1946 through June 1949. To make the results obtained from the experiment as reliable and conclusive as possible, a controlled and planned procedure was carried out. Research methods and techniques that were employed are discussed; and differentiation between practical and scientific control made. A detailed account of

FIVE STAGES OF DEVELOPMENT OF THE DETROIT READING READINESS STUDY

Three year follow-up study of Reading Readiness and Control groups in 116 elementary schools. Purpose to determine the effects of the program on:-

- acceleration and retardation
- reading ability
- pupil adjustment
- absence

Pilot Study conducted in fourteen elementary schools to secure teachers' and principals' reactions to the Test, Personality Inventory, and the recommended Reading Readiness Program

Tryout and validation of original test consisting of 3 booklets, 190 items, 19 schools
Eight hundred pupils involved

Committee devises the original Reading Readiness Test

Appointment of Detroit Reading Readiness Committee. One class one school beginning

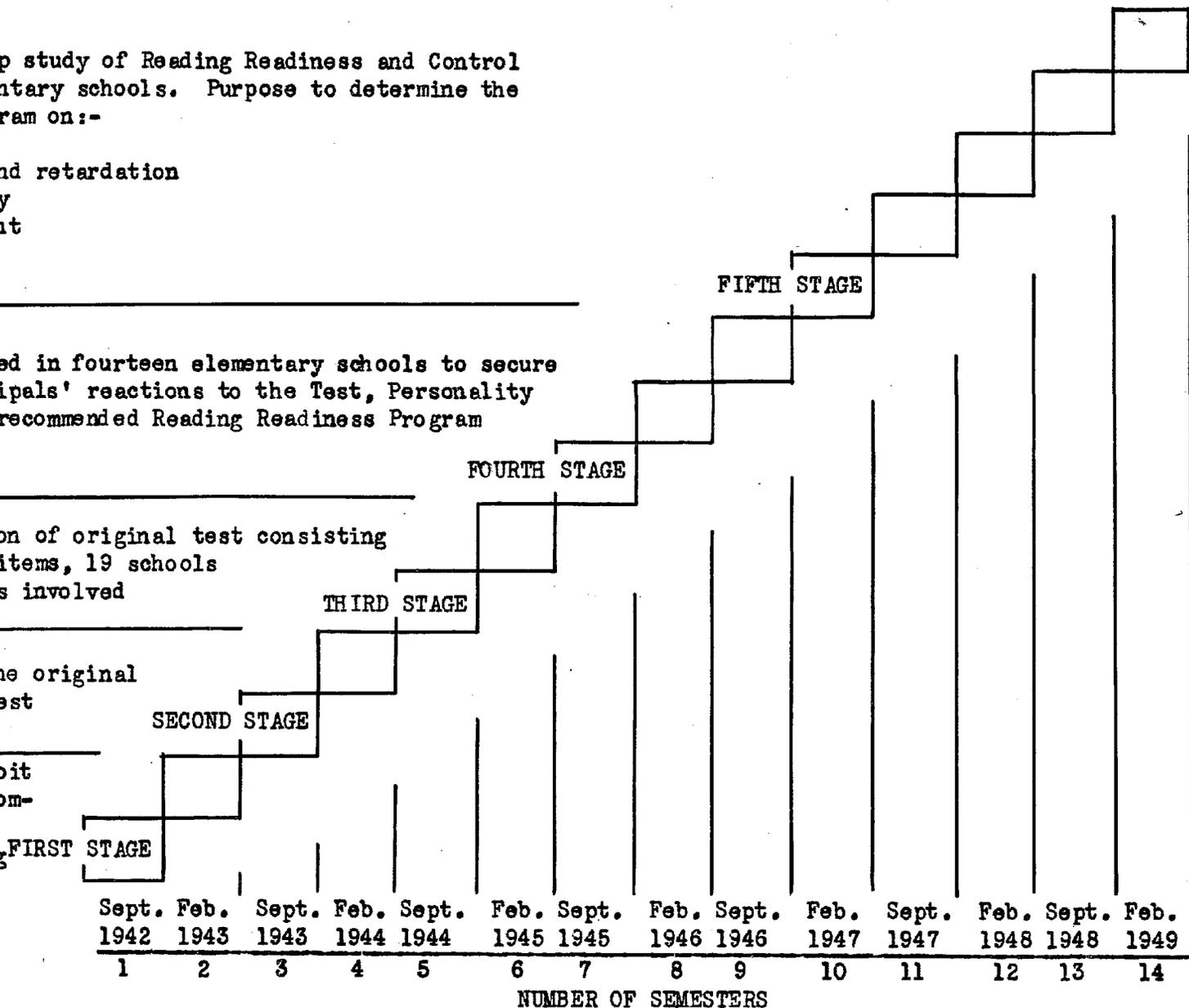


Fig. 1

the sampling procedure, elected to obtain a practical number of children on which to base the conclusions, is given.

In Chapter V the analysis and interpretation of the data, which is the next logical step, are presented. The data are revealed in a series of tables so that such factors as sex, chronological age, intelligence, reading achievement, and adjustment may be statistically compared by measures of central tendency and dispersion. Grade status for both the experimental reading readiness and the control group are compared at the end of the three-year study.

In Chapter VI conclusions which substantiate, negate, or cast doubt on the hypotheses previously stated, are drawn from the data. Judgments concerning strengths, weaknesses, and limitations of the program are presented. Additional problems, revealed in the investigation, but beyond the scope of the present study are stated.

Background and Implications

Throughout the centuries since man first began to use pictures and symbols to convey messages and to record events, reading has been the most exhaustively discussed subject in education. Twenty-five centuries ago the Egyptians had analyzed words and syllables into sounds and had developed a series of symbols to represent the spoken word. As this new form of communication evolved, man became intensely interested in the process that developed the

ability within an individual to read. It is reported that as early as 500 B.C. the Greeks had established methods and techniques for teaching individuals to read. From this period down to the present time educators have constantly discussed various conditions and problems in an effort to improve reading instruction to increase the efficiency of the reader. Apparently time and sincere effort have not fully solved this persistent perplexing problem which has tenaciously held the subject matter spotlight over the years. Furthermore, perhaps the most challenging condition faced by our schools today is the insistent demand of the public for improvement in the reading efficiency of students at all levels in our public schools.

As indicated by the studies of Lamport, the problems attacked most vigorously in the past related largely to methods of teaching beginning reading. In securing needed information and in reaching decisions, observations and personal judgments were relied on chiefly. Very little evidence of the scientific method in studying reading problems appears in the literature until about the middle of the nineteenth century.²

Although the first research studies in reading appeared in Europe about 1944, the United States has contributed greatly to the scientific investigation in this field since 1881. Whereas only four studies were reported prior to 1896, since then the accumulated annual summaries which

²William S. Gray, "Reading," Encyclopedia of Educational Research (The MacMillan Company, 1941) p. 891.

may be designated as research on the general problem of reading number well over 3,000. It is rather interesting to note that teaching children to read was one of our earliest educational problems and at the present time still remains a major problem.

Representative Groups Expressing Interest and Concern

In the past as well as the present, other groups have seconded educators in revealing their intense interest in the problem. Because of its great social implications, reading as a skill has been championed by religious leaders, national leaders, and the general public as well as educators. In the Middle Ages the religious motive for reading was exceedingly strong because both children and adults were given preparation for church work. After the Reformation, great stress was placed on reading so the layman could better understand the teaching of the Scriptures. This motive carried through the early years of American colonization. Our early statesmen were quick to see the advantages of a "reading population" to promote solidarity and national unity. Gray states:

It is not surprising, therefore, to find that the chief motives for reading during the middle half of the nineteenth century were to secure (a) broad knowledge of the world, and (b) understandings essential to good citizenship.³

³Ibid., p. 893.

Public interest in the teaching of reading is not a recent development. People established schools in this country primarily to teach children to read. In the past, as well as in the present, there has been an urgent public demand that reading be taught well. Under our present democratic form of government, it is the public's inherent right to determine the value of the methods employed by our public schools in the teaching of reading. It is extremely questionable whether any single subject taught in our public school has created more interest and has been more scientifically investigated and studied.

Exclusive of formal research reported by clinicians, our education literature abounds with suggestions, recommendations, and proposals for enriching and strengthening our existing reading programs from committees with a variety of vested interests functioning at national, regional, and state levels. No phase of the general reading problem has been left wholly untouched. In fact, so much has been written that some educators seriously question whether research says too much too often.

As pointed out, educators have not been alone in their continuous concern about our general ability to read as a nation. This may be substantiated further by examining the writings of a few of our critics. Leary makes the following statement:

"Nobody," our critics would say, "reads anything in America. Nobody can." This, in effect, is what Stephen Leacock did say a few years back in his essay "L'Evoi in Praise of Americans." We are, he declared, a "queer people." We have "more schools and better schools, and spend more money on schools and colleges than all of Europe," but we can't read; we "print more books in one year than the French print in ten," but we can't read. We cover our country "with 100,000 tons of Sunday newspapers every week," but we don't read them--we're too busy;" instead we use them "for fires and to make more paper with." We buy "thousands of new novels at two dollars each," but we don't read beyond page one. Our streets "are full of hugh signs," we turn our eyes away; "transparent colours, cartwheels, and mechanical flares whirl and flicker in the crowded streets at night," we don't see them; tons of circulars pour through our mails, through our houses and down our garbage chutes. "The last American who sat down to read," Leacock ended by saying 'died in about the days of Henry Clay."

Of course, Leacock's charges are not altogether serious, nor are they altogether true. But there is enough truth in them to justify "the great and continuous concern" that Hendrick VanLoon once said we should feel, and that many of us do feel, over the fact that less than two per cent of the 130,000,000 people in this country are book readers.⁴

Educators themselves are constantly evaluating the product of our public schools in terms of reading ability and comprehension of certain types of reading materials. In the past few years, numerous articles have been written and pointed for public consumption through the medium of popular magazines. One such article, written

⁴ Bernice Leary, "What Does Research Say About Reading?" Journal of Educational Research, XXXIX (1946), 435, quoting Stephen Leacock, Laugh Parade (New York: Dodd, Mead and Co., 1940) pp. 324-26.

by a public school administrator, its contents and theme characteristic of many articles, succeeded in focusing both teachers' and parents' attention on our high school students' ability to read. George H. Henry asked the question, "Can Your Child Really Read?" Many statements in this article, if true, are strong indictments in terms of our reading programs and the methods of reading instruction found in our public schools. Is it a fact that--

...common gossip inside the profession that at least a third of the entire secondary school population ...in grades nine through twelve ...are incapable of mastering the stock tools of learning (reading and writing) well enough to profit from textbook instruction?⁵

It is further stated that these same pupils:

...cannot read on a fifth grade level and no brilliance of teaching can improve these youths enough to make any appreciable difference in their literacy.⁶

From this statement and others one may conclude that educators are seriously concerned and are raising questions regarding methods of instruction and reading programs offered in our public schools.

Newspapers further portray the public's extreme interest and in many instances sincere concern regarding

⁵George Henry, "Can Your Child Really Read?" Harper's Magazine, (January 1946) p. 72.

⁶Ibid., p. 73.

the instruction offered in our public schools by asking the question: "Is the best type of instruction being provided pupils in our schools?" Since it is their inherent right, every public school system should be in a position to answer this question to the satisfaction of the general public.

Illiteracy Still a National Problem

Over the years, adult illiteracy and poor reading among school children have always been chronic problems in the field of reading. In the war years, conscription of large numbers of American men for military service brought the problem of illiteracy into focus for the American public and for our educators. Large numbers of our selectees were classified by the army as functionally illiterate.⁷ Investigation revealed that in one camp, seventy per cent of the Negro selectees and eleven per cent of the whites were illiterate by army standards. Kotinsky further studied the problem and reported that the actual rate of the illiteracy as measured by army standards is approximately four times that indicated by the 1940 census report.⁸ DeBoer suggests that federal aid

⁷ "Schools and the 1940 Census," National Education Association Research Division (Research Bulletin 19: November 1941) p. 225.

⁸ Ruth Kotinsky, Elementary Education of Adults (New York: American Association for Adult Education, 1941), p. 205.

would tend to equalize educational opportunity and cut down the rate of illiteracy.

It is clear that a major cause of illiteracy is sheer lack of schooling. In 1940, 10,105,000 persons in the United States who were at least twenty-five years of age had not finished five years of school. The highest rate of illiteracy is found in the south where expenditures for education are lowest. The first remedy for illiteracy would, therefore, seem to be a greater realization of education opportunity throughout the nation. Federal aid for education became a military necessity in a period when illiteracy disqualified men for war service.⁹

A result of the findings of our Selective Service System caused school men to reexamine their policies and practices for the improvement of reading. In the period, 1940-43, more than 350 separate studies on the general problem of reading were reported. Further, during this same period the National Resource Planning Board¹⁰ recommended expenditures in excess of \$6,000,000,000 in an attempt to reach a twelfth-grade reading proficiency level for ninety per cent of our student population leaving school.

As a result of these findings, State and National Committees were appointed to study the question: "What Shall We Do About Reading Today?" One reaction to the question

⁹ John DeBoer, "Reading Problems of Pressing Importance," Review of Educational Research, XIII, No. 2 (1943) 70.

¹⁰ Report of the National Resources Planning Board (Washington, D.C.: Government Printing Office, 1943)

came from a symposium of experts¹¹ in the form of six recommendations. Upon examination, the recommendations are not entirely new, but they do tend to point up the instructional program and give it direction. In listing the recommendations in the order set forth by the experts it is important to note that the concept of "readiness" is given the number one position. First, said the symposium, postpone beginning reading until children demonstrate readiness for it. Second, attempt to make reading enjoyable at all levels. Third, develop language mastery and a rich background of experience with books. Fourth, provide guidance in reading in all subject fields. Fifth, adapt reading instruction to individual differences in abilities and interests. Sixth, promote growth in attitudes and general maturity of behavior as well as specific reading skills.

Assuming that an informed citizenry in a democracy must be able to read and comprehend the written page in order to function effectively in civic affairs, our concern and the countless hours spent by brilliant

¹¹ Emmett Betts, "What Shall We Do About Reading Today? A Symposium." Elementary English Review, XIX (1942) 226. The Symposium consisted of Emmett A. Betts, Director Reading Clinic, Temple University; Arthur I. Gates, Professor, Teachers College, Columbia University; William S. Gray, Department of Education, University of Chicago; Thomas D. Horn, Professor, Iowa State Teachers College; and Paul Witty, School of Education, Northwestern University.

educational minds in studying the problem have not been entirely wasted. However, although professional contributions have been immensely significant, they have not always found ready acceptance in actual school practice. In general, public education is slow to change and in many instances seems to insulate itself effectively against change. This lag is due mainly to the following factors: (a) the slowness with which an expressed need of a classroom penetrates to the central office or supervisory and administrative staff; (b) the slowness with which professional understanding and interpretation of research filters down from the central office staff to the classroom; and (c) the failure of education in general to keep parents and the general public informed of the recent developments in methods of instruction reported by research. These failures in communication are associated with lack of understanding at two levels; teacher-administrator relationships and administrator-parent relationships.

Reavis makes the statement that the public does not understand and is not willing to pay for the type of supervision necessary for an adequate supervisory program.

The improvement of reading instruction in a city school system demands a well-organized personnel and a high degree of competent leadership. It is difficult to secure popular approval for an adequate amount of supervisory personnel. The lay public, as represented by boards of education, do not

usually realize the number of persons required. The need for direction and supervision is much better understood outside the field of education. It is to be regretted that the need for instructional leadership is not better understood by the general public. The typical voter does not operate business which involves the recognition of this principle of leadership. The fact that we need an adequate amount of competent instructional leadership to make any program function effectively is still an aspect of the general reading problem.¹²

Surveys Often Misleading

In some respects, the more extensive the research on reading, the more complex the process and issues seem to be. Many measuring devices used to indicate the degree of reading ability which an individual possesses can be seriously questioned. Henry's broad generalization - "one-third of our secondary school population cannot read on a fifth grade level" - certainly should be challenged and a few pointed questions ought to be asked in regard to the extent and the validity of his study.

A study for the purpose of discovering the extent of reading problems faced by a variety of schools in the State of New York gives an entirely different grade-level for a third of the pupils tested.

...the Iowa Reading Examination was administered. It was agreed that an approximation of beginning ninth grade performance on this test would enable

¹²G. H. Reavis, "Factors and Conditions to Consider in Further Efforts to Improve Reading in School Systems," Adjusting Reading Programs to Individuals (Supplementary Educational Monographs, No. 52: The University of Chicago, 1941), pp. 13-14.

a pupil to meet the reading demands of the secondary schools. In a large number of schools, it was found that two-fifths of the ninth grade pupils, one-third of the tenth to one-third of the seniors fell below the minimum required.¹³

In comparing the generalizations drawn by Henry and Smith, we have very little to go on except that they disagree as to the grade level where thirty per cent of our secondary school population are reading. As far as the writer was able to determine neither author described the population on which their study was based. Further, it is questionable whether the tests used in the studies would measure the same grade level for both groups if they had been used interchangeably.

A study of relationship between levels in ability and tests used by Pflieger¹⁴ bears out the contention that comparisons should be very carefully made. This study attempts to answer the question: Does the reading ability of a group depend, at least in part, on the test which is used for measuring reading ability? His report is the analysis of the reading scores made on two different tests by several groups of students in an attempt to find some answer to the question. In general, students who read

¹³Dora V. Smith, "Evaluating Instruction in Secondary School English" National Council of Teachers of English (English Monograph, No. 11, 1941), pp. 32-33.

¹⁴Elmer Pflieger, "A Study of Reading Grade Levels," Journal of Educational Research, XLII (1949) 541-546.

well on one test, read well on the other; and those who read poorly on one, read poorly on the other. In two schools there was almost perfect correlation. However, the reading grade levels were quite different and indicated a real difference in the difficulty of the two tests. The reading grade levels of individuals and of groups of children are dependent in part on the particular test used. While the two tests yield different grade levels, they rank students in about the same order in relation to their groups.

From the evidence cited, the validity of the generalization that one-third of the pupils in our secondary schools cannot read "on a fifth grade level" can be seriously questioned. We do not know enough about the population used or the tests on which this conclusion was based. In contrast to the above indictment made on our secondary schools, Gray concludes:

Taken by and large, there never was a period when as many boys and girls, including the less able pupils who formerly dropped out of school, learned to read as well as they do today, when children and young people read as much and for as many purposes as they do now, and when reading was more useful in promoting personal development, school progress, and social understanding.¹⁵

¹⁵William S. Gray, "What Shall We Do About Reading?", Elementary English Review, IXX (1942) 236.

Certainly the validity of the statement or assumption "no method and no brilliance of teaching can improve these youths enough to make any difference in their literacy"¹⁶ can be challenged. If educators and classroom teachers were to wholly accept that premise, they would be assuming that the extreme maturation theory operates in every classroom. This means that the teacher's sole function is to provide the child with the opportunity to do what he is capable of doing with no instruction from the teacher. In the past two decades, countless articles have been published indicating that remedial reading programs result in gains in reading ability at all levels. To substantiate the above statement, Hilliard makes the observation:

In spite of several attempts to eliminate a systematic method in teaching reading, the evidence available justifies the conclusion that some systematic teaching is desirable. Meriam, who is a leading proponent of an informal attack on reading, compared the progress of public school children in reading with that of children whose instruction in reading was initiated in harmony with two basic principles: '(1) The best way to teach reading is not to teach reading, but to provide the occasion ...in which certain reading functions... (2) Let the pupils read to learn; incidentally they will learn to read.' The results were distinctly favorable to the experimental group, but as Gray points out, nothing is known about the methods employed in the control schools, the preparation and efficiency of the teachers, the capacity of the children of the two groups, and other factors

¹⁶Henry, op. cit., p. 74.

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 that influence progress. Gates, Batchelder and Betzner studied the value of 'a modern systematic method' of teaching reading as compared with an 'opportunistic method' in which the above variables were much more under control, and drew the conclusion that their study justifies some systematization of teaching efforts, but not the 'rigidly organized, highly rationalized, or logically systematized textbook' which has often completely dominated the teaching of reading.¹⁷

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 Comprehensive reading programs have demonstrated the reading ability of the lowest twenty-five per cent of the entering class can be improved. In many instances it is reported that pupils have been reassigned to regular classes where regular classroom teachers assume the responsibility of meeting their specific needs. However, these studies are all based on rather small experimental programs: this fact again points up the need for educational leadership and consultant service, which is not too well understood by boards of education and the general public. Administrative problems in a clinical situation are radically different from those in an average classroom in a large city school system.

Educators hold to three general points of view regarding remedial reading practice, all based upon agreement that individual pupils differ greatly in their native abilities and in their growth potentialities. Each

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¹⁷George H. Hilliard, "Reading and Literature" What Does Research Say? State of Michigan: Department of Public Instruction, Bulletin 308, 1937, p. 113.

can be traced to the premise that special attention should be given to pupils who do not make satisfactory progress in reading within the regular school program.

One group recognizes the many values in keeping the individual pupil as much as possible with his regular age group and class, but at the same time recognizes that in general the regular reading teacher cannot give clinical assistance to all pupils who need it. This calls for the pupil to remain with his regular group as much as possible, but is taken from the class for short periods and given special instruction. This instruction is provided by a remedial reading teacher.

The second group assumes that special attention should be given the pupil by his regular classroom teacher. This, of course, implies that every teacher should be sufficiently trained in diagnostic and remedial techniques so that specialized individual instruction can be rendered. Of course, this may apply to some teachers and others may not be able to make this adaptation as individual differences operate at the teacher level as well as the pupil level.

The third group advocates putting the pupils who need special help in a separate class taught by a specially trained teacher. This, of course, calls for special grouping within a school. The idea is not new, as we have had grouping by means of intelligence quotients for years.

Grouping by reading ability or lack of it is merely singling out pupils by means of different criterion. The thinking of group two and three is diametrically opposed with relation to the pupil's need for association with those with whom he would normally be involved in everyday learning activities. In one case he is kept with his group, in the other he is removed. Of course, the third is a compromise between the two.

Over the years all three methods have been employed by school administrators to improve the educational offering of their schools. Many factors¹⁸ have impeded or enhanced the chance of the particular type of program succeeding or failing within a particular school.

Delimiting the General Area of Concern

Recognizing the extreme range and complexity of the general problem of reading, a group of Detroit administrators and teachers decided to attack one small segment of the problem, in the attempt to bring about better instructional methods, on a totally different front; namely, at the post-kindergarten level. This dissertation describes and discusses this experiment which is the extension of

¹⁸ Size of the classes, physical room space available, support through taxation that will enable a school or school system to employ additional teachers to be used as specialists and general reaction to the pupils themselves.

the regular 1B grade downward to incorporate a reading readiness program of instruction in the Detroit Public Schools. Such a program was designed to determine readiness for reading and for the study of the child and his total reactions as a person to the school situation. It deals with the attempt to diagnose abilities and disabilities of each individual child at the post-kindergarten level. Formal and informal measures of these factors must be included in an adequate program of evaluation. The program was planned to be flexible enough for administrative practices for the participating schools.

In the experimental planning of the new program, a committee¹⁹ designated as the Reading Readiness Committee was appointed by the Superintendent of Schools and assigned the duty of investigating the advantages or disadvantages of such a program. Further, the committee was asked to study current Reading Readiness Tests and develop a similar test suitable for use in the Detroit schools, which would serve a similar function under locally controlled conditions. Although this program was not fully formulated within the first year of the committee's work, it seems

¹⁹ Reading Readiness Committee consisted of: Dr. Harry Baker, Psychological Clinic; Elizabeth Cullen, Kindergarten Supervisory; Evelyn Koppelman, First Grade Teacher; Bernice Leland, Remedial Reading Teacher; Elmer McDaid, Instructional Research; Clarice Schultz, First Grade Teacher; Paul Voelker, Special Education; and Eveline Waterbury, Supervisor of Elementary Reading.

logical for the purpose of clarity in developing the dissertation to state the tentative program and the concepts held by the writer and the committee in the next few pages. It should be explained further that the first four stages in the development of the study were experimental and changes and revisions of the program stated in this chapter will necessarily be dealt with more adequately in Chapters Two and Three. Further, the section following the tentative program, "Survey of Related Study," was largely instrumental in formulating tentative plans and concepts of the program outlined. It logically follows that the tentative program may be checked in light of the studies cited in the field.

Tentative Program to Determine Readiness for Reading

Information may be secured in various ways concerning the potential ability and the social adjustment of a child about to enter the first grade. Probably the most important sources are: the kindergarten teacher's observation of the child, school records, formal and informal tests, conference with the parents and with the child himself. Authorities list the following factors as necessary for success in beginning reading and group them under three headings; namely, intellectual, physical, and personality development. Under the first category, intellectual development, it is held that the child must have:

1. reached a mental age of approximately six and one-half years.
2. an ability to see likenesses and differences in symbols.
3. an ability to remember word forms.
4. a memory span for ideas.
5. an ability to do abstract thinking.
6. little or no tendency to reverse letter or word forms.

In the second category, physical development, a child should have:

1. normal speech.
2. general good health.
3. good vision.
4. hearing - the ability to blend sounds into words and to differentiate between sounds and groups of sounds.
5. established handedness.
6. a chronological age range of 5.5 to 7 years.

The third category, personality development, is divided into two parts: (1) emotional stability, the factor necessary before a child can react with efficiency to a new problem; (2) adjustment to a school situation. This is usually the function of the kindergarten in our school. Emotional stability and adjustment to a school situation are inter-dependent upon each other and one is seldom observed without the other. However, under the third category the child should have:

1. a high degree of responsiveness
2. good work habits
3. desirable attitudes toward reading, classmates, and teachers

Recognizing the above factors as important in determining a child's readiness for reading, the program provides that data be secured from the following sources:

Teacher observation--Observations and ratings of children by kindergarten teachers are recorded on a Personality Inventory²⁰ and passed on to the first grade or reading readiness teacher. The ratings are made on a five point scale and include the following characteristics of the child; personal appearance, vitality, citizenship, attitudes, sociability and composure, or stability.

School records--Facts concerning the status of the child's health during kindergarten may be obtained from the School Record Form 35²¹. Notations concerning the child's home background are recorded on this form by the kindergarten teacher.

Results of formal tests--Results of two formal tests, Detroit Reading Readiness²² and Detroit Beginning First Grade Intelligence²³, and the result of one Personality Rating may be

²⁰ See Appendix B.

²¹ See Appendix A.

²² See Appendix B.

²³ See Appendix B.

obtained from the cover page of the test. In addition space has been provided for the tester to note any physical characteristics of the child that would be helpful in determining the classification of reading readiness or 1B formal reading. In the tentative planning the first grade teacher would give the test in order to observe personally the child's work habits. This observation affords the teacher insight into the child's abilities or disabilities and adds valuable information in making the final decision of group placement. The intelligence test is not part of the reading readiness program but is used as a check on the reading readiness test scores. The Beginning First Grade Intelligence Test is administered by the Psychological Clinic by professional testers.

Conferences with Parents--Teachers may obtain pertinent information from parents concerning the home life of the child, the child's status in the home, his reaction to the school situation as seen through the eyes of the parents. This is recorded in anecdotal record form by either the kindergarten or first grade teacher.

Conference with Children--Informal talks with children themselves are recorded and often yield further insight into their interests, attitudes, and feelings toward the home and the school.

Interpreting the Data Gathered--Interpreting the data is important for the teacher to see the problem of the

whole child. It is the pattern and inter-relationship of specific abilities and maturities of the child that enter into the final classification. All available data gathered, i.e. mental rating, physical condition, emotional maturity, plus the Reading Readiness Test score, are then assembled; and with the assistance of the kindergarten teacher, the child is then classified by the first grade teacher as 1 R.R.²⁴ or regular 1B.

With the formulation of the tentative testing program, the factor of flexibility was given due consideration as it was a foregone conclusion that the needs and administrative procedures would vary from school to school. By introducing this program and the recommendations that some children be withheld from formal instruction in reading, it was anticipated that more adequate instruction would result for children classified as reading readiness. The recommended program intends to foster the following:²⁵

²⁴1 R.R. is used for the purpose of child accounting and indicates that the child is a member of a reading readiness group. All children classified as 1 R.R. are enumerated under that heading on the Monthly Class Report. See Appendix A.

²⁵The tentative program was developed before the committee began work on the Reading Readiness Test or the Personality Inventory. This developmental stage of the study will be more adequately dealt with in Chapter II. However, the writer has made the preliminary statement at this point so that the reader may substantiate the thinking of the committee by the findings of authorities in the field.

- (1) An atmosphere for the immature child to be happy doing tasks appropriate to his maturity level.
- (2) An environment in which the child would have a reasonable chance to experience success instead of failure.
- (3) A period of adjustment at the post-kindergarten level under the guidance of a sympathetic teacher whose duty it would be to develop attitudes, abilities and skills that were lacking for reasonable success in formal reading.
- (4) A grouping which would be consistent with the psychological requirements for child development, i.e., sense of security, social acceptance, and successful achieving.
- (5) An administrative adjustment for a small class size to allow more individual instruction and guidance.

Survey of Related Studies

Over the years, teachers and principals have become increasingly concerned with two conditions operating at the post-kindergarten level in our public schools: first, the high percentage of failure at the first grade level and the realization that failure at this level is especially dangerous to a pupil's school and social adjustment; second, the fact that the standard reading program offered in the first grade compels some children to face standards devised for a level of maturity that they have not yet attained.

The first condition is substantiated by the age-grade progress studies which show that approximately twenty to thirty per cent of first graders repeat at least one

semester of their first year of school work. Since the principal emphasis in almost all schools during the first year is placed on reading, the high failure rate means that at least twenty to thirty per cent of the pupils have not successfully learned to read the beginning text-books. Research studies agree that a great portion of this difficulty is traceable to the fact that some children are not ready to read at the prescribed level. Pugsley reports that from one-third to one-sixth of the first year pupils fail and that ninety per cent of these failures are due to their inability to read at the standards set by the schools.²⁶

In reporting a study involving a group of children classified as special kindergarten (comparable to a reading readiness group) Lithauer draws the following conclusion:

....the progress of pupils in a special kindergarten whose IQ's at entrance ranged from 65-97 indicated how valuable this special kindergarten was in preventing failure. Seventy-three per cent of failure could have been eliminated if the mentally immature group had been excluded from the first grade until maturity was reached.²⁷

Both of the studies cited bear out the assumption made by Detroit teachers and supervisors that a program of reading readiness should be provided to meet the needs of many

²⁶C. A. Pugsley, "Reducing and Handling Student Failures," American School Board Journal, LXXXVI (1933) 18.

²⁷Donah B. Lithauer, "A Follow-up Report on the Later School Progress of Children of Primary School Age," Journal of Juvenile Research, XVII (1933) 178.

post-kindergarten children. By delaying a child's introduction to formal reading and providing experiences necessary for success, a stage of readiness can be attained which is conducive to child growth and development. Harrison explains this reasoning very simply and clearly:

Just as there are preparatory stages for walking and talking among children, there is a preparatory period for learning to read. We do not think of teaching a child to walk before we are certain that the muscles of his legs are strong enough to support him; we must likewise take into account the abilities which are necessary as a basis for his learning to read. We can strengthen the muscles of a baby's legs through exercise so that he will walk with more ease and fewer bumps; we can likewise strengthen some of his abilities and bring out in him others which will help him to learn to read with more ease than would otherwise be possible. To this end the kindergarten and first-grade teachers plan for the preparatory period of reading instruction to precede instruction in actual reading.²⁸

The preparatory period spoken of in the above quotation is a period for varying activities and experiences designated as reading readiness instruction for the child. This period varies in length, depending upon the rate of development of the individual child, the range usually being from six weeks to six months or longer. Evidence submitted by authors of child growth and development studies leads to the conclusion that lasting harm can be inflicted upon a child when failure creates a mindset against formal

²⁸ Lucile Harrison, Reading Readiness (Boston: Houghton Mifflin Company, 1939) p. 31.

reading. It is further inferred that if reading is deferred until the child is reasonably assured of at least partial success, he will gain speed as well as appreciation and will catch up with his age group in due²⁹ time.

The problem of meeting the needs of this particular group of our post-kindergarten population involves the school administrator, (principal), the first grade teacher, the parents, and last but not least, the child himself. This group will have to work together as a team to adjust and redefine the first grade experiences and activities. Administrators will be called upon to provide a flexible first grade organization which will provide for a varying period of adjustment for children not ready to read.

Parents must be involved, for they must understand the concept of "readiness" as devoting a general mental, physical, and social preparedness for reading instruction. For generations, parents, in general, have assumed that when a child becomes chronologically six years of age he is ready to read. If one's child does not read, one deduces that teaching or instruction is poor. It must be pointed

²⁹"Due time" is rather indefinite but is assumed to be dependent upon the child's rate of development. In many of the studies, only four to ten children are reported. The writer has not been able to locate any study dealing with comparisons of two large equated groups which measures reading achievement or social adjustment at any particular period after reading readiness instruction.

out to parents that our best authorities have found that not all children are ready to read at the same time. Our studies of failure rates at the first grade level support this point; yet it is extremely hard to explain to parents. However, a parent is more easily convinced that a school is offering his child good instruction if he feels that teachers are offering the type of instruction which meets the individual needs of his child.

Further, this adjustment to the first grade curriculum coincides with our democratic philosophy; "the essence of democracy is its recognition of the worth, dignity, and integrity of the individual."³⁰ If our schools are to be administered on this premise a program in reading must be provided so that every child may be reared in an educational environment which recognizes his needs and limitations and makes adequate provision for his maximum development. In the light of the evidence available, that any school initiating an experimental Reading Readiness Program at the post-kindergarten level in an attempt to adjust its curriculum to the needs of individual pupils is justified in so doing. To cite the multitudinous studies and experimentations on a clinical basis to substantiate this statement

³⁰ Philip H. Falk, Democracy: The Worth of the Individual, Eighty-fifth Annual Report, 1939-40. Madison, Wisconsin: Board of Education, 1941. p. 5.

would require a volume based on historical research in the field; further, it would be repetitive, since this phase has already been adequately handled by periodic summaries of research. However, footnotes and a complete bibliography make this information readily accessible to interested individuals.

Theory and practice with respect to large educational issues other than reading readiness have been known to differ. Although there is complete agreement that a number of complex factors are involved in readiness for reading, judgments differ concerning the best means of securing such readiness in children. Many reading experts point out that readiness for initial instruction comes through "natural process" of growth and development of the child. However, others in the field maintain that readiness for reading can be hastened or facilitated through specific programs of pre-reading activities. Doubtless both groups are correct, for a number of complicated factors determine the degree of readiness in each individual child. In order to reveal somewhat the complexity of providing a meaningful reading readiness program the factors bearing on readiness development will be outlined briefly under three types of development.

Doubtless the view that physical development of the child is of great importance is accepted and valid.

However, many will hasten to add that many physical characteristics³¹ of the child such as maturity of sense organs and auditory acuity, are little influenced by school instruction or training. If the organs for reception and coordination are underdeveloped or impaired in any way, the readiness for reading will be delayed. Experts in reading instruction point out that no matter how skillful the teacher or what the nature of his teaching methods may be, reading will not necessarily ensue. In studies of maturation processes of children, as evidenced by their behavior, we are constantly confronted with the fact that readiness to do things appears at rather definite intervals within certain age limits. Parallel to these findings, child psychologists point out the dangers in developing negativistic attitudes toward any activity that a child is not ready for. Further, these studies have shown that the age ranges for beginning certain activities are comparatively broad. Regardless of this factual information gathered from research over the years plus evidence offered by the extremely high failure rate in the lower grades, the majority of schools are still following the traditional pattern of

³¹"Physical characteristics of the child" refers to: general health (good nutrition, freedom from toxins, resistance to contagion); vision (sensation and perception, visual acuity, hearing); ability to fuse sounds into words (auditory acuity, auditory frequency range) hand dominance; chronological age (range from 5.5 to 7 years); and normalcy of speech organs. These characteristics are considered organically rather than psychologically (if there is a real difference).

introducing all children to formal instruction in reading readiness regardless of whether they have evidenced readiness. The hypotheses to which the above statements lead is that if more time is given to the maturing process of some children, reading casualties will be decreased considerably at the first grade level.

Intellectual development can be divided into two categories: first, the organic maturation of the organizations within the nervous system involved in noticing likenesses and differences, holding the memory span for ideas, thinking abstractly, etc; second, environmental stimulation, notably the experiences gained through training and education in home and school, the former being related to the education and intelligence of the parents.

The first of these intellectual factors develops to the state of readiness through the impetus of organic growth and is only slightly dependent upon training. The second can be brought about quite successfully through training and instruction within the school. The two factors obviously operate upon each other, the first establishing potentialities for the second, the second influencing the first.

The general factor of mental age comes about mainly through organic maturation, and is perhaps the most important single factor in determining readiness to read.

Harrison concludes that in order for a child to make any progress in reading, he must have attained the mental age of at least six years and preferably six and one-half.³² To substantiate this conclusion Harrison cites the following findings by Morphett and Washbourne:

Correlations between mental age and ability to learn to read, as measured by reading progress and sight-word scores, showed a fairly high degree of relationship. The correlations ranged from .50 to .65...

The correlations between mental age and reading progress were somewhat higher where mental age was measured by the Detroit First Grade Intelligence Test than when mental age was measured by the Stanford Revision of the Binet-Simon Scale...

When the Detroit test was used as a basis for determining mental age groups, the children who had a mental age of six years and six months made far better progress than did the less mature children and practically as satisfactory progress as did the children of a higher mental age...

Adequate mental age alone does not insure reading success, as various experiments in the field have shown, but it is safe to assume that reading success is much more probable if the child has reached six years and six months. Therefore, it is advisable, as one means of distinguishing the non-reader, to give every child an intelligence test before he enters the first grade.

³²Lucile Harrison, Reading Readiness (2nd Edit.; Boston: Houghton Mifflin Company, 1939) p. 6 quoting Mabel Morphett and Carleton Washbourne, "When Should Children Begin to Read?" Elementary School Journal, XXXI (March 1931) 496-503.

To foster personal development, children must be given the opportunity to live in compatible social groups. When a child is assigned to a group, his personality must be weighed as well as his academic potentiality, the latter may well be a function of the former. To promote adequate personality development, the teachers must determine the child's emotional status and his adjustment to the school situation. If he is emotionally unstable, the result is nervousness, fear, worry, or negative tendencies toward a new and difficult learning situation such as beginning reading. Before a kindergarten teacher recommends a child for first grade reading she must be confident that he has reached a stage of personal development which will allow reasonable success. Harrison lists the pertinent personality factors as responsiveness, desirable attitudes and good work habits.³³

Waterbury and Schultz summarize the three types of development in the following manner in their directive to reading readiness teachers.

All three types obviously are highly important. A child who is handicapped by weak vision, or hearing, or by poor general health is correspondingly limited in learning to read. Similarly, one who is emotionally unstable, who behaves in an antisocial manner, and who bids for an undue amount of teacher attention is at a greater disadvantage in learning to read than one who adjusts easily to new situations and who calmly settles down to the task at hand. It is the

³³Ibid., p. 28.

duty of the first-grade teacher to urge that all possible measures be taken to remove physical limitations. She should also try consistently to help pupils become stable and well adjusted personalities. Actually, however, she has less control over these two kinds of development than she has over certain intellectual skills which respond to training and guidance in a school room situation. Hence, the reading readiness program, while taking into consideration the physical and personal phases of pupil development, will deal generally with activities for building up certain specific skills and abilities leading directly to regular reading instruction.³⁴

Teachers of post-kindergarten children have long recognized the fact that children must reach a particular developmental level before readiness for reading is assured. However, teachers have been greatly handicapped by the traditional pattern of the first grade curriculum and the legal statute which states that a school shall admit a child to the first grade when he becomes chronologically six years of age. Further, parents have become accustomed to think of this mystical age as the time in a child's life when he begins to read. In general, parents should not be criticized too severely for this assumption, for some of the looser studies imply that this is true. One such study points this out by submitting evidence that formal instruction in reading should be delayed until a child reaches the approximate

³⁴Eveline A. Waterbury and Clarice Schultz, "A Teacher's Bulletin for Reading Readiness," (Publication No. 48-A: Detroit Public Schools, Division of Language Education, 1948) p. 5.

age of six. It makes no mention of other factors to be considered. However, the investigator should not be criticized too severely since, in general, chronological age is the only criterion used for entrance throughout the United States.

The following study is rather traditional in pattern in that it compares two different age groups in regard to the outcomes of a first grade reading program. Thomson submitted the following table³⁵ which, unless it is rather critically examined, excites an inference that children are ready to read at the age of six.

It may be concluded from the figures indicated on the table that the older group liked to read, succeeded in learning to read, and were less emotionally disturbed than the younger group. This study was the only one found in the recent literature (after 1930) that emphasized chronological age as an important factor in determining the readiness of a child to read. Undoubtedly there were others before this period, as the state governments must have had some basis for arriving uniformly at the chronological age of six.

Most of the studies in the field of reading readiness during the late thirties relate to the factors that influence progress in beginning reading. The pattern of

³⁵Jennie Thomson, "Big Gains from Postponed Reading," Journal of Education CXVII (1934) 445.

TABLE I

COMPARISON OF TWO GROUPS OF POST-KINDERGARTEN CHILDREN
IN TERMS OF LIKES, DISLIKES, SUCCESS, FAILURE,
AND EMOTIONAL DISTURBANCES AS MEASURED IN
THE FIRST SEMESTER OF READING

	Age Group (5-2)	Per Cent	Age Group (5-10)	Per Cent
Liked Reading	19	8	176	91
Disliked Reading	60	25	11	6
Preferred Other Activities	221	92	18	9
Succeed in Reading	210	87	176	91
Failed Reading	30	12	18	9
Emotionally Disturbed	105	41	6	3
Total Pupils	240		194	

experimentation was to administer various types of tests and then correlate the results with the pupils' subsequent progress in reading. Gray reports correlation studies between scores on reading readiness tests and reading achievement scores of pupils at various times during the first three semesters of reading. His findings indicate that mental age is a significant factor in reading readiness. The optimum mental age for average work in first grade reading is given

as six and one-half years or older. Below this mental age, more children failed than succeeded.³⁶ This again points out that formal reading should be delayed for many first grade pupils.

To test the value of delaying reading for pupils with low IQ's, Gates and Russell studied the progress of two paired groups. One group began formal reading after two months in first grade, the other group one semester and two months after beginning the first grade. It was reported that the experimental group revealed a "superiority at mid-year which became more pronounced at the end of the year." The conclusion was that preparatory instruction, together with the advantage of additional age, enables the dull-normal, underprivileged, socially, physically, and emotionally inferior child to read better than similar pupils who lack preparatory instruction.³⁷ The second significant conclusion evolving from the study was: "the main

³⁶ William Gray, "Summaries of Reading Investigation," Journal of Educational Research, XXXIII, 485, (1940), quoting A.I. Gates, G.L. Bond, and D. H. Russell, Methods of Determining Reading Readiness, (New York: Bureau of Publications, Teachers' College, Columbia University, 1939) p. 55.

³⁷ Arthur I. Gates and David H. Russell, "The Effects of Delaying Beginning Reading a Half Year in the Case of Underprivileged Pupils With IQ's of 75-95," Journal of Educational Research, XXXII (1939), 321-28.

sources of difficulty in learning are individual problems which must be solved as such and which are, in most cases, not removed by mere delay." Chronological age is not as important as mental age as a determining factor in reading readiness.

Delaying Formal Instruction in Reading

In reviewing the early studies in reading readiness, Witty and Kopel found they all recommended that the intricate process of reading instruction should be delayed for an indefinite period beyond the first grade level. Apparently all these studies were stimulated by the high failure rate and its direct relation to later reading success. Witty and Kopel also point out that...

Dewey was one of the first educators to contend that the primary child's body is ill-adapted structurally and physiologically for the specialized and finely coordinated act of reading and writing. While there are undoubted exceptions, present physiological knowledge, amply confirmed in recent years, points to the age of about eight years as early enough for anything more than incidental attention to visual and written language forms.³⁸

³⁸ Paul Witty and David Kopel, "Preventing Reading Disability: The Reading Readiness Factor," Educational Administration and Supervision, XXXII (1936), 413.

Over the years, others³⁹ have substantiated Dewey's contention in a number of individual studies. These investigations further contend that background, environment, and mental growth allows children to find meaning in tasks assigned. Until the process of maturation has engendered a condition for perception of words, it is impossible to have meaningful experiences in reading. This implies that many children's introduction to reading should come well beyond the chronological age of six.

³⁹G. T. Patrick, "Should Children Under Ten Learn to Read and Write?" Popular Science Monthly, LIV (1899), 384.

G. E. Partridge, Genetic Philosophy of Education (New York: Sturgis and Walton Co., 1912) 206.

E. B. Huey, The Psychology and Pedagogy of Reading (New York: The MacMillan Co., 1929) 310-312.

A. L. Gessell, The Pre-school Child (Boston: Houghton Mifflin Co., 1923) 82.

M. Johnson, Youth in a World of Men (New York: The John Day Co., 1929) 32-33.

It has been accepted that physiological and experimental maturation are related to future success in reading; and a number of authorities⁴⁰ have devised instruments to measure reading aptitude or the degree of reading readiness in children. In general, learning first grade skills is difficult for many pupils because of the complex processes involved. The difficulty may be due to lack of maturity or experience constituting lack of "readiness" to learn. The tests are devised to determine the extent to which pupils are ready to learn first grade skills, and to provide an analysis of difficulties in:

⁴⁰E. C. Deputy, "Predicting First Grade Reading Achievement", Teacher's College Contributions to Education, New York: Bureau of Publications, Columbia University, 1930. (Dissertation)

Maud Berry, "The Baltimore Reading Readiness Test", Child Education, III (1927) 222.

L. Teegarden, "Tests the Tendency to Reversal in Reading", Journal of Educational Research, XXVII (1933) 82.

J. M. Lee and W. W. Clark, "Measuring Reading Readiness", Elementary School Journal, XXXIV (1934) 656.

Gertrude Hildreth, "Reversals in Reading and Writing", Journal of Educational Psychology, XXV (1934) 6. (1-20).

M. Monroe, "Reading Aptitude Tests in Beginning Reading", Education; LVI (1935) 7.

the child's perceptual abilities to discriminate between words and between forms of letters and objects; his vocabulary comprehension; and his recall for meaningful materials presented orally.⁴¹

A Reading Readiness Test Cited as Predictive of Reading Success or Failure

Many investigations were carried out between 1932 and 1940 to determine the predictive value of reading readiness tests. One such study was reported by Kawin, who reported that the Metropolitan Reading Readiness Test administered at first grade entrance was more predictive of reading success at the third grade level than were measurements of chronological age, mental age, or intelligence quotient. However, Kawin qualifies his judgment by adding, "there are always a sufficient number of individual exceptions to deter one from predicting a child's success or failure in reading on one test alone."⁴² The study further emphasizes what factors other than the ones measured by the Metropolitan Tests are equally important

⁴¹ Witty and Kopel, op. cit. 415.

⁴² Ethel Kawin, "Individual Differences Among Pupils and Their Relations to the Reading Program", Adjusting Reading Programs to Individuals (Supplementary Educational Monographs, University of Chicago, No. 52; 1941) p. 60.

should be taken into consideration. Other investigators likewise make the same assertion that no single factor will stand alone in predicting success or failure in reading, and they add that a "constellation" of complex factors must be taken into account.

To the basic factors of chronological age, mental age, intelligence quotient and "readiness" (as measured by tests), there must be added the knowledge of other individual differences, e.g., home background, emotional and social adjustment, attitudes, physical development, interests, and needs. All authorities agree that the first step is to ascertain these differences in children and record them. Essentially this is the exact procedure followed in the Detroit Experimental Reading Readiness Program.

Reading Readiness Tests vs. Teachers' Forecasts of Pupils' Success or Failure in Reading

Considerable has been written on the predictive value of the Reading Readiness Tests and perhaps an equal amount on the validity of the kindergarten teacher's forecast. The following study made by Henig compares the two methods and draws some conclusions based upon a limited number of pupils (ninety-eight). The method for making the comparison was for each kindergarten teacher to rank the pupils in her class on their relative likelihood to succeed in learning to read in the first grade. The teachers all

accepted the following criteria: ability to talk in sentences, to follow specific directions, to retell a story, and to discriminate between word sounds; and an evaluation of the child's vocabulary. These same pupils were given the Lee-Clark Reading Readiness Tests, and the degree of correspondence between the teachers' estimates and the tests was statistically worked out.

In conclusion, Henig stated that a substantial degree of relationship exists between the reading readiness test results and the forecast of the teachers. First, the Lee-Clark Reading Readiness Test foretells with a substantial degree of accuracy the outcomes of child's first year of success with formal reading as revealed by the end of the term marks. Second, the forecasts made by teachers, understanding reading readiness techniques, have just as high a degree of predictive value.⁴³

The Question of Special Classes for Immature Six-year Olds

It may be concluded that a great deal of time and effort has been expended to determine the optimal age for children to enter the first grade and begin formal instruction in reading. Further, teachers have agreed that no single determining factor is dependable as the sole

⁴³ Max S. Henig, "Predictive Value of a Reading Readiness Test and of Teachers' Forecasts". The Elementary School Journal, I (1949) 41-46.

criterion of reading success. The chronological age of six has been found the least reliable criterion but perhaps the one most frequently used as a screening device. Otto comes to the conclusion that the sole criterion for promotion from the kindergarten to the first grade is chronological age, but once the child has been promoted, the criterion becomes almost solely the ability to read the primer adopted for that particular school or school system.⁴⁴

From their failure studies Cutright and Anderson conclude that in most instances failure at the first grade level represents a failure of the school and not of the child, and they assert that a school has the responsibility of providing educational activities other than reading.⁴⁵

Except for a lull during the war years, studies pertaining to the promotion of immature kindergarten children have increased in number in the educational literature since 1932. Earlier studies during this period usually reported the efforts of single schools or clinical investigations supervised by college professors or reading experts.

⁴⁴Henry Otto, "Implications for Administration and Teaching Growing Out of Pupil Failures in First Grade", Elementary School Journal, XXXIII (1932) 30.

⁴⁵Prudence Cutright and Walter Anderson, "Experimental Study of Pupil Failure in First Grade", Elementary School Journal, XXXIV (1934) 573.

This is not surprising as in our traditional pattern curriculum change was usually brought about in this manner. Consequently, traditional patterns of first grade reading standards throughout the country have been slow to change. However, in the past few years one study on a state-wide basis and another on a city-wide basis have been reported. (The present study of Detroit's Reading Readiness Program may be considered a third.) All three studies grew from earlier failure studies and the desire of teachers and administrators to allow a greater number of children to succeed instead of fail in their first contact beyond the kindergarten.

In a state-wide study, Russell reports the returns of questionnaires from four hundred and eighteen counties in California. He summarizes the results as follows:

1. Of the 271 returns received, forty-three per cent indicated administrative procedures and curriculum patterns of special programs for immature five- and six-year olds in their schools. Further, ten promotion plans were used for these groups and over half of the pupils spent their first three years in the first two grades beyond the post-kindergarten level. Curriculum adjustment seemed to differ in degree rather than in kind.

2. It was concluded that any effort to raise the chronological age could be considered as a negative approach. Besides developing a program suitable for this group of children that a program of public relations should be run simultaneously with the parents. Some twenty different methods of gaining understanding and support were mentioned.

3. Through the new approach the "junior primary" class, a greater flexibility of in-year

promotions seemed to result. Pupils seemed to shift from an immature group to a mature group or vice versa. A greater dependence was being placed upon teachers' judgments and various objective and subjective measures.

4. The investigation is concluded by stating that many uncertainties exist concerning the present curriculum practices and the methods to be used to inform parents of the program. From the outcome of the study the schools are trying to get financial support for additional teachers with specialized training and experience.⁴⁶

This study is one of exploration to establish a trend. It gives no evidence as to the actual benefits the immature child derives from such a program except by inference. This seems to be a striking limitation of all the studies investigated, large or small.

The study mentioned as being on a city-wide basis is reported by Steinmetz, and describes a program, in operation in Chicago, designed to attack the problem of preparing children to read before entering the first grade. Kindergarten pupils about to enter the first grade are given two tests, a test of Primary Mental Abilities⁴⁷ and the Metropolitan Reading Readiness Test,⁴⁸ to corroborate the judgment of the kindergarten teacher as to the pupil's

⁴⁶ Otto H. Russell, "Provisions for Immature Five- and Six-Year Olds in California Schools", California Journal of Elementary Education, XV (1948) 220-223.

⁴⁷ L. L. Thurstone and Thelma Gwinn Thurstone, Tests of Primary Mental Abilities (for ages five and six), Chicago: Science Research Associates, 1946.

⁴⁸ Gertrude Hildreth and Nellie Griffiths, Metropolitan Reading Tests, Published by World Book Co.; Yonkers-on-Hudson, New York: 1933.

readiness for formal instruction in reading. On the basis of the various measures of maturity obtained from the tests and the teachers' judgments, the pupils are grouped in four classifications: definitely ready, probably ready, probably not ready, and definitely not ready. The group, "definitely not ready", is classified as 1C. For the year 1946-47 38,518 pupils were tested and a total of 7,784 pupils were classified as 1C. This is approximately twenty per cent which is roughly comparable to the proportion of first grade failures found on the age-grade progress studies of 1938-39.

At the end of the first semester, nine per cent of the 1C group had already been promoted to the regular 1B grade, seventy-seven per cent were to be placed in the regular 1B grade at the start of the second semester, and approximately thirteen per cent were still not ready for formal reading. The program emphasized the need for flexibility, as individual children were distributed along a great range of readiness. Class organization should take into consideration the need for individual pupils to be shifted from group to group.

In conclusion, Steinmetz emphasizes the following points. First, there is extreme need for parent education to be carried on simultaneously with the Reading Readiness Program. Far too often parents are apt to measure the child's intellectual ability by his success in

learning to read. It must be pointed out to them that intellectual ability is not the sole criterion for reading or vice versa. Second, flexibility and variety are constant factors that must be considered throughout the program in the schools. Third, a critical evaluation shows conclusively that the most important factor in bringing the immature pupil to the point where he is ready to read is the teacher.⁴⁹

The Sex Factor in Reading Readiness

As a group do girls score higher on reading readiness tests than boys? Most elementary teachers seem to agree that, in general, boys are somewhat slower to read than girls of the same age group. In searching the literature for data related to the above question the writer found only one sizable study although the sex factor was mentioned in many small clinical studies. The smaller studies will not be cited, as they consist of subjective judgments made by teachers when discussing some other phase of the reading readiness problem. It is rather important to note, however, that the one large study reported substantiated the subjective judgments of teachers. Carroll experimentally tested 1,100 post-kindergarten

⁴⁹ Kathryn Steinmetz, "Reading Readiness and Grouping of Pupils in the Primary Grades", Basic Instruction in Reading in Elementary and High Schools, Supplementary Educational Monograph published in conjunction with the School Review and The Elementary School Journal, X (1946), 45-49.

children with a variety of reading readiness tests, and found that part scores and total scores were in favor of the girls on twenty-four of the tests as compared to only fourteen for the boys. A statistically significant sex difference was found to exist by figuring the critical ratio of the means of the distributions. Since this difference did exist before formal reading took place, it can reasonably be expected to exist later and to be reflected in reading achievement.⁵⁰

From the evidence submitted in Carroll's study and the subjective judgments of Detroit elementary teachers, it was decided early in the study to record achievement scores and ratings of boys and girls separately for both the experimental and control groups under investigation. In this way, boys of the experimental reading readiness group may be compared directly with boys of the control group and the girls in a like manner. In this way one variable may be controlled to a great extent.

Summary

In summary teachers, administrators, and parents have struggled long to improve reading and to bring about

⁵⁰ Insistence on the part of Detroit first grade teachers for an instrument that would reasonably predict success or failure of post-kindergarten children in reading was mainly responsible for the present experimental program. The small group of teachers who tried out the test in its experimental form was instrumental in "selling" the program to principals.

a better understanding of the complex instructional problems involved. In reading, as in other parts of the curriculum, evaluation is the process by means of which the individuals concerned estimate the worth-whileness of the program and plan the next steps. Research has not failed in investigation of the multitudinous problems connected with reading, but perhaps has, somewhat, in making the findings meaningful and available to teachers and administrators. It has been pointed out that classroom problems of teachers and administrators are not always fully understood by the research worker. For the advances which have been made in the field, credit must be given equally to the experimental clinicians, teachers, administrators and to the general public who, through tax support, have made the advancement possible.

The fact that we have reading problems existing in varying degrees in our classrooms today does not imply that educators have been slow in recognizing these problems or have done nothing to remedy them over the years. In fact, more than one hundred years ago, Horace Mann wrote the following statement to the secretary of the Board of Education in Massachusetts:

I have devoted especial pains to learn, with some degree of numerical accuracy, how far the reading, in our schools, is an exercise of the mind in thinking and feeling, and how far it is a barren action of the organs of speech upon the atmosphere. My information is derived, principally, from the written

statement of the school committees of the respective towns,--gentlemen who are certainly exempt from all temptation to disparage the schools they superintend. The result is, that more than eleven-twelfths of all the children in the reading-classes, in our schools, do not understand the meaning of the words they read; that they do not master the sense of the reading-lessons, and that the ideas and feelings intended by the author to be conveyed to, and excited in, the reader's mind, still rest in the author's intention, never having yet reached the place of their destination.⁵¹

The above quotation does not sound too different from Henry's⁵² evaluation of the reading ability of the secondary students in 1946, except that Mann did not mention any particular reading grade level. However, the problem was recognized and indicates that educators in that period were concerned with the reading ability of their students. For several reasons, direct comparisons between the reading ability of students in Mann's period and our present student population are not easily or readily made. First, testing materials used in that period were not standardized and could not be reproduced for use in our schools today. Second, the curriculum, the type of reading, and the time allotments have undergone many adjustments over the years. Third, but not least, our student population

⁵¹Horace Mann, "Annual Report of the Secretary of the Board of Education in Massachusetts," 1837-38, The Elementary School Journal, XXIII (1922) 257.

⁵²Henry, op. cit., p. 74.

has radically changed. In Mann's time, the school population was much smaller and at the same time much more selective.

Figures on school enrollment for Mann's period are not readily available but the following table will indicate the tremendous increase in Detroit's population since 1874, seventy-five years ago.

TABLE II
COMPARISON OF DETROIT'S SCHOOL POPULATION
IN 1874 TO THE PRESENT POPULATION, 1949

Population	Number Enrolled (1874)	Number Enrolled (1949)	Percentage Increase
Children age 5-20 in Detroit	33,772	370,849	998
Pupils enrolled in public schools	8,956	226,078	2,524
Pupils enrolled in high school	125	40,591	32,133
Pupils in kindergarten	--	36,125	36,125

Detroit's schools are rapidly becoming a cross section of society; its pupils represent all types of mental abilities. As a result of this change, greater and greater numbers of pupils are being retained in the high school. Attendance laws and economic conditions have brought about a manifold increase in the holding power of the high school. This fact alone has introduced tremendous

problems in education. Reading, having an integral part in our curriculum at all levels, must be included and listed as one of the problems that must be met by present day educators. Failure to recognize the problem is costly to all concerned in terms of taxpayers' money and in terms of students' adjustment and success.

It is the opinion of the writer that no teacher, administrator, or parent can conscientiously question the important role that reading has played and is now playing in our democracy nor the countless hours spent in scientific investigation to find better methods of instruction for the pupils enrolled at all levels in our schools. The stand is further taken that it is in the public interest for teachers and administrators to be involved in classroom research as well as instruction.

The view is held that the prestige and worth of a teacher should not rest on instruction or research alone but upon the combination of the two exhibited in the classroom. It is extremely hard to see how one can function without the other. The fact that this relationship in the past has not been outstanding does not indicate that it cannot become important in the future. If an explanation be sought for weaknesses of the past, it is the opinion of the writer that communication and lack of common understanding between interested groups have been the greatest stumbling blocks to progress. Teachers as a rule have not

been too greatly involved in research; and in turn, research workers have not fully comprehended the teachers' problems within the classroom. In general, teachers have not been encouraged to keep careful records of their classroom problems as they are encountered, nor have they been encouraged to submit their experimental solutions. The average classroom has not been viewed too favorably as a laboratory, at least in the past, for scientific study. Such study has been mainly left to research workers or experts, who experiment in a laboratory setting and report the findings to teachers in rather technical terms. This observation applies to the general field of education as well as the more specific problem of reading instructions. Failing to involve more teachers in research has been extremely unfortunate, for the classroom is the most realistic laboratory.

The implication and scope of the general reading problem in our national population at all levels is exceedingly challenging, broad, and complex. Individuals and groups from practically all walks of life have expressed interest and concern from the time it was found that a series of written symbols would convey the same meaning as a spoken word. As a result of this extreme concern, both on the part of the general public and educators, a great deal of investigation has taken place regarding type of reading programs offered in our schools.

Many investigations have helped clarify school policy, while others have pointed out inadequacies and recommended changes that should be incorporated for a changing school population. On the whole, they have undoubtedly helped improve communications between the school, the administration, and the public.

The premise that reading plays a dominating role in education and is therefore a significant subject for an inquiry, is proposed by the writer. It is further held that no single individual or small group of experts can cope with the problem in its entirety. Therefore the position is taken that any data scientifically gathered, interpreted, and contributed in the attempt to throw light on any phase of the general problem of reading are worthwhile and useful.

The study under consideration and investigation, An Experimental Program of Reading Readiness, represents only one small segment of the general area of reading, but if adequately handled will contribute to a better understanding of the total field. Chapter II discusses the Pilot Study covering the first four developmental stages of a program designed to meet the needs of a post-kindergarten children designated as a reading readiness group. It will delineate and define the problems faced by the Reading Readiness Committee in devising a suitable Reading Readiness Test, a Personality Inventory, and the evaluation of the tentative program tried out in a few experimental schools.

CHAPTER II

THE PILOT STUDY

Introduction

It may be stated conclusively that reading authorities, teachers, and principals at least agree on three issues concerning the first year of instruction beyond the kindergarten level. First, grade failure is experienced by far too many children in their first contact with the traditional first grade curriculum. Second, the primary cause for failure at this level may be attributed to the fact that a rather large number of post-kindergarten children are not ready to read. Third, if an educational problem of any kind is recognized by one or more of the three groups most vitally concerned, a direct attack or effort should be made to improve the educational situation with respect to that problem. If the foregoing assumptions be accepted, the problem of reading at the 1B level then becomes a joint responsibility of teacher, principal, and parent.

The teacher must assume the responsibility of changing methods and materials used within the classroom to meet the needs of the children. The principal must understand and sanction the teacher's philosophy and give

administrative approval by formulating new school policy at this level. The principal's role is vital and essential, in attempting to bring about educational change or betterment, on two counts: First, the teacher must be given the security of administrative backing in terms of a formulated school policy; and second, the principal must inform the parents of any change from the traditional school pattern. Actually, the recognition and analysis of the above problem by teachers and principals and through the process of informal discussion over a period of years is directly responsible for the incipency of the Detroit Reading Readiness Program.

One Class, One School Beginning

Early in 1942, a principal¹ and a first grade teacher² decided that a reading readiness room might prove useful in an attempt to eliminate some of the reported 1B and 1A failures that had occurred in large numbers in their school over the years. A proposed plan was submitted to the reading supervisor³ and supervising principal⁴ of the school district for approval of the tentative experimental plan.

¹Harry Gragg, Principal of the Columbian School.

²Clarice Schultz, First Grade Teacher, Columbian School.

³Eveline Waterbury, Elementary Supervisor of Reading, Division of Instruction.

⁴Inez E. Caswell, Supervising Principal of the District.

The proposal was approved and endorsed not only by the individuals directly concerned, but also by other teachers and principals who had similar plans in a "talking stage". In the fall of the same year, the first reading readiness group in the school began without materials or benefit of a screening test.

Because of the city-wide interest and concern of teachers and principals in reading at this level, the Superintendent⁵ appointed a committee⁶ to study the problem, devise a reading readiness test that would compare favorably with the commercially printed tests, and make recommendations for a reading readiness program that could be administered in any elementary school which would desire to experiment with such a program. After carefully considering the charge by the Superintendent, the committee decided on a pilot study to determine the predictive value

⁵ Warren E. Bow, Superintendent of Detroit Public Schools.

⁶ Reading Readiness Committee consisted of: Raoul Gatien, Instructional Research; Harry J. Baker, Psychological Clinic; Eveline Waterbury, Supervisor of Reading; Elizabeth Cullen, Supervisor of Kindergarten; Paul Voelker, Special Education; Clarice Schultz, Teacher of 1B reading; Evelyn Koppelman, Teacher of 1B reading; John S. Thomas, Supervising Principal; Bernice Leland, Psychological Clinic. (Elmer McDaid, Instructional Research, replaced Raoul Gatien in 1943.)

of the reading readiness test and to determine methods and techniques for securing pertinent data concerning the effectiveness and workability of an experimental reading readiness program in a limited number of schools.

Purpose of the Study

The Pilot Study was prompted by studying the observable characteristics and results of the test and the recommended reading readiness program in action in a limited number of schools. The purposes of the committee may be analyzed as follows:

1. To administer the newly devised Detroit Reading Readiness Test under regular classroom conditions in nineteen elementary schools.
2. To determine the predictive value of the test for the purpose of sorting children into potential readers or non-readers.
3. To determine through item analysis the relevant items and to exclude all irrelevant items.
4. To secure and evaluate information concerning the test, the child's personality inventory (rating scale) and teachers' and principals' reactions and opinions to the program.
5. To determine whether the program would be workable in all types of elementary schools. The data secured was to enable the committee to recommend continuing or discontinuing the program on a city-wide basis.

Developmental Stages to be Considered

The Pilot Study will be analyzed and described in the chronological order of its development as occurring during the period from September 1942 through June 1946. The above dates are defined precisely for the over-all pilot study. However, the intermediate stages are designated by approximate dates, as some overlapping occurred. Such approximate dates are significant only as reference points.

1. Stage One may be roughly defined as beginning in September 1942 and extending through the spring of 1943. This period was characterized by one school starting on its own experimental reading readiness program, many schools talking of the possibility, and the Superintendent appointing a committee to study the problem.

2. Stage Two began in September 1943 and extended through June 1944. This stage included the work period when the original test was devised and printed in the form of three booklets consisting of 190 separate items.

3. Stage Three covered a period of tryout and revision of the test from September 1944 through June 1945. Nineteen elementary schools were involved in this study.⁷

⁷The children were tested in groups of eight, each child in two sittings of about one hour each. The test was administered by several teachers and supervisors who had been trained in the procedure to insure a fair degree of uniformity in giving the directions. All scoring and analysis was done by the Department of Instructional Research. A complete report of this part of the pilot study was made to the committee.

At this time, data were collected from children, teachers, and principals, in order to determine the value of the test in predicting⁸ later success or failure in reading. Further, the usability⁹ of the test was determined.

4. Stage Four is actually referred to as the actual Pilot Study and spanned the period from September 1945 through June 1946. This period was characterized by the completion of the revised Detroit Reading Readiness Test and the setting of the recommended program in actual operation in fourteen experimental schools. Teachers' and Principals' reactions to the overall program were evaluated during this period.

It was anticipated that the Pilot Study would prove useful in two ways. First, it would serve as demonstration of actual worth of the test, the personality inventory, and the program in an actual classroom situation. Second,

⁸ Predictive value refers to the validity of the test. Does the test actually measure what it purports to measure? Whether the Detroit Reading Readiness Test is valid depends upon the extent to which it succeeds in measuring future reading ability in children's ability to learn to read.

⁹ The degree to which the test can be successfully employed by classroom teachers and school administrators without undue expenditure of time and energy (i.e., usability means practicability). Whether a test is usable by average teachers depends upon several factors; i.e., ease of administration, ease of scoring, ease of interpretation and proper mechanical make-up.



the findings themselves, if accepted as fairly representative of children's, teachers', and principals' reactions should be used as a basis for the committee to make recommendation for continuing or discontinuing the program. The remainder of this chapter will be devoted to describing and reporting the findings of Stages Three and Four of the Pilot Study.

The Validity and Other Aspects of the Test

All 1B children were tested in the nineteen volunteer elementary schools and the following data were collected during the course of the semester:

1. Scores from the regular Detroit Reading Test 10, Form C,¹⁰ and Reading 1B Experimental, Form A,¹¹ were secured at the regular testing periods in the semester.
2. Raw scores from the Beginning First Grade Intelligence Test¹² and letter (mental) ratings¹³ for each child

¹⁰ Appendix B.

¹¹ Appendix B.

¹² Appendix B.

¹³ Mental Ratings are derived from the scores achieved on the Detroit group intelligence test given to all kindergarten pupils. Children are classified in intelligence as A, B, C⁺, C, C⁻, D, and E.

A means the brightest eight per cent of children of the same age.

B means the next twelve per cent of children of the same age.

were secured from the Psychological Clinic and the child's school record forms.

3. Chronological age and the number of terms spent in kindergarten were obtained from the child's Permanent Record Form 35,¹⁴ with added notations of any pronounced physical defects cited.

4. The teacher's nineteenth week rating of the child's reading achievement was recorded on a five point scale:¹⁵
 UF, unsatisfactory--failed; S-, barely satisfactory; S, satisfactory; S/, very satisfactory; E, excellent.

5. Score from the Reading Readiness Test, which was composed of 190 separate items divided into three distinct booklets:

Book I

- Test 1. Vocabulary (naming)
 2. Visual Perception of Forms
 3. Motor Control
 4. Auditory Discrimination (rhyming)

Book II

- Test 5. Immediate Recall
 6. Skill with Hands
 7. Vocabulary (use)
 8. Auditory Discrimination (Initial Sounds)
 9. Delayed Recall

C/ means the next eighteen per cent of children of the same age.

C means the average twenty-four per cent of children of the same age.

C- means the next eighteen per cent of children of the same age.

D means the next twelve per cent of children of the same age.

E means the dullest eight per cent of children of the same age.

¹⁴ See Appendix A.

¹⁵ See Appendix B.

Book III

- Test 10. Visual Retention of Forms
- 11. Vocabulary (Sentences)
- 12. Auditory Discrimination (Blending)
- 13. Tendency to Proceed in Reverse

Besides the groupings by books, provision was made to combine various subtests into the following five classifications:

Vocabulary: subtests 1-7-11
 Visual: subtests 2-10
 Motor: subtests 3-6
 Auditory
 Discrimination: subtests 4-8-12
 Recall: subtests 5-9

Although approximately 800 children were tested in the nineteen elementary schools, only 446 were used in the study. The loss of the remainder of the cases was due to transfer, absence, and lack of complete data on individual children. In some cases intelligence ratings were lacking; in others, one or more of the in-term reading tests had been missed. When the final ratings of the children were compiled, it was found that fifteen per cent of the 446 cases for whom complete data were available had failed in the first semester of reading. A study and analysis of the failures were made to determine which items on the test seemed most discriminating in screening out potential failures in the future. As one result of this study, the Reading Readiness Test was further revised.¹⁶ The revised test consists of one booklet with fifty-six separate items

The following table gives the correlations between the scores achieved by the 446 children on the Detroit Reading Readiness Test and the Criterion.

TABLE III
CORRELATIONS BETWEEN DETROIT READING READINESS TEST (EXPERIMENTAL) SCORES AND THE CRITERION

Detroit Reading Readiness Test Original Scores-Subtests and Parts*	N	Criterion Reading Test 10C Plus 1B
Subtests:		
2. Visual Perception of Forms	446	.48
3. Motor Control	446	.48
5. Immediate Recall	446	.40
9. Delayed Recall	446	.43
10. Visual Retention of Forms	446	.34
11. Vocabulary (e) Sentences	446	.32
<hr/>		
Book I (Tests 1, 2, 3, and 4)	446	.43
Book II (Tests 5, 7, 8, and 9)	446	.46
Book III (Tests 10, 11, and 12)	446	.41
Total Books I, II, and III	446	.58
<hr/>		
Vocabulary:		
Subtests 1, 7, and 11	446	.36
Visual:		
Subtests 2 and 10	446	.51
Motor Control:		
Subtest 3	446	.48
Auditory:		
Subtests 4, 8, and 12	446	.31
Recall:		
Subtests 5 and 9	446	.46
<hr/>		
Subtests: 2, 3, 5, 9, and 10		.59

*Subtests 1, 4, 7, 8, and 12 were not correlated separately with the criterion. Subtests 6 and 13 of the original test were not scored.

It was found that the correlation between the experimental version of Detroit Reading Readiness Test and Detroit Reading Test 10C plus 1B Experimental was .59. The question now may be asked, how high, qualitatively is the validity indicated by the coefficient of .59. Apparently there is no simple answer to this question. Attempts have been made to describe the degree by such adjectives as "high", "marked", or "low"; but they are vague and often misleading. These adjectives have only a relative meaning. Odell¹⁷ proposes to give a definite mathematical interpretation of the degree of relationship implied by a coefficient of correlation of a given magnitude by using the formula $K = \sqrt{1-r^2}$. This is a measure of the departure from perfect agreement or correlation. By substituting .59 in the above formula, $K = \sqrt{1-.59^2}$, $= \sqrt{1-.35}$, $= \sqrt{.65}$, $= .80$. This means that the departure from perfect agreement is eighty per cent. Stated in another way, the correlation between the Detroit Reading Readiness Test (Experimental version) and the combined criterion is only twenty per cent better than chance.

In order to improve the test, a study¹⁸ of each individual item was made on each of the subtests. This was

¹⁷C. W. Odell, An Introduction to Educational Statistics (New York: Prentice-Hall, Inc., 1946), p. 142.

¹⁸See Appendix D.

undertaken to determine the discriminating items. By retaining the discriminating item and casting out the poor items, the tests were rescored. The discriminating items retained comprise the Revised Detroit Reading Readiness Test.

TABLE IV

CORRELATIONS BETWEEN THE REVISED DETROIT READING READINESS TEST AND READING TESTS 10C AND 1B

School	N	Median I.Q.	Q ₁ - Q ₃	Corre- lation	Percentile Rank*
F, E, and L	68	108.5	95.0-124.8	.48	Av. 77
G	35	107.5	93.5-117.9	.48	74
A	40	87.5	77.3- 92.3	.50	2
O, R, Q, N, P, and M	67	94.8	87.5-109.6	.62	Av. 17
B	38	97.7	89.3-111.0	.64	29
C	49	110.4	96.5-121.6	.64	76
J	29	106.4	89.6-113.4	.65	17
S, I, and H	48	97.1	87.8-106.5	.66	Av. 38
K	29	107.3	91.0-113.8	.71	37
D	43	109.2	97.9-119.6	.77	92
All Schools	446	101.4	89.7-114.1	Md. .64	Av. 45.9

* Rank of the school as determined by the Psychological Clinic, 1943.

By revising the test slightly better correlation is obtained, .64 against .58. Substituting in the formula $K = \sqrt{1-r^2}$ it was found that the departure from agreement is seventy-seven per cent or twenty-three per cent better than change. This seems to show that the revised test is more predictive but not to any great degree.

It should be noted that in one school the correlation is .77 whereas in two others, only .48. Where the number of cases in any one school fell below twenty-nine the school

was grouped with another.

TABLE V

CORRELATIONS BETWEEN THE REVISED DETROIT READING READINESS TEST AND DETROIT READING TESTS 10C AND 1B BY SCHOOLS

School	N	Median I.Q.	Q ₁ - Q ₃	Corre- lation
A B C D	173	100.0	89.4-115.1	.61
E F G H I J K L	188	105.3	91.3-115.1	.65
M N O P Q R S	85	95.8	97.4-109.8	.62
All Schools	446	101.4	89.7-114.1	.62

Table V gives data for three groups of schools which were classified on the following basis: Group 1, the four largest schools; Group 2, the next smallest schools in which no school reported less than twenty cases and for which complete data were available; Group 3, all schools which completely reported less than twenty cases per school. The median correlation for these groups is .62.

In this reading study, as in others, reading tests constitute the principal criteria. In examining the final

reading scores of the 446 children, it was found that fifteen per cent of all children failed in reading. However, only seventy-four per cent of all children scoring at or below the 10th percentile in the final reading tests failed. If the determination of reading failure were very close and uniformly allied with the reading test scores obtained at the end of the semester, in this case, 100 per cent of the children falling at or below the 10th percentile should fail. This indicates that the reading test score criterion is by no means perfect.

In the attempt to secure a better criterion, an innovation was tried. Teachers were asked to consider each individual pupil who had taken the reading readiness test and to rate him as to his success in reading at the end of the following semester in 1B.¹⁹ To these ratings weights were assigned, and the weighted value was added to the total reading achievement score. The weights assigned to the ratings were as follows:

- E -- Excellent -- assigned weight 40
- S/ -- Very Satisfactory -- assigned weight 30
- S -- Satisfactory -- assigned weight 20
- S- -- Barely Satisfactory -- assigned weight 10
- UF -- Unsatisfactory -- Failing -- assigned weight 0

In addition the 8th week reading test score was added to the

¹⁹See Appendix B.

criterion. The Reading Readiness Test (Revised) scores were then correlated with this revised criterion and the correlation for the 446 cases was "r"=.79 against r=.64. Table Vi makes this comparison by schools.

TABLE VI

CORRELATIONS BETWEEN THE REVISED DETROIT READING READINESS TEST PLUS THE 1B (8TH WEEK) READING TEST (WEIGHTED) AND DETROIT READING TESTS 10C PLUS 1B (18TH WEEK) PLUS THE TEACHERS RATING BY SCHOOLS

School	Revised Reading Readiness and 10C Plus 1B			Revised Reading Readiness Plus 8th Week 1B and 10C Plus Teacher's Rating	
	N	Med. IQ	"r"	N	"r"
F, E, and L	68	108.5	.48	68	.60
G	35	107.5	.48	35	.60
A	40	87.5	.50	40	.61
O, R, Q, N, P, and M	67	94.8	.62	67	.78
B	38	97.7	.64	38	--
C	49	110.4	.64	49	.89
J	29	106.4	.65	29	.80
S, I, and H	48	97.1	.66	48	.81
K	29	107.3	.71	29	.90
D	43	109.2	.77	43	--*
All Schools	446	101.4	Md.64	446	Md. .79

* No 1B (8th week) scores available for B and D.

By adding the teachers' weighted ratings to the criterion the correlation was increased measurably. This rating came too late in the semester to be of any practical value. However, it was considered important enough for the committee to consider moving the time of this rating from the 19th week to the end of the 8th week and adding it to the child's reading readiness score. This suggestion was never carried out as the regrouping of children at this period would not be practical. In this way the screening process would be

more predictive. A further explanation of the increased correlation is probably due to the fact that reading tests correlate highly with each other. It is possible, however, that the higher correlation obtained by including the 8th week reading test and teachers' judgments as a part of the reading readiness test may warrant its inclusion in the future. By substituting the higher $r .79$ in the formula $K \sqrt{1-.79^2}$, $K = 61$ per cent departure from perfect agreement or thirty-nine per cent better than chance. By adding the 8th week test scores the predictive value has been improved; but this method is rather hard to handle in a practical school situation. The teachers and administrators felt it entailed too much testing, clerical work, and shifting of classes.

Primarily the LB teacher is interested in how accurately a reading readiness test will select children who need a reading readiness program. Therefore, the charge to the committee by the Superintendent was to construct a test as good or better than any of the commercially printed tests. In response to this charge, the Detroit Reading Readiness Test was devised. By correlating the scores obtained from this test with those scores of the two reading achievement tests previously mentioned, the committee demonstrated that their test would meet the requirement set.

A number of commercially printed reading readiness tests have been correlated with reading achievement tests.

These are shown in Table VII. The original table was devised by Robinson and Hall in their research on the predictive value of reading readiness tests.²⁰ However, the author has taken the liberty of adding Detroit's study to the bottom of the table for comparison purposes. The evidence seems to warrant the following conclusions:

(1) The median correlation found to exist between reading readiness tests and the various criteria in the studies reported in Table VII is .58.

(2) The correlations for the Detroit Reading Readiness Test (Revised) are as high or higher, depending upon which grouping of schools is determined as most representative, than the average commercially printed available reading readiness test.

(3) No one reading readiness test seems consistently better than the Detroit Reading Readiness Test.

Robinson and Hall explain Table VII very simply by giving the following explanation of the first entry:

Calvert made a study of 746 children who were entering rural school in Kern County, California. He used two different reading tests as criteria of reading success. He found that the Metropolitan Reading Readiness tests correlated .56 with the Gates Primary 1 Reading test and correlated .63 with DeVault Reading tests, teacher's ratings, or intelligence tests in his study. In the various studies

²⁰ Francis Robinson and William Hall, "Concerning Reading Readiness Tests," (Ohio State University Press: Bulletin of the Ohio Conference on Reading No. 3, March, 1942.) p. 4-5.

TABLE VIII

VALIDITY OF READING READINESS IN PREDICTING READING SUCCESS IN 1B

Source	N	Group Characteristics	Criteria	Reading Readiness								
				Gates	Lee-Clark	Metropolitan	Monroe	Stone-Grover	Van Waggenen	Detroit Reading Readiness	Detroit (Revised) R.R., Reading 10C and Exp. 1B	Detroit (Revised) R.R., Reading 10C and Exp. 1B., plus Teachers' ratings
Calvert	746	Entering children rural Calif.	Gates Pr. I DeVault Pr.	-- --	-- --	.56 .63	-- --	-- --	-- --	-- --	-- --	-- --
Dean	116	First graders Billings, Mont.	Metropolitan Achievement	--	--	.59	.41	--	--	--	--	--
Doty	240	12 classes	Gates Pr. 1,2,3 Gray Oral R. Par. Teacher rating after 150 days	.52 .38 .53	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --
Fitzgerald	40	1 Class in N. C.	Gates Pr.	--	--	.68	--	--	--	--	--	--
Foster	95	Med. IQ 111; Oak Park, Ill.	Metropolitan Achievement	--	--	.37	.38	--	.46	--	--	--
Gates	156	Entering First Grade Conn.	Gates Pr. 1,2,3 Teacher's Est.	.70 .56	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
Gates	97	N. Y. C.	Gates Pr. 1, 2, 3	.71	--	--	--	.62	.52	--	--	--
Gates	173	8 N. Y. C. classes	Gates Pr. 1, 2,	.71	--	--	--	--	--	--	--	--
Grant	260	Med. IQ 93, Cincinnati	Gates Pr. 1,2,3 Metro. Pr. 1 or DeVault Pr. 1	-- --	-- --	.64	--	--	--	--	--	--
Lee, Clark	100	Los Angeles	Gates Pr. 1,2,3	--	.54	--	--	--	--	--	--	--

			after 150 days	.53	--	--	--	--	--	--	--	--
Fitzgerald	40	1 Class in N. C.	Gates Pr.	--	--	.68	--	--	--	--	--	--
Foster	95	Med. IQ 111; Oak Park, Ill.	Metropolitan Achievement	--	--	.37	.38	--	.46	--	--	--
Gates	156	Entering First Grade Conn.	Gates Pr. 1,2,3 Teacher's Est.	.70	--	--	--	--	--	--	--	--
				.56	--	--	--	--	--	--	--	--
Gates	97	N. Y. C.	Gates Pr. 1, 2, 3	.71	--	--	--	.62	.52	--	--	--
Gates	173	8 N. Y. C. classes	Gates Pr. 1, 2,	.71	--	--	--	--	--	--	--	--
Grant	260	Med. IQ 93, Cincinnati	Gates Pr. 1,2,3 Metro. Pr. 1 or DeVault Pr. 1	--	--	.64	--	--	--	--	--	--
Lee, Clark and Lee	100	Los Angeles Los Angeles Burbank, Calif.	Gates Pr. 1,2,3 Lee-Clark Pr. Lee-Clark Pr.	--	.54	--	--	--	--	--	--	--
				--	.49	--	--	--	--	--	--	--
				--	.68	--	--	--	--	--	--	--
Monroe	85	Evanston, Ill. Sch.	Gates Pr. 1	--	--	.52	--	--	--	--	--	--
Peck and McGlothlin	100	Texas, Av. 6 yr. 9 mo. C.A.	Metro. Gen. Ach. Teachers' Marks	--	.62	--	--	--	--	--	--	--
				--	.55	--	--	--	--	--	--	--
Senour	80	E. Chicago, Ind.	Gates Pr. 1,2,3	--	--	.53	--	--	--	--	--	--
Stone-Grover	100	"Unselected cases"	Lee-Clark Pr.	--	--	--	--	.62	--	--	--	--
Wright	203	About 60% of 1B students in city	Teacher's Marks	--	.44	.61	--	--	--	--	--	--
	194		Teacher's Marks	--	--	.62	--	--	--	--	--	--
	203		Gates Pr. 1,2,3	--	.51	.63	--	--	--	--	--	--
	194		Gates Pr. 1,2,3	--	--	.44	--	--	--	--	--	--
		Av. IQ of 446 in this group 101.4	Reading 10C 1B Exp.	--	--	--	--	--	--	.58	--	--
Detroit Reading Readiness Committee	446	Av. IQ of 446 in this group 101.4	Reading 10C 1B Exp. and Teacher's Rtg.	--	--	--	--	--	--	--	.64	--
		Av. IQ of 446 in this group 101.4	Reading 10C 1B Exp. (8th and 18th) and Teacher's Rtg.	--	--	--	--	--	--	--	--	.79

listed, the reading readiness tests were usually given during the first month of school and the reading achievement tests at mid-year or at the end of the first year of schooling. (Detroit procedure on the pilot study conformed to this pattern)

The typical (median) correlation in Table VII between a reading readiness test and a measure of reading success (reading test or teacher's grades) is .58. Let us assume that both the reading readiness and reading achievement tests produce similar and normal distributions of scores between zero and one hundred. If several pupils each score fifty on the reading readiness test, then one can predict that at the end of the year their reading achievement scores will most probably (fifty per cent of the time) be between forty-one and fifty-nine and will rarely (in less than one per cent of the cases) be less than eleven or more than eighty-nine.²¹

By following the above illustrations it can be seen that such a test is better than mere guessing (twenty per cent better than chance). However, one must still be extremely cautious, as marked errors may still be made by placing children in reading or reading readiness groups on the basis of the test alone. Certainly a test should not be trusted implicitly in the classification of all post-kindergarten children. The authors of the above studies cited point out that children who make high scores on reading readiness tests will almost certainly learn to read during the first year and those who make extremely low scores will certainly fail in reading the first year. However, we still have errors in classification of children falling or scoring in the middle range.

²¹
Ibid., p. 3.

In a failure study, Calvert found that children scoring over eighty on the Metropolitan Reading Readiness Test are practically certain to succeed in reading, and those scoring below forty are practically certain to fail. Further, Monroe found that the highest twenty per cent on her tests all became above average readers, while the lowest twenty per cent scored in the lowest quartile in reading.²²

Table VIII reveals the fact that of the 446 cases studied in Detroit, sixty-two per cent of the children scoring at or below the 10th percentile in reading readiness also scored at or below the 10th percentile in reading.

TABLE VIII

PERCENTAGE OF PUPILS AT OR BELOW VARIOUS PERCENTILE POINTS
IN READING ACCORDING TO VARIOUS PERCENTILE
PLACEMENTS IN READING READINESS

At or Below Reading Readiness Percentile	Percentage Scoring At or Below Reading Percentiles		
	10th	20th	30th
10th	62	79	88
15th		62	78
20th		54	70

²² Robinson and Hall, *op. cit.*, p. 6, quoting E. T. Calvert, "Reading Accomplishment in Beginning Reading," California Journal of Elementary Education, VI (1937) 34-44 and Marian Monroe, "Reading Aptitude for the Prediction of Success and Failure in Beginning Reading," Education, LVI (1936) 7-14.

The preceding table is read: Of all children scoring at or below the 10th percentile in reading, seventy-nine per cent scored at or below the 20th percentile in reading, and eighty-eight per cent scored at or below the 30th percentile in reading. Other percentages revealed on the table may be read in a similar manner.

A more accurate concept of how the Detroit Reading Readiness Test (Revised) will actually function in the schools may be gained by inspecting Tables IX, X, and XI. In Tables IX and X reading test scores are disregarded and only the children who actually failed in reading are considered.

TABLE IX

PERCENTAGES OF PUPILS FAILING BELOW SPECIFIC READING READINESS (REVISED) SCORES FOR ALL 446 PUPILS, AND FOR THE SIXTY-EIGHT PUPILS WHO FAILED

All Pupils		68 Failing Pupils	
Scoring Below	Approximate Percentage of Failing Group	Scoring Below	Approximate Percentage of Failing Group
21	64.0	21	26.0
25	58.0	25	31.0
29	49.0	29	44.0
33	40.0	33	50.0
37	32.0	37	60.0
41	29.0	41	76.0
45	25.0	45	85.0
49	22.0	49	93.0

The above table is read in the following manner. Of all pupils (446) who took the Reading Readiness Test at the

beginning of the semester, sixty-four per cent of those who scored below twenty-one failed at the 1B level, while only twenty-two per cent of those who scored below forty-nine failed. Considering only sixty-eight failing children it was found that twenty-six per cent of them scored below twenty-one on the Reading Readiness Test, while ninety-three scored below forty-nine. Other scores and percentages may be read in the same way.

TABLE X

VARIOUS PERCENTILE SCORES FOR DETROIT READING READINESS TEST
(REVISED) AND PERCENTAGES FAILING IN READING ABOVE
AND BELOW VARIOUS PERCENTILES
(N = 446)

Reading Readiness (Revised)		Approximate Percentage Failing in Reading	
Percentile	Scores	Percentage of Those Who Scored	
		Above	Below
90	56.8	0	15
80	53.6	2	0
70	50.7	3	0
60	47.8	3	0
50	44.7	5	22
40	41.3	6	28
30	37.6	0	30
20	33.4	0	39
15	30.0	0	46
10	26.4	0	56
5	21.3	0	62
0	0	15	0

The above table is read as follows: All children scoring above fifty-six stood at the 90th percentile in their group. Children scoring at twenty-one stood at the 5th percentile. At the right side of the table it is revealed that no pupils scoring at or above the 90th percentile failed

in 1B reading, while fifteen per cent scoring below the 90th percentile failed. Six per cent scoring at or above the 40th percentile failed in reading, while twenty-eight per cent scoring below the 40th percentile failed.

TABLE XI

VARIOUS PERCENTILE SCORES FOR DETROIT READING READINESS TEST (REVISED) AND DETROIT READING TESTS 10C PLUS 1B (EXPERIMENTAL 18th WEEK) 446 CASES

Reading Readiness		Reading 10C Plus 1B	
Percentile	Scores	Percentile	Scores
90	56.8	90	72.9
80	53.6	80	68.7
70	50.7	70	63.8
60	47.8	60	59.5
50	44.7	50	55.2
40	41.3	40	51.0
30	37.6	30	45.5
20	33.4	20	36.4
15	30.0	15	31.9
10	26.4	10	23.7
5	21.3	5	12.3

Table XI gives the various percentile scores for the Revised Detroit Reading Readiness Test and for Reading Tests 10C and 1B Experimental.

Tentative Norms and Interpretations of the Detroit Reading Readiness Test

If a child, because of mental, social, or physical immaturity, is not ready to read at the usual 1B level, the school should be ready to provide a program with standards which that child can achieve. At present some pupils are classified as failures, when in reality they have been achieving, although not at the prescribed level. Reading

readiness tests have been designed to secure some objective measure of the child's probable success in formal reading. This has been done by correlating various tests with success in reading at the end of one semester or one year, as indicated by reading test scores and teachers' ratings. The correlations in most instances are near .58 or above. The correlation between the total score of the Detroit Reading Readiness Test (Revised) is approximately .64 which means, if the criterion is valid, that there is a fairly high correlation between the total score on the Detroit Reading Readiness Test and a child's expectation of reading success. The findings do not, however, warrant the conclusion that the test may be relied upon exclusive of the teacher's judgment.

The Detroit Reading Readiness Test, as a part of the overall proposed reading readiness program, is designed specifically to aid the teacher in the following ways to build a suitable reading program.

1. To provide test situations in which the teacher may observe and study the child's reactions to situations similar to those found in the reading process itself.

From a perusal of the test items, it immediately becomes apparent that items and testing devices have been chosen because of the similarity between the activities and the actual reading process. Just as an achievement test enables the teacher in a short time to gain a fairly

accurate picture of the pupil's achievement for instructional purposes, so the Reading Readiness Test is designed to give the teacher a great deal of pertinent data regarding each child's probable future success in formal reading, at the beginning of the term before formal instruction begins. The advantages of such tests over casual observation alone are numerous and quite apparent. The test is objective and presents a uniform situation to a group of pupils at one time. It furnishes an immediate basis for acquaintance with the child. The resulting data are comparable from child to child.

2. To provide test norms for purposes of comparison and to help determine child placement at the post-kindergarten level.

The norms were established after careful study of over 400 1B children, but they are given here as tentative norms only, since the sampling was proportionately small. The teacher using the percentile scores may make comparisons between various individuals and between the class as a whole and other classes. Such comparisons should be helpful in aiding the teacher to come to some conclusions concerning individuals and groups, but it is to be emphasized that the norms do not form the sole basis for the determination of reading readiness. The norms are designed to aid the teacher in forming judgments, not to establish conclusive standards.

3. To help the teacher select children to participate in selected instructional procedures, i.e., reading readiness activities or formal reading.

The interpretation of the test results, together with the consideration of other observations and data, have very special significance for the teacher. The test should aid in the classification of children into relatively homogeneous²³ class groups, and aid in the grouping of children within classes for instructional purposes. Such groupings will also facilitate arrangements for remediation and further diagnosis. By identifying areas or skills in which certain pupils or groups show disability it will, if used in conjunction with the Reading Readiness Workbook and the Teachers' Bulletin for Reading Readiness, suggest activities and materials suited to the needs, abilities, and interests of individuals and groups.

4. To provide an adequate record for all data bearing upon the child's state of reading readiness.

The first page of the test is designed to indicate most of the various factors which should be considered in studying each child before arriving at his tentative placement

²³"Homogeneous" groups can, of course, never be developed with reference to more than one criterion at once. If they are homogeneous in reading readiness, they will be heterogeneous in six or seven other traits.

in the reading readiness groups. They are:

1. Name
2. Sex
3. Age in Years and Months
4. Intelligence Letter Rating
5. Score in Vocabulary
6. Score in Visual Perception
7. Score in Motor Control
8. Score in Visual Retention
9. Score in Delayed Recall
10. Score in Immediate Recall
11. Total Score
12. Score in Auditory Discrimination (Optional)
13. Number of Reversals
14. Physical Factors
 - a. Vision
 - b. Hearing
 - c. Speech Defects
 - d. Frequency of Illness
 - e. Handedness
 - f. Teeth
 - g. Tonsils
 - h. General Physical Condition - Vitality
15. Pertinent factors in the child's case history
16. The Teacher's final determination of reading readiness, which must be considered tentative to allow for transfer from one group to the other as conditions may warrant. It is important that flexibility in grouping be maintained.

When the test is scored, the front sheet may be removed and kept by the teacher as a part of the child's permanent record. It is advisable to write the child's name (when the first page is removed) on the third page of the test booklet so that it can be identified for reference purposes.

The percentile norms²⁴ can best be explained by applying them to an actual child's scores. For example, Mary Brown's scores on the Reading Readiness Test are as follows:

²⁴ See Appendix D.

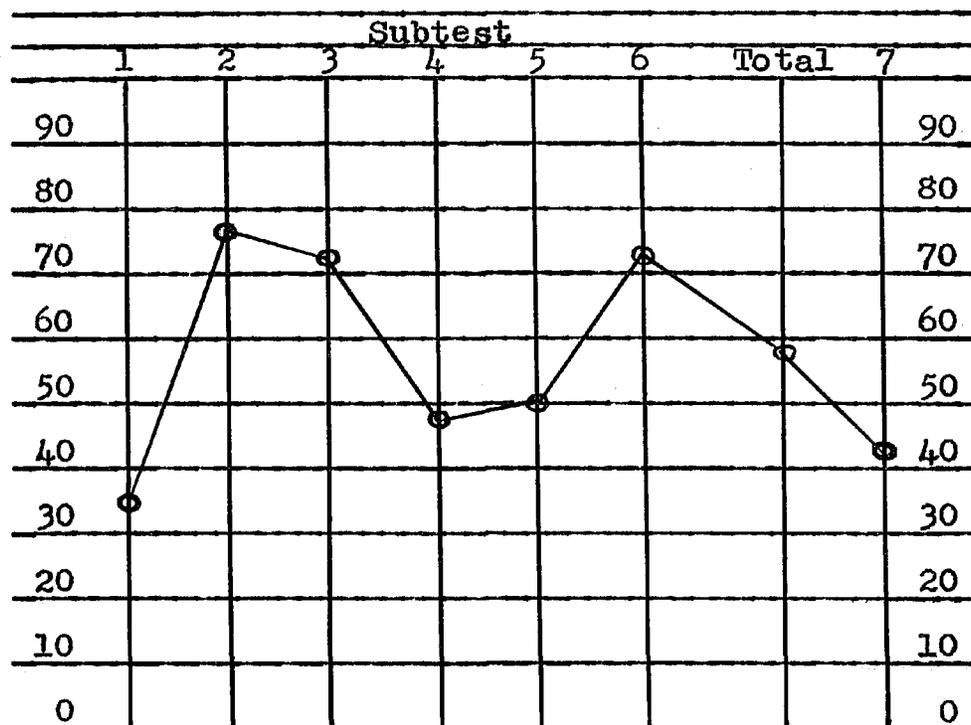
Subtest	Raw Score
1. Vocabulary	7
2. Visual Perception	12
3. Motor Control	7
4. Visual Retention	10
5. Delayed Recall	4
6. Immediate Recall	7
Total	47
7. Auditory	4

By consulting the percentile tables in Appendix D, the raw score in Vocabulary (7) may be converted into a percentile score of thirty-four. This means that in a group of 100 children entering 1B, Mary Brown has a score which is better than thirty-three other children's scores in the group. Her score on Subtest 2, Visual Perception, is twelve. This coincides with a percentile score of seventy-six. This means that Mary has a better score than seventy-five other children in any group of one hundred 1B's.

By continuing this procedure with the other tests, the percentile scores may be determined for all the subtests. These scores may now be plotted on the front of the test booklet. The profile chart gives a graphic indication of the child's abilities and disabilities. The various subtest percentile scores should help the teacher select certain pupils for specific types of remediation or training.

TABLE XII

PROFILE GRAPH OF PUPIL'S ACHIEVEMENT



The total score (and it should be noted again that Subtest 7 is not included in the total score) is the most significant in considering a child's probable future success in reading. The evidence shows that in over 400 cases, approximately--

Sixty per cent of those children scoring below the 10th R. R. percentile failed in reading.
 Fifty per cent of those children scoring below the 15th R. R. percentile failed in reading.
 Forty per cent of those children scoring below the 20th R. R. percentile failed in reading.
 Thirty per cent of those children scoring below the 30th R. R. percentile failed in reading.

The individuals and classes studied in gathering these data were drawn from nineteen Detroit schools representing varying abilities, conditions, and standards. For this

reason, the application of the percentile scores in establishing reading readiness groups in any particular school will be a matter to be determined by the individual school. If the average ability in any school is extremely high and the standards established in 1B reading are high, it is possible that the percentage who score below the 20th percentile and fail in reading may be much higher than the forty per cent indicated for the sampling of 400 pupils studied. On the contrary, if the average ability of the 1B's in any school is consistently low, this might lead to a relaxation of reading standards. In such a situation, the number who score below the 15th percentile and fail in reading might be smaller than the fifty per cent indicated for the sampling studied.

In general, the following represents a tentative classification for reading readiness as determined solely by the Detroit Reading Readiness Test. This tabulation is based upon a group of over four hundred 1B Detroit pupils.

<u>Score</u>	<u>Classification</u>	<u>Percentile Scores</u>
61 and Above	High	88 and Above
51 - 60	High Average	62 - 87
41 - 50	Average	35 - 61
34 - 40	Low Average	18 - 34
26 - 33	Low	6 - 15
25 and Below	Very Low	5 and Below

On the basis of the predictive value of the test and the teacher's evaluation of its usefulness, the Reading Readiness Committee recommended to the supervising

principals an experimental program in fourteen elementary schools. This program was delayed for approximately one semester until additional materials²⁵ could be constructed to round out the program. The rating scales were undertaken as a cooperative project by the Psychological Clinic, the Department of Language Education, and the Department of Instructional Research. Instructional materials were developed by the Department of Language Education.

Recommendations for the Proposed Program

Reading readiness at the post-kindergarten level is that stage in a child's development when he can begin to learn to read with a fair chance of success. In recording success or failure of children in the nineteen elementary schools studied the previous year, it was found that approximately fifteen per cent of the children failed to read sufficiently well to be promoted to 1A. Hence it appears

²⁵ Pupil's Rating Scales (Experimental Forms A, B, C, and D) and the Detroit Revised Reading Readiness Test. See Appendix A.

In addition, the following materials were provided to aid the teachers:

1. My First Workbook - Reading Readiness (one per pupil).
2. A set of picture cards to help visual discrimination (one set per teacher).
3. Before We Read, the pre-reading book of the Scott-Foresman Series (one per pupil).
4. A Teacher's Bulletin for Reading Readiness (one per teacher).
5. Directions to Teachers for using My First Workbook - Reading Readiness (one per teacher).

in Detroit, as elsewhere, that a considerable number of children, although chronologically six years old, are not ready to read at the post-kindergarten level. It is generally agreed among those who have made a study of the problem that no one factor can be singled out as being the contributing cause; but rather, the lack of readiness is due to a complex of factors. Outstanding among these are mental immaturity, physical handicaps, low vitality, and poor personal adjustment to school situations. In all the individual cases studied, the lack of readiness was due to a combination of these factors. Teachers are obligated to determine if a child is ready for formal instruction in reading or if he needs further instruction in readiness. It follows that if reading instruction is needed, a subsequent program should be established in the schools to foster a state of readiness in the child.

With the above purpose in mind, the following Reading Readiness Program was recommended to a few experimental schools:

1. The Revised Detroit Reading Readiness Test devised by the committee should be tried on a volunteer basis by the schools. It is suggested that all the elementary districts be represented.

2. The test should be administered by the 1B teacher to all post-kindergarten children within the school, in groups of eight children.

3. The Personality Inventory should be considered part of the reading readiness program; the kindergarten teacher should record her judgment on each child and pass those inventories on to the first grade teacher for her subsequent judgment.

4. The curriculum material prepared for pre-reading or reading readiness groups should be considered part of the overall program, the purpose of which is to provide suitable instruction for all children not ready for formal instruction in reading.

5. Possible public resistance to pre-reading instruction at this level should be anticipated by formulating some plan for counteracting it.

6. A policy should be established, within the schools which volunteer to try the Readiness Test, (a) of three semesters in the first grade for individual children who appear upon entrance to be unready for formal instruction in reading, criteria for such judgment being the child's intelligence rating, his score or scores on the Reading Readiness Test, and his rating on the Personality Inventory, and (b) that progress in this standard program be indicated by the terms 1 R.R.,²⁶ 1B, and 1A. Pupils who are found unready for formal instruction in reading should be classified

²⁶ 1 R.R. is an administrative designation given to a pupil who has been promoted from kindergarten but due to immaturity is not placed in the regular 1B grade.

as 1 R.R. and subsequently as 1B whenever during a semester they are found ready to start reading. Other pupils who are ready for formal instruction immediately upon entrance from the kindergarten should be classified as 1B, progressing subsequently into 1A.

7. Teachers should be encouraged and helped to study children primarily as individuals with respect to health, social, emotional, or other factors which are known to influence success or failure in reading.

8. Provision should be made for continuous study, through the successive primary grades, of the success and failure of children in this experimental group, with special reference to those classified at any time as 1 R.R.

9. Provision should be made for possible improvement of the Readiness Test and the Personality Inventory in the future.

The above recommendations were sent to the fourteen experimental schools prior to beginning of the semester of February 1945. In addition, a letter of explanation was sent by the Department of Language Education. The following is an excerpt from the letter:

Next semester your school has been requested to experiment with the proposed Reading Readiness Program. The purpose of this program is to discover which post-kindergarten pupils are not ready for regular reading instruction and to furnish them with reading readiness materials and instruction. It is anticipated that by following this procedure a state of readiness may be developed in the child.

Since the pupils for whom the readiness program is planned differ in native ability, home background, and in many other factors, it is not possible to state arbitrarily how long the preparatory period may last. For some it may be six weeks, half a semester, or a full semester or longer.

It is to be expected that a pupil who spends all, or a large part of the semester upon preparation for reading will not be ready at the end of his first term to be promoted to Grade 1A. However, if he progresses steadily and successfully from reading readiness materials to regular beginning reading work he feels a continuous sense of accomplishment. For him there is no failure. He is merely delayed for a longer time before entering Grade 1B.

In order to gain their fullest cooperation it seems wise and expedient to acquaint all parents whose children are in a reading readiness group with the gist of the above discussion. It is suggested that parents in each case be informed not only that their children are participating in reading readiness instead of reading, but that the notation on the child's report card indicates the same. For reading readiness pupils, report cards should be marked Reading Readiness rather than Reading, and parents should understand this distinction.²⁷

The above recommendations were made possible only by the exceedingly fine cooperation and interest by teachers, principals, supervising principals, and schools in trying out the test and offering suggestions and contributions of reading readiness materials. The Reading Readiness Committee realized that they could not have completed the

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Language Education Department - Director: Marquis E. Shattuck, Supervision of Elementary Reading: Eveline Waterbury.

above phase of the study without the wholehearted cooperation of all individuals²⁸, who contributed in various ways.

Reading Readiness in Fourteen Experimental Schools

In February 1945, the recommended Reading Readiness Program began in fourteen experimental schools. Principals were informed of their school being admitted to the program by letter.²⁹ The program continued in this form for a period of one year. During this period, other schools were allowed to try the program to a limited degree; however, the additional schools are not included in the scope of this study, having been added and dropped for a variety of reasons.

²⁸Testers: F. W. Bickel, A. Blaske, H. Butts, G. Dennis, H. Hanlon, C. Howell, M. Jackman, F. Keller, A. Kirshner, E. Koppelman, L. R. Parker, and C. Schultz.

Teachers of Classes Tested: A. Blaske, A. Bodjack, C. Bucholz, M. Butts, S. Cutler, I. Dahlin, E. Dahlquist, D. Davis, G. Dennis, R. Fahl, T. Garvin, A. H. Hemenway, P. Hill, C. Howell, M. Jackman, K. Jeffery, F. Keller, A. Kirshner, D. Kost, M. Kowalski, L. Lewis, M. McGuinness, E. McGrath, M. Meyers, E. Molyneaux, H. Parker, L. R. Parker, A. Roach, F. Rogers, J. Rowlader, M. Seibert, B. Tyner, and A. D. White.

Principals and Supervising Principals of Schools Tested: J. Baird, J. Belisle, G. Birkam, E. W. Booth, E. Burke, H. Burk, E. Burt, E. Broegger, I. Caswell, J. Cooney, E. Dawson, E. Gonne, H. H. Gragg, A. Graham, Z. Harris, E. J. Knighton, E. Laing, M. C. McGowan, M. McMahan, M. Mahony, E. Newman, H. Petry, M. Redman, O. D. Reynolds, A. Robison, G. Stout, M. Sullivan, J. Thomas, J. Voorhees, and A. Wilson.

²⁹See Appendix C.

This phase of the pilot study is mainly concerned with the actual working of the program and the teachers', principals', and parents' reactions. Therefore, very little reference will be made to the Reading Readiness Test except presenting in the teachers' overall evaluation of the program. The procedures and methods used for administering the test were the same as those described in the previous section. The remainder of this chapter will be devoted to opinions and reactions of teachers and principals who actually used the newly developed materials. Special emphasis will be given to the personality inventory, as the development of this instrument was actually a rather large study in itself. Although records of most children were kept during this period, no evaluation of actual group achievement will be attempted, since controlled conditions were not maintained. This part of the overall study of the problem has not been neglected, since it will be considered in the next chapter under exacting conditions over a definite period of time. However, the present chapter is concerned only with the pilot study, with special emphasis on material and administrative workability.

Pattern of the Program

In all fourteen experimental schools, each post-kindergarten child was rated by means of the four

personality inventories³⁰ (Forms A, B, C, and D) devised for this specific purpose³¹. Each child was given the revised form of the Detroit Reading Readiness Test. The results of both instruments, together with that of the Detroit First Grade Intelligence Test plus teacher judgment, were used as criteria in determining whether pupils should be placed in a first grade reading group or a reading readiness group. The reading readiness children were handled administratively in two ways:

1. They were part of a regular 1B group but were given reading readiness instruction and no formal 1B reading. These children were grouped with a slow 1B reading group and out of platoon. In all schools where this arrangement was in effect, the reading readiness pupils did not number more than eight or ten.
2. They were in a room designated as "reading readiness" with a teacher who was classified as a reading readiness teacher. All such classes were out of platoon and numbered from fifteen to twenty-five children.

³⁰ See Appendix B.

³¹ The following directions were given to each kindergarten teacher in regard to making out the personality inventories: Consider the child's behavior over as long a period as possible. Attempt to disregard your personal feelings about the child. Your attitudes may color your ratings unless you are very careful. See specific directions on each rating scale.

In the reading readiness groups, children were given My First Workbook, Reading Readiness and teachers followed the devices and suggestions provided in the Teacher's Bulletin for Reading Readiness as far as time and organization permitted. Children qualified to start reading at once proceeded in the accustomed manner in the regular 1B.

Teachers' and Principals' Evaluations

Near the end of the second semester, a general evaluation session was called, with all personnel of the fourteen schools in attendance. Discussion was limited to specific areas by questions pointed to issues identified over the year of experimentation. The questions had been formulated and sent to teachers and principals previous to the evaluation session. These questions are set forth under major items of consideration as outlined by the committee.

1. Personality Inventory

- (a) In what way was the Personality Inventory useful in classifying children either for a regular 1B group or a reading readiness group?
- (b) Have you found opportunity to use this information in guiding pupil's growth?
- (c) Do you favor marking the inventory and passing it on to the next teacher? (This question was referred to the kindergarten teachers who were responsible for marking the original forms of the inventory. Later the reading readiness teachers were asked

to make a second evaluation.) This particular phase of the program was deemed so important that separate evaluation was made of the inventory forms. This will be cited separately.

2. Reading Readiness Test

- (a) To what extent do you feel that the Reading Readiness Test was an accurate prediction of reading readiness or the lack of it for the group with whom you are concerned?
- (b) Are you satisfied that you used the right percentile score for dividing or classifying children into reading readiness or reading groups? What point on the scale is the significant one for deciding in which group a pupil should be placed?
- (c) Would you prefer giving the test during the last two weeks of the semester to the kindergarten children who are to be classified as post-kindergarten rather than waiting for the beginning of the semester?

3. Reading Readiness Workbook

- (a) What, in general, is your reaction to the Workbook?
- (b) What tangible results can you see as a result of its use?

4. Teacher's Bulletin for Reading Readiness

- (a) What part or parts of the bulletin have you found useful?
- (b) How might the bulletin be improved?

5. General Consideration

- (a) Have you had any unfavorable parental reactions among parents of children in your reading readiness group?
- (b) What should be the next steps to take in improving the Detroit Reading Readiness Program?

In submitting the opinions, beliefs, and attitudes regarding the above areas of the program, it may be stated that the meeting set aside for this purpose was not adequate. Teachers did not feel at ease in submitting their opinions to the supervisory staff that had such a vested interest in the program. Verbal responses were given readily, but it is doubtful that the giver's attitude or opinion was fully expressed. To summarize this attempted evaluation the questions or parts of the program will receive categorical comment.

The Personality Inventory

Concerning the personality inventories³², the group seemed to be in agreement as to the potential value of such an instrument as a means of guiding the child's progress but suggested the following changes:

Most teachers thought that four or five divisions along a scale were too many because this would imply better discrimination than was practically possible; but they seemed to agree that such expansion would have its advantages in rating the children at the extreme end of the scale. Some felt that some items could be omitted, although when pressed for the specific items they could not agree. Some felt that Forms A, C, and D could be greatly improved if space were provided for remarks. All seemed in agreement

³² See Appendix B.

that more emphasis should be given to physical handicaps-- if not on the rating scale, then somewhere else; a recommendation was made that this space be provided on the tests. The Psychological Clinic volunteered to make out a guide sheet for the first grade teachers' benefit.³³ All principals present were most enthusiastic as to the value of the inventory. However, all felt that a more thorough evaluation of the four forms should be made. This was carried out and will be reviewed in the next section. The purpose was to decide on one form combining the advantages of the present four.

The Reading Readiness Test

After the Reading Readiness Test was used in the fall and winter semesters, the teachers' opinions and feelings led to the following conclusions: A reading readiness test, an intelligence test, or a rating scale is helpful in determining the degree to which a child is ready for a certain level of reading instruction; but marked errors can result for individual prediction. Any one of the three instruments is useful, but by combining the three a much better prediction can be made. The group further agreed that the Reading Readiness Test was the most accurate of the three. It was reported that the number of children for whom it did not predict accurately ranged from two to six per school. The critical percentile point, used to divide pupils into reading and reading readiness groups,

³³Ibid.

varied from six to twenty-one in different schools; teachers seemed satisfied with the points chosen. As to when the test should be given, the majority felt that it would be better for a first grade teacher to test the kindergarten children during the last two weeks of the kindergarten semester instead of testing them as 1B's during the first two weeks of the new semester. It was pointed out that children who are tested the second week of the semester score high on the matching section of the test, due to their practice in matching during the reading period. A slow child will make a better score during the second week than an able child (ready for reading) makes if tested the first day. Later, it may be found that the slower child is not ready for reading. Hence, the test should be given prior to any regular reading activities tending to raise scores. Everyone felt that giving the test during the first two weeks of the semester has a very disintegrating effect on the children. Much discussion centered around the problem whether to give the test in the kindergarten in June in view of the summer vacation intervening between semesters. No clear-cut opinion was reached. It was finally agreed to leave it up to the individual schools to decide. This was rather encouraging to the committee, since their original recommendation was for the program to be flexible enough to meet the needs of individual schools.

The Teachers' Workbook

Not too much time was spent on the evaluation of the teachers' workbooks since all realized that the workbook was under revision at the time of the meeting. It was, however, recommended that an art teacher be employed full time during the summer months to work with supervision to prepare more adequate illustration for future use. In general, the teachers expressed very favorable comment and felt that the workbook was very valuable in the reading readiness instruction.

The Teachers' Bulletin

The Bulletin for Reading Readiness was also deemed valuable in varying degrees. Teachers who had sections out of platoon and had an entire section of reading readiness used a great deal of its contents. Teachers with groups in platoon and those in platoon with a split section used it relatively less. One teacher felt it could be better organized. Several wished to have more reference for duplicated seatwork included. A committee was appointed to revise and make additions to the bulletin.

Parents' Comments

As to reports of unfavorable reaction to the program from parents of children in the reading readiness group, ten of the fourteen schools reported none. Four said they had parents inquire as to the purpose and objectives of such a program. All teachers felt that parents would object

if children were to be retained in the reading readiness group beyond one semester. Parents interviewed felt the best type of instruction was being given to meet the needs of their child.

Teachers and principals felt the evaluation meeting too short to appraise the program adequately and recommended that further comment be submitted in writing. It was agreed that four points should be considered, namely; the advantages of the program, the disadvantages, whether the program was worthwhile, and how it might be improved.

Advantages and Disadvantages
(In General, was the Program Worthwhile)

These reports were received from teachers and principals and consolidated over a period of a month. The following paragraphs were received and have been consolidated under the appropriate headings.

Advantages of the Program

...The acquired ability to follow directions accurately and independently is to me the most important advantage in giving a child the training. Our regular 1B teachers especially notice this ability in children who were in the reading readiness group. Very little preparatory work is necessary before beginning the workbook. The children themselves show much interest in the work and are very eager to use the workbooks. The workbook is a very good check for the developmental activities used by the teacher.

...In general, is the program worthwhile? The program has been in operation at the _____ School for three semesters. The principal, the first grade, the second grade, and kindergarten teachers, the parents, and the children are "sold"

on it. The mothers feel that their children have a better chance to progress; the children say they have a good time in school and tell any newcomer that he will have fun. Previously when included in a group, some of whom were able to read, the very slow ones felt left out. Frequently they got into difficulty and some became behavior problems. The 1B and 1A teachers feel that the children are better readers and the teacher who received the 1 R.R. promotions says that the class moves along rapidly and that the children are ready to read without any further preparatory work.

...The program teaches skills which must be known before reading can take place. The child is making progress on his own level, not wasting time. Produces success not failure. The varied types of activities make for a bridge from kindergarten to 1B and a better knowledge of the child's ability before beginning formal reading. Even the very slow child can acquire a feeling of success in his work.

...I think reading readiness helps immature children and children without initiative a great deal. It gives them experience backgrounds, visual discrimination, a mastery over motor control, and help in learning to follow directions. Children who have not had the advantages of pre-school work at home are given more opportunity to work with crayons and scissors. The workbook is very helpful in that it accustoms the child to working with material which is smaller than that of kindergarten.

...I think the chief advantage of the Reading Readiness Program is that it provides a period of gradual transition from the informality of the kindergarten to first grade reading activities. The children acquire the work habits necessary for reading, such as following directions, concentration, working neatly, working independently, etc. They practice these habits with familiar objects drawn from their own experiences. Before they are required to learn a difficult set of new symbols found in printed words they are given practice in certain basic skills such as left to right eye movement, noticing likeness and difference, and matching patterns. When they are finally confronted with printed letters they have had some experience with the techniques involved in learning to read. They have also acquired the social

habits necessary for formal reading drills and for independent seatwork.

...The Detroit Reading Readiness Program takes into consideration two important factors in beginning reading. First, those children who are ready to learn to read. Second, those who will need added experiences and a period of maturation before they begin the formal phases of reading. The Detroit Reading Readiness Test is accurate and enlightening in classifying the children.

...The outstanding advantages of this new Reading Readiness Program are: Gives a child school work to fit his mental and physical ability; develops a child's reading senses through a series of well-worked out 'reading developers' so skillfully that to a child who would otherwise find school too hard and discouraging it becomes fun and gives the teacher of slow children a type of work over which neither she nor the child needs to become discouraged.

...Children who are not ready for reading are given a sense of accomplishment with the result that they have a better foundation for the reading process. The teacher can plan activities which are better suited to the ability of the group. The program gives an opportunity for the development of skills which will be used in the picture story method (coloring, drawing objects, cutting, and pasting).

...After one full semester of using the reading readiness material, I think it is one of the most important and necessary steps we have taken to improve our educational system. Not only does it prepare the children for reading but it also gives them a feeling of having accomplished something rather than the feeling of failure they used to get when it was necessary to fail them in the 1B.

Disadvantages of the Program

...Very often because of the big step from kindergarten to a 1B room in a platoon school many little folks appear to be reading readiness prospects and unless given close attention and opportunities to develop could just be left in a reading readiness group.

...Some children who scored low on the test are able to complete the workbooks and learn the color

words and a number of picture words sooner than expected but too late to begin the LB pads. Perhaps it is an injustice to keep such children in LB two terms.

...The Reading Readiness Test should be given in the kindergarten except for new entrants. The lack of a standardization of scores for placement in various groups makes the comparison of results difficult. Our school placed children with scores below twenty-five in a regular LB. This put a strain on the LB teacher to prepare all of them for 1A. At the meeting at the Division of Instruction, Thursday, May 10, 1945, I noted that most of the schools required a score of thirty-five as the LB requirement. Had we used thirty-five instead of twenty-five, we would have had twenty-five ready for LB and seventeen in a reading readiness group, plus thirty-five in a reading readiness room. The reading readiness room received all new entrants and replaced them according to ability with the result of an enrollment of forty-five most of the semester.

...I can see no disadvantages in using this material if the teacher remembers to give the child who is ready the opportunity to read. We must watch our children carefully and not keep them back if they have progressed to the reading stage.

...We are agreed that a child should have attained a mental age of six or six and a half before he is taught to read. He should be in good physical condition and he should have a rich background in meaningful discussions and experiences. These discussions and experiences contribute to the size and comprehension of the child's auditory and verbal vocabulary. The child should have some concept of the sequence of events and should be able to discriminate between slight differences of form and sound. The Reading Readiness Program provides this type of instruction.

...The only disadvantage was in the attitude of the teachers in this building over reorganization, once they had the children placed in their rooms by the kindergarten teachers at passingtime. This can be avoided by end of the term testing.

...Lack of material, such as dry powder paint, paint brushes, clay, extra manila, bogus and colored paper, which are a necessity in an out-of-platoon reading readiness room.

...Some children might develop a little inferiority complex because they realize they are not doing the same work as the rest of the class. I wondered if it could be used in the latter part of kindergarten. Then the parents would not object to it and feel that their children were slower and would be one semester behind the others.

As far as I can see there are no disadvantages in the Reading Readiness Program, with the exception of one general fault found in all of our Detroit education. I do not think we succeed in teaching the qualities needed for successful participation in a democracy. Knowing how to read is one important thing, but there are other things which should receive equal emphasis and are forgotten too often.

How Can the Program be Improved?

(a) ...an extension of the services of the Psychological Clinic to provide for the early testing of children with very low mental ability and of those making a very poor adjustment to school and social situations

(b) ...an extension of the health services to provide for the discovery of children with glandular disturbances and correctable physical defects

(c) ...an extension of the visiting teacher program to provide immediate help with children failing to adjust to the school

(d) ...an opportunity for reading readiness teachers to visit other schools and gather ideas from others

(e) ...a continuation of the interest in the program with an opportunity to meet and discuss any suggestions for improvement, so that the progress made will be continued

(f) ...materials to aid instruction such as paper-covered books illustrating sounds used in the picture story material. Such pictures should have captions consisting of easy reading. Such a book could be used upon completion of the workbook to introduce actual reading material and the child would thus have a feeling of having started to read

...A very simple pre-primer with attractive pictures such as 'Look and See' and 'Come and Go' would be helpful for children doing well in the reading readiness group but not quite ready to do pad work.

...By the more widespread use of the Reading Readiness Program throughout the city. By the establishment of an official maximum class size. By the development of a suggested outline to be included in the bulletin for the purpose of analyzing and presenting techniques for the development of each one of the points mentioned in the Personality Inventory. It would be helpful if the workbook were published in a hectograph edition.

...Reading Readiness activities develop a real interest in learning to read. The Detroit plan is flexible and varied and provides ample time for each new development. A program such as this forestalls and prevents disappointment, humiliation, lack of self-confidence, and failure in reading accomplishments of the 1A and 1B child.

...It will be improved when each teacher gathers experience and material. The workbook is only a very small part of the necessary equipment. The exchange of teacher ideas and material would help.

...It cannot be improved but added to. The children finished with the workbook and becoming ready for reading would greatly profit by a pre-primer series of lessons correlating with Picture Story, Series I and as steps toward picture story work the following semester.

In General, Is the Program Worthwhile?

...The few children who had reading readiness in our building last year are doing very well in their 1B reading work, which proved to us that it is worthwhile and it does accomplish the things it was set up for.

...Yes, emphatically so. Entirely aside from learning to read, each child gains a sense of successful achievement and satisfaction which is very important in developing desirable school attitudes.

...The following interesting statistics help prove its worth. Out of 125 children having had a complete Reading Readiness Program, 64.3 per cent have passed the 1B the first term; 58.5 per cent of these children passed the 1A the first term.

...The workbook also provides many activities that are directly related to 1B formal reading. Therefore, we feel that the child who has participated in a reading readiness program will have an enriched vocabulary and background for reading.

...From the standpoint of the child, very much so. I feel nearly every child needs a week or so of such work. The teacher may feel it a burden until she acquires the wealth of material that is necessary.

...I think it is worthwhile to those slow children who would otherwise fail in the Picture Story work. It gives them a feeling of accomplishment rather than failure.

...The new program has been a godsend to the teachers in schools where the children are known as slow and retarded.³⁴

Evaluation of the Personality Inventory

Before summarizing the Pilot Study, there remains one important task to be done, namely, a more extensive evaluation of the four forms of the Personality Inventory. Teachers felt that this method of evaluating a child was extremely important, but they felt that it was almost too much of a task to ask of the kindergarten teacher,

³⁴ Evaluations received anonymously from teachers from the fourteen participating schools. In many instances, the reports were cut short where the same thing is said by another teacher. The author and Language Education Department compiled the above comments.

especially since in the Pilot Study, each kindergarten teacher was asked to use two of the four forms. Therefore the problem was referred back to the kindergarten teachers to determine which of the four forms of the Inventory was most useful and workable from their viewpoint.

A check list of fifteen questions³⁵ concerning the experimental rating forms was devised and sent to the kindergarten teacher in the fourteen schools. They were asked to make out the check list and to solicit the cooperation of the 1B teachers, as some of the questions pertained to the use made of the check list in the reading readiness or the regular 1B sections. Tables XIII and XIV summarize the teachers' responses.

Teachers in twelve of the fourteen schools replied to the questionnaire. Each teacher rated a number of children on two of the four forms. The number of children rated on each form varied as the teachers formed their opinions of the forms early and used their preferred form on most of their children.

There was no clear evidence that any one form was more acceptable to the teachers in toto. However, Form B received only two of the twelve votes and Form D received four.

³⁵See Appendix B.

TABLE XIII

RESPONSES TO THE INDIVIDUAL ITEMS (1-7) SET FORTH
IN THE TEACHERS' EVALUATION OF THE CHILD'S
PERSONALITY INVENTORY OR RATING SCALE

Item	Forms				No. Teachers
	A	B	C	D	
Which two forms did you use?	6	6	6	6	12
Which form did you prefer?	3	2	3	4	12
On which form did you find items most easily applied?	4	1	4	3	12
Which form was the least time consuming?	2	1	6	3	12
Which form led you to think most carefully and critically?	5	2	2	4	12
Which form would be most helpful to the child's next teacher?	4	1	3	4	12
Which form led you to a new appraisal of the child?	4	3	1	4	12

Probably a greater number of kindergarten teachers should have been asked to consider the inventories.

Teachers gave evidence that the questions were more easily applied to children on Forms A, C, and D. The feeling was that Form B contained too many extreme classifications without an intermediate choice, a condition which could be corrected only if the teacher made the effort to spread remarks on each classification in the comment column. This was especially true of the "a" and "b" statements under most traits. Ordinarily, additional descriptions would be very helpful and even necessary in using Form B.

Half of the teachers felt that Form C took the least time to complete. However, these same teachers were not in agreement that the form ought to be used; in fact, some felt it was far too short to be of any value to the reading readiness or the first grade teacher.

In general, teachers felt that Forms A and D led them to think most critically about the child in order to get an adequate evaluation. They further stated that these forms provided extremes between which almost every child's personality traits could be placed. For this reason, it was easier to use these forms. It was further added that these forms were more likely to describe the child as he actually was at the time of rating.

Again, to the question, "Which form would be most helpful to the child's next teacher?", Forms A and D received the most votes. This was also true of the question, "Which form led you to a new appraisal of the child?" It may be concluded that no one of the four forms was given a clear-cut advantage by the teachers. However, Forms A and D seem to have more general acceptance than Forms B and C.

In summarizing Table XIV, it should be noted that on only one item were the teachers in complete agreement. All reading readiness and 1B teachers appreciated the help in finding the causes for a child's typical behavior. They felt that a great deal of time and energy was saved when the kindergarten teacher made out the inventories or the

TABLE XIV

RESPONSES TO THE INDIVIDUAL ITEMS (8-14) SET FORTH
IN THE TEACHERS' EVALUATION OF THE CHILD'S
PERSONALITY INVENTORY OR RATING SCALE

Item	Responses			No. Teachers
	Yes	No	Undecided	
Do you believe it would be better to rate more than once a semester?	7	5	0	12
Do teachers appreciate the help of the scale?	12	0	0	12
Do you believe pamphlets suggesting remedial treatment would be helpful?	9	3	0	12
Do teachers have time to use the rating scale for each child?	6	4	2	12
Do you believe the value warrants the time spent?	9	0	3	12
Would you favor a shorter form?	5	7	0	12
Would you favor a longer form?	1	10	1	12

rating scales. Ten of the twelve teachers felt that they did not think a longer form would be any more revealing and at the same time seven did not want a shorter form. In general, the teachers felt that this evaluation which they were asked to do was extremely worthwhile, and they felt that the administration was justified in asking them to take the time to complete it. All twelve teachers provided comments on the rating scales in much greater detail than was requested. A few of the additional comments have been consolidated and

are reported to give additional evidence of the teachers' opinions regarding the usefulness of the scales.

...I think that these evaluation sheets are an excellent idea. However, I feel that with the sheets, I found Form C the most valuable because it was more precise and descriptive and the terms more definite. In Form A I had to take more time analyzing the various phases to make certain that the phase was the best suited to describe the child. If a form similar to Form C is decided upon, a teacher should be asked to underscore the item which best describes the child in addition to checking in the correct column. However, with the longer sheets most teachers, especially those with larger sections, will be apt to rush through without giving each paragraph due consideration. Then, too, the reading readiness and the 1B teachers receiving the sheets will appreciate a shorter form because at a glance they could get a picture of a child's behavior.

...I found Form C quite unsatisfactory because its approach is so entirely negative that it does not give a fair picture of each individual child when viewed objectively. Form A incorporates many good features which ought to prove truly helpful to the teacher who is attempting to evaluate the child and also the teacher receiving the form. However, some of the items listed cannot always apply in their entirety to the child's individual behavior, i.e., all the description given may not apply, just a portion of it. One method of correcting this would be to allow the evaluating teacher to feel free to cross out any portion of the description that would not apply to the child being evaluated.

...Form C suggests fifteen types of behavior and allows four degrees of variation in each, while Form B covers only eleven types, with three variations in each. Few teachers are apt to take advantage of the space allowed for comment or extended analysis. For a quick appraisal my choice would be C. But I feel that Form A gives a more complete picture of the child's personality and behavior; no teacher could possibly use it without slow and careful evaluation of the ratings and

of her own attitude toward the child.³⁶

The end result of the teachers' evaluation of the inventories and ratings was that the committee referred all four forms back to the Department of Instructional Research and the Psychological Clinic to be revised and consolidated into one form. The attempt was made to comply with the teachers' recommendations and to take the better sections from each form. This was carried out, and the resulting form of the Personality Inventory³⁷ was devised. This form has been used successfully for the last three years of the study. Further, the interpretation and suggested use of the Inventory³⁸ asked for by the teachers was developed by the Psychological Clinic.

Summary

From September 1942 through June 1946, teachers and principals in nineteen elementary schools³⁹ conducted a study in the field of reading readiness. This study grew

³⁶Excerpts taken from comments submitted by teachers.

³⁷See Appendix B.

³⁸See Appendix B.

³⁹Nineteen elementary schools participated in stage three of the study but only fourteen were involved in stage four; the tryout of the Revised test and the Reading Readiness Program.

out of the recognition of teachers and principals that it was false to assume that every child was ready to read upon promotion from kindergarten or upon becoming chronologically six years of age. Preliminary research revealed that children possess a wide range of interests, experiences, and aptitudes at the post-kindergarten level. Consequently, in any group of children entering the first grade, some are not ready to begin formal reading. With these established facts in mind, the Reading Readiness Committee designed a Reading Readiness Test and Personality Inventory for the purpose of providing more adequate means of placement and adjustment of children at the post-kindergarten level. Further, a recommended program of reading readiness was tried out as a Pilot Study in fourteen experimental schools. The Pilot Study provided setting and data which yielded the following findings, conclusions, and recommendations:

1. The Detroit Reading Readiness Test was judged by teachers and principals to be a useful instrument in discovering children who are not ready to read. The test is not infallible in prediction, but it is twenty per cent better than chance.

2. Whenever possible, the post-kindergarten teacher should administer the test, since she can learn considerable about the potential abilities of the child from his reactions in taking the test. In most cases, the teacher who tests will have the majority of that group to teach, and

so she has the advantage of advance knowledge of the various children composing it.

3. The Detroit Reading Readiness Test was judged as good as any commercially printed test available. (In the writer's opinion, this conclusion is not substantiated by the evidence presented, since as the criterion used for validation was not the same as in the studies cited.) For this conclusion to be drawn, the commercially printed test would have to be validated against the criterion which was used for the Detroit test. (However, the Detroit test correlated as high or higher with its criterion as the commercial test with their criteria, and all these criteria, which invariably include standard reading tests, are likely to prove comparable.)

4. The mental rating obtained from the Detroit Beginning First Grade Intelligence Test should be considered as a further check on the child's potential readiness or non-readiness to begin formal reading.

5. The Personality Inventory was considered an important measure of a child's readiness for formal reading. (Post-kindergarten teachers deem it invaluable in supplying them information on social and personal characteristics of the child.) In general, kindergarten teachers do not object to the task of making out the inventories if they are reasonably assured that they will be used by the post-kindergarten teacher.

6. Success in learning to read depends upon a complex of factors. No child was assigned to a reading readiness group on the basis of his mental rating, Reading Readiness Test score, or the evaluation of the Personality Inventory alone. Investigation revealed that the post-kindergarten teacher and the child's kindergarten teacher discussed each child's case before classifying him as reading readiness or regular 1B.

7. The time each child spends in a reading readiness group depends entirely on his individual need. Some children showed signs of orientation early and were given the opportunity to advance to a regular reading group. In a few instances, a child passed from reading readiness to a regular reading group and then was promoted to the 1A grade in the period of one semester. By far the larger number, however, made slow progress even at the reading readiness level. A few children failed to make adjustment to the reading readiness group and were held for more than one semester.

8. The attitudes of parents toward the program were generally good. However, when parents first realized that their child had been placed in a pre-reading group, their attitude was usually negative. Hence, it is recommended to future reading readiness schools that the parents be invited to the school for a discussion of the need and advantages of the program. Some schools wrote letters⁴⁰ to parents

⁴⁰See Appendix C.

explaining the program and inviting them to visit the reading readiness teacher. Teachers and principals were agreed that most parents, when convinced of the importance of having their child succeed in beginning reading, withdrew their objections wholly or in part to the program.

9. A Reading Readiness Report Card⁴¹ should be specially designed for reporting the child's progress to parents. (The essential difference would be that the child would be marked in Reading Readiness instead of Reading).

10. On the basis of the above findings and conclusions, a reading readiness program should be offered to fifty additional schools in the eight elementary districts in the city. This recommendation by the Reading Readiness Committee was endorsed by the Superintendent and the eight supervising principals.

In making the above recommendations, the Detroit Reading Readiness Committee made the following assumptions based mainly on the findings of the Pilot Study:

1. A first grade teacher must know something of the individual child if she is to work effectively in helping him become ready for reading.

2. A standardized reading readiness test can be of inestimable value, as it verifies the judgment which the

⁴¹Ibid.

kindergarten teacher has formed after working with a child for one year. In some instances, the tests produce new evidence which leads the teacher to question the opinion which she previously held, or they indicate a weakness or strength not previously suspected. In the light of the test results and the information concerning each child as noted on the Personality Inventory, the teacher can group the children into two basic groups--Reading Readiness or 1B Reading.

3. These two basic groups or classifications of children should be flexible during the first semester of instruction. They should be maintained in such a manner that the children can move from one to the other in terms of their individual needs and growth patterns. The effectiveness with which a teacher meets the needs through such a plan of organization is in direct proportion to the depth of her understanding of the child with whom she works.

4. By meeting the needs of the child who is not ready to read, and by developing basic fundamental skills through a program of reading readiness, the school can save the child an experience of failure at the end of the 1B grade. As one result a more effective program of formal reading could be offered the child who is ready to read, since he would not be held back by a slower moving group. To facilitate growth of the reading readiness child, administrative procedure can make it possible for such children to spend three semesters at the first grade level.

5. The following program would become effective in fifty-eight reading readiness schools in September 1946. In these schools, each post-kindergarten child would be rated on the Personality Inventory and tested with the Detroit Reading Readiness Test. The results of both these instruments, together with the Detroit Beginning First Grade Intelligence Test plus teacher judgments as criteria would be the determining factors for placing the child in reading readiness or regular 1B. The reading readiness group would be given, My First Workbook, Reading Readiness, and would follow the devices and suggestions provided in the Teacher's Bulletin for Reading Readiness as far as time and organization would permit.

In this chapter the writer has described the procedure used for the construction, validation, and the experimental tryout of the Detroit Reading Readiness Test. Further, a tentative Reading Readiness Program was tried out and evaluated by teachers, principals, and the Reading Readiness Committee in fourteen volunteer schools. This was designated as the Pilot Study. As the result of the Pilot Study the Reading Readiness Committee made recommendations to the Superintendent for the expansion of the program to fifty-eight Reading Readiness Schools for the school year starting in September 1946. This terminated the work of the Reading Readiness Committee and the fifth and final stage of the study was carried out by the writer. Up to this point in

the study the writer was a member of the committee with an assigned status and function. In the final stage of the study, September 1946 through June 1949, his role is one of research worker carrying out a personal project and investigation without the aid of the committee.

In Chapter III the specific problem is defined unique to the fifth and final developmental stage of the study, referred to on page 3, "a special project for the defined period September 1946 through June 1949." Limitations will be imposed on the problem, hypotheses stated, and sources and nature of the data will be given.

CHAPTER III

THE PROBLEM UNDER INVESTIGATION

Introduction

Over the past three decades research has submitted evidence suggesting that many of our serious adjustment problems in reading might have been prevented at the post-kindergarten level if a state of "readiness"¹ had existed prior to the child's introduction to formal instruction in reading.

¹The term "readiness" as an educational concept in terms of reading was found appearing in bulletins and publications in the early thirties. It usually referred to the state of readiness for the mastery of subject matter in the early primary grades, although at present it refers to a state in connection with the learning of any subject matter at any grade level. In general, the term as it appears in the literature implies a number of meanings: readiness, and educational readiness.

Biological readiness pertains to organic maturation. It refers to the development of the sense organs of speech, hearing, vision and touch. It is assumed that if the organism is under-developed, under-nourished, or otherwise defective, it cannot function efficiently in its environment; therefore it is not ready for a high level of learning efficiency.

Psychological readiness is concerned with the development of the nervous system and the ability of the mental capacities to respond. Most often this readiness refers to the mental maturity of the individual. This is discussed in terms of the mental age of the individual and is measured by intelligence tests. Many authorities state that a mental age of 6 years and 6 months is essential for the mastery of reading at the 1B level.

Social readiness describes the needs of a child in his social surroundings and implies that social pressure which he is not ready to accept will cause maladjustment and emotional instability. Children reach a stage in their play

This evidence has been exceedingly challenging to teachers and administrators, because by law a child must be admitted to the first grade when he reaches the chronological age of six. As long as the statutes recognize age as the sole criterion, many children will continue to enter the first grade inadequately prepared to begin systematic instruction in reading. Therefore, at present as in the past, teachers are confronted with the problem of providing instruction for a group of children who vary widely in their stages of development or maturity. Investigations have revealed that not all children who enter the first grade are endowed with the same abilities, attitudes, and skills necessary for successful achievement in reading, i.e., ability to read and comprehend the primers written for the first grade level. Primary teachers have expressed an imperative need for special provisions for this group of children, who are found in varying numbers in every first grade population within a school.

activities where they need to read numbers and words to successfully participate with other children.

Educational readiness suggests a state where the child is ready to learn the material presented by the teacher. It is the willingness, desire, and ability to engage in a given activity.

One possible solution to the problem is the downward extension of the first grade to include a reading readiness program² designed to provide educational experiences which would prepare the child for his future introduction to formal reading. This solution is based on recognition of the fact that many children are immature socially and emotionally, that they have limited abilities for cooperative undertakings, that their attention span is of a very short duration, and that they are incessantly active. The activities provided are not widely different from those of the kindergarten, but the breadth and depth of the experiences are expanded. The teacher's goal is to build a background of meaningful experiences, concepts, and vocabulary. Emphasis is placed on oral expression and situations which will tend to build stability and confidence in the child.

² The program under study (Detroit's) is an experimental program and is designated as 1 R.R. i.e., first grade Reading Readiness, and embodies the following important factors: 1. Provisions for real, varied and rich experiences necessary to interpret reading material. 2. Training in the ability to problematize thinking. 3. Training in the speaking of simple English sentences. 4. The development of a large speaking vocabulary. 5. Training in accurate enunciation and pronunciation. 6. The development of a desire to read through curiosity, interest, and anticipation. 7. Training in keeping a series of events in mind in their proper sequence. The administrative organization of this program will be discussed in detail in a later section of this dissertation.

With the above purposes in mind, the Detroit Reading Readiness Committee and the supervising principals recommended such a program be tried in approximately thirty per cent of the schools in the city.

Children were designated for this transition program (1 R.R.)³ by the kindergarten teacher's recommendation plus a number of objective measurements: mental age, reading readiness test score, chronological age, and rating on the child's personality inventory obtained in the last two weeks of kindergarten. The program also carried the provision that as soon as a child showed interest, aptitude, and readiness for reading, he was immediately transferred to a regular 1B reading section.

The present study was conceived and carried out for the express purpose of determining the advantages or disadvantages of a reading readiness program for a selected group of post-kindergarten children in fifty-eight elementary schools in the City of Detroit. Further, the study considered the factors and conditions instrumental in introducing the experimental program to the schools, the individual teachers' and principals' reactions to problems of administering the program, the description of methods

³ 1 R.R. is an administrative designation given to a child who has been promoted from kindergarten but because of immaturity is not placed in the regular 1B grade. Immaturity is dependent upon a number of factors which will be defined specifically and in detail in a later section.

and techniques employed in gathering the data, and parents' reactions to the program. Finally, conclusions and implications were drawn from analysis of the data. All these aspects of the study are set forth in the five developmental stages.

Need for the Study

Education has progressed beyond the stage where any instructional method that compels children to read, either willingly or unwillingly, can be accepted as a solution to the reading problem. At present we are seeking means that will serve to enrich experiences, develop right attitudes, broaden interests, and create an environment that will be conducive for the child to develop an ability and a will to think. By recognizing this problem at the post-kindergarten level, the reading readiness program made a departure from the traditional pattern of the 1B grade in the attempt to teach children to develop and maintain a desire to read. It is an attempt to adjust the post-kindergarten activities to the needs of a group of children who are not ready to read. The purpose is to provide activities, experiences, and instruction that will reasonably insure the child a fair chance for success in his first contact with reading.

No experimental program is complete without adequate provisions being made for evaluation and appraisal. The present study is not an exception to the rule. In fact, means for gathering both quantitative, and qualitative

data by which teachers, principals, and administrators can make decisions as to the strengths and weaknesses of the program have been incorporated in the experimental design. For the purpose of this study, evaluation is defined as the process of making judgments and coming to decisions concerning the goal, status, and procedures employed in a given discipline--in this case, the attempt to create a state of readiness for reading in a large group of children.

The experimental program is essentially a departure from the traditional first grade program, which is circumscribed by a prescribed course of study built upon basic reading, primers, formal word-drill, phonetic exercises, spelling, and writing.⁴ In the experimental reading readiness group, the educational theory has been evolved from the following assumptions: First, the classroom is a form of social life and ought to be democratic. These experiences should grow from the children's social activities integrated around a central problem suggested by the children's social activities. Second, a pupil's interests may be viewed as signs and symptoms of growing powers and abilities. These powers are considered best developed by activities and not alone by passive assimilation of knowledge. None of these

⁴It is not implied that the instruction in the regular 1B grades considered in this study does not take into consideration individual differences of pupils.

practices is fixed or final, and the teachers who have incorporated these practices into the reading readiness program view them as merely experimental.

Whenever a group of principals and teachers depart from a traditional educational pattern, a group of unanswered questions are formulated. The introduction of reading readiness in the Detroit schools was no exception to this rule. At the start of the experiment, the following pertinent questions were formulated:

1. What will be the administrative cost to extend the 1B grade downward to provide a program of reading readiness instruction?
2. To what extent will a program of reading readiness instruction offset the high percentage of failures usually found in the traditional primary grades?
3. What educational gains can be claimed by the additional experience and preparation for formal reading?
 - (a) Is there substantial evidence that reading readiness pupils reveal evidence of better self-adjustment and social adjustment⁵ than like pupils who are receiving the regular 1B instruction?
 - (b) Do former reading readiness pupils read as well or better than similar pupils placed immediately in 1B reading at the end of three years of instruction?

⁵ Self-adjustment is assumed to consist of the following components; self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies, and nervous symptoms. Social adjustment consists of social standards, social skills, freedom from anti-social tendencies, family relations, school relations, and community relations.

4. What will be the judgments and opinions of principals, teachers, and parents in regard to the effectiveness and workability of the reading readiness instruction after three years experimentation?

These questions arose in the course of the experimental planning of the program and the need to answer them is self evident. The writer does not assert that these are the only questions which arose, or that by the answering of the formulated questions others will not arise. It was anticipated that by undertaking to study the program for a period of years some of the basic questions could be fully or partially answered and aspects of the program not anticipated might be brought up for further consideration. To show how this end was accomplished, the dissertation will describe the present procedures, principals' and teachers' opinions, pupils' academic and social adjustments, and parents' attitudes which seem to be evolving from the present reading readiness program in the Detroit Public Schools.

In summary, the need of the study was four-fold:

1. To measure and evaluate as adequately as possible a group of reading readiness pupils in terms of social and academic adjustment at the end of a defined period of instruction.
2. To secure the answers to the questions set forth as to the worth and advisability of such a program and to anticipate and formulate further questions which the present study sets forth for further study and consideration.
3. To provide accurate data for teachers and principals concerning the present program so

that weaknesses may be eliminated and strong points identified, described, and passed on to others.

4. To develop an objective basis for evaluating and recording progress of reading readiness pupils.

Definition of the Problem

The problem selected for investigation may be stated as follows: (1) To determine methods, techniques, and forms of communication necessary to gather adequate data by which to evaluate and appraise Detroit's Reading Readiness Program at the post-kindergarten level in terms of its effects on the children's academic achievements, its effects on their emotional and social adjustment, and its administrative adaptability; (2) To make such an evaluation and appraisal.

Limitations Imposed on the Problem

The following limitations were imposed on the problem. First, methods, techniques, and communications devised and used must be applicable to all schools included in the study and be practicable for city-wide use. Second, the children to be placed under investigation and designated as the experimental "1 R.R. Group" throughout the study, must be scientifically drawn from the fifty-eight reading readiness schools. This group would be a random

sample⁶ of the total population of reading readiness children as of September 1946. The same method would be rigidly applied to a control group. Third, conclusions and implications would be drawn at the end of the three-year follow-up study. (This period, stage five, begins with the testing and classifying of children in September 1946, and extends through June 1949). Fourth, in making comparisons at the termination of the study, the following test variables would be considered:

- (1) pupils' achievement scores in reading comprehension⁷
- (2) pupils' achievement scores in vocabulary⁸
- (3) pupils' achievement scores from the California Test of Personality⁹
- (4) pupils' attendance record¹⁰

⁶ Sampling is the technique of drawing a few pupils from a total population or universe in such a way as to secure statistics on the basis of which, by inference, a picture of the total population may be drawn. When the choice of the pupils is so controlled as to give each pupil in the total population an equal chance of being selected the method is called "random sampling." The method employed to obtain this random sample was to number each child systematically and then use Lindquist's table of "Random Sampling Numbers." The children were selected for inclusion in the sample as their numbers appear in the table.

⁷ Detroit's Reading Comprehension Test 5, Form L.
See Appendix B.

⁸ Detroit's Experimental Reading Vocabulary, Form X.
See Appendix B.

⁹ California Test of Personality, Primary Form A.
See Appendix B.

¹⁰ Obtained from pupils' permanent record, Form 35.
See Appendix A.

(5) pupils' adjustment ratings¹¹ teacher's subjective evaluation)

In setting the experimental design of the study, the parallel-group technique was followed as closely as possible. The experimental variable in the study may be defined as one or more semesters of reading readiness instruction at the post-kindergarten level applied to the experimental 1 R.R. group and not applied to the control group. In all other respects, the instruction, physical environment, and materials were held as constant as possible for both groups throughout the three-year period.

Good, Barr, and Scates describe parallel-group procedure as follows:

The parallel-group procedure represents an attempt to overcome the limitations of the one-group method, since two or more groups, as nearly equivalent as possible in all respects, are used at the same time. Under carefully controlled conditions, only a single variable is manipulated, namely, the factor which the experimenter varies for the two groups, whose effect he attempts to determine. To one group may be applied the experimental factor, with the parallel-group serving as a control for comparative purposes, following a customary or non-experimental procedure. Or, different phases of the experimental factor may be applied to the two equivalent groups, although in such an instance, a third parallel-group, following a non-experimental plan, is desirable to serve as a control for purposes of comparison. For example, one of two equivalent groups may take a standard test

¹¹ Pupils' rating forms filled out by homeroom teachers (form contains information concerning grade status, language spoken at home, and five questions concerning personal and social adjustment). See Appendix B.

under conditions of discouragement, induced by the experimenter, while the second group uses only the customary directions accompanying the test. Or, the second group may take the test under a condition of encouragement and praise, which is another phase of the experimental factor of mental attitude; however, in this event a third parallel-group using only the printed directions accompanying the test is desirable as a control. Of course, the greatest difficulty in this method is to equate groups adequately.¹²

Basic Hypotheses Underlying the Study

When a group of experienced teachers, supervisors, and administrators has observed certain phenomena which have attracted their attention for one reason or another, they have a tendency to form some generalizations relative to the causes of the phenomena. Their generalizations in some cases are assumptions formulated out of experiences and partly intuitive thinking, and in other cases are fairly precise hypotheses intended to be tested; these generalizations are used as spring boards for action to guide the search for ways to overcome a problem. The present study is an example of this process and describes the departure from the traditional pattern of 1B instruction and content material to a new pattern of instruction designed to meet the apparent needs of a particular group of children.

¹² Good, C. V., Barr, A. S., and Scates, D.E., The Methodology of Educational Research (New York: D. Appleton-Century Co. 1936) pp. 493-94.

For the purpose of this dissertation, the hypotheses to be stated will serve a two-fold function: First, they will limit the field of investigation and save a great deal of time in aimless research. To restrict the area of investigation is desirable and necessary, since no single study is capable of solving all the reading problems in the field of education. Second, they will tend to sensitize the individual to facts, conditions and relationships which might otherwise pass by unheeded.

It is not the intent nor within the scope of this dissertation to list or test all the hypotheses that were instrumental in initiating a reading readiness program in the Detroit Public Schools. Only the salient ones that can be handled adequately will be listed and considered. They are as follows:

1. Post-kindergarten children who have not reached a stage of mental development, physical development, and personal development that is considered adequate for beginning reading will better adjust to a reading readiness program than to the traditional 1B program and this will be evidenced in due time.¹³
2. The percentage of failure experienced by the Experimental Reading Readiness Group will be considerably less at the end of three years of public school instruction than for a control

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For the purposes of this study due time may be thought of as any time between the time he terminates his reading readiness experiences and the termination date of the study, June 1949.

group of pupils following the traditional 1B curriculum.

3. The percentage of days absent for the Experimental Group will be less than for the Control Group over a three-year period.
4. The Experimental Group will read as well or better when compared to the Control Group at the end of three years of instruction.
5. The Experimental Group will show evidences of better personal and school adjustment at the end of the period.

The desire to test the above hypotheses was largely responsible for the introduction of the Reading Readiness Program and formed the framework for this study. They seem acceptable and reasonable in the light of available evidence from studies reported on individual children. The writer does not seriously question these studies but there is no conclusive evidence that the same conclusions will hold when applied to a large group of children in a large public school system. It is held that from experimental data reported in the literature the hypotheses used as a basis for the program as a whole seem reasonably true but may become untenable or false when applied to a large group of schools and children.

Sources and Nature of Data

The actual systematic collection of data pertaining to the problem¹⁴ stated spans a defined period of time, September 1946 through June 1949. The criteria used for the selection of appropriate techniques were three: namely, reliability, practicability, and adequacy. It is held that a technique is: (1) reliable when it can be depended upon to obtain the facts desired and to obtain them with small likelihood of error; (2) practicable when its use involves no more time or expense than the writer had at his command; (3) adequate for a given purpose when it serves to obtain or interpret a sufficient amount of desired data with the least probable error. The present study involves a canvass of conditions or status of each child, determination of central tendencies of a number of factors concerning two groups, (reading readiness and control) and utilizes extensively such data-collecting instruments as questionnaires,

¹⁴The problem selected for investigation may be stated as follows: To determine methods, techniques, and forms of communication necessary to gather adequate data by which to evaluate and appraise Detroit's Reading Readiness Program at the post-kindergarten level in terms of its effects on the children's academic achievements, its effects on their emotional and social adjustment, and its administrative adaptability.

tests, check lists, rating scales, as well as personal interviews. Tests were administered at the beginning and the end of the period defined, questionnaires, interviews, and rating scales at periodic intervals during the study.

The data employed to describe, analyze, interpret, evaluate and suggest implications and problems growing out of the study was secured from the following sources:

1. One hundred sixteen elementary schools within the boundaries of the City of Detroit. These schools may be further classified as Experimental Reading Readiness Schools¹⁵ and Control Schools¹⁶ i.e., fifty-eight Reading Readiness and fifty-eight Control Schools. Because anonymity will be maintained throughout this report, a numerical code will designate individual pupils and schools. Table XV gives the schools participating in the study. Immediately following the table, the geographical locations

¹⁵ A Reading Readiness School is defined for the purposes of this study as a school that offers a reading readiness program to post-kindergarten pupils. The course of study is built around the needs of individual pupils in terms of readiness activities. No formal reading is taught and promotion to a regular 1B class is determined by the individual growth of the child.

¹⁶ Control school may be defined as an elementary school not offering reading readiness instruction to post-kindergarten children. The control schools in this study were drawn at random from the 208 elementary schools in the city. Actually control pupils were drawn from fifty-eight schools but two of the schools are defined as Reading Readiness Schools; 05R and 32R. The pupils were

of the participating schools are given on a spot map of the city. It should be noted that the City of Detroit is divided into eight elementary districts and the heavy concentrations of schools fall in the South, Southeast, Southwest and Center districts.

TABLE XV

SCHOOL CODE NUMBER, NUMBER OF PUPILS, AND AVERAGE INTELLIGENCE RATING OF SCHOOLS PARTICIPATING IN THE STUDY

School Code	Number Pupils	Average Rating	School Code	Number Pupils	Average Rating
001R	14	3.76	059C	23	2.79
002R	19	3.06	060C	4	4.06
003R	6	2.47	061C	6	3.51
004R	8	2.38	062C	7	3.02
005R	4	3.51	063C	3	4.83
006R	6	4.04	064C	3	2.32
007R	24	2.12	065C	3	4.60
008R	8	4.05	066C	3	4.56
009R	28	2.67	067C	17	3.18
010R	2	3.64	068C	5	4.40
011R	13	3.71	069C	21	4.70
012R	14	2.50	070C	15	4.27
013R	18	3.51	071C	4	5.07
014R	27	2.83	072C	18	3.76
015R	11	3.96	073C	10	3.46
016R	7	3.91	074C	12	4.77
017R	7	3.60	075C	22	3.27
018R	16	2.18	076C	14	3.75
019R	15	2.83	077C	14	3.69

originally in control schools but were transferred to the reading readiness school shortly after the start of the study. However, they were placed in regular 1B and did not receive any reading readiness instruction. To simplify accounting the two schools in question are classified as both reading readiness and control.

TABLE XV--Continued

020R	5	2.58	078C	19	4.61
021R	7	3.38	079C	15	3.65
022R	9	4.01	080C	5	4.49
023R	16	4.14	081C	3	4.60
024R	7	3.02	082C	7	3.97
025R	12	3.37	083C	6	4.39
026R	4	3.66	084C	12	2.97
027R	4	3.87	085C	3	3.83
028R	11	3.56	086C	15	3.77
029R	5	4.27	087C	6	4.28
030R	13	3.68	088C	4	4.16
031R	7	3.66	089C	7	4.26
032R	15	2.55	090C	14	2.82
033R	8	3.66	091C	14	4.13
034R	8	4.31	092C	7	4.18
035R	13	2.32	093C	7	3.72
036R	11	2.75	094C	5	3.97
037R	9	3.47	095C	26	3.98
038R	2	2.53	096C	20	2.55
039R	6	2.20	097C	6	5.10
040R	10	3.17	098C	6	3.76
041R	8	2.59	099C	10	4.22
042R	9	3.49	100C	9	4.00
043R	5	4.06	101C	9	3.91
044R	7	2.30	102C	12	4.48
045R	18	3.39	103C	10	3.66
046R	27	4.25	104C	5	3.86
047R	1	3.40	105C	6	3.49
048R	17	2.89	106C	15	3.78
049R	8	4.38	107C	14	3.33
050R	5	4.90	108C	12	3.51
051R	2	3.33	109C	19	4.14
052R	3	3.55	110C	12	3.49
053R	9	2.98	111C	5	3.79
054R	3	3.71	112C	6	3.54
055R	26	4.54	113C	7	3.87
056R	7	2.21	114C	6	4.76
057R	6	3.33	115C	14	3.85
058R	1	3.08	116C	9	3.50

Totals: 116 Schools 1182 Pupils

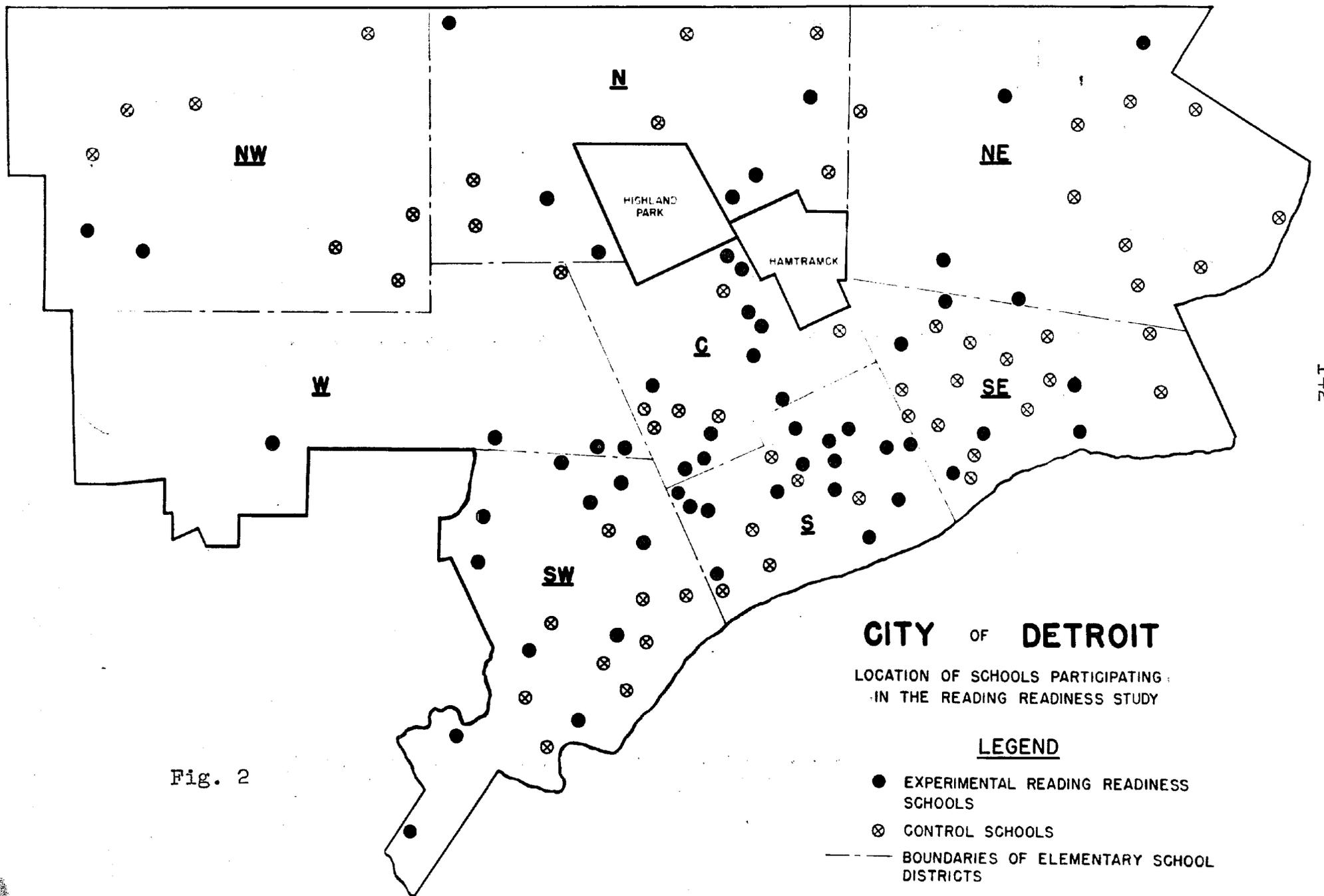


Fig. 2

CITY OF DETROIT

LOCATION OF SCHOOLS PARTICIPATING
IN THE READING READINESS STUDY

LEGEND

- EXPERIMENTAL READING READINESS SCHOOLS
- ⊗ CONTROL SCHOOLS
- - - BOUNDARIES OF ELEMENTARY SCHOOL DISTRICTS

2. Teachers,¹⁷ and principals,¹⁸ questionnaires regarding administration of the program, pupils' achievement and progress, and parents' acceptance or reactions to the program were submitted. Personal observations of Reading Readiness classes were made and recorded at periodic intervals during the three-year period. Because of the large number of schools, it was not possible to visit all schools but a representative group was canvassed.

3. Pupils' Individual Record Card,¹⁹ and a Class Record Sheet²⁰ was devised and used for recording pupil's

¹⁷The Teachers' Questionnaire was designed to gather information regarding the administrative practices found in the schools. Questions were asked concerning: (1) Is it the practice to administer the Detroit Reading Readiness Test to all post-kindergarten pupils? (2) Was the test administered in June or September? (3) What are the factors used in classifying a pupil as reading readiness? (4) Are they assigned to a special reading readiness room? (5) Are reading readiness pupils in platoon or out-of-platoon?
Appendix C.

¹⁸The Principals' Questionnaire was designed to secure the principals' opinions regarding the overall workability of the Reading Readiness Program. Was the Reading Readiness Program effective? What advantages or disadvantages have been revealed? How have parents reacted to the program?
Appendix C.

¹⁹A cumulative record of pupils' progress and achievement was designed for both the reading readiness and control pupils. This Pupil's Individual Record Form was printed on 5 x 8 cards and maintained in the central office for accounting purposes. Appendix A.

²⁰The Class Record Sheet was designed to be sent out at the end of each semester to determine the promotion or failure of each individual pupil. Appendix A.

progress.

4. The Permanent School Record, Form 35,²¹ was used to secure cumulative days' absence for each semester at the end of the three-year period.

5. The Monthly Class Report²² was used to determine enrollment and the increases or decreases of reading readiness classes during the period of the study.

6. The following tests were used for classification or to measure pupil achievement and adjustment at the beginning or end of the study period. All results were returned to the central office for interpretation or final summary.

(a) Detroit Beginning First Grade Intelligence Test,²³ This test was administered and corrected by the Psychological Clinic. This was not a special service by the Clinic,

²¹ Pupil's Permanent Record Form 29, Attendance and Scholarship Record, is a standard form which remains in the school. This form was used to secure the number of half-days present for each semester from September 1946 through June 1949. Appendix A.

²² Elementary Monthly Class Report, Form 533, Detroit Public Schools. Appendix A.

²³ Detroit Beginning First Grade Intelligence Test, revised by A. M. Engel and H. J. Baker. Yonkers, New York: World Book Co., 1937. Previous studies made by the Department of Instructional Research and the Psychological Clinic (both are departments of the Detroit Board of Education) found that mental age and ability to learn to read as measured by reading progress in the first grade show a fair degree of correlation. This may be explained by the fact that parts of the Detroit Beginning First Grade Intelligence Test give a measure of form discrimination. It is this same ability that a child must use for quick word recognition on the first grade reading tests. Appendix B.

as it is done each year on a city-wide basis. In securing the pupils' raw score and chronological age, the school summary sheets were borrowed from the Psychological Clinic.

(b) Detroit Reading Readiness Test²⁴ is administered to the post-kindergarten by the Reading Readiness Teacher. The test consists of six subtests: Vocabulary, Visual Perception of Forms, Motor Control, Visual Retention of Forms, Delayed Recall, and Immediate Recall. The front page of the test provides a profile chart and space to record the pupil's physical characteristics and the teacher's classification of the pupil on a four-point scale, i.e., Decided Readiness, Probable Readiness, Doubtful Readiness, or Undecided Readiness.

(c) The pupil's Personality Inventory²⁵ was filled out by the kindergarten teacher at the end of the first year. These forms were passed on to the Reading Readiness Teacher who retained them for one year. They later were returned to the central office for evaluation. See Appendix "A".

²⁴Detroit Reading Readiness Test, Form 8100, published by the Detroit Board of Education; Copyright 1945. Appendix B.

²⁵Personality Inventory. Published by the Detroit Board of Education; Copyright 1945. Appendix B.

(d) Detroit Reading Test 5,²⁶ Form L, Detroit Experimental Vocabulary Test,²⁷ Form X, and The California Test of Personality,²⁸ Form A, was administered to Random Sample three and seven at the completion of the Study.

(e) A Pupil's Information and Rating Sheet²⁹ for each pupil drawn on random Sample three and seven was filled out by the homeroom teacher and returned for tabulation.

In collecting and tabulating the data gathered from the sources given, great care was exercised to eliminate clerical error. Boys and girls were tabulated or recorded separately. All scoring was closely supervised and checked.

²⁶ Detroit Reading Test, Form L. (8039). Published by the Detroit Board of Education. Appendix B.

²⁷ Detroit Experimental Vocabulary Test, (Mimeographed form). Constructed by J. Wilmer Menge, Detroit Board of Education, 1948. This test was devised to measure the ability of pupils to recognize and give the meaning of words at the 3B through the 4A level. Appendix B.

²⁸ California Test of Personality - Primary, Form A. "A Profile of Personal and Social Adjustment," devised by Louis P. Thorpe, Willis W. Clark, and Ernest Tiegs. Copyright 1942. California Test Bureau. Appendix B.

²⁹ The Pupil's Information and Rating Sheet was devised to gather the following data: (1) present grade placement of the pupil as of June 1949, (2) language spoken in the homes and questions concerning the pupil's emotional and social adjustment at his present grade level. Appendix B.

The Reading Readiness Test was administered to every pupil in a reading readiness school. Every pupil (Reading Readiness and Control took the basic intelligence test. At the conclusion of the study, every pupil except one (a pupil who had a contagious disease) was tested in Random Sample three and seven.

Summary

Chapter III has defined the problem, imposed limitations, formulated the basic hypotheses to be tested, reviewed the need in the area of investigation and gave the nature and sources of data collected for the study. Although the problem defined is only one small part of the general problem of reading it is maintained to be worthwhile and is directly related to the general area of concern expressed by educators and the general public. As far as the writer is able to determine the proposed problem set forth is quite different in size and scope than any study reported in the literature reviewed. Although these studies helped immensely in the experimental planning, they did not touch upon basic problems that are anticipated for the present study in a large city school system. It is the desire of the writer that through the involvement of teachers and principals in the findings of the study, individuals may be helped to make adequate and worthwhile decisions concerning the future of such a program.

Chapter IV will discuss and describe methods and techniques employed to secure the necessary data from which the final conclusions for the study will be drawn. Differentiation between practical and rigid scientific controls imposed on varying aspects of the study will be defended and discussed. Geographic location and nature of the population will be described in relation to the random sampling procedure used.

CHAPTER IV

EXPERIMENTAL DESIGN AND METHODOLOGY

Introduction

From the very nature and the setting of the study, the writer could not employ and has not employed the types of rigid scientific control which characterize work in "pure" research. However, the concept and meaning of research have not been taken lightly to mean simply questionnairing, opinionnairing, or arithmetical manipulation (measures of central tendency, standard deviations, etc.). Controls have been applied to all variables within the study wherever and whenever administratively possible and practical. It was found early in the study that placing rigid controls on all variable factors would create undue hardship on pupils, teachers, and the administrative head of the school. For example, one may not claim that the factor of instruction was rigidly controlled, but it was controlled as well as practically possible under average classroom conditions. To control this completely was impossible, since teachers reveal individual differences in their methods and techniques of instruction. However, it should be noted that precisely the same basic controls were placed upon each group; namely, administrative directives and the average amount of supervision provided all 1B classes in the city

schools. Although the writer cannot make the statement that each reading readiness group or control group received precisely the same instruction, it can be said that teachers received the same amount of pre-teaching instruction¹, classroom materials, and supervision throughout the study.²

The method of equating groups (experimental and control) was perhaps more expedient than scientific, but here again the writer had to choose the most practical method, since the most scientific was not acceptable or practical from the viewpoint of the school administrators (principals). However, since the study may be classified as practical research in a large city school system, the decision was made to use the most practical and logical type of control in some situations, instead of the most rigid and scientific; and the writer feels the position taken is justifiable.

In some situations, alternate methods, if applied, would have rendered better control, but the study could not have progressed in the regular classroom setting on a city-wide basis. Administration had recommended that the present study be conducted as a practical service type of research

¹ Instructional meetings were held in May 1946 to present reading readiness materials and instructional methods to all teachers and principals in the participating schools.

² In this instance "The Study" is referred to as the fifth developmental stage of the overall Reading Readiness Program being investigated.

with as many scientific controls applied to the variables as practically and economically possible. The above statement is not offered because of any sense of embarrassment, but is made to better establish the problem of the writer and to further clarify the numerous problems which were investigated.

The research undertaken for the present study was for the purpose of testing the hypotheses stated in Chapter III. Further, the research was "controlled" by thoughtful experimental design which involved the selection and use of procedures and instruments³ appropriate to the hypotheses stated.

The defining statement of educational research which most nearly conforms to the writer's concept of the problem is the following:

Research is an honest, exhaustive, intelligent searching for facts and their meanings or implications with reference to a given problem. The product, or findings, of a given piece of research should be an authentic verifiable contribution to knowledge in the field studied. There are two distinct types of research; basic or fundamental or constructive research and service research. The former is fundamental to the development of a science of education; the latter is less far reaching in its scope and is usually pursued as a means of solving immediate local problems.⁴

³ See Appendix A, B, C, D.

⁴ Paul M. Cook, "Initiation Practices of Phi Delta Kappa," Phi Delta Kappa, XII (1929), 123.

The present study may be associated with the latter more than the former. It starts with a practical problem in the setting of a much larger problem, collects data, analyzes and draws conclusions on actual evidence, and involves original work instead of mere exercise of personal opinion.

Research Methods

Good, Barr, and Scates classify research methods into four categories or types. Other authors use different terminologies but the basic methods are the same in principle. In the interest of simplicity of expression in this section, no distinction is made between such terms as "procedures", "methods", and "techniques". The authors summarize these four basic methods in simple, direct style:

...(1) to examine the evidence and experience of the past as an aid in analyzing and interpreting the present situation (historical research); (2) to canvass present practices with respect to plans for dealing with such differences or to set up norms or control tendencies through testing and measurement against which the extent of differences may be checked (normative-survey research); (3) under controlled conditions, with only a single variable, to try out in a classroom or laboratory different ways of dealing with or adjusting to individual differences in pupils in order to determine the effectiveness of a given plan or procedure (experimental research); (4) to determine relationships through statistical manipulation of data (correlational calculations for example) or through intensive case or genetic study or causal-comparative group analysis, to diagnose the original or cause of differences and possibly to follow such analysis by remedial prescription and practice (types of research especially adapted to studying complex causal relationships).⁵

⁵ Good, Barr, and Scates, The Methodology of Educational Research (New York: D. Appleton-Century Company, 1935), p. 232.

The methods described briefly were considered carefully in the experimental design of the study. All four methods were employed in varying degrees in the planning, collecting data, analyzing, interpreting, and drawing conclusions. The use of the methods greatly enhanced the handling of significant problems occurring in the study. The present discussion considers and recognizes two factors or two individuals, the researcher and the administrator; both play an important role in the study. Each in part has been responsible for some discrepancies; each has been the victim of unfavorable circumstances essentially uncontrollable. The phenomenon of individual differences in pupils, teachers, instructional materials, and schools add to the intricacy of the chosen field.

No single research method can be applied to the exclusion of the others to obtain the desired results. It is quite obvious that any investigation must include phases of each method, to the extent that data are collected and interpreted, statistical techniques used, and inferences and recommendations drawn. Therefore it seems logical that methods of inquiry used in a given case of educational research must be for the sole purpose of securing data to test the hypotheses stated for that study. Further specifications and design must consider administrative problems and difficulties which may arise in any research undertaken in a classroom setting.

With the above limitations necessarily imposed on the present study, three phases of research methodology were found to be of prime importance and were applied in the experimental design:

1. Planning or designing the research pattern from stating the hypotheses to drawing final conclusions

2. Collecting data relevant to the hypotheses, including the method of drawing the samples to be studied, types and methods of observations made, and recording measurements yielded by the testing instruments

3. Applying statistical techniques to data gathered in order to interpret, draw inferences or conclusions, and further define problems revealed by the investigation

Experimental Design

The experimental design outlined refers only to the fifth developmental stage of the study. Methods, procedures, and techniques have been selected to attack the problem⁶ and test the hypotheses related exclusively to the period September 1946 through June 1949. This period may be referred to as the "Followup Study" of reading readiness and control children in 116 elementary schools. The method employed is referred to as a "modified parallel group technic".

⁶ Problem: (1) To determine methods, techniques, and forms of communication necessary to gather adequate data by which to evaluate and appraise Detroit's Reading Readiness Program at the post-kindergarten level in terms of its effects on the children's academic achievement, and its administrative adaptability; (2) to make such an evaluation and appraisal.

It represents an attempt to overcome the limitations of drawing conclusions or evaluating from the evidence of only one type of group. In the investigation, two groups are followed through the three-year period and then compared by a number of objective measurements at the close of the period.

Children who received reading readiness instruction at the post-kindergarten level instead of regular 1B reading instruction are referred to as the "experimental reading readiness group". This group received instruction in reading readiness for one semester or longer, depending upon the degree of readiness they attained at the end of the semester. With the exception of the first semester beyond the kindergarten, reading readiness children received instruction identical to that which any child would receive in the Detroit Public Schools.

Control pupils proceeded in the normal manner from kindergarten to first grade. There was no opportunity for this group to receive reading readiness instruction, as it was not offered in any of the fifty-eight control schools. Administratively, the instructional variable existing between the two groups is the one semester or longer of reading readiness given the experimental group. However, reading readiness instruction did vary from school to school and from teacher to teacher, since individual differences exist between schools and teachers. This is one of the

factors mentioned which was beyond the control of the writer. Many controls were recognized as essential in the experimental planning and will be discussed under two main headings in the following section.

Variable Factors Controlled

In setting up the controls for the study, a number of variable factors were considered; some have been controlled adequately, others practically. The factors considered are classified under two large headings as follows:

- I. Characteristics of the children and the school
 - A. General intelligence in terms of point scores
 - B. Chronological age
 - C. Previous training
 - D. Sex
- II. Educative factors affecting child achievement
 - A. Teacher factors
 1. Instructional techniques
 - (a) Learning exercise
 - (b) Motivation procedures
 2. Classroom-management procedures
 - B. General school factors
 1. Instructional materials
 2. Time devoted to learning activities
 3. Size of school
 4. School organization
 5. Administration and supervision

Clarification and control placed upon the above factors will be stated in the order given.

Point scores for every child included in the study were obtained for both groups, 1 R.R. and Control. Any child who did not take the Detroit Beginning First Grade Intelligence Test was excluded from the study.

Chronological age was precisely determined and recorded on the Pupil's Individual Record. This was checked against the permanent school record, Form 35. Because each child is required to show a birth certificate upon entrance to kindergarten, this record was considered accurate. No child under five years and six months or over seven years and two months was included in the study.

All children comprising the experimental 1 R.R. and the control group had received one full year of kindergarten training. Children receiving less or more training were excluded.

Tabulation of the various factors measured was made by sex. Boys and girls were treated separately for both experimental and control groups. Direct comparisons can be made in terms of sex on any of the statistical tables.

The teacher factor was controlled as practically as possible. This was accomplished by organizing two district meetings for all reading readiness schools, one for the east side and one for the west side schools. These meetings were

called early in May 1946 for the purpose of introducing the proposed program to the teachers⁷ and principals. The meetings were of the instructional type and lasted about three hours. Instruction and details for rating the children on the Personality Inventory were given to the kindergarten teacher. Hints and suggestions for interpretation and analysis were outlined to the first grade teachers. Full directions were given for administering the Reading Readiness Test; in fact, every teacher actually took the test and scored it. It is recognized that the request for rating the children came too suddenly and too late in the semester to be fully fair to the children and the teachers. However, since the rating was an integral part of the overall program, it was deemed advisable to make the best of an unfortunate situation by asking the teachers' cooperation and understanding. Teachers responded completely; all inventories were completely made out and returned. During the meeting, a schedule for actual demonstration lessons on techniques employed in reading readiness instruction was arranged for every school. Teachers who had taught reading readiness

⁷ "Teachers" included all kindergarten and first grade teachers in the fifty-eight experimental reading readiness schools. Teachers and principals of control schools were not included, as they were to follow the traditional 1B pattern of instruction.

classes the previous year in the fourteen experimental schools included in the Pilot Study acted as demonstrators. The instructional factor was controlled as closely as practical, but it may not have been entirely adequate.

Each teacher received the same exterior stimulation from the presentation of the program. The degree of motivation thereby evoked in each teacher and principal is questionable. It is well to note that all fifty-eight schools elected voluntarily to participate in the program. It may be concluded that a degree of motivation existed for all, but one should question whether the deliberate stimulation was the source.

Instructional and supplementary materials were the same for all schools. Here again, administratively this factor was held constant, but the initiative of individual teachers produced variations. Teachers becoming enthusiastic about the possibilities of the program created additional supplementary materials of their own. Therefore, basically all children received the same materials, but supplementary materials varied from teacher to teacher and from school to school.

Size of school (determined by overall enrollment) varied greatly, as did actual size of reading readiness groups or classes.

School organization followed one of two rather distinct patterns with slight variation. Each school designated

as experimental reading readiness was given the same administrative directives for organizing the reading readiness classes or groups within their buildings. The organization followed one of two set patterns:

Plan I called for a self contained classroom consisting only of children classified as 1 R.R.⁸ This plan was followed in the larger schools where it was administratively possible to release a 1B teacher for a reading readiness group. Under this plan, 1 R.R. classes ranged from fifteen to thirty-five children. A further feature of this plan was that children were out of platoon; i.e., they did not leave the classroom for special subjects except for health instruction. Schools adopting this plan were all large schools.

Plan II was designed to fit the needs of the smaller schools where it was not possible to assign a teacher solely to a reading readiness group. Children were classified as 1 R.R. but spent their first semester with the regular 1B reading group. They were given reading readiness instruction but received it in a regular 1B classroom. With the exception of three groups, all were out of platoon.

Both plans called for identical instruction and materials, but the physical setting of the 1 R.R. groups differed widely. Under Plan I, the children were not exposed

⁸

1 R.R. is the administrative designation of a child or group not receiving regular 1B reading instruction.

to any formal instruction in reading. In Plan II, the children received no direct instruction in formal reading but did get some indirectly from exposure to the regular 1B in the same room. This difference in setting was entirely beyond the control of the schools or the writer, as administration made no provision for extra teachers for the reading readiness program. The program was to succeed or fail in a regular school situation.

All schools were afforded the same supervision provided by the administrative head of the school, the principal. Supervision luckily held itself constant; only one supervisor was available. The supervisor visited and offered suggestions to every reading readiness school included in the study.

The above mentioned controls were applied to all fifty-eight experimental reading readiness schools but were not applied to any of the control schools. The essential difference between experimental and control groups was the one semester of reading readiness instruction given to the experimental groups. However, for the purpose of equating groups, the same controls were applied to both groups.

Determining the Experimental Group

The experimental group was determined by scores of the Detroit Reading Readiness Test, ratings from the Personality Inventories, and the conference between 1B and

kindergarten teachers in all fifty-eight experimental schools. This group constitutes all children classified as 1 R.R. The following tables summarize the testing and classification made in September 1946.

TABLE XVI

CODES OF THE PARTICIPATING READING READINESS SCHOOLS, POST-KINDERGARTEN ENROLLMENT, NUMBER AND PER CENT OF CHILDREN TESTED, NUMBER AND PER CENT OF CHILDREN PLACED IN READING READINESS OR REGULAR 1B GRADE IN EACH OF THE EIGHT ELEMENTARY DISTRICTS IN THE CITY

School Code	Number Pupils	Number Tested	%	Placement of Pupils Tested			
				R.R.	%	1B	%
District (C)							
003R	106	64	60	14	13	92	87
009R	108	50	46	44	41	64	59
019R	131	58	44	27	21	104	79
021R	48	47	98	16	33	32	67
035R	90	49	54	24	27	66	73
038R	80	45	56	27	34	53	66
041R	107	66	62	34	32	73	68
042R	122	77	63	19	16	103	84
050R	80	67	84	12	15	68	85
052R	72	57	79	22	31	50	69
District (N)							
002R	79	32	41	29	37	50	63
016R	80	71	89	32	40	48	60
017R	119	73	61	16	13	103	87
024R	176	43	24	22	13	154	88
034R	104	95	91	24	23	80	77
056R	155	86	56	32	21	123	79
District (NE)							
010R	96	96	100	16	17	80	83
025R	122	107	88	28	23	94	77
029R	79	60	76	9	11	70	89
055R	177	142	80	52	29	125	71
District (NW)							
022R	155	90	58	22	14	133	86
027R	65	43	66	7	11	58	89

TABLE XVI--Continued

School Code	Number Pupils	Number Tested	%	Placement of Pupils Tested			
				R. R.	%	LB	%
District (SE)							
005R	62	40	65	13	21	49	79
031R	78	53	68	13	17	65	83
033R	81	34	42	10	12	71	88
049R	66	38	58	12	18	54	82
051R	46	16	35	7	15	39	85
054R	38	37	97	3	8	35	92
District (S)							
004R	86	32	37	14	16	72	84
007R	189	85	45	42	22	147	78
011R	151	44	29	14	9	137	91
012R	112	48	43	26	23	86	77
013R	156	94	60	26	17	130	83
018R	153	113	74	29	19	124	81
020R	72	42	58	27	38	45	63
030R	75	67	89	31	41	44	59
032R	173	104	60	19	11	154	89
039R	77	44	57	12	16	65	84
040R	73	47	64	25	34	48	66
044R	136	82	60	28	21	108	79
048R	89	49	55	20	23	69	78
053R	97	50	52	27	28	70	72
057R	55	36	66	8	15	47	86
District (SW)							
001R	59	54	92	22	37	37	63
006R	55	50	91	15	27	40	73
008R	144	41	29	28	19	116	81
014R	159	91	57	52	33	107	67
015R	54	12	22	11	20	43	80
026R	51	51	100	10	20	41	80
028R	84	59	70	28	33	56	67
037R	62	39	63	17	27	45	73
043R	55	50	91	12	22	43	78
045R	81	61	75	40	49	41	51
047R	41	27	66	6	15	35	85
District (W)							
023R	198	62	31	27	14	171	86
036R	64	41	64	18	28	46	72
046R	77	77	100	51	66	26	34
058R	60	41	68	16	27	44	73

TABLE XVII

DISTRICT CODES, NUMBER AND PER CENT OF CHILDREN TESTED, AND THEIR SUBSEQUENT CLASSIFICATION

District Code	Number Tested	Number Tested	%	Placement of Pupils Tested			
				R. R.	%	IB	%
C (R) 10*	944	580	61	239	25	705	75
N (R) 6*	713	400	56	155	22	558	78
NE (R) 4*	474	405	85	105	22	369	78
NW (R) 2*	220	133	61	29	13	191	87
S (R) 15*	1694	937	55	348	21	1346	80
SE (R) 6*	371	218	59	58	16	313	84
SW (R) 11*	845	535	63	241	29	604	72
W (R) 4*	399	221	55	112	28	287	72
Grand Totals(58)*	5660	3429	61	1287	23	4373	77

*Number of participating reading readiness schools in the study.

The results of the testing and classification are summarized below for the total population in the reading readiness schools:

1. Approximately three out of five post-kindergarten children (sixty-one per cent) took the Detroit Reading Readiness Test. In individual schools the number of children tested ranged from twenty-two to one hundred per cent.

2. Approximately one child out of every five children of the total population (twenty-three per cent) was classified to receive reading readiness instruction. This group constituted the total reading readiness population as of September 1946 and is considered basic.

3. Approximately two in every five of the children tested were (thirty-seven per cent) classified as reading readiness. This means that teachers and administrators

excluded some children from the initial testing. The test was not administered to these children and they had no chance to be classified as reading readiness. It was found that this group of children all had high intelligence ratings. Inasmuch as intelligence tests and Reading Readiness tests correlate high with each other, it is extremely doubtful that many of these children would have been classified as 1 R.R. even if they had taken the test.

4. The district having the greatest number of schools participating in the study was the "S" district (fifteen schools); the least, the "NW" (two schools).

5. The district having the greatest number of children in 1 R.R. is the "S" (three hundred and forty-eight children); the least, the "NW" (twenty-nine children). It should not be assumed that the children who were not classified as 1 R.R. constituted the control group. This was not the case, as these children screened by the Reading Readiness Test had a much higher average intelligence than the 1 R.R. children. That groups should be equivalent with respect to measures of general intelligence has been generally accepted by research: this principle ruled out the possibility of designating this group as the control group. However, a control group was selected on the basis of four criteria; raw intelligence score, chronological age, similar training and school experience, and sex. Each child was required to satisfy the criteria before becoming a member of this group.

Determining the Control Group

Children for this group were selected by studying the Psychological Clinic's records of all children tested in June 1946. A composite list⁹ of all children who obtained a raw score of 3 to 76 and between 66 and 69 months of age was made irrespective of school or location. The children named on this composite list did not constitute the control group, but the list did represent a registry of potential control pupils located by school. For reason of simplicity and clarity, the final selection and definition of the control group will be treated more extensively later in this chapter. At this point the writer had established two large populations: the total reading readiness population located in fifty-eight experimental schools; and a potential control population, equally large, selected by applying the four criteria to all children drawn from the record forms of the Psychological Clinic. Children who were able to satisfy the criteria made up the total control population. To clarify further the two distinct populations, a pictorial presentation of the post-kindergarten population in the two hundred and eight elementary schools is shown on the following page.

⁹The form sheets gave name of the child, school attended, chronological age, and sex for each child.

An alternate method¹⁰ to establish an experimental and control group was suggested to the administration. This method is outlined briefly under five headings:

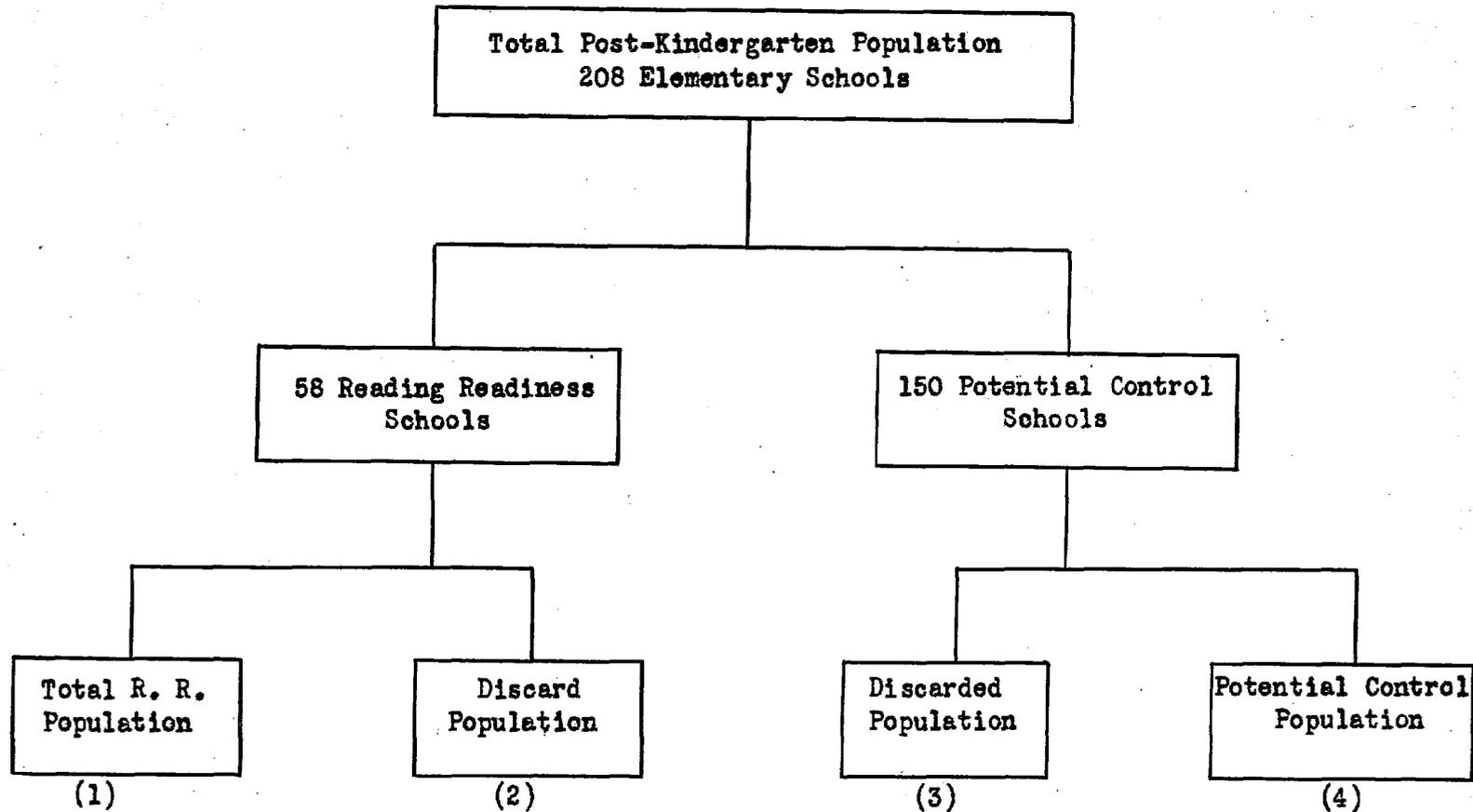
1. Selection of two equal groups. Determine the post-kindergarten population in the fifty-eight schools and by means of random procedure divide them into two equal groups: Control to be called group "B", Experimental to be designated as group "A". It is essential that the individuals be assigned to the two equal groups in a purely randomized manner.

2. Administer the same initial test instruments to both groups. Give both groups the Reading Readiness Test. Tests would be administered in the usual manner but the scoring would be done by the Department of Instructional Research. Classification of children would be made by the Language Education Department.

3. Group B, the Control. All children in this group, regardless of score on the Reading Readiness Test, would be placed in regular 1B classes. No scores for Group B would be reported to the schools or the teachers. In this way teachers would not know which children would have been assigned to R.R. classes had this group not been designated

¹⁰ This method was suggested to the administration but was deemed impractical in a regular school situation.

ESTABLISHING TOTAL READING READINESS AND CONTROL POPULATIONS



1. Total Reading Readiness Population: includes all post-kindergarten children classified as R. R.
2. Discard Population: includes all post-kindergarten not classified as R.R. in the fifty-eight Reading Readiness Schools.
3. Discarded Population: includes all post-kindergarten children who did not meet the criteria.
4. Potential Control Population: includes all post-kindergarten children who met the criteria.

Fig. 3

the control. At the end of one semester, that is, at the end of the 1B grade, give all the children a test in reading. At the end of the second semester, test again--this time all those promoted to 1A and also all that had to repeat 1B. At the end of three semesters, test again in reading. The group would now be divided among three different grades--those who have been promoted twice and have reached the 2B grade--those who have been promoted only once and have reached the 1A grade--and those who have never been promoted and are still in the 1B.

4. Retardation of the Control group. If all children have been promoted twice, the number would be multiplied by 3 (for three semesters). In order to measure the retardation in this group, multiply the number in the 2B by 3, the number in 1A by 2, and the number in 1B by 1. Add these three products to obtain child semesters in this group. The difference between this number and (total group x 3) would be a measure of the amount of retardation.

5. Experimental Reading Readiness. This group would be designated as "A". Place all children who ranked above the 25th percentile in regular 1B reading; the others would make up the reading readiness groups. Follow the identical procedure for testing as with the Control Group B. This also would apply to determining the retardation for this group. This procedure would yield the necessary data to make comparisons between the two groups at the end of three

semesters or three years.

Although the plan was considered, administration decided it would be impractical for the fifty-eight experimental schools to use it. These schools had volunteered to try the program as recommended by the reading readiness committee, and they felt that a controlled experiment, requiring a laboratory setting within their schools, would create an undue hardship upon the administration and teachers. It was decided to maintain the program in a regular school setting and at the end of the three-year period to evaluate it from that standpoint.

Description of the Post-kindergarten Population

In the previous section, reference was made to a total reading readiness population and a total control population. The two combined made up the total post-kindergarten population, i.e., all children promoted from kindergarten with either 1 R.R. or regular 1B status as of September 1946. These children were located in over two hundred elementary schools. The geographical distribution covered the entire city. The economic level of individual neighborhoods thus ranged from the lowest to the highest to be found within the city limits. Detroit, like other large industrial communities, has many separate neighborhood concentrations of nationality groups and racial groups. However, it was found that English was spoken in the homes, with the exception of a very few cases (fewer than ten); consequently

the factor of home language was held constant or nearly so.

The mean intelligence of this post-kindergarten population compares favorably with that of like populations in Detroit over the past five years and with the two succeeding populations, 1947 and 1948. Therefore it may be concluded that the groups under investigation originated from a population of the city whose intelligence was average and characteristic. It should be noted, however, that the total reading readiness and the potential control populations were not average. They were considerably below average, as they were made up almost wholly of children with C-, D, or E intelligence ratings.

Plan of Procedure

The original plan outlined early in the study called for a testing period and appraisal at the end of each academic school year both for the Control and Experimental groups. In this way the child's reading achievement, social or school adjustment, and grade placement would be recorded at yearly intervals for the study. This plan was attempted at the completion of the first year 1946-47, but it met with so many administrative difficulties it was abandoned in the first test situation. To mention a few of the problems should be enough to convince the reader that if the writer had held to the original plan the program of reading readiness would have been doomed to failure.

First, it was impractical to test a segment of a 1A group. Since the time the original group had been formed, many children had been transferred; also, many new children had entered from outside the school. The lists sent out from the Department of Instructional Research were confusing to the teacher, who found that only a few of her class were listed.

Second, the reading readiness testing period conflicted with the regular Detroit testing period. Teachers did not have the time to give special tests or fill out rating scales for the children included in the study.

Third, it was impossible to locate transfers (children may have transferred to three or four different schools during that period).

Fourth, it proved far too great a clerical task for the teacher and the school office to keep the children's records straight.

Although the original plan was carried through for the reading readiness group, the control group was not contacted at the end of the first year. The reason is quite obvious; there were only fifty-eight reading readiness schools whereas the control group was scattered in over one hundred and fifty separate elementary schools. If the plan was not feasible in fifty-eight schools it surely would meet with opposition in one hundred and fifty.

For the record, a graphic view of what did happen to the reading readiness group at the end of the first semester is shown on the next page. This information was obtained by sending a Class Record Sheet¹¹ to the fifty-eight experimental schools in March and June 1947.

Alternate Plan Adopted

It was decided to discard the troublesome provision in the original plan--the periodic testing of children over the three-year period--and to test only at the termination of the study in June 1949. All other provisions remained essentially the same and will be stated without reference to the original plan. The procedure for collecting and organizing the data is as follows:

1. Request to locate children. In April 1949, a request was sent to all reading readiness and control schools to inventory all original children associated with the study in September 1946. The following is an excerpt taken from the letter sent to the principals of the elementary schools involved in the study.

...At the present time the writer requests your cooperation in order to complete the three-year follow-up study of the Reading Readiness Program. It is now necessary to determine the grade status of pupils comprising the control or reading readiness group selected for this study. These children were promoted from

¹¹ See Appendix A.

READING READINESS PROGRAM

Graphic View of What Happened to the Children
At the End of the First Semester

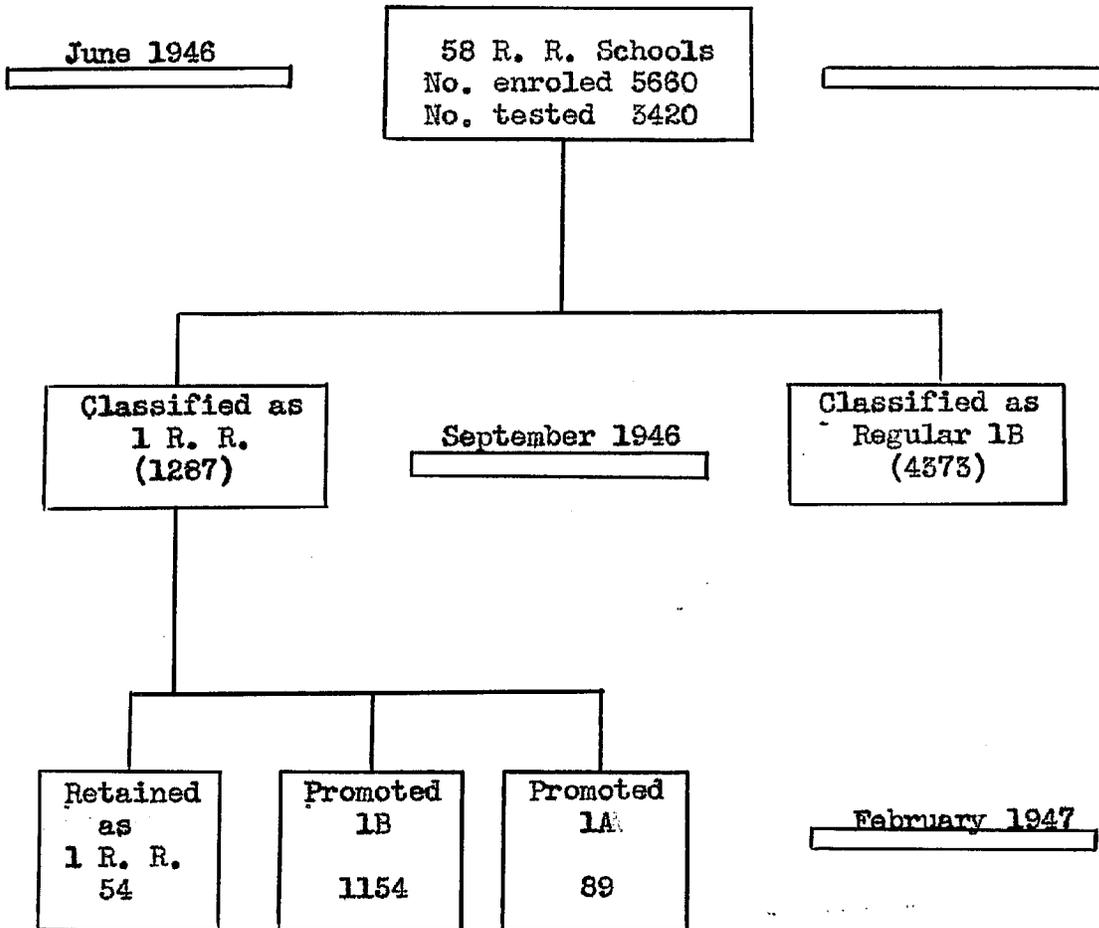


Fig. 4

kindergarten to the regular 1B grade or to 1 R.R. in September 1946. No attempt has been made to ascertain their progress since that time. Therefore it is necessary to know their present status to make comparisons. The experimental design of the study recognizes many variable factors existing within the two groups. However, only four criteria are being used to match the groups; namely, raw score achieved on the Detroit Beginning First Grade Intelligence Test, chronological age, sex, and one year experience (instruction) in the kindergarten. Your school is one that has either reading readiness or control children that will eventually be drawn in the sampling procedure. However in the final analysis it is not anticipated using the total number of children, as this number could not be adequately handled. A random sample will be drawn from the total population of each group. A list¹² of the children located in your school is attached. Check this list and return to the Department of Instructional Research by March 1, 1949.¹³

Teachers were asked to furnish the following information:

1. The present grade status of the child as of April 1949.
2. If the child had left the school, mark "left" and record the date and the school of transfer.

SAMPLE

Name	Code	L.R.	Int. Score	Age Code	R.R. Score	Grade Status	Trans. To
1. Jones, Sam	01	E	22			2A	
2. Smith, Ethel	01	D	41				2/16/48

Other information concerning the child was filled in completely before the lists were sent to the schools. This

¹² See Appendix A.

¹³ Actually two letters were sent to the schools. One to the Reading Readiness Schools and one to the Control Schools. For the sake of simplicity and to conserve space the letters were combined in the above excerpt.

information was secured from the Pupil's Record Form.¹⁴ By March 1, 1949, all lists had been returned and both populations (R.R. and Control) were determined. The new population of R.R. consisted of only seven hundred of the original 1287 children. A similar loss was suffered by the control schools. Loss of original children was due to: (1) transfer to other schools, (2) transfer out of the city, and (3) records not complete. No attempt was made to recover the children who had transferred. However, investigation of a few transfers revealed some children had moved five times in the three-year period. Although the Pupil's Record Forms were not used as originally designed--i.e., recording the yearly testing periods for both groups--the forms did serve their purpose in recording all data at the beginning and the completion of the study.

2. Redefining the population of the groups. In May 1949, the reading readiness was again determined in the fifty-eight experimental schools. Record cards were carefully examined to see that every card had complete data. In many instances, schools were contacted personally by phone to determine whether the child was still in attendance. The short period from March to May eliminated approximately one hundred more children through transfer. The largest loss

¹⁴See Appendix A.

was due to families moving back to rural areas. By the middle of May, a stable population of 591 reading readiness children was recorded in the fifty-eight original R.R. schools. This population is now defined as "the stable reading readiness population". With the exception of a few children who were forced to drop out of school in the last few weeks with contagious diseases, this group completed the three-year period defined in Stage Five of the Study.

The potential control population was examined in identically the same manner and finally narrowed down to approximately eight hundred children in some seventy-two schools. The next step was to select fifty-eight control schools to match as closely as possible the fifty-eight reading readiness schools and select at random 591 children within these schools. This procedure was carried out and the resulting control population was fixed. Every child in the "stable control population" was checked and accounted for as of May 1949. The "stable R.R. population" and the "stable control population" combined is now defined as the Study Population.

This perhaps was the most difficult problem encountered in the entire study; namely, the locating of children after three years of public school life. The writer wishes to point out that the problem would have been handled far more easily by using only a few schools for the investigation, but this would not have satisfied the administration. The problem and charge was to evaluate the program in the

fifty-eight experimental reading readiness schools. Therefore, the laboratory controls usually applied to experimental schools had to be circumvented in many instances. Further the studies cited in the first chapter had drawn their conclusion for a small number of schools and children. The question was still unanswered for a large city system.

Step two of the procedure has been completely described and resulted in the formation of two rather large populations derived from a much larger population in existence at the beginning of the study.

3. Request for testing and appraising children. A letter¹⁵ was sent to all participating schools on June 1, 1949, requesting their cooperation to complete the study.

The following is an excerpt taken from the original letter.

...June 1949 terminates the three-year followup study of the Detroit Reading Readiness Program. The program began in September 1946 with 1287 children tested and placed in reading readiness groups or classes. Accurate data have been recorded on these children at regular intervals over the three-year period. Records of a similar group (control) have been kept over the same period. At present the problem is to compare these two groups of children by administering the same test instruments. Due to the nature of the study, no comparison will be made between schools. As the study draws to a close, the collection and treatment of these data constitute a major problem. Therefore, a method of scientific sampling has been decided upon rather than to try to collect the data from the entire population of both groups. By this method of sampling,¹⁶ the following

¹⁵ See Appendix C.

¹⁶ Method of sampling used will be treated adequately at the beginning of Chapter V.

children in your school have been drawn for collecting the data necessary to complete the study. Due to the scientific selection of these children, it is extremely important that accurate data be secured. The homeroom teacher is asked to administer three tests, our regular Detroit Reading Test 5, Form L, our new Experimental Vocabulary Test designed for the 2A through 6A, and the California Test of Personality. These tests can be administered during the regular testing week of June 6. Complete instructions for administering the tests are enclosed in the testing envelope. Teachers are not required to score the tests. Complete information concerning each child has been placed on the front of each test, i.e., name, classification (reading readiness or control), grade, age code, score code, etc. Teachers' names have been omitted, as the child may be in grade 2B or in 4B due to the child's acceleration or retardation over the three-year period.¹⁷

A list of the children drawn in the sample accompanied each letter sent to the schools. The data requested were returned by June 10, 1949.

In order to secure evidence of the child's school adjustment to match against his verbal responses on the California Test of Personality, a rating scale¹⁸ was sent to the teachers along with the tests. Teachers were asked to check each child on a three-point scale in response to seven questions which bear to some degree on his school adjustment. The questions were as follows:

1. How does the child get along with his classmates?
2. Does the child attempt to attract attention?

¹⁷ See Appendix C.

¹⁸ See Appendix B.

3. How emotionally stable is he?
4. What is his reaction to authority?
5. What in his attitude toward school work?
6. How attentive is he?
7. How does he react to discussion of himself or his work?

In addition to answering the questions pertaining to the child's school adjustment, the final grade status of each child was requested. Complete data for each child was returned by June 22, 1949.

Teachers and Principals Look at the Program

Although an evaluation and appraisal was made during the Pilot Study in fourteen elementary schools, it was deemed advisable to make a similar evaluation for the expanded program in the fifty-eight schools. As used in education, evaluation is a far more inclusive concept than measurement. The term "measurement" implies the use of a test, the results of which are expressed in objective, quantitative terms. In the present study, therefore, measurement represents only one approach to evaluation. This aspect has been carried out by testing at the beginning and at the completion of the study. The other aspect of evaluation of the study was the attempt to appraise other features of the program, such as school organization and workability of the program. To appraise factors in the program that were not touched by the testing, two methods were employed: first, questionnaires

sent to teachers and principals in the participating schools; and, second, personal observation in a few classrooms where the program was in actual operation. The first in order of discussion is the teacher's questionnaire, filled out and returned by practically all teachers in the reading readiness schools. The questionnaire was designed to secure the teacher's reaction to the program as it functioned in the school; further, to list the varying practices that teachers used within the school in order to adjust the program to the school organization.

Teachers' Questionnaire Concerning School Practices

The nature and setup of the questionnaires¹⁹ do not lend themselves to summary in the form of a table: consequently each item will have to be dealt with separately. The items will be quoted in the order appearing on the questionnaire, and the writer's comments will follow each item.

1. Was the Detroit Reading Readiness Test administered to all kindergarten children in your school who finished the kindergarten in June 1946? (a) Was the test given in June or September? (b) Do you have any comments that would further clarify the plan used in your school for administering the test?

Only three of the fifty-eight Experimental schools gave the test to all of their post-kindergarten children.

¹⁹ See Appendix B.

Apparently reliance was placed upon the judgment of the kindergarten teacher to recommend some children to be classified in regular 1B without being tested. No single instance was reported where a child was placed in reading readiness without being tested.

(a) At the start of the program, only three schools waited until September to test their post-kindergarten children. However, a later check with the schools revealed that this policy has been changed.²⁰

(b) In response to this question, a variety of practices was revealed by the schools. Some schools increased the number of children tested in one sitting from eight to ten. Some schools released all first-grade teachers from classroom assignments to administer the test. Some felt it was unfair to ask first grade teachers to assume this extra duty either at the beginning or end of a semester. Their feeling was that a paid substitute provided by the Board of Education was needed for the work. Another suggestion was that student teachers from Wayne University be provided; another, that testers be supplied by the Psychological Clinic. However, all the reading readiness teachers agreed that the best plan would be for the regular teacher

²⁰ At present, by far the majority of schools test in September. A more complete coverage of children can be obtained in this manner.

assigned to the incoming class do the testing but be relieved of the other end-of-term assignments. All teachers felt that valuable information was gained by having the regular teachers observe the children under the testing conditions.

2. Will you describe how you decided a child was classified in reading readiness?

Most all schools followed very closely the recommendations set by the Reading Readiness Committee. Every child's case was examined in reference to his Reading Readiness percentile score, rating from the Personality Inventory, letter rating, physical examination, and social adjustment described by the kindergarten teacher. However, there were some deviations from this pattern. One large school placed the lowest third of the group in reading readiness. Two schools relied wholly on the kindergarten teacher's judgment and used the tests only to diagnose the difficulties of the child. Three schools administered the Reading Readiness Test to only their D and E children. In most instances, the kindergarten teacher was called upon before a final decision was reached.

3. How did you group the children after they were assigned to reading readiness?

Thirty-nine schools reported that they maintained a self-contained classroom for the reading readiness group. Nineteen reported that their group of reading readiness was too small for segregation and was part of a regular 1B room.

As to the merits of the two patterns, opinions were divided. Some thought the reading readiness children gained a great deal from their contact with the regular 1B's. Others thought it gave the children a sense of failure, and they much preferred to have self-contained classroom set up. This controversy was aimless, as the administrative organization of the school largely determined the policy.

4. Were the reading readiness children in a platoon or non-platoon section?

Forty-one schools reported their reading readiness children to be out of platoon; seventeen schools, in the regular platoon sections.²¹

In summary, the teachers reported varying practices existing from school to school. This is understandable, as the original intent of the program was to meet the individual needs of children and, of course, the school organization itself.

Principals' Questionnaire

In order to sample the opinions of all individuals concerned with the R. R. program, a second questionnaire,²² similar in many respects to the teachers' questionnaire,

²¹ Since the trend in Detroit has been away from platoon in the 1B and 1A grades, it is extremely doubtful that any of the present reading readiness children are on a platoon schedule.

²² See Appendix C.

was sent to all Reading Readiness Schools. Whereas the instrument for the teachers revealed practices and organization found in each classroom, the principals' questionnaire was directed toward determining attitudes and opinions about the overall program within each school. Each question will be given and the responses or evaluation of the situations will be quoted:

1. In your judgment, has the Reading Readiness Program been effective in your school?

...Yes, as we have many children who need further training in social adjustment after the kindergarten. This training can be given and is given if the teacher does not have to have the child reading at a certain rate at a particular time. The program is particularly useful to schools that receive a great many transfers during the semester. The reading readiness group or class receives all LB transfers after school starts in the fall. The reading readiness teacher then determines if the child is actually ready for the regular LB grade. This procedure has worked well in some schools, in others the R.R. group became a dumping ground for discipline cases and children with excessive absence. Schools that received children without kindergarten training all classified the children as reading readiness.

...Decidedly so. Our pupils who are now LB and who have had Reading Readiness are showing much more progress and stability than similar groups have shown.

...I believe it has been successful in providing constructive activity for children too immature to undertake LB work successfully. Without exception it is a marvelous improvement over the traditional pattern of LB reading for all children.

...The program has proved so successful in our school that I believe all children should be exposed to the program before starting regular reading.

...We like the program except for one rather serious difficulty we have not been able to overcome. Some children seem ready for regular reading after

about six weeks reading readiness instruction. The 1B teacher is rather reluctant to accept these children. Reason--they slow up the children that have been reading since the beginning of the semester.

...Our particular setup calls for only a few reading readiness pupils in with a regular 1B class. Our first grade teacher, and she is a good one, complains of the special type of materials that must be provided for these children. She would much prefer to go back to her method of grouping "X Y Z". (This plan was in effect for many years in Detroit. Many of our older teachers still maintain the grouping in their classrooms).

2. From your observations, what have you found to be the chief value or advantages of the Reading Readiness Program?

...For many years teachers have been complaining that pupils with D and E letter ratings are not ready to read. The program provides a place for these children. It caters to the capacities of children who are not mature enough to indulge in the regular reading activities.

...For the slow child it is an opportunity to experience a few successes instead of only failure. Adjusts work to level of the slow learner. The child learns to follow instruction, learns his colors and gets a real foundation for regular 1B work to follow at the end of the semester. The child will also develop skills in visual auditory discrimination, and motor controls, that will help him develop an ability to retain words.

...Prevents 1B failures. Gives children too old for kindergarten and yet mentally too young for reading a sense of satisfaction in doing. It individualizes instruction.

...Our present program helps the desire to read. Our children do not have the contacts with books or stories at home which help to create this desire. The motivation supplied in this room together with the various types of training has been very helpful. Children have time and opportunity to become oriented to school, platoon, and reading activities and progress easier and faster after Reading Readiness.

3. What disadvantages have you observed or what reservations do you have concerning the program?

...We have found that care must be taken that children who are capable of doing regular work aren't held back. Children who are capable of learning to read after a short period of R.R. should be promoted to 1B. Administratively this is difficult.

...I do not believe it is the final answer to the problem of slow-learning children. Even after having one semester in Reading Readiness, the slow child has a difficult time with Picture Story. I believe the 1B teacher should be equipped and qualified to teach more than one method of reading. It seems to be the opinion of the 1B teachers that Picture Story is too difficult for slow-learning children even after spending one semester in Reading Readiness.

...No reservations. As we handle it, can see no disadvantages. However, the supply of materials is quite inadequate. This of course also holds true for the regular 1B's. Programs of this type should have a special budget to obtain needed supplies and materials.

...Further information should be given parents to familiarize them with the advantages of the program. Most parents hear about it for the first time after their child has been placed in a reading readiness group.

...Thirty children not ready to read constitute too great a problem for any one teacher to handle. Classes or groups of this type should be limited to twenty children. They need far greater individual attention.

...The advantages far outweigh the disadvantages and with any new program there are bound to be some. These are minor with us and I believe can be solved within our own building. First, materials--the art teacher is now helping the R.R. teacher to produce some mimeograph material suitable for use. Second, making the shift from R.R. to 1B for a few children who seem ready for formal reading. The other R.R. children look upon this as a promotion and are discouraged.

4. What reactions have you had from parents when they were informed that their child had been placed in Reading Readiness?

...None which were unfavorable. Teachers explained courses and purpose to parents and everyone accepted it as being the instruction which their child needed.

...We have had fine cooperation with parents. Not one parent has expressed dissatisfaction or disagreement with the program.

...Most parents were pleased to have their children introduced gradually to reading. A few expressed displeasure but not seriously. Some seemed disappointed until the program was explained. There has been but one or two inquiries; seems to be the result of the reading readiness report card. On the whole completely ignored the program.

...Our situation is probably not average as our school is considered one of the higher intelligence schools. We only had three children and all parents objected rather strongly.

5. What explanation did you give to parents that was helpful in explaining this program to parents?

...Purposes of the program, needs of children of various types, and the types of activities that help children get ready for reading. Invited parents to come to the school and visit a reading readiness group.

...Convinced the parents that the program was especially designed for children who had difficulty in reading. That their child had a good chance to be promoted to regular 1B before the end of the semester. The letter to parents at the beginning of the program paved the way. Very little more was needed.

In summary, it may be said principals were very favorably impressed by the workability of the program in their school. Of course they all would like more teachers provided for the program and more physical space and equipment (materials). The writer is convinced that teachers and

principals feel the program is helping in a small way to meet the problems of teachers and children at this level.

Observing the Program in the Classroom

The writer did not actually visit all of the fifty-eight Experimental schools during the three-year period. However, a number of schools was visited, enough in fact to be fairly representative of the total group. Each teacher and principal has discussed the program freely in either one of two settings; in the actual classroom or in teachers' or principals' meetings. Notes concerning the various visitations or meetings have been kept and will be consolidated at this time. All discussions and meetings centered around teaching materials for the R.R. program, procedures used in assigning pupils to reading readiness classes or groups, promotion policies, etc. The major purpose was to secure ideas from the reading readiness teachers and principals in the schools that would be helpful for a general evaluation at the end of the study.

1. Assignment to Reading Readiness. The Reading Readiness test is an important factor in deciding whether a child is ready to begin reading. The test was appraised favorably by far the greatest majority of teachers. However, no easy method for administering the test has been found. As far as was determined in nearly all schools, test results were confirmed by the judgments of the kindergarten teachers. One school was an exception: the

thirty-five children who scored lowest on the test were arbitrarily assigned to a reading readiness class because there was room for thirty-five children.

In many instances the Personality Inventory has not been accepted favorably. It has not proved too helpful in the actual job of making assignments to reading readiness or in appraising the value of reading readiness work of individual children. Some teachers made the comment that they didn't even look at the Inventory which had been filled out by the kindergarten teacher until after the child had been in the reading readiness class for several weeks. Teachers all agreed that critical observation of children while they were taking the test was an excellent means of diagnosing work habits and ability to follow directions. Brief notes concerning these behavior habits of children in the test situation proved valuable in predicting the probability of success in regular 1B reading.

2. Instructional Procedures in the Classroom. The Work Book represents only a small part of the materials that were needed for adequate instruction. Practically all the materials regularly supplied to a kindergarten room were needed for reading readiness. In addition to the Work Book and kindergarten materials, there were other materials which had proved their usefulness and previously had had to be produced or secured personally by individual teachers. These materials include cards showing likenesses or

differences among different types of figures and drawings, matching games to be used by children individually at their seats, paints, brushes, and bags, peg boards, and wooden beads.

A strong recommendation was made by all the teachers that definite plans be made for orienting teachers new to the Reading Readiness Program and for giving these teachers newly assigned to reading readiness work specific instructions in teaching methods and materials. It was suggested that visits to other reading readiness schools would be helpful. Courses at Wayne University were also suggested as a possibility. It was pointed out by some teachers that principals are not well informed concerning the purposes and nature of the program. (Lack of understanding on the part of the administrator nearly always handicaps the teacher, who under the best of circumstances has great difficulty in securing adequate materials and equipment.)

3. Promotion Policies. In discussing methods of promoting children from reading readiness to 1B, several different types of practices were described.

- (a) Those children who proved most able were promoted from reading readiness to the 1B during the first semester but they remained in the same class until the end of the term. At the end-term marking period the report card showed a promotion to 1B. The teacher started these children on picture story materials and at the end of the semester they went into a regular 1A class.

- (b) The more able students--those who demonstrated the skill and maturity required for beginning reading were promoted during the first semester and were transferred from reading readiness to a regular 1B section.
- (c) In one school it was reported that no child had been promoted to 1A at the end of one semester after having been originally assigned to a reading readiness class.
- (d) In one school about half of all reading readiness children began 1A at the end of the first semester.
- (e) One group observed was composed of regular 1B's and children who had been promoted from R.R. the previous semester. The children with previous R.R. instruction were progressing faster and apparently more easily than the regular 1B's. This was reported by the teacher and substantiated by the principal.

4. Reading Readiness Report Cards.²³ In three schools the special report card is used both in regular 1B classes and in the reading readiness classes. These three schools proved to be the exception, as all other R.R. schools used the special report card for R.R. children. The original purpose of the special card was to avoid difficulties that might arise through use of two types of reports to parents in the first semester following the kindergarten.

In general, teachers or principals did not feel that interpreting the report card or interpreting the program itself to parents was especially difficult..

²³ See Appendix C.

Most schools reported that if almost any kind of reasonable explanation is made to parents, they accept it without serious criticisms. There was general agreement that the special report card should provide a space for reading readiness mark and also 1B. In that way the same card could be used for both groups within a school. This plan has now been adopted in most reading readiness schools.

5. General Evaluation and Suggested Appraisal.

Teachers expressed a number of evaluative judgments concerning the effectiveness of the program in their respective schools. Some of the comments were:

(a) It is a good thing for practically every pupil to pass at the end of the semester. This never happened when all pupils were assigned to regular 1B work.

(b) The program seems to have been extremely valuable in eliminating failures at the 1A level. This statement implies that when children are promoted from reading readiness, the majority are ready to read and make normal progress.

(c) Many children who started 1B work became behavior problems because they couldn't do the required work. They were transferred to reading readiness, where the behavior symptoms disappeared and they made satisfactory progress.

(d) Children who are unable to do 1B work often develop withdrawal tendencies rather than become "behavior problems" in the usual sense of the term. This type of response to work that is too difficult is much less likely to occur in a reading readiness class because of the flexibility and type of work offered in standards of achievement expected.

Teachers and principals both felt that an adequate plan of appraisal should provide for a continuous study over a

relatively long period of time. The five criteria mentioned most frequently for judging the value of the program were: (1) incidence of behavior problems, (2) retardation or incidence of failure, (3) truancy, (4) absences, and (5) incidence of withdrawal behavior.

In discussion of the criteria, it appeared that the criterion of "ability to read" was considered to be of secondary importance. Several of the teachers concurred in the opinion that the average child who was first introduced to formal reading at seven or eight years of age would probably be able to read as well at the age of twelve or fourteen as the child whose instruction in formal reading began at the age of six.

In general, the only types of records kept by all reading readiness teachers were: (1) Form 35²⁴ and (2) the cover page to the Reading Readiness Test. These records were ordinarily kept in the classroom in the teacher's personal file. In some instances the Personality Inventory²⁵ for each child was kept in the classroom. Very few of the teachers considered the Inventory to be an important part of their records.

Visitors to the schools found considerable variation in the Reading Readiness Program. In the different schools,

²⁴ See Appendix A.

²⁵ See Appendix B.

significant differences were found both in procedures used for assigning children and in actual methods of teaching and the use of materials. Again, this indicates flexibility in the general program; individual schools had leeway to make their own adjustments to the program. Teachers and principals were all agreed that it would not be desirable to attempt to standardize teaching methods. It was recognized, however, that in any general plan of appraisal it is necessary to give careful attention to the problem of defining carefully the term "reading readiness instruction."

Summary

In Chapter IV the experimental design has been outlined for the fifth and final stage of the study. Methods, procedures, and techniques have been selected which the writer believes will yield valid and adequate data by which to draw conclusions at the termination of the study. Controls have been assigned to as many of the variable factors as possible without placing undue hardship upon pupils, teachers, and school administrators. The classroom organization designed for reading readiness instruction has been outlined in Plan I (the self-contained reading readiness classroom) and Plan II (the reading readiness group within the regular 1B section). Under both plans, the children were to receive the same type of instruction as outlined by the Reading Readiness Committee. Testing procedure was

described and determination was made of the Reading Readiness population in the fifty-eight Experimental schools. The potential control population was described.

At the end of the first year, questionnaires were sent to teachers and principals in order to determine the workability of the program. In general, both teachers and principals heartily endorsed the general program and felt that it was serving the needs of this particular type of child. Further, they felt the program to be an improvement over the traditional reading course of study offered in the regular first grade. With the exception of administrative difficulties encountered in shifting of children from Reading Readiness to regular 1B reading, the program was evaluated as answering the needs of both children and teachers.

CHAPTER V

ANALYSIS AND INTERPRETATION OF THE DATA

Introduction

This chapter presents the data obtained in the fifth and final stage of the study, September 1946 through June 1949. It is concerned with the specific problem of analyzing and interpreting these data to determine statuses of two groups of children as of June 1949. The experimental variable is one semester of reading readiness instruction at the post-kindergarten level. Group A, Experimental, received the specialized instruction in reading readiness; Group B, Control, received the regular 1B instruction in formal reading. The two groups combined made up the Study Population of 1,176 children enrolled in one hundred and sixteen schools (fifty-eight experimental and fifty-eight control) located within the boundaries of the City of Detroit. Each of the one hundred and sixteen schools is spot-located on an outline map of the City of Detroit.¹

The experimental group consists entirely of children who started their post-kindergarten school life classified as

¹ See page 142 . Note the heavy concentration of schools in the SW, S, and SE districts.

1 R.R., i.e., reading readiness. These children did not receive any formal instruction in reading during the first semester. Children comprising the control group started their post-kindergarten experience in the regular 1B manner, i.e., instruction in formal reading. With the exception of the first semester, both groups operated under mutually similar conditions during the three-year period of the study.

Limitations imposed on the problem defined in Chapter III have been rigidly adhered to. First, methods, techniques, and communications devised and used were applied to all schools and have proved applicable for city-wide use. Second, the children sampled and placed under investigation were scientifically drawn from the fifty-eight Reading Readiness and the fifty-eight Control schools. Third, conclusions and implications were drawn at the end of the three-year period, the termination of the study. Fourth, comparisons were made in reference to the five test variables selected as means to compare the status of the two groups in question at the termination of the study. These test variables were as follows:

1. Reading achievement scores
2. Vocabulary scores
3. Personality scores (Self-adjustment and Social)
4. Attendance record (for three-year period)
5. School adjustment ratings (teacher's subjective evaluation)

Since only a random sample of the Study Population was finally measured in terms of the five test variables, it is necessary to state rather precisely the limits of the population from which it was drawn. Further, since the Study Population is in turn only a portion of the total or true population, statistical means must be used to show limits of this population. If the Study Population is shown to be representative of the total or true population it then may be used as a reliable base for the remainder of the study.

Characteristics of the Study Population

The Study Population has been defined as all children located in the fifty-eight Experimental Reading Readiness and fifty-eight Control schools as of May 1949. A further check of each child's record, Individual Record Card,² revealed the following:

1. Each child had been in regular attendance³ in the Detroit Public Schools for the three-year period of the study.
2. Each child had received one full year of kindergarten experience (instruction) and had been promoted to

² See Appendix A.

³ Regular attendance does not imply perfect attendance. A child may have been absent because of illness and still considered in regular attendance. However, if a child transferred out of the city or to a parochial school and then returned, he was not considered in regular attendance.

post-kindergarten status in June 1946.

3. Each child's chronological age had been secured from the Psychological Clinic and verified later with the child's permanent record, Form 35. (The date of birth is recorded on this form from the birth certificate required upon entering kindergarten).

4. Each child's raw intelligence score was obtained from the Psychological Clinic.

It may be concluded that every child in the Study Population had kindergarten instruction in the Detroit Public Schools and began his post-kindergarten life at exactly the same time.⁴

Mean Chronological Age

The Mean Chronological Age of the Study Population was six years and two months (74.02) at the time of testing, June 1946. Only .03 of a month separated the boys and the girls; the slight difference being in favor of the boys. Table XVIII reveals the two oldest children to be seven years and four months and the three youngest to be five years and seven months.⁵

⁴However, it must be kept in mind they did not receive identically the same amount or the same instruction or experience. Instruction is known to vary from school to school and from teacher to teacher. Further, some children were absent to an undetermined extent during the kindergarten period.

⁵All means and standard deviations figured on: "Work Sheet for the Computation of the Mean and Standard Deviation." See Appendix D.

TABLE XVIII

DISTRIBUTION OF CHRONOLOGICAL AGES, BY SEX OF CHILDREN COMPRISING THE STUDY POPULATION

Chronological Age	SEX		Total Pupils
	Boys	Girls	
87-89	1	1	2
84-86	2	4	6
81-83	7	8	15
78-80	21	20	41
75-77	166	155	321
72-74	267	251	518
69-71	132	138	270
66-68	1	2	3
Total	597	579	1176
Mean	74.04	74.01	74.02
σ	2.71	2.86	2.77
σ_M	.11	.12	.08

The question now arises: How reliable is the computed mean chronological age of the Study Population? Since uncontrolled influences determined which children were to constitute the Study Population, the mean of this group will differ, to some amount, from the true mean. The writer considers the uncontrolled influences which were responsible for determining the size of the Study Population as chance factors that would operate in the selection of any random sample. Assuming this to be true, the Study Population is an unbiased sample of the total or true population and may be considered random. Therefore, to determine the reliability of the mean depends upon two characteristics of the sample: (1) the number of cases, and (2) the variability or spread of the ages within the sample. The reliability of the mean

of the Study Population may now be measured mathematically in terms of its standard error. The following formula⁶ for the standard error of a distribution of a sample recognizes the characteristics given above.

$$\sigma_M = \frac{\sigma \text{ population}}{\sqrt{N}}$$

By applying the formula, the standard error of the mean was found to be .08 of a month. Because the true mean may be thought of as a central value in a distribution of means, the chances are sixty-eight in one hundred that the sample mean will fall within .08, one standard error, of the true mean, provided that no special factors are operating against chance. However, the chances are ninety-nine in one hundred that it will lie within .24 of the true mean; because, unless the sample error itself is greatly affected or biased, ninety-nine per cent of all means from samples selected from a population will fall within three standard errors of the true mean. Therefore it may be said with practical certainty that the true mean lies between 74.26 and 73.78 months. The average of the children in the

⁶ E. F. Lindquist, Statistical Analysis in Educational Research (Boston: Houghton Mifflin Company, 1940) p. 12.

Study Population is practically certain⁷ not to be more than seven days older or younger than the average of children in the theoretical true population.

By following the same procedure it was found that there could be no more than $\frac{1}{2}$ ten days difference between the mean age of boys in the Study Population and the mean age of boys in a theoretical true population. The difference between the means for the girls could be no more than $\frac{1}{2}$ eleven days.

Mean Raw Intelligence Score

The next step was to determine the reliability of the mean for raw intelligence scores of the Study Population. Table XIX shows the distribution of these scores.

⁷ Lindquist states that the phrases "practically certain" and "reasonably certain" are used with the sampling error theory. Statisticians have agreed to consider "practically certain" to mean a negligible degree of uncertainty. Furthermore, they have arbitrarily selected three standard errors as convenient limiting or maximum values of the sampling errors in any measure obtained from a random sample.

TABLE XIX

DISTRIBUTION OF RAW INTELLIGENCE SCORES, BY SEX, OF CHILDREN COMPRISING THE STUDY POPULATION

Raw Intelligence Score	SEX		Number Pupils
	Boys	Girls	
78-80	1		1
75-77	3	1	4
72-74	2	2	4
69-71	7	5	12
66-68	13	7	20
63-65	7	14	21
60-62	23	26	49
57-59	19	25	44
54-56	24	19	43
51-53	23	20	43
48-50	24	25	49
45-47	36	40	76
42-44	39	30	69
39-41	28	46	74
36-38	42	33	75
33-35	35	50	85
30-32	35	31	66
27-29	46	42	88
24-26	48	37	85
21-23	41	39	80
18-20	27	23	50
15-17	28	24	52
12-14	21	17	38
9-11	6	10	16
6-8	10	7	17
3-5	9	5	14
0-2		1	1
Total	597	579	1176
Mean	36.57	37.30	36.93
σ	16.02	15.45	15.75
σ_M	.66	.64	.46

By applying the formula, $\sigma_M = \frac{\sigma_{\text{population}}}{\sqrt{N}}$, it is found that the standard error of the mean is .46. Hence, it is practically certain that the obtained mean 36.93 does

not diverge from the true mean by more than 1.38 raw score points.⁸ The true mean lies between the limits of 38.31 and 35.55. Therefore the average children in the Study Population did not achieve more than 1.38 score points higher or lower than could the average children in the true population.

Separating the Study Population by sex, the true mean for the boys is practically certain to lie between 38.55 and 34.59; for the girls, between 39.22 and 35.38. It would be practically impossible for the average boys in the Study Population to have achieved 1.98 score points higher or lower than the average boys in the true population, or for the average girls to have achieved 1.92 score points higher or lower.

It has been shown by the use of the above formula that the Study Population closely resembles the true population in chronological age and raw intelligence score as measured by Detroit's First Grade Intelligence Test at the start of the study. A comparison of characteristics of the two component parts, Experimental Reading Readiness (Group A) and Control (Group B), of the Study Population are compared in the following table.

⁸ Raw Intelligence Score should not be misinterpreted to mean I.Q.

TABLE XX

CHARACTERISTICS OF THE STUDY POPULATION

	Group		Difference
	A	B	
Number of Schools	58	58	0
Number of Children	588	588	0
Mean Age	73.97	74.08	.11
σ	2.87	2.67	.20
Mean Raw Score	37.02	36.84	.18
σ	16.01	15.48	.53

Inspection of Table XX shows the average children classified as Reading Readiness to be .11 of one month younger than for the average Control children and to have achieved .18 of a raw score point better on the Intelligence Test.

Determining Significant Differences Between Means

One very useful application of the standard-deviation idea of sampling results is made in testing the difference between two samples to see whether they are really different or whether the apparent differences may be due merely to random errors of sampling. It must be recognized that the means computed in the Study Population may differ among themselves because of (1) biases or mistakes in sampling, or (2) a random error, or (3) because the samples⁹ have actually come from different populations. In the previous

⁹ Samples refer to the Experimental Reading Readiness group and the Control group which combined are referred to as the Study Population.

section the writer has shown that neither biases nor mistakes characterized the selection of either of the two groups. The problem now is to decide whether the differences between the two sample means can be attributed to sampling errors.

Lindquist states that the most frequent used formula for making a comparison between two samples is that for the standard error of difference. Commenting further, he states:

...Whenever a difference is found between measures obtained from random samples drawn from two populations, each of the measures between which the difference is found will probably contain some sampling error, and hence the difference between them will also contain some sampling error. The standard error of any obtained difference is the standard deviation of a distribution of such differences for a large number of pairs of random samples independently drawn from the same population. The general formula for the standard error of a difference between uncorrelated measures is as follows:

$$\sigma_{1-2} = \sqrt{\sigma_1^2 + \sigma_2^2}$$

This formula, as applied to a difference between two means, would be:¹⁰

$$\sigma_{M_1 - M_2} = \sqrt{\sigma_{M_1}^2 + \sigma_{M_2}^2}$$

This formula is used to determine whether or not the difference between means shown in Table XX is really significant.

¹⁰

E. F. Lindquist, A First Course in Statistics (Boston: Houghton Mifflin Company, 1938) p. 119-20.

The standard error for Groups A and B has been computed and found to be .12 and .11 respectively. Hence, by substituting in the formula $\sigma_{M_A - M_B} = \sqrt{.12^2 + .11^2}$, it is found that .16 is the standard error of the difference. Therefore the chances are sixty-eight in one hundred that the true difference is somewhere between .27 and -.05 months and that it is "practically certain" that the true difference is within .48 months of the obtained difference.

The next step is to figure the critical ratio to discover if the absolute difference between the means of Group A and Group B (73.97 and 74.08, or .11) is statistically significant. This is accomplished by using the formula:

$$T = \frac{M_1 - M_2}{\sigma_{1-2}^D}$$

By substituting in this formula, $T = \frac{.11}{.16} = .69$. This is below the one per cent level of significance ($2.57\sigma_D$) so it may be concluded that the .11 of a month in chronological age between Group A and B is not significant, as a variation of this size can be attributed to sampling error.

The same question must now be answered in terms of the difference found to exist between the means of the raw intelligence scores for the two groups. Referring again to Table XX, it is found to be .18. By applying the formula¹¹

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$$\sigma_{M_A} - \sigma_{M_B} = \sqrt{\sigma_{M_A}^2 + \sigma_{M_B}^2}$$

and computing the critical ratio for the difference between means, T is found to be .20. This again is far below the one per cent level of significance and therefore the mean difference of .18 of a raw score point between the Experimental and Control Group is not significant.

In summary, it may be said with assurance that at the start of the study, June 1946, there was no significant difference between the two component parts¹² of the Study Population. Further, it can be stated with practical certainty that the mean for the "true" chronological age lies between 74.26 and 73.78 and the "true" mean raw intelligence score is between 38.31 and 35.55. These data are summarized in Table XXI.

TABLE XXI

MEANS OF CHRONOLOGICAL AGE AND RAW INTELLIGENCE SCORE FOR GROUP A AND GROUP B, TOGETHER WITH THE SIGNIFICANCE OF THE DIFFERENCE BETWEEN SUCH MEANS

Characteristic	Group A Mean	Group B Mean	1 Per Cent* $2.576 \sigma_D$
Chronological Age	73.97	74.08	.69
Raw Intelligence Score	37.02	36.84	.20

* $2.576 \sigma_D$ is the one per cent level of significance. Any critical ratio less than $2.576 \sigma_D$ is considered not to be significant.

¹²"Component parts of the Study Population" is defined as the 588 children comprising the Experimental Reading Readiness, Group A and the 588 children of the Control, Group B. Further, "no significant difference" refers to chronological age and raw intelligence score.

Having established the fact that no significant difference exists between the groups, the question now must be answered: Is there a significant difference between boys and girls within the two groups? Distributions of chronological age and raw intelligence score, by sex, for the groups are shown in Tables XXII and XXIII.

TABLE XXII

CHRONOLOGICAL AGES, BY SEX, OF CHILDREN COMPRISING THE STUDY POPULATION

Chronological Age	Group A		Group B	
	Boys	Girls	Boys	Girls
87-89			1	1
84-86	1	3	1	1
88-83	4	3	3	5
78-80	15	15	6	5
75-77	77	72	89	83
72-74	140	107	127	144
69-71	73	76	59	62
66-68	1	1		1
Total	311	277	286	302
Mean	73.96	73.99	74.13	74.03
σ	2.74	3.01	2.68	2.71
σ_M	.15	.18	.16	.16

A critical ratio was computed for each of the following combinations:

Group A; boys' mean chronological age against girls--
 $T = .13$

Group A; boys' mean raw intelligence score against
 girls-- $T = 1.3$

TABLE XXIII

RAW INTELLIGENCE SCORES, BY SEX, OF CHILDREN COMPRISING
THE STUDY POPULATION

Raw Intelligence Scores	Group A		Group B	
	Boys	Girls	Boys	Girls
78-80	1			
75-77	2		1	1
72-74	2	2		
69-71	5	3	2	2
66-68	9	3	4	4
63-65	7	3		11
60-62	14	8	9	18
57-59	9	12	10	13
54-56	8	7	16	12
51-53	14	12	9	8
48-50	11	14	13	11
45-47	18	19	18	21
42-44	14	14	25	16
39-41	19	26	9	20
36-38	22	15	20	18
33-35	16	24	19	26
30-32	20	19	15	12
27-29	25	17	21	25
24-26	28	14	20	23
21-23	17	18	24	21
18-20	17	10	10	13
15-17	12	14	16	10
12-14	7	11	14	6
9-11	4	5	2	5
6-8	5	3	5	4
3-5	5	3	4	2
0-2		1		
Total	311	277	286	302
Mean	37.49	36.48	35.56	38.05
σ	16.63	15.27	15.27	15.58
σ_M	.94	.91	.90	.90

Group B; boys' mean chronological age against girls--T = .43

Group B; boys' mean raw intelligence score against girls--T = 1.9

It may be concluded that there is no significant difference in either chronological age or mean raw intelligence score between boys and girls comprising either Group A, Experimental, or Group B, Control.

By following the same procedure the means for the boys of Group A were compared to the means of the boys of Group B. The critical ratios were as follows:

Mean chronological age, boys Group A with boys Group B--T = .77

Mean chronological age, girls Group A with girls Group B--T = .16

Mean raw intelligence score, boys Group A with boys Group B--T = 1.5

Mean raw intelligence score, girls Group A with girls Group B--T = 1.2

It may now be concluded that at the beginning of the study there was no significant difference between Group A and B or between boys and girls that made up the groups. The critical ratios are all well below the one per cent level of significance.

In summary of this section, Characteristics of the Study Population, it may be concluded:

1. That in June 1946, the Study Population, consisting of an Experimental and Control group, very closely resembled the "true" or total population;

2. That no statistically significant difference existed between the Experimental and the Control groups in regard to mean chronological age or mean raw intelligence score;

3. That no statistically significant difference existed between boys and girls within the Experimental or Control groups;

4. That no statistically significant difference existed between boys of one group and boys of the other group or between girls and girls.

The groups are therefore equated in terms of the four criteria set forth in Chapter III; namely, chronological age, raw intelligence score, sex, and one year experience in kindergarten.

Sampling the Study Population

In the previous section, the Study Population was precisely described in terms of its two component parts, i.e., Experimental Group A and Control Group B. The final problem was to secure adequate and accurate data to determine the status of the two groups as measured by the test variables¹³

¹³ Detroit Reading Achievement Test 5, Form L.
 Experimental Reading Vocabulary, Form X.
 California Test of Personality-Primary, Form A.
 Pupils' Rating Scale (Teachers' subjective evaluation of pupil's adjustment).
 Pupils' cumulative absence during the three-year period.

at the termination of the study. The writer considered two possible approaches to the problem: (1) a complete induction of the Study Population to the test variables, and (2) a partial induction of the Study Population (random sample) to the test variables. The latter method was decided upon. In making the choice, two factors were considered. First, this choice would greatly lessen the countless hours of clerical time necessary for correcting, scoring, and tabulating test results and the checking of records. Second, the random sampling method, if applied scientifically, would produce an accurate picture in miniature of the larger population.

Even though it was possible from the physical standpoint to secure the data available, it was not practical or economical. A properly drawn sample will provide data from which generalizations and conclusions can be made concerning the characteristics of the total from which the sample came. In general, there are two techniques used in selecting the sample from the total population. One is called "simple random sampling" and the other "stratified random sampling". The latter was decided upon. Lindquist defines and gives the following explanation of this technique of random sampling:

A random sample is one selected in such a fashion that every member of the population has an equal chance to be selected. This means that each member must be selected independently of all others. It is useful also to think of a random sample as one so

drawn that all other possible combinations of an equal number of members from the population had an equal chance to constitute the sample drawn. Suppose, for example, that we are drawing a random sample of three hundred cases from all high-school pupils in Indiana. There is, of course, an almost unlimited number of different combinations of three hundred pupils in this population. One of these combinations, for instance, might consist of two pupils from Terre Haute, thirteen from Lafayette, two hundred and seventy-six from Indianapolis, and nine from Gary. If our sampling is random, this particular combination must have the same chance of being selected as any other. Emphasis is placed on this latter concept of random sampling, since it indicates quite clearly that the samples used in educational research are seldom simple random samples.¹⁴

From the above, it may be concluded the random method of sampling requires that the selection be so controlled that each case in the total population has the same chance of being included in the sample. The word "controlled" must be introduced to clearly differentiate random sampling from the popular concept of "random" which implies carelessness. Therefore, to secure a true random sample for statistical study, a great deal of care must be exercised in selecting samples from the total--in this case, the Study Population.

Method Used to Secure the Random Sample

An elementary method would be to write the name of each child on a card, shuffle the cards and then place all cards in a container. A random selection can then be secured as

¹⁴E. F. Lindquist, Statistical Analysis in Educational Research (Boston: Houghton Mifflin Company, 1940) p. 3-4.

follows: draw one card, write the name of the child on a list, re-insert the card, reshuffle, and then draw a second card. Continue this process of drawing, re-inserting, shuffling, and then drawing until the complete sample is secured. This is time-consuming and not necessary. A more convenient means of obtaining a random sample is to code each child systematically and then use a table of random numbers. Two such tables are: Tippett's "Random Sampling Numbers"¹⁵ and Lindquist's "Table of Random Numbers".¹⁶

The problem was to select two numerically equal samples from the study population, one from Experimental Group A and one from Control Group B. Group A was located in fifty-eight Reading Readiness Schools and Group B in fifty-eight Control Schools. The children constituting these two separate groups were coded (Group A, 001 through 588, Group B, 001 through 588). It was decided that 147 (one-fourth of the total Experimental Group) and 147 (one-fourth of the Control Group) would be an adequate sample for testing at the completion of the study.

¹⁵L. H. C. Tippett, The Methods of Statistics (2nd Edit.; London: Williams and Norgate, 1937) p. 68.

¹⁶Lindquist, op. cit., p. 262. (Taken by consent from Table XXXIII, Statistical Tables for Biological, Agricultural, and Medical Research, R.A. Fisher and F. Yates, by permission of Oliver and Boyd, Edinburgh).

The next step was to split the Experimental Group into four numerically equal groups and Control Group in the same way. In both cases, the selection was to be made from 588 cases, which meant that three-digit numbers must be read from the table. These numbers were secured by combining columns in the table. For example, in selecting the samples for the Control Group, page 262 of the table was chosen as a starting point and columns one and two were combined to secure the three-digit numbers needed.

After drawing eight separate samples (four Experimental and four Control) by the use of Lindquist's table of random numbers, a further drawing was made from the eight samples to determine which sample would represent the Experimental Reading Readiness Group and which the Control. Random samples three and seven were drawn. The code numbers of the children drawn on these two samples are given on a specially prepared code sheet.¹⁷ Children drawn in random sample three were found to be in attendance in forty-seven of the original fifty-eight reading readiness schools. A spot map showing the geographical location of these schools is presented later in this Chapter. Children drawn in the Control sample seven were found to be located in forty-six of the fifty-eight

¹⁷ Code sheets listing the children's code numbers drawn on sample three and seven are given in Appendix D.

control schools. A similar spot map locates the control schools in the city.

Comparison of Eight Random Sample Means With the Study Population

Since the method of sampling was selected for its virtue of scientific exactness, each sample should very closely resemble the parent population from which it was drawn. Tables XXIV, XXV, XXVI, and XXVII show the distributions, by sex, of chronological ages and raw intelligence scores for the eight samples drawn from the Study Population; four from Group A, Experimental and four from Group B, Control.

TABLE XXIV

DISTRIBUTION OF CHRONOLOGICAL AGES, BY SEX, OF THE FOUR NUMERICALLY EQUAL READING READINESS SAMPLES DRAWN

Age	Sample 1		Sample 2		Sample 3		Sample 4	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
84-86		2	1			1		
81-83	1		1	3	1		1	
78-80	1	6	3	3	4	3	7	3
75-77	19	22	20	14	18	20	20	16
72-74	41	31	36	25	35	26	28	25
69-71	12	11	18	23	21	18	22	24
66-68	1							1
Total	75	72	79	68	79	68	78	69
Mean ¹	73.90	74.79	74.07	73.76	73.80	74.03	74.08	73.33
σ^1	2.37	3.08	2.88	3.16	2.68	2.91	2.97	2.70
σ_M^1	.27	.36	.32	.38	.30	.35	.34	.32
Total	147		147		147		147	
Mean ²	74.34		73.93		73.91		73.72	
σ^2	2.77		3.01		2.79		2.87	
σ_M^2	.23		.25		.23		.24	

TABLE XXV

DISTRIBUTION OF CHRONOLOGICAL AGES, BY SEX, OF THE FOUR
NUMERICALLY EQUAL CONTROL SAMPLES DRAWN

Age	Sample 5		Sample 6		Sample 7		Sample 8	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
87-89				1	1			
84-86					1			1
81-83	1	2		1	1	2	1	
78-80	2	1		3	3	1	1	
75-77	20	12	26	21	19	24	24	26
72-74	31	45	33	35	32	29	31	35
69-71	12	21	14	13	19	14	14	14
66-68						1		
Total	66	81	73	74	76	71	71	76
Mean ¹	74.18	73.46	73.99	74.39	74.91	74.18	74.13	74.13
σ^1	2.50	2.47	2.17	2.99	3.37	2.77	2.46	2.49
σ_M^1	.31	.27	.25	.35	.39	.33	.29	.29
Total	147		147		147		147	
Mean ²	73.78		74.17		74.19		74.13	
σ^2	2.51		2.52		3.09		2.48	
σ_M^2	.21		.21		.25		.20	

TABLE XXVI

DISTRIBUTION OF RAW INTELLIGENCE SCORE, BY SEX, OF THE FOUR NUMERICALLY EQUAL READING READINESS SAMPLES DRAWN

Raw Score	Sample 1		Sample 2		Sample 3		Sample 4	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
78-80					1			
75-77			2					
72-74	1		1	1				1
69-71	2	1	1					1
66-68	1	2	3		1		1	2
63-65	2		2	1	1		3	1
60-62	4	3	3	4	4	1	2	1
57-59	1	3	4	1	4	5	3	
54-56	1	3	1		3	3		3
51-53	4	3	4	2	2	2	3	1
48-50	4	4	4	5	1	3	4	5
45-47	2	5	4	4	8	6	2	2
42-44	3	5	2	4	3	5	6	4
39-41	6	6	6	8	3	6	4	6
36-38	6	3	6	3	7	3	3	6
33-35	4	5	2	8	6	3	4	8
30-32	7	6	5	6	3	3	5	4
27-29	6		5	8	3	2	1	7
24-26	6	5	7	1	10	5	5	3
21-23	2	5	3	3	6	6	6	4
18-20	2	2	5	3	6	4	4	1
15-17	3	2	4	2	2	6	3	4
12-14	2	5	2	1	1	1	2	4
9-11	4	1		2		1		1
6-8		2	2		1	1	2	
3-5	2		1	1	1	1	1	1
0-2		1						
Total	75	72	79	68	79	68	78	69
Mean ¹	35.86	36.96	38.94	36.88	37.84	35.60	36.27	36.46
σ^1	16.72	16.30	17.73	13.93	16.06	15.07	15.78	15.60
σ_M^1	1.93	1.92	1.99	1.67	1.81	1.83	1.79	1.88
Total	147		147		147		147	
Mean ²	36.91		37.99		36.81		36.36	
σ^2	16.52		16.12		15.65		15.70	
σ_M^2	1.36		1.33		1.29		1.29	

TABLE XXVII

DISTRIBUTION OF RAW INTELLIGENCE SCORE, BY SEX, OF THE FOUR NUMERICALLY EQUAL CONTROL SAMPLES DRAWN

Raw Score	Sample 5		Sample 6		Sample 7		Sample 8	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
78-80								
75-77		1			1			
72-74								
69-71		1	1		1			1
66-68			2	1	2	1		1
63-65		4		3				2
60-62	2	3	1	4	2	5	4	4
57-59	3	5	6	1		5	1	6
54-56	4	2	2	5	6	1	4	2
51-53	1	3	3	1	2		3	4
48-50	4	3	3	2	3	5	3	4
45-47	7	5	3	7	6	3	3	1
42-44	5	4	5	6	9	3	2	6
39-41	2	4	3		3	10	6	2
36-38	6	5	6	3	6	3	1	3
33-35	2	11	4	5	6	4	2	7
30-32	2	2	5	2	4	2	7	6
27-29	1	5	8	4	6	6	4	6
24-26	9	6	3	7	2	6	6	10
21-23	8	6	6	8	3	6	6	4
18-20	1	5	2	6	4	4	7	3
15-17	5	2	3	1	3	2	3	
12-14	2	2	5	2	4	4	5	3
9-11		1	1	1		2	3	
6-8	1			2	2	1	1	1
3-5	1	1	1		1	1	2	1
0-2							1	
Total	66	81	73	74	76	71	71	76
Mean ¹	35.32	38.28	36.23	36.61	37.26	36.36	33.27	40.78
σ^1	14.54	15.72	15.49	15.61	15.68	15.37	14.98	15.19
σ_M^1	1.80	1.74	1.81	1.81	1.80	1.82	1.78	1.74
Total	147		147		147		147	
Mean ²	36.95		36.42		36.83		37.15	
σ^2	15.27		15.55		15.54		15.55	
σ_M^2	1.26		1.28		1.28		1.28	

In the previous section, practical certainty limits were determined for the mean chronological age and mean raw intelligence score for both boys and girls in Groups A and B of the Study Population. The next step is to see if the eight random sample means fall within the limits set by the standard error of the mean. Mean limits for Groups A and B are taken from Tables XXII and XXIII; the means for the eight random samples from Tables XXIV, XXV, XXVI, and XXVII. Each random sample mean will now be checked to determine if it is within the limits of three standard errors of the study mean previously determined. To eliminate cross checking with previous tables, basic information will be repeated.

Experimental Reading Readiness Group A--One-Half of the Study Population

The mean chronological age for the boys (311) in Group A is 73.96 months; for the girls (277) 73.99 months. It may be said with practical certainty that the true mean for the boys will lie between 73.51 and 74.41 months; the girls between 73.45 and 74.53 months.

The mean raw intelligence score for the boys is 37.49 and for the girls 36.48. Therefore, the true mean for the boys will lie somewhere between the limits of 34.67 and 40.31 and the girls between 33.75 and 39.21. Table XXVIII shows the mean chronological age and the mean raw intelligence score computed for the four random samples drawn.

TABLE XXVIII

MEANS OBTAINED FROM THE FOUR RANDOM SAMPLES DRAWN FROM GROUP
A OF THE STUDY POPULATION

Sample	Mean Chronological Age		Mean Raw Intelligence Score	
	Boys (73.51-74.41)	Girls (73.45-74.53)	Boys (34.67-40.31)	Girls (33.75-39.21)
1	73.90	74.79*	36.86	36.96
2	74.07	73.76	38.94	36.88
3	73.80	74.03	37.84	35.60
4	74.08	73.33*	36.27	36.46

*Sample means outside the limits determined by three standard errors of the parent population.

The mean age of girls in sample one is .26 of a month beyond the upper limit given for the true mean. Girls in sample four are .12 beyond the lower limit given for their true mean. Sample three, the random sample that was tested by the five test variables at the termination of the study, is well within the range of the true mean in both mean chronological age and mean raw intelligence score.

In summary, it is extremely interesting to note the small differences existing between means computed for the samples.

1. Mean chronological age for boys--

Oldest sample (four)	74.08
Youngest sample (three)	73.80
Difference	.28

2. Mean chronological age for girls--

Oldest sample (one)	74.79
Youngest sample (three)	73.33
Difference	1.46

3. Mean raw intelligence score boys--

Highest sample (two)	38.94
Lowest sample (four)	36.27
Difference	2.67

4. Mean raw intelligence score girls--

Highest sample (one)	36.96
Lowest sample (three)	35.60
Difference	1.36

The greatest mean difference in chronological age occurred in samples one and three for the girls; the greatest difference in raw intelligence score for the boys in samples two and four.

Control Group B--One-half the Study Population

The mean chronological age for the boys (286) is 74.13 months; for the girls (302) 74.03 months. It is practically certain that the true mean will lie between 73.65 and 74.61 for the boys, and between 73.55 and 74.51 for the girls.

The mean raw intelligence for the boys is 35.56 and for the girls 38.05. Therefore, the true mean will lie somewhere between 32.86 and 38.26 for the boys and 35.35 and 40.75 for the girls. Table XXIX shows the mean chronological age and the mean raw intelligence score computed for the four random samples drawn.

TABLE XXIX

MEANS OBTAINED FROM THE FOUR RANDOM SAMPLES DRAWN FROM GROUP
B OF THE STUDY POPULATION

Sample	Mean Chronological Age		Mean Raw Intelligence Score	
	Boys	Girls	Boys	Girls
	(73.65-74.61)	(73.55-74.51)	(32.86-38.26)	(35.35-40.75)
5	74.18	73.46*	35.32	38.28
6	73.99	74.39	36.23	36.61
7	74.91*	74.18	37.26	36.36
8	74.13	74.13	33.27	40.78*

*Sample means outside the limits determined by three standard errors of the parent population.

The mean age of boys in sample seven is .30 of a month beyond the upper limits given for the true mean. In sample five, the girls are .09 of a month below the lower limits of the true mean. The girls' raw intelligence score is .03 beyond the upper limits of the true mean for girls in sample eight.

The differences between the means computed for the samples drawn from the parent Control population are as follows:

1. Mean chronological age for boys--

Oldest sample (seven)	74.91
Youngest sample (six)	73.99
Difference	.92

2. Mean chronological age for girls--

Oldest sample (six)	74.39
Youngest sample (five)	73.46
Difference	.93

3. Mean raw intelligence score for boys--

Oldest sample (seven)	37.26
Youngest sample (eight)	33.27
Difference	3.99

4. Mean raw intelligence score for girls--

Oldest sample (eight)	40.78
Youngest sample (seven)	36.36
Difference	4.42

It may be concluded that a greater difference occurred between sample means of the Control group than between sample means of the Experimental group when broken down by sex. This may be attributed to numerical differences between the sexes in two component parts of the Study Population.

Group A, Experimental, consists of 311 boys against 277 girls and Group B, Control, has only two hundred and eighty-six boys against three hundred and two girls. However, the comparison of the means was made in terms of boys against boys and girls against girls. Consequently the numerical differences may not account for the observed differences between the means of the samples. The writer mentions this problem for further consideration as it is beyond the scope of this study but definitely worth consideration by individuals interested in sampling procedures.

By eliminating the sex factor, i.e., combining boys and girls in the samples, the differences observed between the means (of the samples) are greatly reduced. Table XXX presents the number of schools, number of boys and girls, mean chronological age, and mean raw intelligence score for the sample drawn.

TABLE XXX

CHARACTERISTICS OF THE EIGHT RANDOM SAMPLES DRAWN, FOUR FROM
READING READINESS AND FOUR FROM CONTROL SCHOOLS

Type of School	Sample	Number Schools	Sex		Number Pupils	Mean Age	Mean Raw Score
			Boys	Girls			
Reading Readiness	1	49	75	72	147	74.34	36.91
	2	54	79	68	147	73.93	37.99
	3*	47	79	68	147	73.91	36.81
	4	49	78	69	147	73.72	36.36
Control	5	52	66	81	147	73.78	36.95
	6	48	73	74	147	74.17	36.42
	7*	46	76	71	147	74.19	36.83
	8	47	71	76	147	74.13	37.15

*Random samples drawn to represent the Study Population.

The greatest difference occurring between sample means is .62 of a month in chronological age and 1.63 raw score points in intelligence. With the exception of samples one and two, all means fall within the theoretical limits assumed for the true mean. In reviewing Table XXX the reader may raise the question as to the number of schools represented on each sample drawn. It must be kept in mind that each of the one hundred and sixteen schools comprising the final Study Population were not equally represented with children. Therefore, the chance of drawing an equal number of schools on each sample was eliminated. In the final registry of children comprising the Study Population, a few schools had less than five children of the original group

in attendance. In Group A, 45.6 per cent of the children comprising the original population had transferred during the period of the study, i.e., September 1946 through June 1949. However, this is not characteristic of the total Detroit population for the same period. In analyzing this loss from original schools, two factors must be considered: First, the Experimental population was made up almost entirely of children with D and E intelligence ratings which is less than twenty per cent of the total population. Second, the majority of the reading readiness schools were geographically located in the poorer sections of the city. Previous surveys have revealed this population to be extremely unstable.

Summary of Sampling Results

In summary, a brief review of results obtained from the sampling procedure employed is necessary before analyzing the two samples paramount in the remainder of this study; namely, samples three and seven. The review and summary will be combined as stages of procedure.

1. As of May 1949, a fixed Study Population was determined to consist of 588 Experimental Reading Readiness children¹⁸ and 588 Control children. The two groups were designated as A and B, and consisted of 1176 children. The

¹⁸ The term "Reading Readiness children" is perhaps misleading. These children were Reading Readiness children the first semester of the study. Since that time they have progressed in the regular classroom situation. For clarity purposes they have been designated "Reading Readiness" throughout the study.

following facts were determined for this population:

- A. Mean chronological age 74.02
 - 1. Boys' mean age (597) 74.04
 - 2. Girls' mean age (579) 74.01
- B. Mean raw intelligence score 36.93
 - 1. Boys' mean raw score (597) 36.57
 - 2. Girls' mean raw score (579) 37.30

2. In May 1949, eight random samples were drawn from the Study Population, four from Experimental Group A, and four from Control Group B. All eight samples consisted of 147 children. One hundred and sixteen schools, fifty-eight Experimental and fifty-eight Control, contributed children to the samples drawn. Table XXXI compares each of the four Reading Readiness samples drawn with Group A of the Study Population. Table XXXII compares the four Control samples drawn with Group B of the Study Population. By referring to Table XXXI it is revealed that sample three:

- A. is least representative of the fifty-eight schools from which it was drawn.
- B. has 2.9 per cent more boys than girls.
- C. is .06 of one month older than the Study Population.
- D. has a mean raw intelligence score of .21 less than the Study Population.

By referring to Table XXXII it is found that sample seven:

- A. is least representative of the fifty-eight schools from which it was drawn.
- B. has three per cent more boys than girls.
- C. is .11 of one month older than Study Population.

TABLE XXXI

COMPARISON OF THE FOUR RANDOM SAMPLES DRAWN WITH THE
EXPERIMENTAL READING READINESS STUDY POPULATION

	Study Population Group A	Random Sample	Difference
<u>Sample (1)</u>			
Number Schools	58	49	- 9
Per Cent Boys	50.8	51.0	+ .2
Per Cent Girls	49.2	49.0	- .2
Mean Age	73.97	74.34	+ .37
Mean Raw Score	37.02	36.91	- .11
<u>Sample (2)</u>			
Number Schools	58	54	- 4
Per Cent Boys	50.8	53.7	+ 2.9
Per Cent Girls	49.2	46.3	- 2.9
Mean Age	73.97	73.93	- .04
Mean Raw Score	37.02	37.99	+ .97
<u>Sample (3) *</u>			
Number Schools	58	47	-11
Per Cent Boys	50.8	53.7	+ 2.9
Per Cent Girls	49.2	46.3	- 2.9
Mean Age	73.97	73.91	- .06
Mean Raw Score	37.02	36.81	- .21
<u>Sample (4)</u>			
Number Schools	58	49	- 9
Per Cent Boys	50.8	53.0	+ 2.2
Per Cent Girls	49.2	47.0	- 2.2
Mean Age	73.97	73.72	- .25
Mean Raw Score	37.02	36.36	- .66

*Random sample drawn to represent the Study Population.

TABLE XXXII

COMPARISON OF THE FOUR RANDOM SAMPLES DRAWN WITH
THE CONTROL STUDY POPULATION

	Study Population Group B	Random Sample	Difference
<u>Sample (5)</u>			
Number Schools	58	52	- 6
Per Cent Boys	48.7	44.9	- 3.8
Per Cent Girls	51.3	55.1	+ 3.8
Mean Age	74.08	73.78	- .30
Mean Raw Score	36.84	36.95	- .11
<u>Sample (6)</u>			
Number Schools	58	48	-10
Per Cent Boys	48.7	49.8	+ 1.1
Per Cent Girls	51.3	50.2	- 1.1
Mean Age	74.08	74.17	+ .09
Mean Raw Score	36.84	36.42	- .42
<u>Sample (7)*</u>			
Number Schools	58	46	-12
Per Cent Boys	48.7	51.7	+ 3
Per Cent Girls	51.3	48.3	- 3
Mean Age	74.08	74.19	+ .11
Mean Raw Score	36.84	36.83	- .01
<u>Sample (8)</u>			
Number Schools	58	47	-11
Per Cent Boys	48.7	48.3	- .4
Per Cent Girls	51.3	51.7	+ .4
Mean Age	74.08	74.13	+ .05
Mean Raw Score	36.84	37.15	+ .31

*Random sample drawn to represent the Study Population.

D. has a mean raw intelligence score of .01 less than Study Population.

3. The procedure of random sampling the two component parts of the Study Population was employed to eliminate needless clerical work and testing at the termination of the study. The writer's interest in the possibilities of sampling led to the rather detailed analysis of the eight samples drawn. This perhaps could be pursued even further but by doing so the specific problem of this dissertation would be jeopardized. However the problem of sampling a large city school population has been adequately studied by Menge and reported in a doctoral dissertation.¹⁹

4. In analyzing the two component parts of the Study Population, it was found that slight mean differences occurred between Group A and B. By applying the formula for the standard error of the differences and then determining critical ratios it was found that no statistically significant difference existed between the groups comprising the Study Population.

Representative Samples Three and Seven

Again by random selection, sample three of Group A and sample four of Group B were drawn to represent the Study

¹⁹ J. Wilmer Menge, "Sampling Procedures for the Determination of Achievement Test Norms," (University of Michigan: unpublished doctoral dissertation, 1948).

Population in terminating the study in June 1949. No further mention or reference will be made to the discarded samples one, two, four, five, six, and eight.

In random sampling, the true mean of the population is very seldom known. However, in the present situation the true means of both Group A and Group B have been mathematically determined. Therefore, the standard error of the difference may be determined for samples three and seven in relation to the actual means of the Study Population. Table XXXIII shows the distribution of chronological ages for samples three and seven. Following this table is a spot map showing the location of the Reading Readiness schools drawn in random sample three. Table XXXIV shows the distribution of raw intelligence scores for the respective samples. Following this table a second spot map gives the location of the Control schools drawn in random sample seven. For the reader who is interested in the distribution of raw intelligence scores by age groups within the samples, Tables XXXV and XXXVI have been prepared.

The progress of the Reading Readiness Group and the Control Group was measured by the five test variables at the termination of the study in June, 1949. It is possible, therefore, to investigate the status or progress of the groups and to determine what effect the experimental factor, one semester of reading readiness, had upon Group A compared to Group B.

In studying the influence of the program upon the gains, it is important that the groups whose gains are to be compared should be similar in regard to chronological age, mental age, initial achievement, and any other traits likely to have a considerable effect upon gains over the three-year period. Otherwise, the difference in gains made by groups under each program²⁰ may in reality be due not to the program but to differences in learning ability, educational and cultural background, and other factors. Inasmuch as the writer was only able to control three factors (chronological age, raw intelligence score, and one year of kindergarten instruction), superior status at the end of the three year period revealed by either group could be conclusive only for the factors controlled. The problem then is to determine if significant differences existed between the two representative samples at the start of the study.

²⁰ Reading Readiness Program and the Regular 1B Program.

TABLE XXXIII
 DISTRIBUTION OF CHRONOLOGICAL AGES OF SAMPLES
 THREE AND SEVEN

Chronological Age	Sample 3			Sample 7		
	Boys	Girls	Total	Boys	Girls	Total
87-89				1		1
84-86		1	1	1		1
81-83	1		1	1	2	3
78-80	4	3	7	3	1	4
75-77	18	20	38	19	24	43
72-74	35	26	61	32	29	61
69-71	21	18	39	19	14	33
66-68					1	1
Total	79	68	147	76	71	147
Mean	73.80	74.03	73.91	74.91	74.18	74.19
σ	2.68	2.91	2.79	3.37	2.77	3.09
σ_M	.30	.35	.23	.39	.33	.25

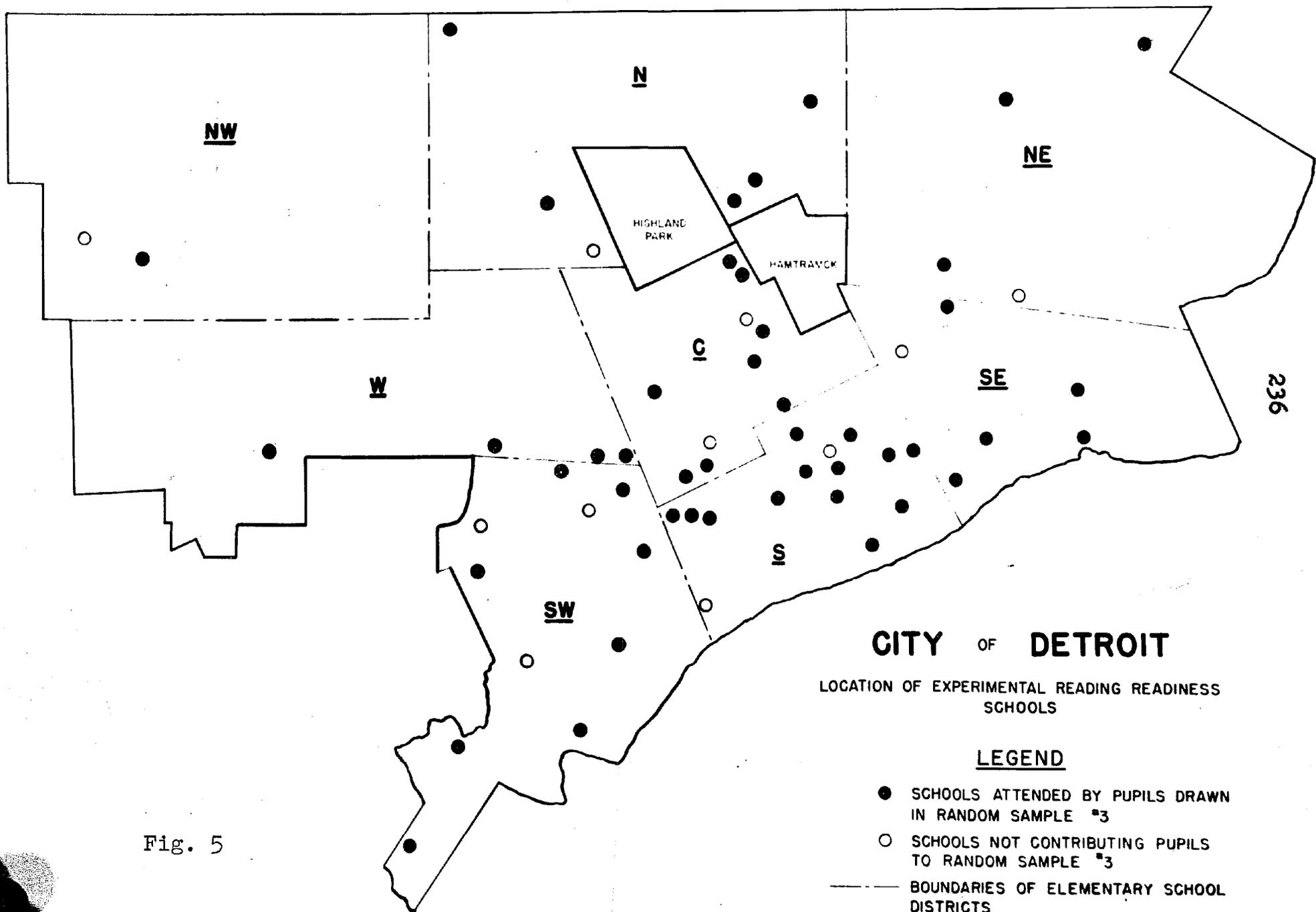


Fig. 5

TABLE XXXIV

DISTRIBUTION OF RAW INTELLIGENCE SCORES OF SAMPLES
THREE AND SEVEN

Raw Intelligence Score	Sample 3			Sample 7		
	Boys	Girls	Total	Boys	Girls	Total
78-80	1		1			
75-77				1		1
72-74						
69-71	1		1	1		1
66-68	2		2	2	1	3
63-65	1	1	2			
60-62	4	1	5	2	5	7
57-59	4	5	9		5	5
54-56	3	3	6	6	1	7
51-53	2	2	4	2		2
48-50	1	3	4	3	5	8
45-47	8	6	14	6	3	9
42-44	3	5	8	9	4	13
39-41	3	6	9	3	10	13
36-38	7	3	10	6	3	9
33-35	6	3	9	6	4	10
30-32	3	3	6	4	2	6
27-29	3	2	5	6	6	12
24-26	10	5	15	2	6	8
21-23	6	6	12	3	4	7
18-20	6	4	10	4	2	6
15-17	2	6	8	3	4	7
12-14	1	1	2	4	2	6
9-11		1	1		2	2
6-8	1	1	2	2	1	3
3-5	1	1	2	1	1	2
0-2						
Total	79	68	147	76	71	147
Mean	37.84	35.60	36.81	37.26	36.36	36.83
σ	16.06	15.07	15.65	15.68	15.37	15.54
σ_M	1.80	1.83	1.29	1.80	1.82	1.28

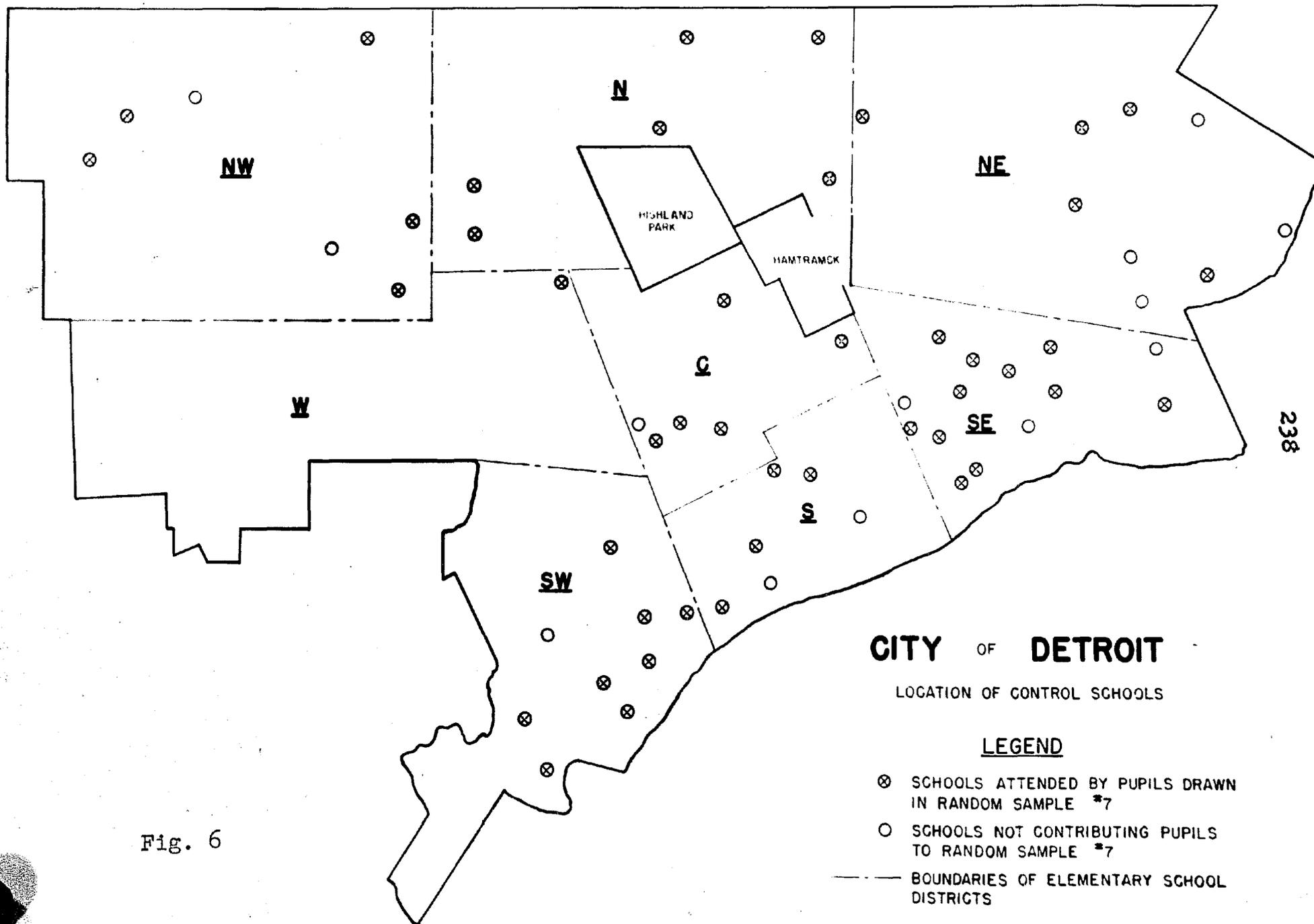


Fig. 6

TABLE XXXV
 DISTRIBUTION OF RAW INTELLIGENCE SCORES OF READING READINESS PUPILS
 BY CHRONOLOGICAL AGE AND SEX DRAWN IN RANDOM SAMPLE THREE

Raw Score	C.A. 69-71		C.A. 72-74		C.A. 75-77		C.A. 78-80		C.A. 81-83		C.A. 84-86	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
78-80			1									
75-77												
72-74												
69-71			1									
66-68	1		1									
63-65	1			1								
60-62	2		1		1	1						
57-59		1	3	3	1	1						
54-56	1	1	1	1	1			1				
51-53	1		1	2								
48-50			1	1		2						
45-47	3		4	2	1	3		1				
42-44		2		1	2	1			1			1
39-41		3		1	2	2		1				
36-38	3	1	2		2	2						
33-35	2	1	3	1		1		1				
30-32	2	1	1			1			1			
27-29		1	3	1								
24-26	2		4	4	3	1		1				
21-23			2	4	3	2		1				
18-20	2	4	3		1							
15-17		3	1	2	1	1						
12-14	1			1								
9-11						1						
6-8			1			1						
3-5			1	1								
Total ¹	21	18	35	26	18	20	4	3	1			1
Mean ¹	40.50	32.33	37.93	35.88	35.83	36.45	30.75	44.50	43.00			43.00
σ^1	15.41	13.18	18.04	16.67	13.61	14.64	7.16	9.90				
Total ²		39		61		38		7		1		1
Mean ²		37.73		37.06		36.16		36.64				
σ^2		14.99		17.50		14.17		10.84				

TABLE XXXVI
DISTRIBUTION OF RAW INTELLIGENCE SCORES OF CONTROL PUPILS BY
CHRONOLOGICAL AGE AND SEX DRAWN IN RANDOM SAMPLE SEVEN

Raw Score	C.A. 66-68		C.A. 67-71		C.A. 72-74		C.A. 75-77		C.A. 78-80		C.A. 81-83		C.A. 84-86		C.A. 67-89	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
75-77														1		
72-74																
69-71							1									
66-68					1		1					1				
63-65																
60-62				1	2	2		2								
57-59				1				4								
54-56			1	1	2		2		1							
51-53			1		1											
48-50					1	3	1	2	1							
45-47			2	1	4	1		1								
42-44			2	1	5	1	1	2			1					
39-41			1	4	2	6										
36-38			1		3	1	1	2	1							
33-35	1		1	1	3	1	1	1							1	
30-32			1	1	1	1	2									
27-29			1	1	3	2	2	3								
24-26			1	1	1	4						1				
21-23			1		1	2	1	2								
18-20			1				3	2								
15-17			1	1	1	2	1	1								
12-14			3			1	1			1						
9-11						2										
6-8			1		1			1								
3-5							1	1								
Total ¹	1		19	14	32	29	19	24	3	1	1	2	1		1	
Mean ¹	34.00		31.18	40.28	40.41	33.78	34.18	37.38	47.00	13.00	43.00	46.00	76.00		34.00	
σ ¹			14.37	12.24	12.91	13.77	18.00	17.24								
Total ²	1		33		61		43		4		3		1		1	
Mean ²			35.05		37.25		35.97		39.00							
σ ²			14.23		13.73		17.65		16.09							

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Significant Differences Between Samples in September 1946

Tables XXXIII and XXXIV are considered basic for comparing the samples. By using the statistical formula for computing the standard error of the difference between means, chronological ages, and raw intelligence scores were compared for the two samples. These standard errors and their critical ratios are revealed in Tables XXXVII, XXXVIII, XXXIX, and XL.

TABLE XXXVII

CHRONOLOGICAL AGE AND RAW INTELLIGENCE SCORE MEANS
FOR RANDOM SAMPLES THREE AND SEVEN

Variable	Sample 3	Sample 7	σD	$\frac{D}{\sigma D}$
Chronological Age	73.91	74.19	.34	.82
Raw Intelligence Score	36.81	36.83	1.82	.01

TABLE XXXVIII

CHRONOLOGICAL AGE AND RAW INTELLIGENCE SCORE MEANS
BY SEX, OF SAMPLES THREE AND SEVEN

Variable	Sample 3	Sample 7	σD	$\frac{D}{\sigma D}$
Chronological Age				
Boys	73.80	74.91	.49	2.26
Girls	74.03	74.18	.48	.31
Raw Intelligence Score				
Boys	37.84	37.26	2.55	.23
Girls	36.60	36.36	2.58	.09

TABLE XXXIX

CHRONOLOGICAL AGE AND RAW INTELLIGENCE SCORE MEANS
FOR BOYS AND GIRLS OF SAMPLE THREE

Variable	Sample 3		σD	$\frac{D}{\sigma D}$
	Boys	Girls		
Chronological Age	73.80	74.03	1.14	.16
Raw Intelligence Score	37.84	38.60	2.57	.87

TABLE XL

CHRONOLOGICAL AGE AND RAW INTELLIGENCE SCORE MEANS
FOR BOYS AND GIRLS OF SAMPLE SEVEN

Variable	Sample 7		σD	$\frac{D}{\sigma D}$
	Boys	Girls		
Chronological Age	74.91	74.18	.51	1.43
Raw Intelligence Score	37.26	36.36	2.55	.35

Table XXXVII is read: At the start of the study, the mean chronological age of sample three was 73.91, and of sample seven, 73.91 months. The mean difference of .25 months was in favor of the Control sample. The standard error of the difference is .34 of one month and the critical ratio $\frac{D}{\sigma D}$.82, which are very much below the one per cent level of significance. Variations of this magnitude can be attributed to random errors in sampling. In raw intelligence score, the means for the two groups varied by 1.28 raw score points. The ratio of the mean difference to its standard error

was .01. This is certainly not statistically significant by conventional standards, since it is again below the one per cent level.

Table XXXVIII answers the question as to possible significant differences existing between means of boys of one sample and boys of the other sample, in both chronological age and raw intelligence score. Although a difference was found to exist between the sample means, for both sexes, in chronological age and raw intelligence scores, the differences were not statistically significant. In chronological age, the boys and girls of sample seven slightly exceed the mean age of boys and girls of sample three; in mean raw intelligence score, the boys and girls of sample three slightly exceed the boys and girls in sample seven.

Table XXXIX compares the mean chronological age and mean raw intelligence score of boys and girls of sample three. Again slight differences occur, but the critical ratios are well below the one per cent level of significance. The slight difference in age is in favor of girls; the difference in raw intelligence score is in favor of the boys.

Table XL shows the mean chronological age of boys to be .73 of one month older than the girls and the mean raw intelligence score to be .90 of a score point higher. In neither instance did the critical ratio approach significance.

In summary, it may be stated with assurance that at the start of the study, samples three and seven were equated in

respect to mean chronological age and mean raw intelligence score. Further, all children within the samples had been equally exposed to kindergarten instruction. No statistically significant difference between means existed between the samples or between boys and boys or girls and girls within the samples.

Significant Differences Between Samples, June 1949, as Measured by the Test Variables

During the regular testing week, eighteenth week, the following data were secured for all children in samples three and seven:

1. Scores achieved on the Detroit Reading Test, Form L
2. Scores achieved on Detroit Vocabulary Test, Form X
3. Scores achieved on the California Test of Personality, Primary Form A
4. Cumulative half-days' absence over the three-year period
5. Teacher's rating of the child's adjustment to school situations at the end of the three-year period
6. The actual grade status of the child at the termination of the study

Tables XLI, XLII, XLIII, and XLIV show the distributions of scores achieved on the tests²¹ and the cumulative

²¹

The California Test of Personality was used to arrive at a numerical evaluation of the pupil's personality and adjustment; the Detroit Reading Test and Vocabulary, to measure to some extent school progress.

half-days' absence for the pupils in samples three and seven.

Pupils in the various schools were not tested on the same day, but all were tested within the same week. No pupil was tested more than five days earlier or five days later than any other pupil. Due to the extra clerical duties placed upon teachers at the end of a semester, it was not deemed advisable to secure the cumulative half-days' absence at the close of the semester.

School clerks were contacted in the fall of 1949 for this information.²²

²² Cumulative half-days' absence was secured from the pupil's permanent record, Form 35.

TABLE XLI

RAW SCORES ACHIEVED BY PUPILS IN SAMPLES THREE
AND SEVEN ON THE DETROIT READING
TEST 5, FORM L

Raw Score	Sample 3		Total	Sample 7		Total
	Boys	Girls		Boys	Girls	
24	9	9	18	5	14	19
23	5	10	15	11	14	25
22	3	5	8	8	7	15
21	1	5	6	4	4	8
20		4	4	1	1	2
19	1	1	2	3	1	4
18	1	1	2	1	5	6
17	2	4	6		3	3
16				2		2
15	7	3	10	2	1	3
14	2	3	5	5	4	9
13	2	2	4	1	1	2
12	2	2	4	4	1	5
11	2	2	4	4	1	5
10	3	1	4	3	3	6
9	2	3	5	3	1	4
8	5	2	7	6	2	8
7	7	2	9	2	1	3
6	5	3	8	3	1	4
5	3	3	6	2	2	4
4	8		8	3		5
3	6	2	8			
2	2		2	1		1
1	1		1	2		4
0					2	
Total	79	67	146	76	71	147
Mean	12.28	17.08	14.49	15.34	18.40	16.82
σ	7.48	6.71	7.53	7.08	6.75	7.09
σ_M	.84	.82	.62	.81	.80	.58

TABLE XLII

RAW SCORES ACHIEVED BY PUPILS IN SAMPLES THREE
AND SEVEN ON THE DETROIT EXPERIMENTAL
READING VOCABULARY TEST, FORM X

Raw Score	Sample 3		Total	Sample 7		Total
	Boys	Girls		Boys	Girls	
40	1	2	3	1	3	4
38-39	5	2	7	7	5	12
36-37	3	5	8	4	13	17
34-35	5	4	9	5	4	9
32-33	3	5	8	3	3	6
30-31	5	4	9	3	4	7
28-29		1	1	3		3
26-27	2	4	6	7	4	11
24-25	1	3	4	3	4	7
22-23		2	2	4		4
20-21	4	3	7	2	4	6
18-19	6	8	14	3	3	6
16-17	3	4	7	5	2	7
14-15	4	8	12	5	5	10
12-13	8	4	12	7	2	9
10-11	10	2	12	7	5	12
8-9	5	1	6	2	6	8
6-7	6	3	9	1	4	5
4-5	1	1	2	3		3
2-3	6	1	7	1		1
0-1	1		1			
Total	79	67	146	76	71	147
Mean	18.85	23.09	20.79	22.92	25.11	23.98
σ	11.61	10.04	11.12	10.65	11.43	11.09
σ_M	1.31	1.23	.92	1.22	1.35	.91

TABLE XLIII

RAW SCORES ACHIEVED BY PUPILS IN SAMPLES THREE
AND SEVEN ON THE CALIFORNIA TEST
OF PERSONALITY, FORM A

Raw Score	Sample 3		Total	Sample 7		Total
	Boys	Girls		Boys	Girls	
93-95				1	1	2
90-92	2	1	3	2	4	6
87-89	6	3	9	3	2	5
84-86	5	4	9	6	11	17
81-83	7	2	9	8	5	13
78-80	9	9	18	16	6	22
75-77	7	10	17	5	9	14
72-74	6	6	12	2	8	10
69-71	9	10	19	8	4	12
66-68	6	5	11	7	5	12
63-65	5	6	11	8	4	12
60-62	3	3	6	3	1	4
57-59	3	3	6	2	3	5
54-56	4	3	7	1	4	5
51-53				2	2	4
48-50		1	1	1	1	2
45-47	3		3			
42-44	2		2	1		1
39-41					1	1
36-38	1		1			
33-35	1		1			
30-32						
27-29						
24-26						
21-23		1	1			
Total	79	67	146	76	71	147
Mean	71.56	71.84	71.69	74.01	74.30	74.15
σ	12.97	10.91	12.07	10.52	11.65	11.08
σ_M	1.46	1.33	1.00	1.21	1.38	.91

TABLE XLIV

CUMULATIVE HALF DAYS OF ABSENCE FOR PUPILS
IN SAMPLES THREE AND SEVEN FOR THE
THREE-YEAR PERIOD OF THE STUDY

Half Days of Absence	Sample 3		Total	Sample 7		Total
	Boys	Girls		Boys	Girls	
375-389		1	1			
360-374						
345-359					1	1
330-344						
315-329	2		2			
300-314						
285-299	2		2		3	3
270-284	1	2	3			
255-269	1		1			
240-254	2	2	4	2	1	3
225-239	2	2	4	1	2	3
210-224	2	2	4	2	1	3
195-209	2	1	3	3	3	6
180-194	5	3	8	1	3	4
165-179	1	1	2	2	2	4
150-164	5	4	9	3	5	8
135-149	6	1	7	2	5	7
120-134	1	6	7	2	9	11
105-119	6	6	12	4	7	11
90-104	6	3	9	9	5	14
75-89	4	8	12	7	7	14
60-74	6	6	12	9	5	14
45-59	9	8	17	7	5	12
30-44	9	8	17	15	3	18
15-29	5	4	9	6	3	9
0-14	2		2	1	1	2
Total	79	68	147	76	71	147
Mean	118.76	112.50	115.87	90.79	126.23	107.91
σ	80.60	74.73	78.01	60.51	70.43	67.84
σ_M	9.07	9.06	6.44	6.94	8.35	5.60

The point has finally been reached where the Experimental Reading Readiness Group, sample three, can be compared to the Control Group, sample seven. The purpose of the investigation was to find out if pupils who are not ready to read at the post-kindergarten level are helped by a period of reading readiness instruction before being exposed to formal reading in the regular 1B grade. Early studies have indicated improvement at the end of the period of reading readiness instruction, but as was pointed out earlier by the writer, there have been no studies of a follow-up nature.

The present dissertation is making comparisons of the groups three years after the experimental variable functioned for the Experimental Group. For clarity and ease of reference, sample three will be referred to as the Experimental Reading Readiness Group and sample seven as the Control Group.

Tables XLI, XLII, XLIII, and XLIV reveal that:

1. The mean achievement of the Control Group in Reading is superior to the Experimental Group by 2.33 raw score points.
2. The Control Group's mean achievement as measured by the Vocabulary Test is 3.19 raw score points higher than the Experimental.
3. In social and self-adjustment the mean raw score is 2.46 score points higher for the Control Group.

4. The Control Group's mean absence was 7.96 half-days less than the Experimental Group over the three-year period.

Superficially from the distributions and the mean raw scores, it would seem that the Control Group is better adjusted, had less half-days' absence, and made better progress in reading. This would be an erroneous conclusion to draw, as we do not know whether the mean differences are actually statistically significant.

Tables XLV, XLVI, XLVII, and XLVIII show the standard error of the difference between means and their critical ratios for the groups and their component parts, i.e., boys and girls within the groups. From the means and the critical ratios one may determine if significant differences exist between the Experimental and the Control Groups.

TABLE XLV

DETROIT READING TEST 5, VOCABULARY TEST, CALIFORNIA TEST OF PERSONALITY, AND ABSENCE MEANS FOR SAMPLES THREE AND SEVEN

Variable	Sample 3	Sample 7	σD	$\frac{D}{\sigma D}$
Reading Test	14.49	16.82	.85	2.74
Vocabulary	20.79	23.98	1.30	2.45
Personality	71.69	74.15	1.35	1.82
Absence	115.87	107.91	8.53	.93

TABLE XLVI

DETROIT READING TEST 5, VOCABULARY TEST, CALIFORNIA TEST
OF PERSONALITY, AND ABSENCE MEANS, BY SEX,
FOR SAMPLE THREE AND SEVEN

Variable	Sample 3	Sample 7	σD	$\frac{D}{\sigma D}$
<u>Reading</u>				
Boys	12.28	15.34	1.17	2.61
Girls	17.08	18.40	1.14	1.16
<u>Vocabulary</u>				
Boys	18.85	22.92	1.78	2.29
Girls	23.09	25.11	1.83	1.10
<u>Personality</u>				
Boys	17.56	74.01	1.89	1.30
Girls	71.84	74.30	1.91	1.29
<u>Absence</u>				
Boys	118.76	90.79	11.42	2.45
Girls	112.50	126.23	12.32	1.11

TABLE XLVII

DETROIT READING TEST 5, VOCABULARY TEST, CALIFORNIA TEST
OF PERSONALITY AND ABSENCE MEANS FOR BOYS
AND GIRLS OF SAMPLE THREE

Variable	Sample 3		σD	$\frac{D}{\sigma D}$
	Boys	Girls		σD
Reading	12.28	17.08	1.17	3.49
Vocabulary	18.85	23.09	1.80	2.35
Personality	71.56	71.84	1.97	.14
Absence	116.76	112.50	12.81	.49

TABLE XLVIII

DETROIT READING TEST 5, VOCABULARY TEST, CALIFORNIA TEST
OF PERSONALITY, AND ABSENCE MEANS FOR BOYS
AND GIRLS OF SAMPLE SEVEN

Variable	Sample 7		σD	$\frac{D}{\sigma D}$
	Boys	Girls		
Reading	15.34	18.40	1.13	2.71
Vocabulary	22.92	25.11	1.82	1.20
Personality	74.01	74.30	1.83	.16
Absence	90.79	126.23	10.86	3.26

Table XLV shows the comparison of achievement of both groups on the tests administered. The $\frac{D}{\sigma D}$ for each set of means ranges .93 to 2.74. The standard error of the difference between the paired means in reading shows an absolute difference between the Experimental and the Control Group. This, however, is very slight (2.74 as compared with 2.576), but it does indicate that the difference will occur less than one in one hundred times as a result of random errors of sampling. The difference in means for vocabulary is approaching significance, but the $\frac{D}{\sigma D}$ is still below the one per cent level. As for differences in personality and absence, both are well below the one per cent level of significance.

Table XLVI compares mean achievement for boys of the Experimental Group to boys of the Control Group. In like manner, the mean achievement for girls has been compared. The range of $\frac{D}{\sigma D}$ is from 1.10 to 2.61. With the exception of reading, no significant difference exists between boys

of the Experimental Group and boys of the Control Group, or between girls. It is almost necessary to stretch the imagination to say that the boys of the Control group read better than boys of the Experimental. (The one per cent level of significance is 2.576 against 2.61.)

Table XLVII shows that the girls' mean achievement in the Experimental Group is significantly better than the boys', as measured by a reading and a vocabulary test. No significant difference exists in personality and absence; in fact, both are well below the one per cent level.

Table XLVIII makes the same comparisons for the Control Group. Again the girls show a slight absolute superiority in reading. However, the boys in Control Group have maintained a significantly better attendance record over the three-year period.

Grade Status of Groups, June 1949

The next problem was to determine grade status for both groups at the termination of the study. To accomplish this, a Pupil's Information and Rating Sheet²³ was sent to the Homeroom teachers. Teachers were asked to indicate the pupil's classification by recording his grade status at the end of semester, June 22.

²³ See Appendix B.

Table XLIX shows the actual grade status for the Experimental and Control Groups at the termination of the study.

TABLE XLIX
GRADE STATUS OF THE EXPERIMENTAL AND CONTROL GROUPS
IN JUNE 1949

Grade	Experimental		Total	Control		Total
	Boys	Girls		Boys	Girls	
4A	1		1	2	3	5
4B	4	10	14	34	42	76
3A	34	41	75	21	12	33
3B	24	10	34	13	7	20
2A	10	6	16	5	5	10
2B	4		4	1	1	2
1A	1		1			
Sp. A	1	1	2		1	1
Totals	79	68	147	76	71	147

By assuming 1 R.R. to be a regular semester of instruction and comparable to the 1B grade, the acceleration or retardation is compared for the two groups. In making this comparison each group is considered to have had six-full semesters of instruction. For a pupil to have made normal progress in the Experimental Group he should be at the 3A level in June 1949. For a pupil to have made normal progress²⁴ in the Control Group he should be at the 4B level.

²⁴ Normal progress is defined as: the completion of each grade classification in the regular allotted time of one semester. In this study 1 R.R. is considered a grade classification. Therefore, a pupil classified as 1 R.R. in September of 1946 would have made normal progress if he were promoted to the 4B grade in June 1949. A pupil classified as regular 1B in September 1946 would have made normal progress if he were promoted to 4B in June 1949.

The percentage of retardation and acceleration is as follows for both groups:

1. Experimental Reading Readiness pupils

- a. Ten per cent were accelerated one or more grades. (Fourteen pupils caught up to the regular grade status of the Control Group; one pupil gained the status of one grade beyond.)
- b. Fifty-one per cent made normal progress through the grades (1 R.R. through 3A).
- c. Twenty-three per cent were retarded one grade in the period.
- d. Fifteen per cent were retarded two full grades or more. (Four pupils were retarded three grades; one, four full grades; and two were transferred to Special A.)

2. Control pupils

- a. Four per cent were accelerated one grade.
- b. Fifty-one per cent made normal progress throughout the grades (1B through 4B).
- c. Twenty-two per cent were retarded one grade in the period.
- d. Twenty-two per cent were retarded two or more grades. (Ten pupils were retarded three grades; two were retarded, four; and one transferred to Special A.)

We may compare the two groups in terms of the definition of normal progress. Six per cent more pupils gained an advanced grade status in the Experimental Group; identically the same percentage of pupils made normal progress in both groups; approximately the same percentage were retarded one grade; and seven per cent more pupils were retarded two or more grades in the Control Group.

A second type of comparison may be made by not giving the classification of 1 R.R. grade status at the post-kindergarten level. In this sense, reading readiness would merely be a special type of instruction within the 1B grade. In order to make normal progress a child would be expected to complete the prescribed reading readiness instruction and assume 1B status before the end of the first semester. If the child was not promoted to 1A at the end of the first semester but retained in reading readiness or 1B he would be considered a failure.

In following this line of reasoning a child in either the Experimental Reading Readiness or the Control Group would, by normal progress through the grades, have reached the 4B level at the termination of the study. If a child in either group did not attain this status by June 1949 he would have experienced one or more semesters of failure along the way.

On this basis, approximately ninety per cent of the Experimental Group and approximately forty-five per cent of

the Control Group failed to gain fourth grade status in the three-year period. Implication of this situation will be discussed in the conclusions drawn in the next chapter.

School Adjustment, Teachers' Ratings of Individual Pupils

At the completion of the study, Homeroom teachers were asked to rate the pupils in both groups in terms of school adjustment. In the experimental planning, it was suggested by administration that perhaps pupils of the Experimental Group adjusted better to the school situation as a result of the Reading Readiness program. Teachers rated the children on a three point scale in response to seven questions asked concerning each pupil. Due to the heavy load of clerical duties placed upon teachers at the close of a semester, the writer does not feel that adequate time was provided for teachers to give the ratings due consideration. However, all rating sheets were returned and the results recorded.

The results of the ratings are summarized, by items rated, under the headings: School Adjustment of the Experimental Group and School Adjustment of the Control Group. The first characteristic to the right of the scale has a weight of one (1); the second a weight of two (2); and the third a weight of three (3). The number appearing above the characteristic (without parentheses) is the number of pupils in the group possessing that characteristic. The number in parentheses is the weighted score for the group. The number at the right under "total" represents the total

group adjustment for that item. Perfect adjustment for the Experimental Group on any item rated would be four hundred and thirty-eight; for the Control Group, 441. (One more child was rated in the Control Group.)

SCHOOL ADJUSTMENT OF EXPERIMENTAL GROUP

1. How does the pupil get along with his classmates?

<u>18</u> (18)	<u>50</u> (100)	<u>78</u> (234)	<u>Total</u> (352)
quarrelsome unfriendly	neither unfriendly nor hostile	well-liked pleasant	

2. Does the pupil attempt to attract attention?

<u>19</u> (19)	<u>68</u> (136)	<u>59</u> (177)	(332)
deliberately disobeys or continually runs to teacher for approval	occasionally asks for attention or approval	happy without seeking attention	

3. How emotionally stable is the pupil?

<u>35</u> (35)	<u>88</u> (176)	<u>23</u> (69)	(280)
dull, cries easily upset	calm well-behaved	enthusiastic, but well-poised	

4. What is the pupil's reaction to authority?

<u>18</u> (18)	<u>31</u> (62)	<u>97</u> (281)	(361)
openly defiant	docile or fearful	respectful and cooperative	

5. What is the pupil's attitude toward work?

<u>28</u> (28)	<u>71</u> (142)	<u>47</u> (131)	(301)
refuses to start work needs continual help with little result	requires occasional help to complete job	self-starter and completes job	

6. How attentive is the pupil?

<u>31</u> (31)	<u>90</u> (270)	<u>25</u> (75)	(376)
extremely inattentive or day dreamer	usually attentive occasionally disturbs	alert-quick in response	

7. How does the pupil react to discussion of himself or his work?

<u>27</u> (27)	<u>88</u> (176)	<u>31</u> (93)	(296)
embarrassed, offers no information, refuses suggestions	usually accepts suggestions interprets	weighs suggestions and acts intelligently	

Total weight school adjustment (2,298)

SCHOOL ADJUSTMENT OF CONTROL GROUPS

1. How does the pupil get along with his classmates?

<u>12</u> (12)	<u>62</u> (124)	<u>73</u> (219)	<u>Total</u> (355)
quarrelsome unfriendly	neither unfriendly nor hostile	well-liked pleasant	

2. Does the pupil attempt to attract attention?

<u>22</u> (22)	<u>69</u> (138)	<u>56</u> (168)	(328)
deliberately disobeys or continually runs to teacher for approval	occasionally asks for attention or approval	happy without seeking attention	

3. How emotionally stable is the pupil?

<u>36</u> (36)	<u>93</u> (186)	<u>18</u> (54)	(276)
dull, cries easily upset	calm well-behaved	enthusiastic, but well-poised	

4. What is the pupil's reaction to authority?

<u>18</u> (18)	<u>33</u> (66)	<u>96</u> (288)	(372)
openly defiant	docile or fearful	respectful and cooperative	

5. What is the pupil's attitude toward work?

<u>26</u> (26)	<u>87</u> (174)	<u>34</u> (102)	(302)
refuses to start work needs continual help with little result	requires occasional help to complete job	self-starter and completes job	

6. How attentive is the pupil?

<u>31</u> (31)	<u>92</u> (184)	<u>24</u> (72)	(287)
extremely inattentive or day dreamer	usually attentive occasionally disturbs	alert-quick in response	

7. How does the pupil react to discussion of himself or his work?

<u>29</u> (29)	<u>87</u> (174)	<u>31</u> (93)	(296)
embarrassed, offers no information, refuses suggestions	usually accepts suggestions interprets	weighs suggestions and acts intelligently	

Total weight school adjustment (2,216)

Summary

Since extensive section summaries have been made throughout this chapter, the writer will re-emphasize only a few of the more salient points before drawing conclusions and generalizations for the study in Chapter VI.

First, the Study Population consisted of 588 Experimental Reading Readiness pupils and 588 Control pupils. These pupils were scattered throughout the city in one hundred and sixteen elementary schools.

Second, the Experimental and Control Groups were equated by mean chronological age, mean raw intelligence score, and one year's instruction at the kindergarten level. By mathematical determination it was found that no statistically significant difference existed between the two groups. (All critical ratios were well below the one per cent level of significance.)

Third, two random samples were drawn (147 pupils each) to represent the Study Population for the three year follow-up study, the experimental variable being the one semester of Reading Readiness instruction.

Fourth, the representative samples were checked and it was found that no statistically significant difference existed between the samples or between the sample means and parent population from which they were drawn.

Fifth, after three years of school instruction the groups were compared by means of three test variables,

cumulative half-day's absence, and grade status. The following was found:

A. The mean achievement in reading was just significantly different. The difference was in favor of the Control Group.

B. The mean achievement in vocabulary was approaching significance but had not quite reached the one per cent level of significance. Here again the difference was in favor of the Control Group.

C. Other slight significant differences were found to exist between boys and girls within the groups.

D. No significant difference existed between the means obtained on the California Test of Personality or in half-day's absence for the groups.

Sixth, by considering 1 R.R. as a regular grade, fifty-one per cent of the Experimental Group had not experienced failure at the end of the three-year period; ten per cent had been promoted; and thirty-eight had failed one or more grades. In the Control Group, fifty-one per cent had not experienced failure; four per cent had been accelerated one year; and forty-four per cent had failed one or more grades.

If Reading Readiness is not considered a grade unit but merely a starting point in reading instruction, eighty-nine per cent of the Reading Readiness Group had failed to reach their normal grade status at the end of the three-year period, as against forty-four per cent of the Control Group.

CHAPTER VI.

CONCLUDING STATEMENTS

The writer fully realizes that his close association with the study over a period of seven years has in one respect been extremely advantageous; but at the same time, this association may now be a handicap in appraising the work adequately because of colored vision or unconscious personal bias. Further, the writer has played a dual role in the investigation and the reporting of the study. From September 1943 through June 1946 he was a member of the Reading Readiness Committee with an assigned status and function. From June 1946 to September 1949 his role was one of a research worker carrying out a personal project and investigation without the aid of the committee. With this dual role in mind, the writer will attempt to evaluate, summarize, and draw conclusions from the whole study; namely, the first four developmental stages which were administratively directed, and the fifth and final stage which was personally designed and conducted.

Data for conclusions must necessarily be drawn from two sources: first, from the statistical findings based upon the results of the test variables administered at the termination of the study; second, from teachers' and

principals' actual appraisal of the program in operation in their schools. The evaluation and appraisal of the people in the field, therefore, may not necessarily coincide with the statistical findings. The writer's evaluation will be based almost entirely on the statistical findings, as he had only limited contact with the program in operation in the fifty-eight schools. However, it is not enough to assume the role of the "pure research" worker and say: "With the specific disclosure of facts, the study logically ends." The writer feels that it is his responsibility to initiate re-evaluation of the program in view of the findings, regardless of their nature. For the teachers and administrators, the findings may be good or bad, desirable or repugnant, disturbing or indifferent, or just-as-they-expected. The individuals in the field will be the ones to determine the future and usefulness of the present Reading Readiness Program.

Conclusions

In general, the data gathered from the Experimental Group at the termination of the study do not support the hypotheses stated in Chapter III. However, the writer wishes to emphasize that the conclusions drawn are of a tentative nature and do not necessarily imply conclusively that Reading Readiness instruction or the program is not

functional in a large city school system. The conclusions are based only on one group of pupils under prevailing conditions of a newly organized program. Therefore, factors operating against the success of the program may or may not have been removed at the present time. The hypotheses will be re-stated and the evidence that supports or refutes them will immediately follow.

1. "Post-kindergarten children who have not reached a stage of mental development, physical development, and personal development that is considered adequate for beginning reading will better adjust to a Reading Readiness Program than to the traditional 1B program, and this will be evidenced in due time."

This hypothesis was not substantiated by the evidence gathered at the termination of the study. The Experimental Group did not read better, handle vocabulary words better, show better self or social adjustment, gain normal grade status, or show a better school attendance record over the three-year period. In fact, there was no statistically significant difference between the Experimental and the Control Groups, with the one exception of reading, and this mean difference was actually in favor of the Control Group. Therefore, it may be concluded that the Reading Readiness pupils did not adjust better to the program or to a regular school situation as measured by the test variables at the termination of the study.

However, it may be argued that the hypothesis implies adjustment to the Reading Readiness Program as compared to a regular 1B program, and not over a three-year period. No conclusions can be drawn by the writer on this point, as this question was not answered except by subjective evaluation of the program by teachers and principals. It is their contention that Reading Readiness pupils do adjust better, but objective evidence is not available to support the contention.

2. "The percentage of failure experienced by the Experimental Reading Readiness Group will be considerably less at the end of the three years of public school instruction than for a Control Group of pupils following the traditional 1B curriculum."

Again the data gathered do not support the hypothesis; in fact, they negate it. Grade status and failure must be interpreted in two decidedly different ways in order to get a clear picture of pupil failure for both groups. First, if Reading Readiness at the post-kindergarten level is considered a regular semester of instruction, a pupil cannot be considered a failure if he completes the unit of work in the prescribed time of one semester. Therefore, the first comparison must be made on this basis.¹

¹ A pupil starting in 1 R.R. in September 1946 would progress normally through the grades and reach the 3A level in June 1949. Any pupil not reaching the status of 3A would have failed one or more grades in his progress through the school.

Thirty-eight per cent of the Experimental Group experienced failure of one or more grade units as compared to forty-four per cent for the Control Group. This, of course, is based on the assumption that pupils, teachers, and principals do not consider the classification 1 R.R. as failure at the post-kindergarten level. (Teachers and principals are far from agreement on this issue.)

Therefore, by making the assumption that 1 R.R. is a regular grade unit, the hypothesis is weakly supported. Pupils in the Experimental Group did not experience as much failure as pupils in the Control Group. Further, six per cent more experienced acceleration.

The second comparison of failure for the groups must be made by considering only the regular grade units (1B through 4B). On this basis, pupils placed in 1 R.R. are failed one semester before they start the regular 1B grade, unless they are transferred to a 1B section before the end of the first semester. By this assumption pupils are considered to have experienced failure if they did not reach their regular grade level (4B) as of June 1949. To have made normal progress, the experimental pupil and the control pupil would both have reached the 4B grade at the termination of the study. On this basis, eighty-nine per cent of the Experimental Group experienced one or more semesters of failure as compared to forty-four per cent for the Control Group.

Forced to make the two interpretations, the writer finds it difficult to say conclusively that the hypothesis is or is not supported. The conclusion depends entirely on the status of the semester of Reading Readiness. There is no unanimity of opinion on the part of teachers and administrators on this issue. In some schools, a 1 R.R. pupil has failed when he is placed in a Reading Readiness Group at the post-kindergarten level; in other schools, he is not considered a failure until he fails 1 R.R. or some other grade unit along the way. Therefore, it may be said either that the hypothesis was weakly supported or that it was refuted, depending on the point of view taken.

3. "The percentage of days absent for the Experimental Group will be less than for the Control Group over a three-year period."

Here again the hypothesis is not supported by the statistics on absence for the Experimental Group. The mean difference is approximately four days less absence for the Control Group but this was proved not to be statistically significant.

4. "The Experimental Group will read as well or better when compared to the Control Group at the end of the three years of instruction."

This hypothesis appears on the evidence to be refuted. It may be concluded that there is a significant difference in reading ability as measured by the reading test, but

this difference is in favor of the Control Group. However, the statistically significant difference was slight as measured by the critical ratio (2.74 compared to 2.576). The groups showed no significant difference in mean achievement for the vocabulary test. However, in neither instance did the Experimental Group read better or show better vocabulary understanding than the Control Group at the end of the three-year period.

5. "The Experimental Group will show evidences of better personal and school adjustment at the end of the three-year period."

Here again the data do not support the hypothesis. Although there are no significant differences between the groups, the Experimental Group did not make better personal or school adjustment as measured by the California Test of Personality.

In summary, it may be concluded that four of the five hypotheses stated for the program were not supported by the data gathered at the termination of the study. The fifth hypothesis in question regarding pupil failure is either substantiated or refuted, depending entirely upon the grade structure used as a base. Therefore, with the exception of reading, there was no statistically significant difference between the Experimental and Control Groups as measured by the test variables at the termination of the study. According to the results of this study, the one

semester of reading readiness instruction did not operate in favor of the Experimental Group. Since this is a status study by design, the results give very little help in determining why the experimental variable, one semester of reading readiness instruction, did not operate in favor of the Experimental Group.

Teachers' and Principals' Evaluation of the Program

In addition to the quantitative findings of this study, a number of qualitative judgments and opinions are of interest and should be taken into consideration. The importance of the whole problem is suggested by the evaluations of principals and teachers in contrast to the statistical and status findings. Their evaluations and conclusions were gathered over the three-year period and should somewhat qualify the statistical findings. They are suggested by the following comments:²

...The Detroit Reading Readiness Program takes into consideration two important factors in beginning reading. First, those children who are ready to learn to read. Second, those who will need added experience and a period of maturation before they begin the formal phases of reading. The Detroit Reading Readiness Test is accurate and enlightening in classifying the post-kindergarten children.

²The comments cited have been chosen to represent the feelings of many teachers and principals as revealed on the questionnaire returns. For more detailed opinions and reactions the reader may refer to Chapter II.

...The outstanding advantages of this new Reading Readiness Program are: Gives a child school work to fit his mental and physical ability; develops a child's reading senses through a series of well-worked out "reading developers" so skillfully that to a child who would otherwise find school too hard and discouraging it becomes fun and gives the teachers of slow children a type of work over which neither she nor the child needs to become discouraged.

...After one full semester of using the Reading Readiness materials, I think it is one of the most important and necessary steps we have taken to improve an educational system. Not only does it prepare the children for reading but it also gives them a feeling of having accomplished something rather than the feeling of failure they used to get when it was necessary to fail them in 1B.

Another teacher and principal state their views:

...Some children who scored low on the test are able to complete the workbooks and learn the color words and a number of picture words sooner than expected but too late to begin the 1B pads. Perhaps it is an injustice to keep such children in 1B two terms.³

...Very often because of the big step from kindergarten to a 1B room in a platoon school many children appear to be reading readiness prospects and unless given close attention and opportunities to develop could just be left in a Reading Readiness Group.

In general, teachers and principals evaluate the program worthwhile:

...Yes, emphatically the Reading Readiness Program is worthwhile. Entirely aside from learning to read, each child gains a sense of successful achievement and satisfaction which is very important in developing desirable school attitudes.

³ Administrative organization--the writer sincerely feels that many children were kept back or retarded for lack of available space in regular 1B sections.

...The following interesting statistics help prove its worth. Out of 125 children having had a complete Reading Readiness Program, 64.3 per cent have passed the 1B the first term after Reading Readiness; 58.5 per cent of these children passed the 1A the first term.

...The new program has been a godsend to the teachers in schools where the children are known as slow and retarded.

...No reservations. As we handle it, can see no disadvantages. However, the supply of materials is quite inadequate. This, of course, also holds true for the regular 1B's. Programs of this type should have a special budget to obtain needed supplies and materials.

Principals evaluate and comment on parents' reactions:

...No comments from parents were unfavorable. Parents accepted the instruction as necessary and what their child needed to learn to read.

...Most parents were pleased to have their children introduced gradually to reading. Few expressed displeasure but not seriously. Some seemed disappointed until the program was explained. On the whole, completely ignored the program.

...The Reading Readiness Program has been a decided improvement. Our pupils who are now 1B and who have had Reading Readiness are showing much more progress and stability than similar groups have shown. Without exception it is a marvelous improvement over the traditional pattern of 1B reading for all children.

...The Program has proved so successful in our school that I believe all children should be exposed to the program before starting regular reading.

From questionnaire returns and personal observations, the writer sincerely believes that teachers and principals adopting the 1 R.R. classification have done so to promote child welfare. They believe immature children are happier

when they are doing school tasks appropriate to their maturity level, when they are maintained with their social group, and when they do not experience a sense of reading failure at the beginning of school life. They sincerely feel this period of reading readiness affords the opportunity for adjustment under guidance of sympathetic teachers who plan activities to develop the attitudes, abilities, and skills that are lacking. From all evidence gathered, the teachers attempted to bring about child adjustment to the school, to develop the specific abilities that are essential to achievement in reading, and to stimulate an interest in reading through a balanced program of activities which met the needs of the individual pupils in their school situation. It is the writer's opinion that it will be extremely hard to convince teachers and principals that their Experimental Reading Readiness Group were not superior to the Control Group at the termination of the study.

Limitations of the Study

Some variable factors which undoubtedly affected the functioning of the Reading Readiness Program were not controlled in any way. One of these was the teacher. Were the teachers assigned to the Reading Readiness Program in September 1946 prepared to teach according to the best prescribed Reading Readiness methods? Was their preparation equal to that of teachers in the regular schools with

respect to the usual methods? Teachers were assigned to handle Reading Readiness classes with only limited instruction (two three-hour periods of instruction from the supervisor) and materials. In the fifty-eight schools, not more than twenty teachers had had any experience with Reading Readiness instruction. Therefore, it is questionable whether all the children in the various schools received the best instruction the first semester of the study. The writer does feel, however, that they did receive the best instruction available under the circumstances, as all teachers were trying to meet the needs of this group of children. Many of the teachers who started on the program in 1946 are still offering Reading Readiness instruction and undoubtedly are much better prepared at the present time. Therefore, the present Reading Readiness Program may or may not be more adequate at present than during the study. This question is beyond the scope of this study, but it should be investigated.

Although the Reading Readiness Committee recommended that a pupil be promoted from 1 R.R. when he showed signs of being ready to read, actually only a very few cases were handled in this way. By far, the majority of the pupils started the first semester in 1 R.R. and remained in this classification until the end of the semester. Principals point out that administratively this transfer in the middle of a semester is extremely difficult. This

is especially true where a school maintains a self-contained classroom for Reading Readiness pupils. There is no place for the pupils to go, as the regular 1B sections are filled. Although this provision for adjustment from Reading Readiness to 1B was recommended, it was not carried out in actual practice, at least in the group studied.

In order to obtain a better measure of school adjustment, a more adequate evaluation should be made at the end of each semester. The California Test of Personality and the teacher's rating sheet used for this purpose at the termination of the study were perhaps inadequate. Teachers have suggested an anecdotal record to follow the child. This suggestion has merit and actually has been carried out in a few schools.

Actually to evaluate the Reading Readiness Program, a study of successive groups of 1 R.R. pupils should be followed for a number of years. At the present time, we know what happened to only one group of Reading Readiness pupils at the end of a three-year period in terms of reading achievement, school adjustment, attendance, and grade status. Undoubtedly teachers and principals have re-evaluated their programs with the result that the Reading Readiness Program, at the present time, may or may not be better than the one studied. Evaluation and re-evaluation should be undertaken by the fifty-eight schools on a yearly basis. Before Reading Readiness instruction is condemned,

further study should be made of the administrative problems which apparently caused at least some of the retardation of the present group.

Implications

In light of the outcomes of the study on which this report has been based, there seems to be strong evidence to support the recommendation for further study of the Reading Readiness Program. The objective evidence seems to indicate that reading readiness instruction at the post-kindergarten level has little effect on the child at the end of a three-year period. However, the subjective judgments of teachers and principals indicate the contrary. The writer feels that for administration to condemn the Reading Readiness Program on the basis of the statistical findings would be extremely detrimental to teacher morale. Therefore, it is recommended that the following aspects of the program be re-examined and studied carefully before a final decision as to the fate of the program is reached.

1. A careful study should be made by teachers and principals to determine whether transfers from 1 R.R. to regular 1B could be made more readily. The present program does not allow the reading readiness child to be transferred to a regular reading section during the middle of the semester. Both teachers and the statistical findings point this out to be true. This limitation is one of class organization and, if it is to be solved, it must be attacked

by both teachers and principals within each individual school.

2. Teachers and principals should examine carefully the criteria used for grade promotion in grades 1B through 3A. The objective evidence indicates that both the Experimental and the Control Group were practically equal as measured by the five test variables. However, fifty-one per cent of the Experimental Group were at the 3A level and fifty-one per cent of the Control Group were at the 4B level. On what basis were the groups moved from grade to grade? Were the same criteria for promotion used for both groups?

3. Due to lack of adequate reading readiness material, the instruction in the reading readiness groups may not have been sufficiently differentiated to meet the needs of all pupils. On the other hand, pupils may have been ready to read pre-primers after a few weeks, but because of the nature of their classification this type of material was withheld. Testing and initial teacher judgment combined perhaps do not include enough understanding of a pupil to measure adequately his degree of readiness in all instances.

Obviously the study just reported is a status study. The statistical findings simply reveal existing differences between two equated groups of children after three years of pupil school instruction, the variable factor being one semester of reading readiness instruction. The discussion

has not tried to indicate why the reading readiness program was either superior or inferior to the regular 1B program. Perhaps the findings of this study will lead to further research to answer the question "why". It is certainly evident that the quantitative and qualitative findings do not agree. Therefore, the writer sincerely believes that further research and study are needed to assess the results obtained in this study against the goal set for the program; namely, reducing pupil failure in grades one through three. It is felt that further study would reveal the need for greater flexibility in promotion from the 1 R.R. classification to regular 1B grade status and perhaps between grades above this level.

In final summary, it was not the purpose of this dissertation to prove once and for all that the Reading Readiness Program was either a striking success or a striking failure. The purpose, however, was to submit evidence by which teachers and principals would be obliged to pause and re-evaluate their Reading Readiness Program in the schools.

APPENDIX A

PUPIL ACCOUNTING FORMS

PUPILS' RECORD FORM 35

LAST NAME		FIRST NAME						SEX
Grade							Special Classes Recommended	
Date Tch. Exam.							Braille or Sight Saving Cardiac	
Date Sch. Dr. Exam.							Crippled Deaf or Lip Read.	
Parent Present							Epileptic Open Air or Win.	
Date Pri. Dr. Exam.							Special A Special B	
Height							Spec. Prep. Speech	
Weight							Ungraded Jr. Ungraded Sr.	
Skin								
Nutrition								
Endocrine								
Tonsils								
Nose								
Teeth								
Cerv. Glands								
Heart								
Lungs								
Orthopedic								
Speech								
Vision								
Hearing								
Misc. Posture, Etc.								
Group Mental Rating								
Individ. Mental Test and Date								
HISTORY OF DISEASES				HISTORY OF PROTECTION				
Chicken Pox	Whooping Cough	Cholera	Diphtheria Prot.	Schick, Neg.				
Mumps	Diphtheria	Rheum. Fever	Smallpox Vacc.	T. B. Test				
Measles	Scarlet Fever	Others	Chest X-Ray					
CODE: 0--No Defect 00--Corrected		T--Under Treatment		1--Slight Defect		2--Correction Recommended		

INDIVIDUAL RECORD CARD
Experimental Reading Readiness Schools

R. R.

Name _____ School _____

Data	Feb.-June 47	Sept.-Jan. 47-48	Feb.-June 48	Test Scores
Letter Rating ()	Retained in R.R. ()	Retained in R.R. ()	Retained in 1B ()	R.R.Score () Date _____
Placed in R.R. ()	Promoted to 1B ()	Retained in 1B ()	Retained in 2B ()	_____ () Date _____
Date _____	Promoted to 1A ()	Retained in 1A ()	Promoted to 1B ()	_____ () Date _____
Birth _____		Promoted to 1A ()	Promoted to 1A ()	_____ () Date _____
Mo. Day Yr. _____	Left ()	Promoted to 2B ()	Promoted to 2A ()	_____ () Date _____
Language _____	()	Left ()	Left ()	()

If comments are provided on reverse side check here. ()

INDIVIDUAL RECORD CARD
Experimental Control Schools

Rdg. 1B

Name _____ School _____

Data	Feb.-June 47	Sept.-Jan. 47-48	Feb.-June 48	Test Scores
Letter Rating ()	Retained in 1B ()	Retained in 1B ()	Retained in 1B ()	R.R.Score () Date _____
Placed Reg.1B ()	Promoted to 1A ()	Retained in 2B ()	Retained in 2A ()	_____ () Date _____
Date _____	Promoted to 2B ()	Promoted to 2B ()	Promoted to 1A ()	_____ () Date _____
Birth _____		Promoted to 2A ()	Promoted to 2B ()	_____ () Date _____
Mo. Day Yr. _____	Left ()	Left ()	Promoted to 3B ()	_____ () Left _____
Language _____	()	()	Left ()	()

If comments are provided on reverse side check here. ()

PRINCIPAL'S NAME:	NUMBER OF FULL-TIME TEACHERS	AMOUNT OF PART-TIME TEACHERS	(10)	(11-23)	(24)	
PRINCIPAL'S SIGNATURE:	ACADEMIC (2)	ACADEMIC (5)	NO. OF CHILDREN ON HALF-DAY SESSIONS	TOTAL KINDERGARTEN	TOTAL ELEMENTARY	
DATE	SPEC. SUBJECT (3)	SPEC. SUBJECT (6)				NO. OF HALF-DAY SESSIONS
	SPEC. CLASSES (4)	SPEC. CLASSES (7)				
	TOTAL	TOTAL				

NO.	TITLE SEE NOTE 1 (OVER)	1 NAMES OF TEACHERS	2 TEACHERS FULL-TIME			5 TEACHERS PART-TIME			8 ROOM NO.	9 TYPE OF ROOM (ABBREVIATED)	10 KGN.	11		12		13		14		15		16 EL
			Aca- demic	Spec. Subj.	Spec. Class	Aca- demic	Spec. Subj.	Spec. Class				1	2	1	2	1	2	1	2			
T.	Alice Duress		X					202	Free Homeroom												19	
T.	Frances Polk		X					204	"												41	
																					16 25	
																					38	
T.	Elizabeth Wilson		X					201	"												39	
																					38	
T.	Margaret Dixon		X					207	"												13 24	
																					30	
T.	Elizabeth Patterson		X					208	R. Readiness												27	
T.	Alice Dunbar		X					212	Kdg.												36	
ESRP	Mary Williams					.5		212	"												34	
																					35	

TOTALS

CLASS RECORD SHEET

School _____

TO: 1B Teacher (March 1, 1947)

Please record by placing a check () in the column that will indicate the child's present classification.

TO: 1B Teacher (June 1, 1947)

Please record by placing a check () in the column that will indicate the child's classification or status at the close of the semester.

Pupil's Name	Classification March 1, 1947		Failed June, 1947		Promoted June, 1947		
	Placed in Reading Readiness	Placed in Regular 1B	Retained in Reading Readiness	Failed 1B	Promoted from R.R. to 1B	Promoted from R.R. to 1A	Promoted from 1B to 1A
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

PRESENT GRADE PLACEMENT OF PUPILS CLASSIFIED AS READING READINESS IN SEPTEMBER 1946

School _____ () Principal _____

School Rank (_____) Date: April 16, 1949 Number of Pupils _____

The following pupils were classified as Reading Readiness in your school in September 1946:

We would like to secure the following information concerning each pupil

- (1) Their present grade status as of February 16, 1949
- (2) If the pupil has left your school, mark "left" and record the date and the school to which the pupil was transferred.

S A M P L E

Name	Code	L. R.	Score	Age Code	R.R. Score	Grade Status	Transferred to
1. Jones, Sam	01	E	22	4		2A	
2. Smith, Ethel	01	D	41	4		Left	2/16/48

Name	Code	L. R.	Score	Age Code	R.R. Score	Grade Status	Transferred to
1.							
2.							
3.							
4.							
5.							

PRESENT GRADE PLACEMENT OF PUPILS CLASSIFIED AS CONTROL IN SEPTEMBER 1946

School _____ () Principal _____
 School Rank (_____) Date: April 16, 1949 Number of Pupils _____

The following pupils were classified as Control in your school in September 1946:

We would like to secure the following information concerning each pupil

- (1) Their present grade status as of February 16, 1949.
- (2) If the pupil has left your school, mark "left" and record the date and the school to which the pupil was transferred.

S A M P L E

Name	Code	L. R.	Score	Age Code	Grade Status	Transferred to
1. Jones, Sam	01	E	22	4	2A	
2. Smith, Ethel	01	D	41	4	Left	2/16/48

Name	Code	L. R.	Score	Age Code	Grade Status	Transferred to
1.						
2.						
3.						
4.						
5.						

SUBJECT: Evaluation of the Reading Readiness Program

FROM : E. W. McDaid, Department of Instructional Research

TO : All Principals and First Grade Teachers of Schools
Participating in the Reading Readiness Program

DATE : June 6, 1947

We are returning the Class Record Sheet listing your first grade pupils who are being followed for a period of three years in an attempt to evaluate the Reading Readiness Program in the experimental schools. A check on the left-hand side of the sheet indicates the present status of the pupil (R.R., 1B, 1A, 2B, 2A). This has already been completed from records you supplied this office last February.

At this time will you ask your first grade teachers to check the pupils' classification in the right-hand column (September, 1947)? This classification is based upon the promotion or failure of the pupils this semester. We are asking you to make this check now as the pupils listed will be with new teachers in the fall and much harder to locate. It is not necessary to add new pupils' names to the Class Record Sheet for your school. The sample below illustrates the procedure the first grade teacher will follow in checking pupils on the record sheet.

PUPILS' NAME	June 1947					September 1947								LEFT	
	Check Indicates Pupil's Classification					FAILED Retained in					PROMOTED Promoted to				
	R.R.	1B	1A	2B	2A	R.R.	1B	1A	2B	2A	1B	1A	2B		2A
1. John Doe		✓										✓			
2. Mary Smith			✓										✓		

- John Doe has been checked in the left-hand column under June, 1947, which indicates at the present time he is in Grade 1B.

From his records of this semester, he will be promoted to 1A at the close of school this year. Next September he will start 1A. His teacher has checked him in the right-hand column in the column "Promoted to 1A."

- Mary Smith has been checked in the left-hand column. Her present classification is 1A.

At the end of this semester, she will be promoted to 2B and will start Grade 2B in September. The check is made in "Promoted to 2B" in the right-hand column under September, 1947.

APPENDIX B

TESTS AND RATING SCALES

To answer the question of whether or not a child is obedient, it is essential that the parent observe the child in a variety of situations. Some of the things that parents should look for are: (1) whether the child follows directions, (2) whether the child is able to control his or her impulses, (3) whether the child is able to delay gratification, and (4) whether the child is able to cooperate with others. It is important to note that these things are not necessarily related to the child's intelligence or ability. A parent should also be aware of the child's behavior in different settings, such as at home, at school, and in public places. The parent should also be aware of the child's behavior in different situations, such as when the child is alone, when the child is with other children, and when the child is with adults.

In order to be able to rate a child's behavior, the parent should be carefully instructed in the use of the rating scales.

1. The parent should be instructed in the use of the rating scales.
2. The parent should be instructed in the use of the rating scales.
3. The parent should be instructed in the use of the rating scales.
4. The parent should be instructed in the use of the rating scales.
5. The parent should be instructed in the use of the rating scales.

APPENDIX B

TESTS AND RATING SCALES

1. The parent should be instructed in the use of the rating scales.
2. The parent should be instructed in the use of the rating scales.
3. The parent should be instructed in the use of the rating scales.
4. The parent should be instructed in the use of the rating scales.
5. The parent should be instructed in the use of the rating scales.

The values of these tests are given in the following table. The parent should be instructed in the use of these tests. The parent should be instructed in the use of these tests. The parent should be instructed in the use of these tests.

Please refer to the instructions in the manual which most nearly describe the behavior of the child in the specific area under consideration. If there are any questions, please contact the person who provided the manual.

BEHAVIOR RATING SCALE
Form A

To assure the fullest possible educational development of a child, it is essential that each teacher know as much as possible about the child. Some of the child's aptitudes and abilities may be discovered by means of objective tests, but there are others that have to be obtained by statements from people who have had the opportunity of observing the child carefully over a period of time. The easiest and most graphic way for a person to tell what they know about another person is by means of a rating scale. You, the teacher, have learned many things about the children in your room during the past term. This is a request for you to fill in the rating scale on each pupil so that succeeding teachers may have the advantage of your knowledge of the child and thus make it possible to better understand and teach the child.

In any subjective appraisal, several dangers exist which need to be carefully guarded against.

1. Be as impersonal and objective as possible. Attempt to disregard your personal feelings about the child. Your like or dislike for a child may color your rating unless you are cautious.
2. Consider the child's behavior over as long a period as you are able. Take care that one or two recent incidents do not form the basis for your rating.
3. Consider each item separately. Take care that your rating on one or several of the items does not influence your rating in other items.
4. It is a common tendency for raters to rate most individuals as average or near-average. In your rating, attempt to think of the extremes.

The value of this rating scale is entirely dependent upon the thought and care you use in your rating. It may be of extreme worth in helping the child if you are conscientious in this.

Place an X in the paragraph or phrase under each item which most nearly describes the behavior of the child in the specific area under consideration. If none seem to apply, write one that does and check it.

BEHAVIOR RATING SCALE
Form A

1. How does the child get along with his playmates?

Plays only when he can control situation	Participates in few activities but excludes self from others	Participates in usual way no objections	Seeks and enjoys playmates	Non-social prefers to work and play alone
--	--	---	----------------------------	---

2. Is the child conscious of his own personal appearance in regard to cleanliness and grooming?

Indifferent	Generally appears fairly well cared for	Clean, well groomed--satisfied with appearance and self	Inhibited by being extravagantly dressed--fear of getting soiled or by being shabbily dressed or differently dressed	Definitely clothes conscious and critical of others
-------------	---	---	--	---

3. Does the child attempt to attract attention?

Frequently runs to teacher for approval	Cooperates but not to get attention	Occasionally disturbs other individuals to get attention	Disturbs the whole group occasionally	Deliberately and repeatedly disobeys to get attention
---	-------------------------------------	--	---------------------------------------	---

4. How does he act when confronted with a job?

Over-confident	Has defeatist attitude--knows he can't do job	Has succeeded in many things not yet over-confident	Succeeds frequently in a few things	Very few successes--shows lack of confidence--won't try new things unless he gets much encouragement
----------------	---	---	-------------------------------------	--

5. How flexible is he?

Uncooperative	Slow to accept changes	Conforms agreeably as need arises	Quick to accept new ideas and changes if they are worthwhile	Easily won or persuaded--flabby, unstable
---------------	------------------------	-----------------------------------	--	---

6. How does he accept authority?

Respectful--cooperative agreeable	Resigned docile complies by habit	Generally accepts because it is routine	Critical of authority insecure--afraid	Bold--resentful shown by negative behavior
-----------------------------------	-----------------------------------	---	--	--

7. Is he a day dreamer or wide awake?

Absorbed in day dreaming	Frequently abstracted --self-centered in few activities	Usually attentive	Vigilant, informed-- quick	Difficult to finish work--needs urging
--------------------------	---	-------------------	----------------------------	--

8. How great is his power of concentration?

Completely absorbed in task at hand-- desire to finish	Concentrates if job is interesting	Easily distracted-- tries different tasks gives up easily	Attends adequately	Difficult to finish work needs urging
--	------------------------------------	---	--------------------	---------------------------------------

9. Is he quiet or talkative?

Contributes his part-- is attentive and courteous	Quiet generally contributes some	Does little talking	Interrupts--talks more than necessary	Chatters most of the time
---	----------------------------------	---------------------	---------------------------------------	---------------------------

10. How does he react to discussion of himself or his work?

Closes within himself-- won't talk embarrassed	Offers no information answers in monosyllables if questioned	Willing to have work discussed but contributes little	Accepts and participates--tells everything and uses suggestions offered	Explains why and how--won't accept suggestions--"I want it that way"
--	--	---	---	--

11. Is he emotionally calm or excitable?

Indifferent unconcerned sluggish--lazy	Emotions are slowly aroused	Responds quite normally--rather well balanced	Excitable and easily upset	Cries--sulks--fights-- rebellious--very excitable fearful
--	-----------------------------	---	----------------------------	---

12. Does he act independently?

Uninhibited-- reacts freely creative	Timid but tries and usually succeeds	Reacts freely in most situations	Immature-- frets about everything	Fearful--cries when asked to do something and refuses flatly
--------------------------------------	--------------------------------------	----------------------------------	-----------------------------------	--

Name _____ Grade _____ School _____ Date _____

INVENTORY OF AN INDIVIDUAL CHILD
Form B

The purpose of this record is to help you to know and thereby to better understand an individual child by the simple, informal observation of his behavior.

Under each trait, place an (X) in column (1) after the item which best describes the child at the time. At some later date, check the same trait again in column (2) and later in column (3), thus recording change or otherwise in his general pattern of behavior over a period of time.

It is important for you to be as objective as possible in these observations, and not to regard any trait as "good" or "bad". Base your judgments upon his general pattern of behavior with respect to a trait, and not upon one or two incidents.

Under "Comments", make your own informal notes on anything which seems significant to you; Such as, his reaction to the new baby, some change following an illness, evidence of lying, stealing, or masturbation, sudden improvement in response, some possible sources of his behavior, or perhaps your own emotional reactions to this child.

Note that space is left at the end in which you may record and make your own analysis, if you so desire, of other significant traits which you observe in this child.

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Personality Traits Observed	Dates			Comments - Descriptive and Interpretive
	1	2	3	
1. <u>Attention to Self</u> a. accepts and enjoys attention b. makes aggressive efforts to gain it c. persists in efforts to gain it even when unfavorable attention is result				
2. <u>Independence of Action</u> a. "self-starter"--carries on alone b. requires some help after he gets started c. depends upon continued help after start--not sure of himself				

INVENTORY OF AN INDIVIDUAL CHILD
Form B

Personality Traits Observed	Dates			Comments - Descriptive and Interpretive
	1	2	3	
<u>3. Responses to Children</u> a. enters readily into group activities-- games, stories, rhythms, etc.--with others b. responds if urged c. refuses to participate in group				
<u>4. Promptness of Action</u> a. puts ideas into action at once b. gets off to a slow start--may catch up c. lags behind from start to finish				
<u>5. Response to Authority</u> a. obedient b. protests--verbally or otherwise-- tries to avoid doing as told c. temper tantrum when required to obey				
<u>6. Attitude Toward Adults</u> a. approaches readily, without fear b. hangs back, shy, unresponsive c. runs away or otherwise avoids				
<u>7. Day-dreaming</u> a. imaginative, but recognizes reality b. drifts away but returns to reality easily or spontaneously c. absorbed in his own dream world				
<u>8. Stability</u> a. calm, but alert and emotionally re- sponsive b. easily overstimulated or depressed c. completely passive or perpetually excited				

INVENTORY OF AN INDIVIDUAL CHILD
Form B

Personality Traits Observed	Dates			Comments - Descriptive and Interpretive
	1	2	3	
<p>9. <u>Use of Oral Language</u> (if speech is defective, record under comments)</p> <p>a. speaks readily with no apparent inhibition</p> <p>b. replies when spoken to but does not initiate much</p> <p>c. silent</p>				
<p>10. <u>Possessiveness</u></p> <p>a. shares toys etc., readily with others</p> <p>b. resists sharing but can be persuaded with comparative ease</p> <p>c. refuses to share without pressure or compulsion</p>				
<p>11. <u>Consciousness of Self</u></p> <p>a. at ease with others</p> <p>b. blushes, is embarrassed when attention focuses on him, but recovers</p> <p>c. inhibited or overstimulated by direct reference to himself</p>				

Additional Traits
(observed by the teacher)

Teacher's Name _____

Child's Name _____ Grade _____ School _____

EVALUATION OF UNDESIRABLE BEHAVIOR
Form C

Name _____ Grade _____ School _____

Rated by _____ Date _____

Instructions for evaluating: In rating a pupil whose behavior is undesirable in some respects, check him poor only in the items which he shows some trends. Avoid giving him a poor rating in all traits. In rating a pupil whose behavior is generally acceptable, be sure to mark him poor in the items which apply. Avoid giving him a high rating in all traits merely from general impression. Place an X after each item in the column which best explains his behavior.

Types of Behavior	Almost Always	Quite Common	Once in a While	Very Seldom
Withdrawing, day dreaming				
Weak, lacks ambition, languid				
Tardiness and absence				
Dependent, insecure, shy, lacks confidence				
Irresponsible, unreliable, disorganized				
Inattentive, lacks con- centration				
Talks very little, bashful, possible speech defect				
Very self-conscious, blushes, flustered				
Resists teacher or class dis- cipline, rebellious, critical				
Seeks attention, disturbs entire class				
Lone wolf, or tries to dominate his group, generally unacceptable				
Selfish, self-centered, aloof, prefers to work alone				
Takes toys of others, destroys their projects				
Erratic, excitable--weeps or boisterous laughing				
Unaware of the group, individualist				

List any other types of behavior which you consider important and useful in understanding this pupil better.

PROPOSED INTRODUCTION AND EXPLANATION OF RATING SCALE
Form D

To assure the fullest possible educational development of a child, it is essential that each teacher know as much as possible about the child. Some of the child's aptitudes and abilities may be discovered by means of objective tests but there are others that have to be obtained by statements from people who have had the opportunity of observing the child carefully over a period of time. The easiest and most graphic way for a person to tell what they know about another person is by means of a rating scale. You, the teacher, have learned many things about the children in your room during the past term. This is a request for you to fill in the rating scale on each pupil so that succeeding teachers may have the advantage of your knowledge of the child and thus make it possible to better understand and teach the child.

This rating scale contains several items which have been carefully defined. Read the definitions and place an X in a position any place on the line which you believe best pictures the trait in the child being studied. Use the descriptive phrases below the line as a guide but feel free to place the X any place on the line that best describes the child, even though this be between the first and second statement or nearer the second than the last statement.

In any subjective appraisal, several dangers exist which need to be carefully guarded against:

1. Be as impersonal and objective as possible. Attempt to disregard your personal feelings about the child. Your like or dislike for a child may color your rating unless you are cautious.
2. Consider the child's behavior over as long a period as you are able. Take care that one or two recent incidents do not form the basis for your rating.
3. Consider each item separately. Take care that your rating on one or several of the items does not influence your rating in other items.
4. It is a common tendency for raters to rate most individuals as average or near-average. In your rating, attempt to think of the extremes.

The value of this rating scale is entirely dependent upon the thought and care you use in your rating. It may be of extreme worth in helping the child if you are conscientious in this.

PROPOSED INTRODUCTION AND EXPLANATION OF RATING SCALE
Form D

1. Sociability

In rating the child in this trait, consider the degree to which he is able to get along with the others in the room. Is the child well-liked or disliked by others? Is he quarrelsome or friendly? Is he kind and pleasant or hostile and antagonistic?

*	*	*
Not well-liked - Quarrel- some - Hostile	Fairly well-liked - Neither overly friendly nor hostile	Well-liked-Friendly pleasant

2. Independence

Recall the degree to which this child carries on classroom activities. Does he require constant urging, assistance, and encouragement? Does he require only occasional help, or does he carry out activities after meager preliminary instruction and stimulation?

*	*	*
Requires continual help Inactive unless prodded Fearful--cries	A bit timid but will try Usually succeeds Requires occasional help	"Self-starter" Carries on without help

3. Attention Getting

Most children enjoy individual attention and attempt to get it in some way. Does this child require only a minimum amount of your attention to keep him active, interested, or happy? Does he frequently run to you for approval, even before his project or task is finished? Does the child deliberately disobey or disagree to attract your attention, or even have a tantrum for your benefit?

*	*	*
Seems happy, interested and active without teacher attention	Occasionally asks for attention or approval	Deliberately disobeys to get teacher's attention

PROPOSED INTRODUCTION AND EXPLANATION OF RATING SCALE
Form D

4. Reaction to Authority

Children react differently to authority. Some seem to find pleasure in complying with the rules, or they are immediately obedient as a matter of preference or habit. Some protest mildly by their actions, or verbally; or they conform reluctantly. Still others react very resentfully or violently when disciplined, even to having tantrums.

*	*	*
Respectful-Cooperative- complies graciously	Protests mildly-Usually obedient and willing	Bold, resentful of authority- Reacts violently - Tantrums

5. Self-Control-Disturbing

Is this child quiet and reserved so that he never disturbs? Does he lack self-control? Does he talk or whisper occasionally or does he chatter most of the time or disturb class activity by interrupting frequently? Does he seem to be able to control his impulses and behavior?

*	*	*
Never disturbs Has complete self-control	Disturbs by occasional talking-Loses control once in a while	Continually chattering or in- terrupting-Fights, becomes angry, cries as his impulses lead him

6. Response to Motivation - Energy Output

Does this child respond quickly and decidedly to all kinds of motivating influences, become excitable at the climax of a story--want to be the first to comply with the teacher's suggestion, or does he respond without demonstration and undue excitement, enthusiasm, or fear? Does he seem unaffected, indifferent, sluggish, and lazy?

*	*	*
Emotions or enthusiasm easily aroused-Excitable Decidedly energetic	Responds moderately yet adequately	Unaffected-Indifferent-Dull, sluggish-Lazy

PROPOSED INTRODUCTION AND EXPLANATION OF RATING SCALE
Form D

7. Consideration for Others

Some children are far more considerate of other people's belongings, welfare, and feelings than others. Does this child seem to habitually respect other people's rights? Does he give them room to pass, pick up their books or crayons if he knocks them down? Does he usually respect other's rights, yet occasionally tease his classmates, or does he deliberately taunt them and tear their papers? Is he cruel to pets?

*	*	*
Respects others rights Does not tease or poke them - Shares consider- ably	Usually considerate Occasionally teases - Kind toward others as a rule- hesitant to share some things	Cruel to pets - Taunts class- mates - Destroys their property Will not share

8. Day Dreaming

Does this child appear vigilant, informed, and quick in his response to situations? Does he give full attention to what is happening--is he fairly well absorbed in the class activities, usually attentive, requiring only an occasional call to attention? Some children often seem completely absorbed in thought which carries them beyond the classroom entirely.

*	*	*
Vigilant, alert, informed Quick in response	Fairly well absorbed in what is happening - Occasionally interested in something else	Often completely absorbed in things beyond the activity at hand

9. Participation

To what degree does this child participate in the activities of the group? Does he enter actively into all projects and express his ideas or put them into action? Does he participate only after someone else takes the initiative and then seem to get along normally? Or does he act non-social or pout, prefer to be left alone, or just lag behind from start to finish?

*	*	*
Enters into all activities and puts ideas to work	Participates normally after someone initiates and di- rects the activity	Wants to be left out - Non- social - Lags behind

PROPOSED INTRODUCTION AND EXPLANATION OF RATING SCALE
Form D

10. Concentration (Stick-to-it-iveness) Tenacity of Purpose

Children differ in their ability and determination to complete an assignment or task. Does this child give up, become discouraged, or distracted after a short time? Does he try in a determined way and yet sometimes not complete the assignment or task because of difficulty, or does he concentrate on the job at hand and become absorbed in completing it?

*	*	*
Concentrates on completing task on hand Overcomes difficulty	Concentrates if the job is interesting sometimes does not finish	Easily distracted or discouraged - Cannot finish

11. Responsibility and Dependability

Consider the degree to which this child might be called dependable or responsible. Can he be depended upon to react in a proper way or do a task or assignment without fail? Is he likely to do the correct thing most of the time and yet neglect some details which may be important? Is he unpredictable, that is, may he as often as not do what is required or evade doing certain things which he dislikes?

*	*	*
May be depended upon to do the right thing Always truthful	Occasionally avoids responsibility or omits or disregards details	Evasive - Lies - Slovenly in his work Unpredictable

12. Self-consciousness

Some children show by their actions whether they are concerned about what other children think of them, their work, their dress, or their actions. Does this child seem to be greatly concerned about the opinions of others? Does he seem inhibited for fear he will do the wrong thing? Does he shrink from or dislike criticism or ridiculing laughter? Or is he moderately embarrassed in some things? Lastly, is he largely indifferent to the opinions of others-- uninhibited?

*	*	*
Indifferent to opinions of others - Uninhibited	Moderately embarrassed at some things	Inhibited by fears - Greatly concerned about others opinion of his work or dress

PERSONALITY INVENTORY

Name _____ Birthdate _____

Rating	Rated by	Grade	School	Date	Age
First					
Second					
Third					
Fourth					

Instructions for Rating

The purpose of the personality inventory is to help in a better understanding of pupils. The inventory may be fully as important as scores on tests.

1. Be as impersonal and objective as possible. Attempt to disregard your personal feelings about the pupil. Your attitude may color your ratings unless you are very careful.
2. Consider the child's personality and behavior over as long a period as possible. Do not be influenced too much by one or two recent incidents.
3. Consider each item carefully. Do not let your rating on one item influence the rating you give the other items. The wording of items cannot cover all conditions or situations. Rate as nearly accurate as you can, even though all the descriptive words may not apply.
4. A pupil may be rated more than once on the same blank. For the first rating put the number 1 on the answer which applies at this time for each item. When a second rating is made, use the number 2 on the item which applies. For the third rating number 3, etc.

A. Appearance

1. Looks	Good looking, good impression	Average looks, fair impression	Too good looking, spoiled, capitalizes	Hard to diagnose, unfavorable	Homely, repulsive, or rejected
2. Clothes	Well dressed, reasonable pride	Over dressed, or poor clothes but well-groomed	good clothes, poor care	Rather poor, self-conscious	Ragged, dirty, home neglect
3. Cleanliness	Very clean, hair combed	Fairly clean acceptable	Average, gets dirty easily	Generally below average	Dirty, neglected indifferent

B. Vitality

4. Stature	Average height and weight	Slightly undersize, seems under-nourished	Somewhat oversize, little clumsy	Very small, teased despised, pampered	Greatly oversize, ungainly
5. Defects	No bodily defects	One minor defect, i.e., vision, hearing	Suspected defect, not easily diagnosed	Somewhat handicapped, poorly accepted by class	One or more serious defects, badly handicapped
6. Health	Never ill, good vitality	Fair health, good attendance	Frequent colds, some absence	Often ill, frequent absence	Chronically ill, seldom in school

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C. Citizenship

7. Attendance	Regular attendance	Occasional explained absence	Alibis for absence parents neutral	Often tardy, parents quite indifferent	Deliberate truancy, chronic tardiness
8. Care of Property	Respects property	Unintentional minor damage	Generally a little careless	Easily influenced frequently damages	Breaks, defaces, apparently deliberate
9. Politeness	Always very polite	Fairly polite in most situations	Unnatural, artificial	Often too boisterous	Very rude thoughtless

D. Activity

10. Balance	Very well balanced	Seems a little too cautious	Impulsive, needs directing	Not generally dependable	Too impulsive, very erratic
11. Initiative	Good initiative, uses it wisely	Fair initiative, infrequent lapses	Interests are variable	Too much initiative, poorly directed	Very little initiative, very dependent
12. Purposes	Well-defined purposes	Interests, purposes, fairly good	Too many activities, too scattered	Day-dreaming, wishful thinking	Seems to have no interest, needs directing

E. Attitudes

13. Toward Adults	Judges adults well	Sometimes quite neutral	Makes adult friends slowly	Resents adults, negative	Avoids adults, seems afraid
14. Toward Playmates	Enjoys many good ones	A little too bashful	Has some playmates	Mostly objectional playmates	Prefers to play alone
15. Toward Self	Reasonably self-confident	Succeeds in many tasks	Has false self-confidence	Largely Unsuccessful	Lacks self-confidence

F. Sociability

16. Conversation	Expresses self very well	Rather talkative	Answers too briefly	Too talkative, jabbers	Negative, never talks
17. Popularity	Is generally popular	Enters into games fairly well	Average in popularity	Friends are few, doubtful value	Is avoided, no friends
18. Ideals	High moral ideals	Not consistently dependable	Somewhat neutral, unpredictable	Suspected of lying, stealing	Untruthful, undependable

G. Composure, Stability

19. Composure	Well poised, not self-conscious	Mildly self-conscious	Too indifferent	Usually too self-conscious	Always extremely uneasy
20. Self-Control	Good self-control	Fairly calm, stable	Varies, fair to poor, unpredictable	Fusses with hands, toys, shuffles feet	Lacks physical control, twitches, tremors
21. Temperament	Always happy, optimistic	Usually fairly happy	Variable, moody, unpredictable	Frequently depressed	Generally surly, pessimistic

Remarks

CHECK LIST FOR EXPERIMENTAL FORMS OF RATING SHEETS

After using the two forms of the behavior rating sheets, will you please answer the following questions by filling in the blank with the correct form letter (A, B, C, or D). If you believe the two forms were of equal value, write the word same. Make a choice, however, when at all possible. If any item does not seem to pertain to either form, write neither. Do not sign this list, but send it to Department of Instructional Research, 1354 Broadway.

1. Which two forms did you use?
(The form letters are found just under the title.) _____
2. Which form did you, in general, like better?
(If you can tell why, please do so on the other side of this sheet.) _____
3. On which form did you find items which could be most easily and readily applied? _____
4. On which form did you have to spend less time? _____
5. Which form led you to think most carefully and critically about the child in order to get an adequate evaluation? _____
6. Which form do you think would be most helpful if it were passed along to the child's next teacher? _____
7. Which form led you to a new appraisal of the child? In other words, which form seemed to suggest new ideas which might lead to a better understanding of the pupil? _____

Please attempt to answer the following questions with either Yes or No. Avoid Undecided as much as possible.

8. Do you believe that it would be better to rate each child more than once during the semester? Yes ___ No ___ Undecided ___
9. Do you believe that teachers would appreciate some help in finding the causes for a typical behavior? Yes ___ No ___ Undecided ___
10. Do you believe pamphlets suggesting remedial treatment for certain types of behavior would be useful? Yes ___ No ___ Undecided ___
11. Do teachers have time, generally speaking, to use the rating sheet for each child individually? Yes ___ No ___ Undecided ___

12. Do you believe the value of the rating sheet warrants the time spent in completing it? Yes ___ No ___ Undecided ___
13. Would you favor a shorter form than either of the forms which you used? Yes ___ No ___ Undecided ___
14. Would you favor a longer form than either of the forms which you used? Yes ___ No ___ Undecided ___
15. Please comment, if you care to, upon what you consider the strong and weak points of the rating sheets which you used.

SENSORY DEFECTS IN YOUNG CHILDREN

In a program of reading readiness the discovery and correction of sensory defects is one of the important elements. The following suggestions are offered:

I. Visual Defects

Young children have two types of visual defects inherent in their age and incomplete development. Many of them are hyperopic or far-sighted, since their eyeballs have not reached their full size and hence the image is cast behind the retina by the crystalline lens, which is more nearly at a mature stage. By the time the children are eight or ten years of age this difficulty is much reduced over what it is at six years of age. A second difficulty lies in the lack of fusion of the images of the two eyes, because they are not yet practiced in focussing together on one point or object; rather, both seem to look straight ahead. Because of these two difficulties six-year-old children find it difficult to concentrate on close work. They develop visual strain and weariness, look around the room, or out of the window at distant objects, and similar behavior. A satisfactory program of school work for six-year-olds should make allowances for these visual conditions.

The usual examination for visual defects is made with the Snellen E Chart. While children who fail on this test are undoubtedly poor in vision, some types of visual defects are not detected by it. Some of these difficulties are as follows: (1) a child may strain his eyes temporarily to see the E chart at nearly normal range, but this is not his usual, practical classroom vision; (2) perfect vision in each eye separately does not discover the inability to fuse the vision of the eyes taken together.

The following "Signs of Eye Trouble in Children" by the National Society for the Prevention of Blindness should supplement any formal examination.

"Signs of Eye Trouble in Children"

1. Attempts to brush away blur; rubs eyes frequently; frowns.
2. Stumbles frequently or trips over small objects.
3. Blinks more than usual, cries often, or is irritable when doing close work.
4. Holds book or small playthings close to eyes.
5. Shuts or covers one eye, tilts or thrusts head forward when looking at objects.
6. Has difficulty in reading or in other school work requiring close use of the eyes.
7. Is uninterested in distant objects or unable to participate in games such as playing ball.
8. Holds body tense or screws up face either for distant or for close work.

9. Is sensitive to light.
10. Is unable to distinguish colors.

Appearance

Red-rimmed, encrusted, or swollen eyelids
 Repeated sties
 Watery or red eyes
 Crossed eyes

Complaints

Dizziness, headaches, nausea, following close
 eye work
 Blurred or double vision

II. Auditory Defects

The watch test or whispering test, where the child cannot read lips, is a practical means of discovering gross defects of hearing. Some other symptoms of hearing defects are as follows:

1. Physical Symptoms

Failure to respond, says "What?" constantly, cups his hand to his ear, moves closer, has peculiar posture, tilts head at unusual angles to get better sound, mouth breathing, running ears, earaches and noises in head.

2. Speech Symptoms

Defects in speech, peculiar voice, often high pitched and without expression, avoids talking to people, lack of adequate flow of language.

3. School Symptoms

Poor general scholarship, poor oral work, generally slow and inaccurate in school work, particularly poor in spelling where dictation methods are used, puts his own incorrect interpretation on many questions and topics as a substitute for complete hearing and understanding.

4. Social Symptoms

Listless, uninterested in any group, sensitive, aloof, suspicious, hard to accept as a cordial acquaintance.

INTERPRETATION OF PERSONALITY INVENTORY¹

Your entering 1B pupils have recently been evaluated by their Kindergarten teachers on the Personality Inventory. This interpretation is a part of the program of the Reading Readiness Committee to assist you in making better adjustments in children's problems.

You will note that each pupil has been rated by placing the number "1" in one of the five choice answers for each of the twenty-one items. Answers near the left side of the page are generally more desirable than those near the right side.

Calling attention to relatively undesirable traits is not intended to discourage teachers about pupils with such characteristics, but rather to disclose areas in which improvements should be attempted. The interpretations and suggestions in this bulletin are designed to assist you with this problem.

The Personality Inventory is constructed so as to disclose specific areas in which children have weaknesses. You should aim to secure correction in the particular areas affecting each child. Do not inform the child himself in how many areas he has difficulties but quietly go about seeking improvement in certain items which seem most hopeful of changing. If he is discouraged by some weaknesses he should be commended for the items in which he has been rated favorably.

A second method of approach is to deal with a small group of pupils who show weaknesses in some one particular item. Your attack on the problem may be strengthened by considering several children at a time over a period of a few days. In using this method you should avoid bringing them together as a group, such as those who are the most homely, which would probably intensify their problems.

This plan of study might be facilitated if you drew up a form similar to the Personality Inventory but of larger size on which you would write in the names of pupils, particularly those with the less favorable descriptions. In that manner you could quickly identify all the pupils under each of the twenty-one areas. Such a chart should never be shown to the pupils themselves.

Children's success in school is dependent upon many factors or causes working in combination. You should coordinate your activities on the Personality Inventory with the mental ratings with the results of the Reading Readiness test, and with the physical defects in need of correction. Whenever Visiting Teachers are assigned to your school there should be close cooperation in their program.

¹ Complete bulletin may be secured from the Psychological Clinic, Detroit Public Schools.

Some of the suggestions are stated as very specific remedial measures. Others are necessarily somewhat general in nature but are offered to give a view of the overall effect which a specific disability may have upon a child's long-time attitudes. All suggestions are designed not as an end in themselves but as a point of departure for those teachers who wish to make a more complete journey into the challenging field of child psychology.

It is not to be inferred that the correction of deviations in the various fields implies that a dead level of uniformity is to be expected or desired in all traits and in all children. Minor idiosyncrasies put a characteristic stamp of individuality upon every child. If these deviations do not interfere markedly with a child's success in his school studies, nor with his general personality and social adjustment, they should not be viewed with undue alarm. The teacher should be the judge of what factors or problems should be studied and remedied in each individual child.

1. LOOKS. Although the great majority of little children have what might be termed average looks a few stand out as very good looking and about an equal number who are considered to be homely. Extreme deviations from the average are likely to have a marked effect upon the child's personality development.

Pupils who are less fortunate than the majority in their looks often have great difficulty in being accepted on equal terms by their classmates. The impression which they make on others gets them off to a bad start. It is difficult to overcome such rejection or ostracism. Too often people (including small children) are judged as to their personality by their looks rather than by their more fundamental character traits.

In order to overcome such handicaps the pupil should be trained on how to make the most of his good character qualities. Learning how to develop a friendly smile which may be used in many critical situations is helpful in neutralizing facial features that give an unfortunate appearance.

It would be bad psychology to call the child's attention to the fact that he is homely. Fortunately, there is seldom unanimous agreement about standards of homeliness or good looks, so that practically all children are acceptable to at least a few other people.

Some very good-looking pupils take advantage of their popularity to receive many favors but to give little in return. Others wait on them, do many of their personal errands, and generally allow them to exploit their looks beyond reasonable limits. They may even try their personal wiles on teachers.

The few children who deviate in looks or appearance should be recognized at an early date and appropriate training be undertaken along suitable lines.

PUPIL'S INFORMATION AND RATING SHEET

1. Indicate the pupil's classification by recording his grade status at the end of this semester, June 22. (Insert his grade in the blank after the words "was promoted to" or "retained in").

_____ was promoted to _____ or retained in _____

2. To my knowledge the parents of this pupil speak the _____ language at home.

ON THE FOLLOWING SCALE PLACE AN "X" ON THE LINE THAT BEST DESCRIBES THE PUPIL'S CHARACTERISTICS AS YOU HAVE OBSERVED THEM OVER THE PAST SEMESTER.

3. How does the pupil get along with his classmates?

quarrelsome unfriendly	neither unfriendly nor hostile	well-liked pleasant
---------------------------	-----------------------------------	------------------------

4. Does the pupil attempt to attract attention?

deliberately disobeys or continually runs to teacher for approval	occasionally asks for attention approval	happy without seeking attention
---	--	---------------------------------------

5. How emotionally stable is he?

dull, cries easily upset	calm well-behaved	enthusiastic, but well-poised
-----------------------------	----------------------	----------------------------------

6. What is his reaction to authority?

openly defiant	docile or fearful	respectful and cooperative
----------------	-------------------	-------------------------------

7. What is his attitude toward work?

refuses to start work needs continual help with little result	requires occasional help to complete job	self-starter and completes job
---	--	--------------------------------------

8. How attentive is he?

extremely inattentive or day-dreamer	usually attentive occasionally disturbs	alert-quick in response
---	---	----------------------------

9. How does he react to discussion of himself or his work?

embarrassed, offers no information refuses suggestions	usually accepts suggestions interprets	weighs suggestions and acts intelligently
--	--	---

Date: June 22, 1949

Teacher's Name _____

Name _____ Last _____ First _____ Initial _____ Grade _____
 School _____
 Years _____ Months _____
 Date of Birth _____ Year _____ Month _____ Day _____ Teacher _____
 Date of Test _____ SCORE _____

DETROIT READING READINESS TEST

City Public Schools

Department of
Instructional Research

	Raw Score
Vocabulary	
Visual Perception	
Motor Control	
Visual Retention	
Delayed Recall	
Immediate Recall	
Total Score	
Auditory	
Detroit Beginning First Grade Intelligence Test	
Reversals	

PROFILE CHART—PERCENTILES

	Test						Total	7
	1	2	3	4	5	6		
100						100		
90						90		
80						80		
70						70		
60						60		
50						50		
40						40		
30						30		
20						20		
10						10		
0						0		

Personality Inventory _____
 Strengths _____
 Weaknesses _____

Please check and comment on the following:

Vision	e. Handedness	Rt.	Lt.	Both
Hearing	f. Teeth			
Speech Defects	g. Tonsils—Mouth Breathing			
Frequency of Illness	h. General Physical Condition			

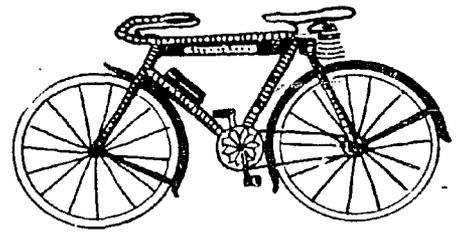
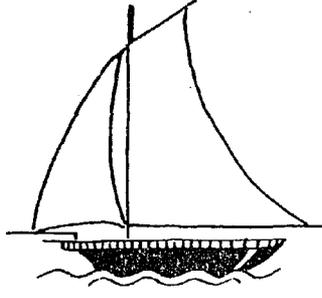
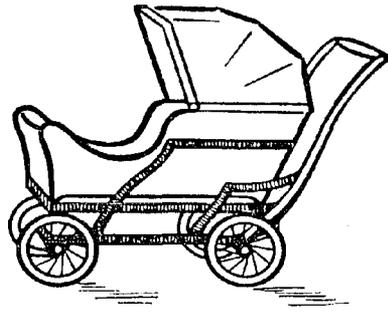
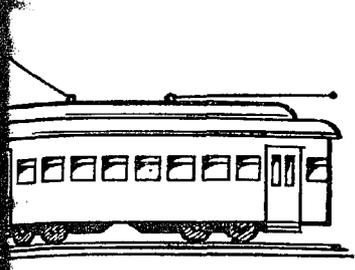
Available evidence this child shows—
 Decided Readiness | Probable Readiness | Doubtful Readiness | Decided Lack of Readiness

Copyright 1945 by Harry J. Baker, Elizabeth M. Cullen, Raoul J. Gatien, Evelyn Koppelman, Bernice Leland, Elmer W. McDaid, Arnold R. Meier, Clarice Schultz, Paul H. Voelker, Evelyn ... Earl R. Laing, John S. Thomas, and Marquis E. Shattuck. The right to print or modify this test has been assigned to the Board of Education of the City of Detroit.

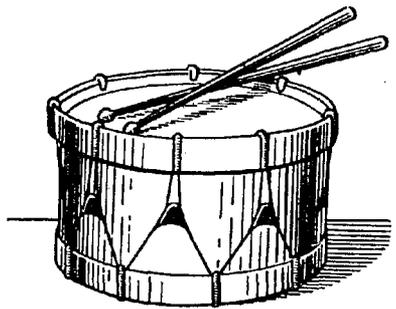
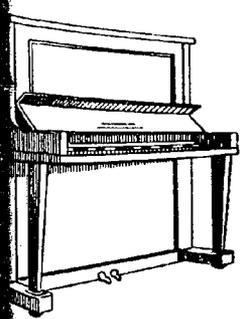
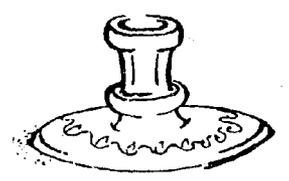
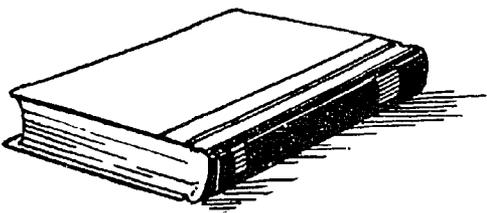
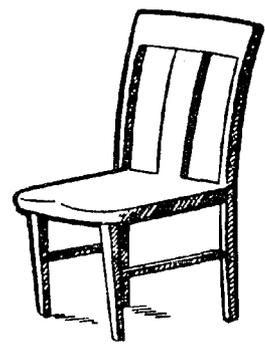
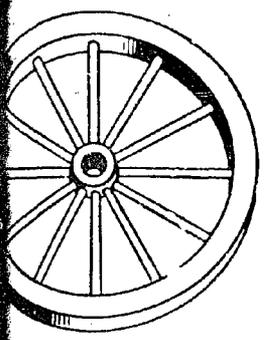
1. Vocabulary (a) NAMING

_____ Name

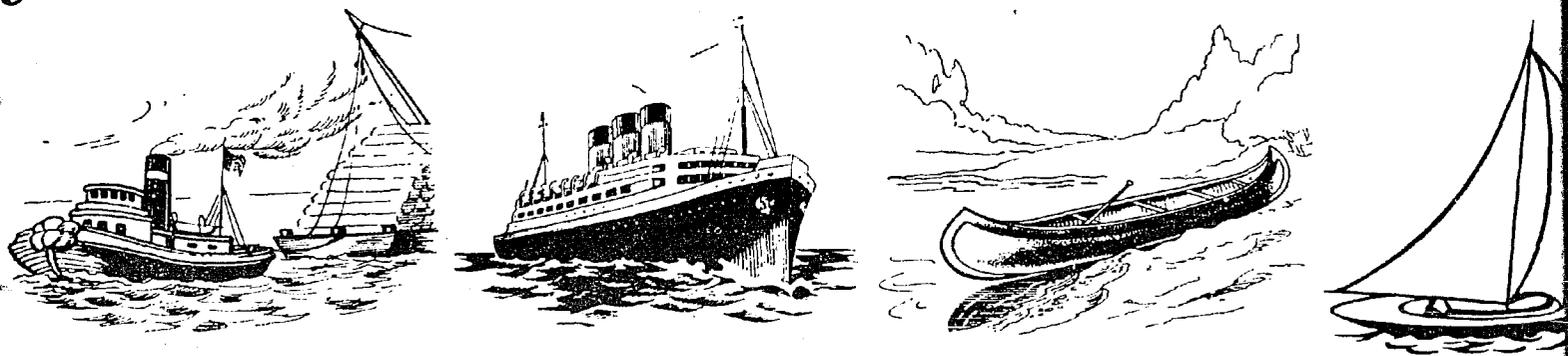
Practice



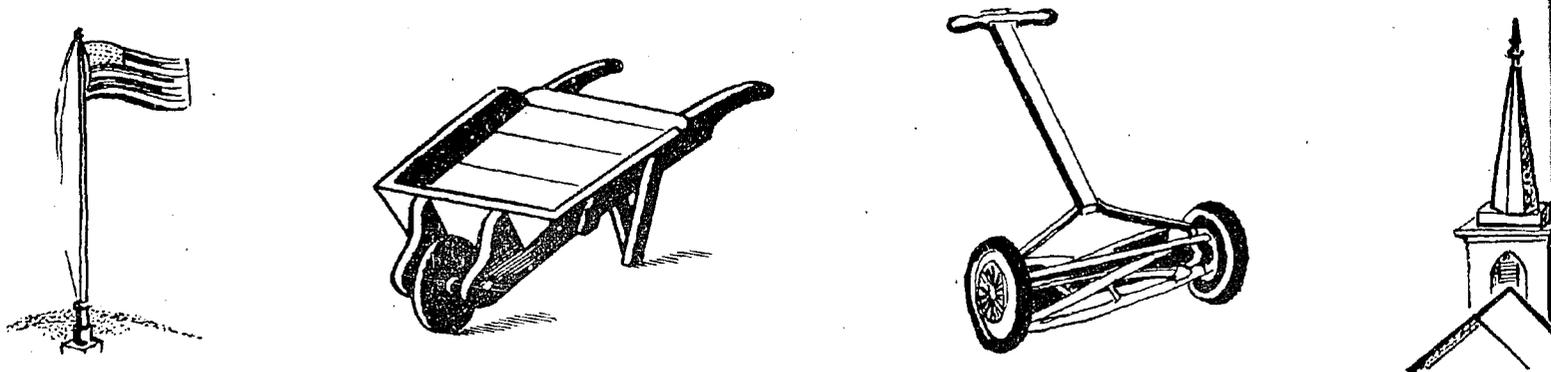
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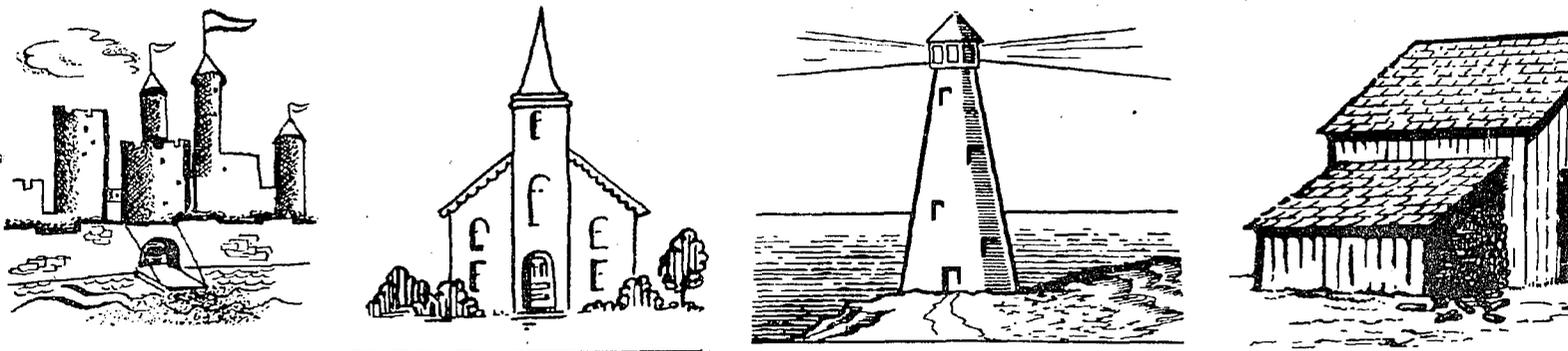
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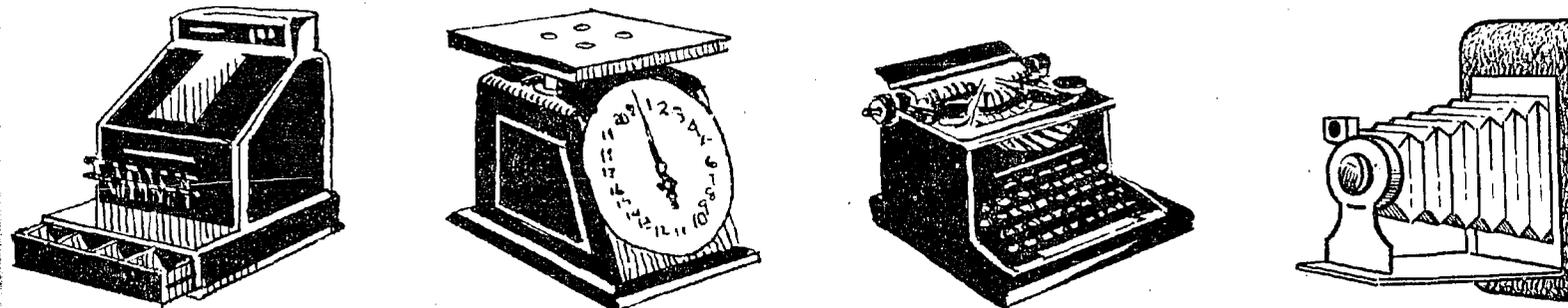
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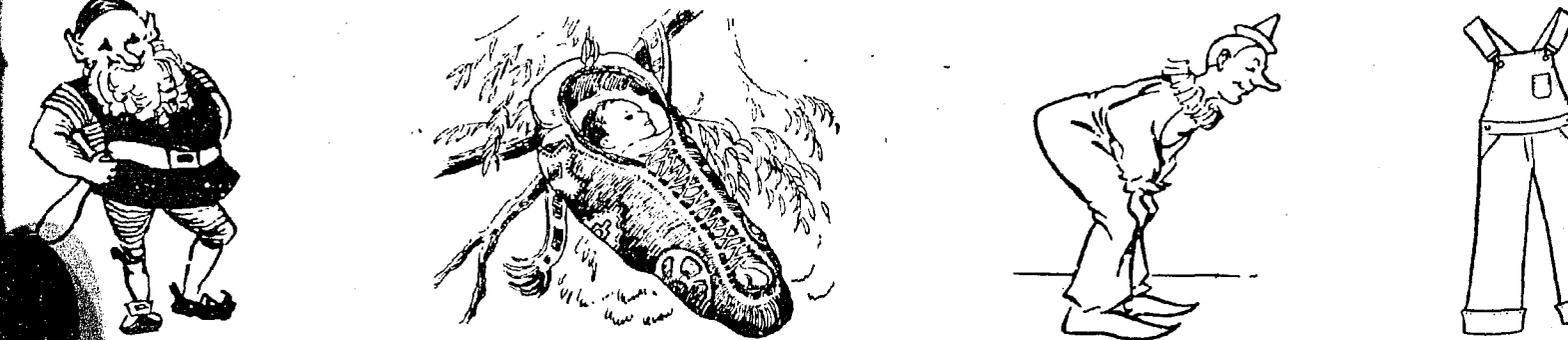
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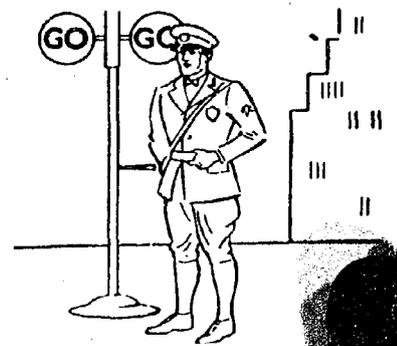
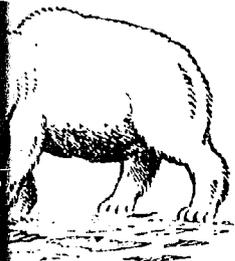
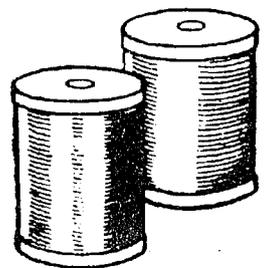
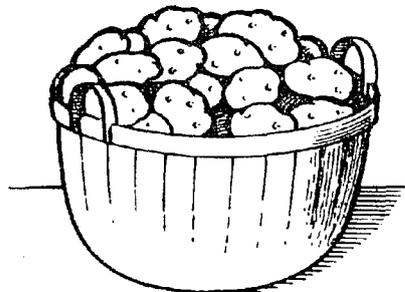
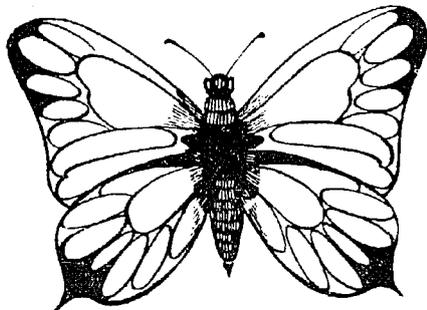
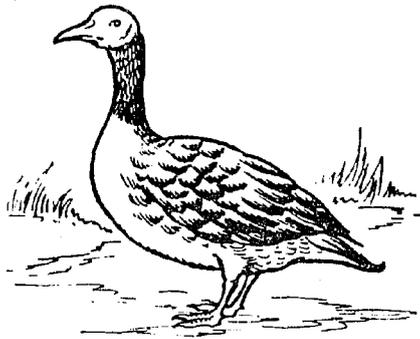
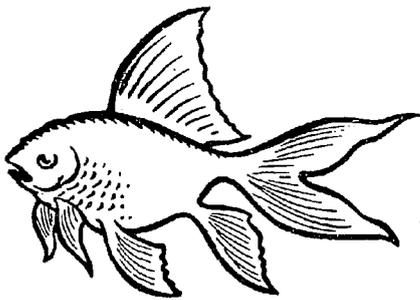
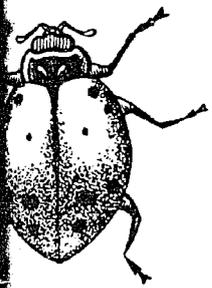
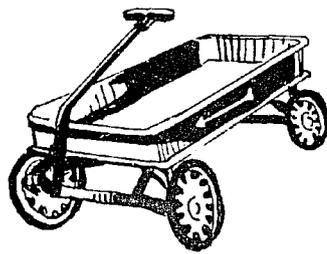
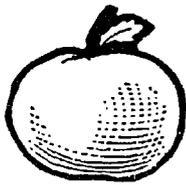
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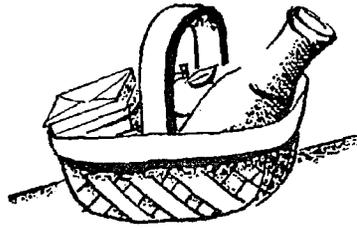
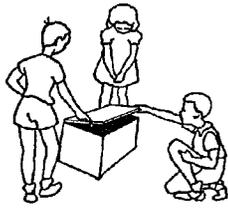
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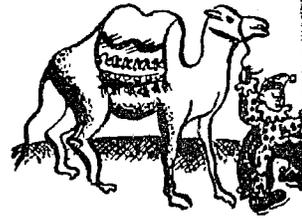
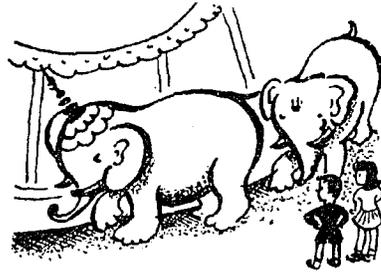
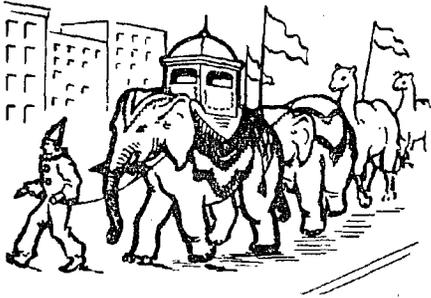
Practice



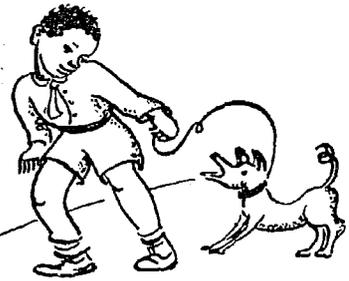
(d) Practice



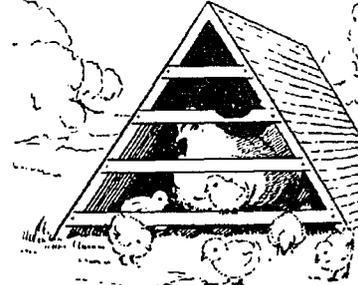
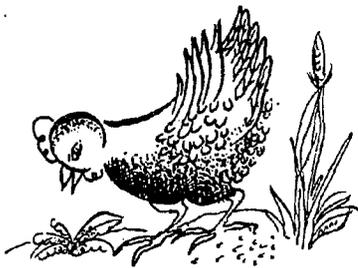
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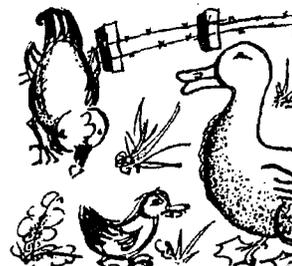
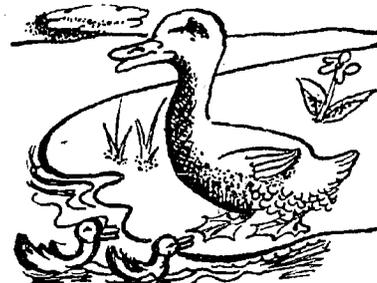
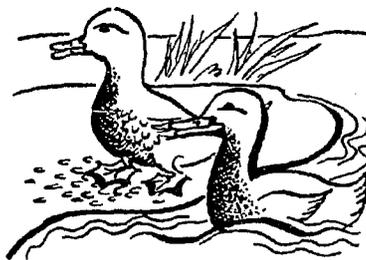
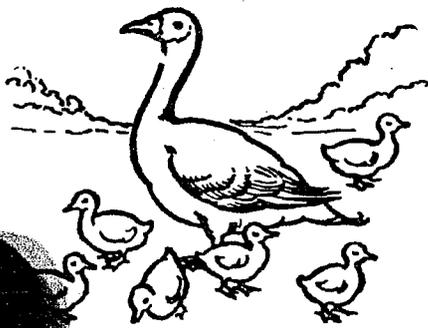
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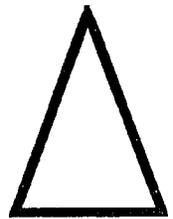
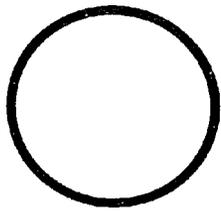


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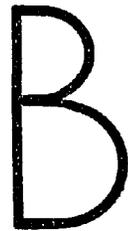
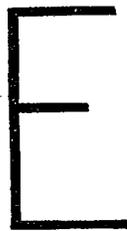
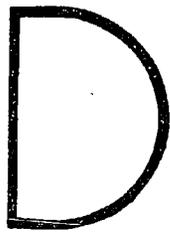


2. VISUAL PERCEPTION OF FORMS

Practice



Practice



Practice

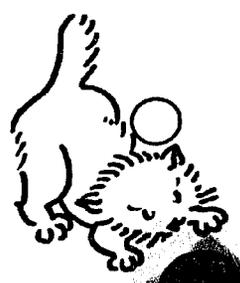
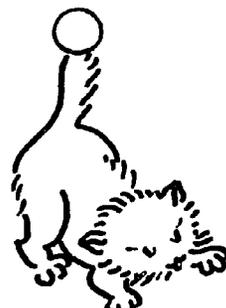
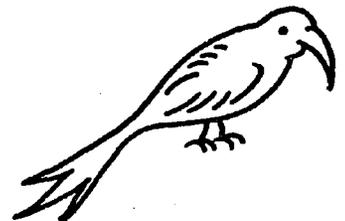
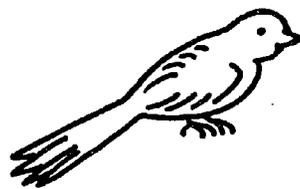
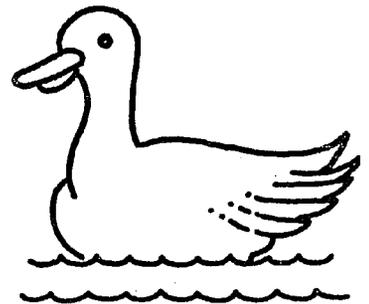
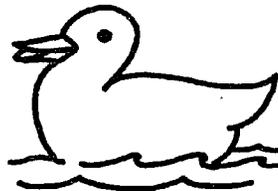
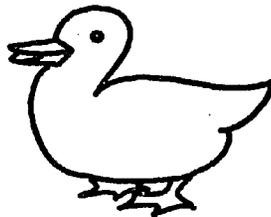
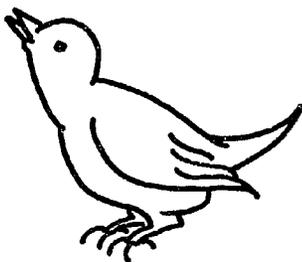
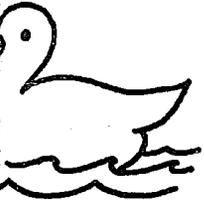
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MOTOR CONTROL

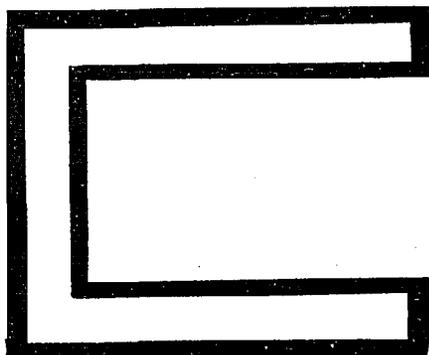
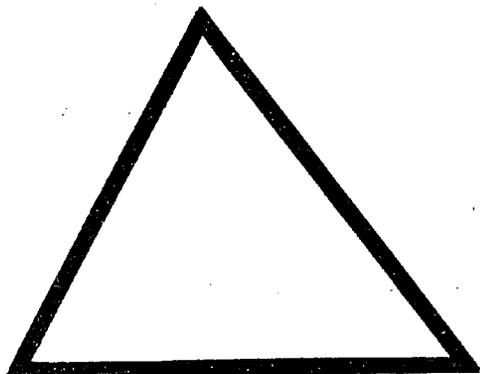
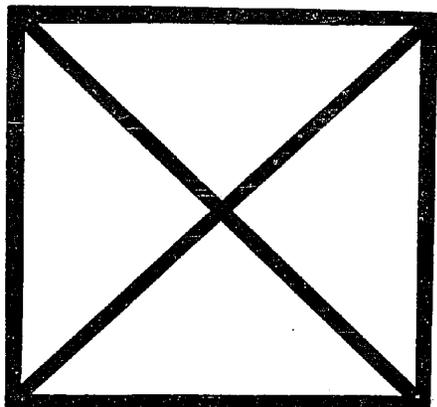
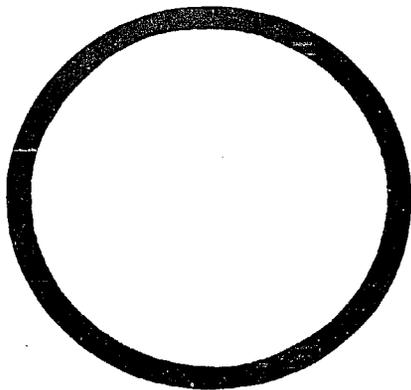
314
Indicate which hand
the child uses in this
subtest.

Right

Both

Left

Practice



5

fet

6

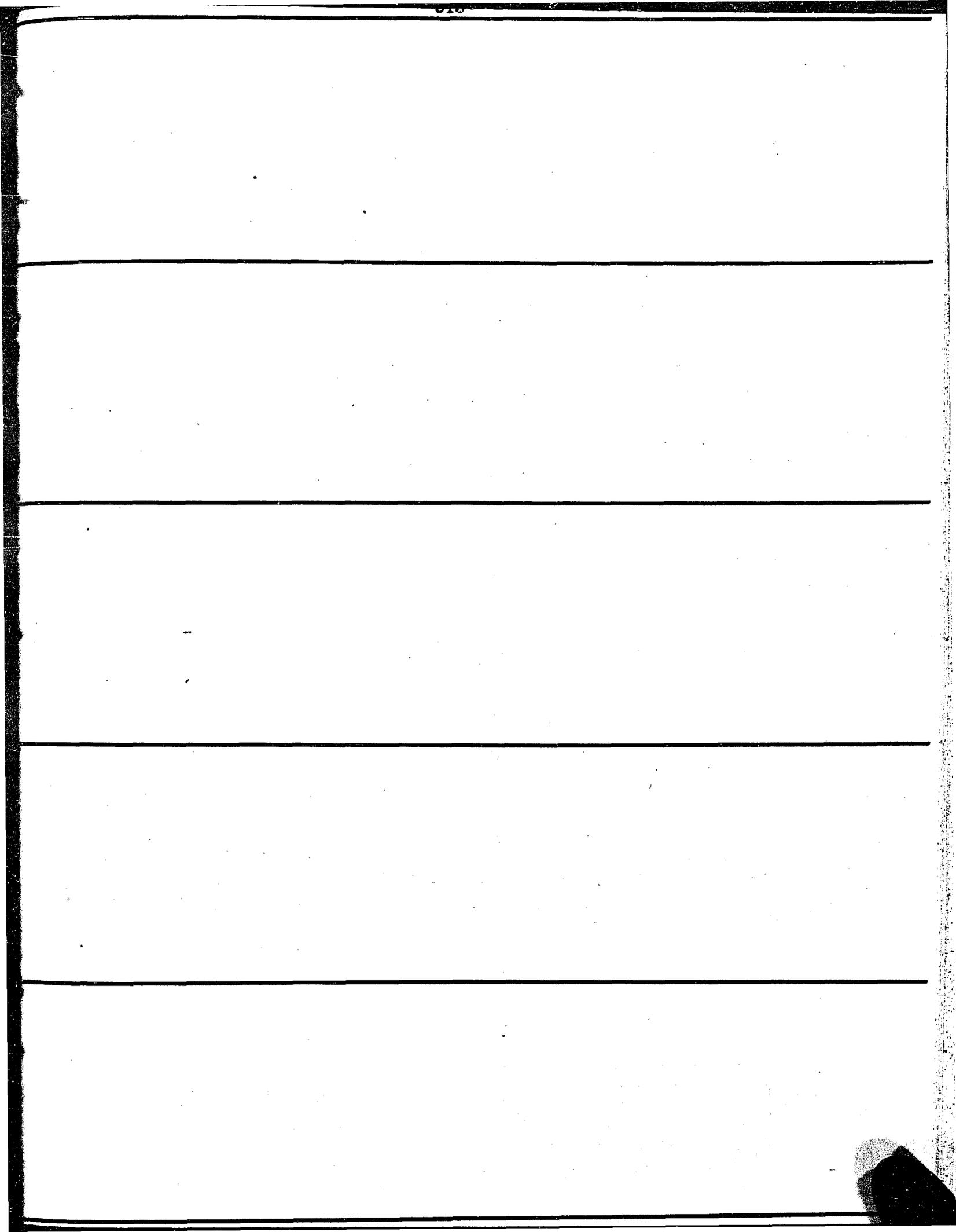
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4. VISUAL RETENTION OF FORMS

(1a) Practice

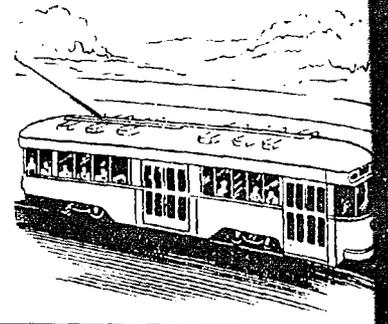
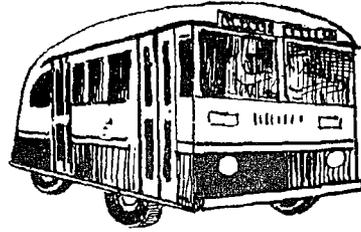
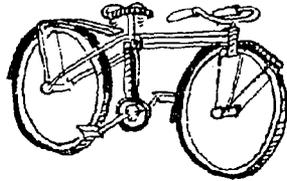
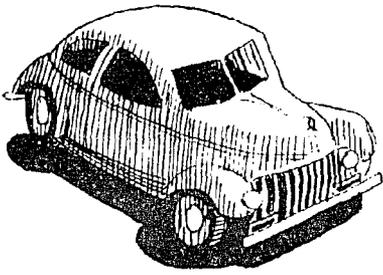
(1b) Practice

2a



5. DELAYED RECALL

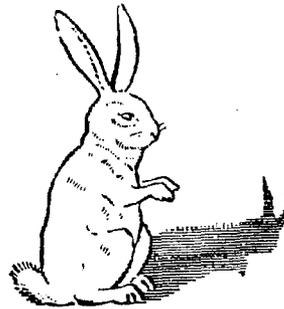
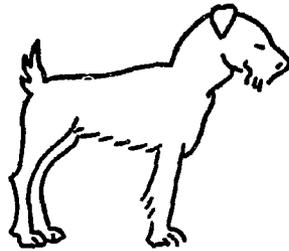
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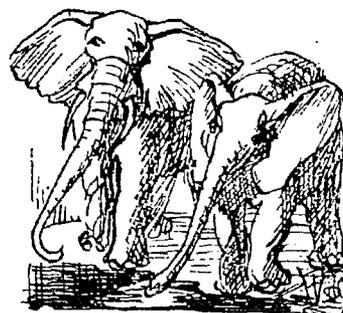
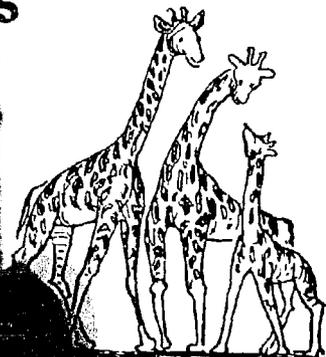
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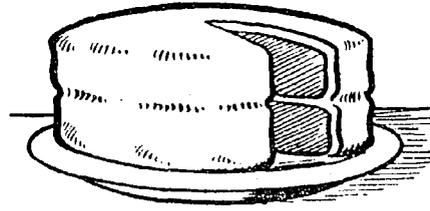
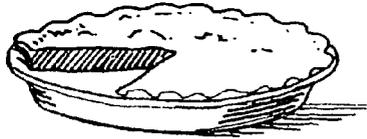
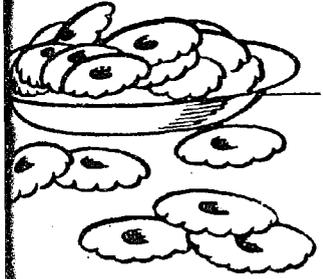


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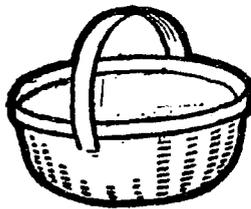
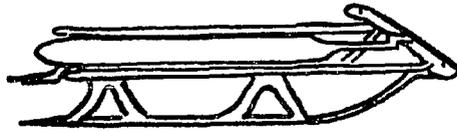
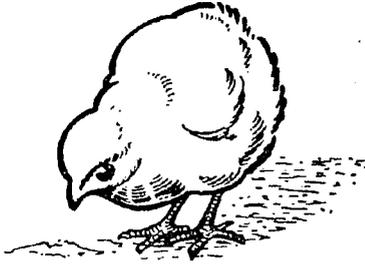
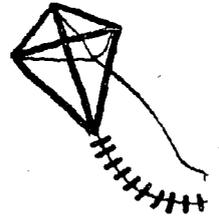
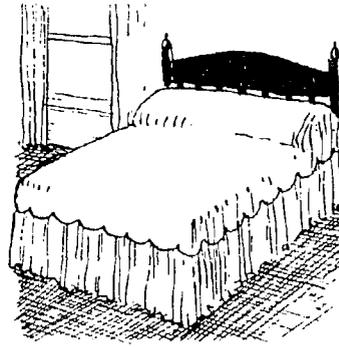
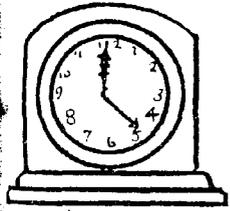
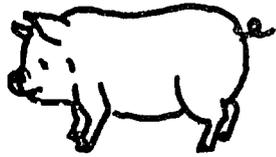


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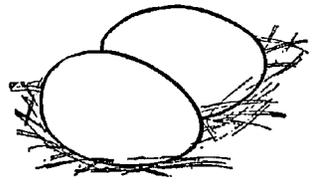
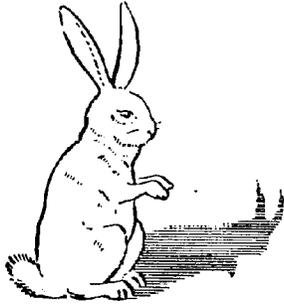
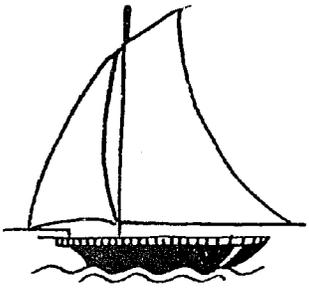




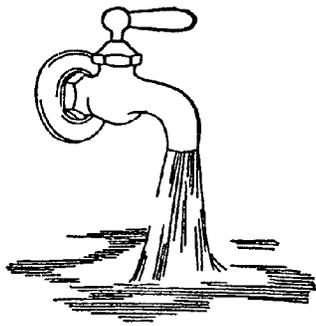
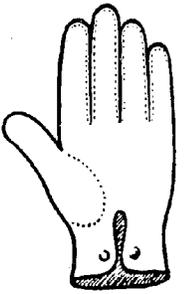
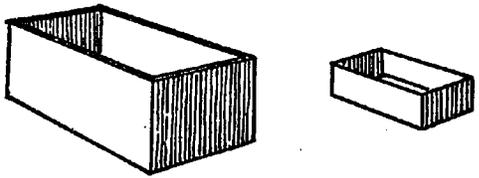
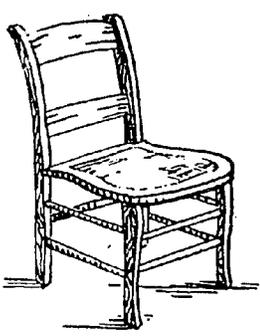
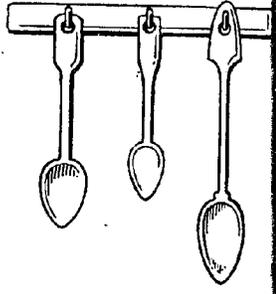
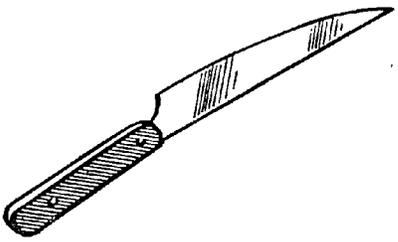
6. IMMEDIATE RECALL



3



4



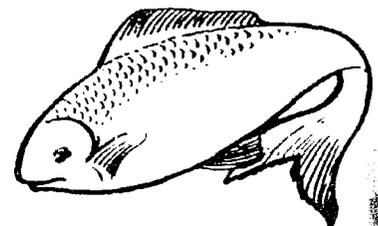
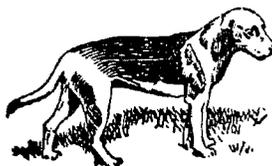
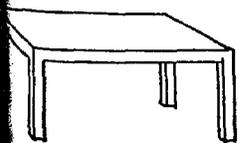
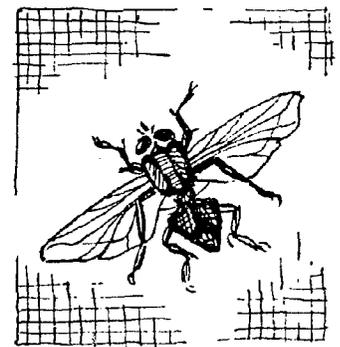
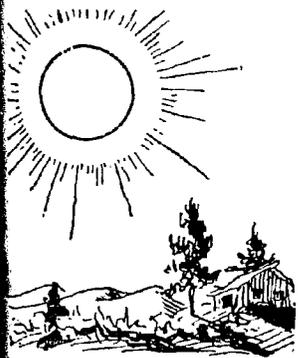
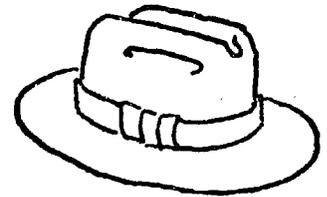
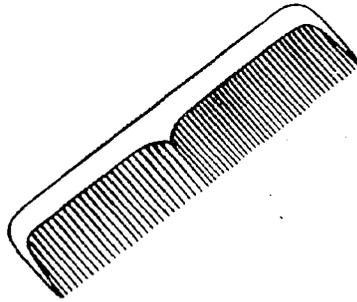
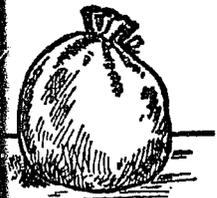
7. Auditory Discrimination (a) — RHYMING

(The use of Subtest 7 is optional. The score on this test is not to be added to the total of the first six Subtests.)

Practice

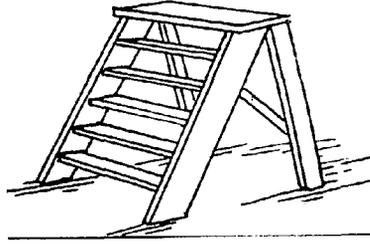
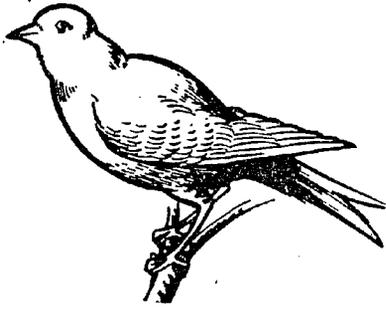


Practice

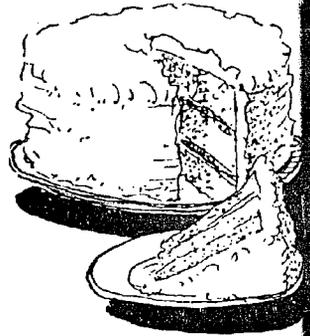
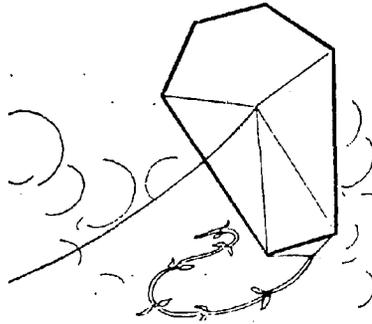
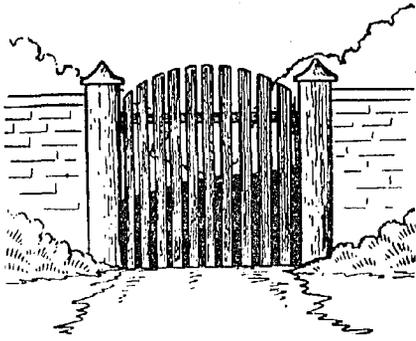


Auditory Discrimination (b)—BLENDING

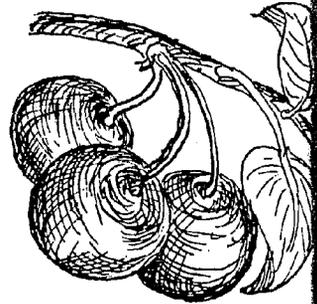
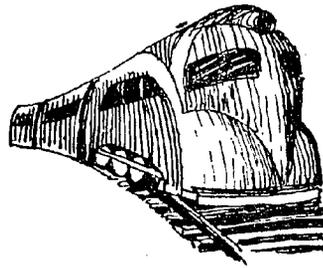
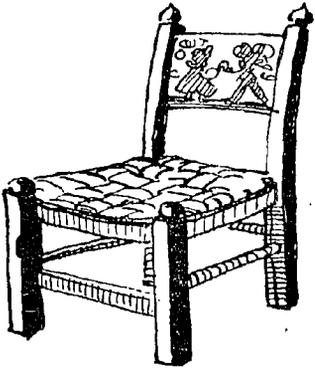
(a) Practice



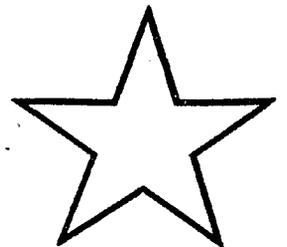
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5



6



DETROIT PUBLIC SCHOOLS
Psychological Clinic—Group Test A

Detroit Beginning First-Grade Intelligence Test
(Second Revision)

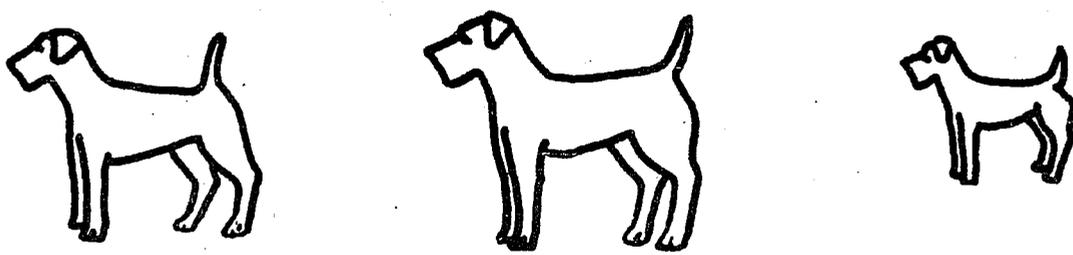
Last name _____ First name _____ Initial _____ Sex: M _____ F _____
 School _____ Birth date _____ Color _____
 Terms in kindergarten _____ Terms in first grade _____ Home language _____

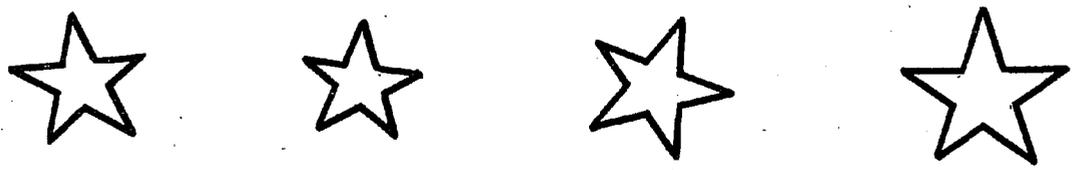
No. OF TEST	NAME OF TEST	SCORE
1	Comparisons	
2	Memory	
3	Similarities	
4	Information	
5	Missing Parts	
6	Absurdities	
7	Classification	
8	Designs	
9	Counting	
10	Directions	
Total		
Rating		

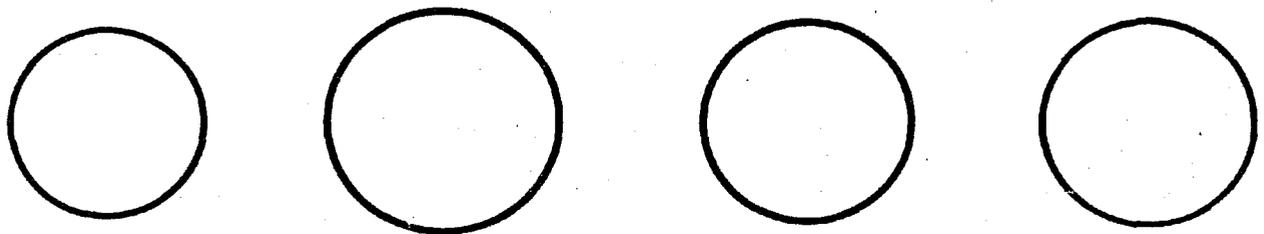
Copyright, 1935, by Anna M. Engel and Harry J. Baker. The right to modify or print this work for use in the Detroit Public Schools has been assigned to the Board of Education, City of Detroit.

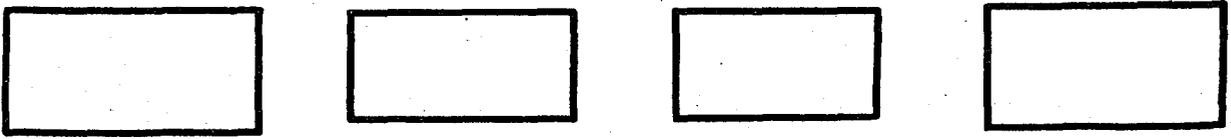
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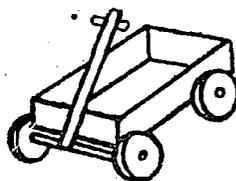
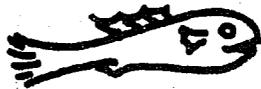




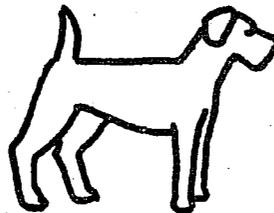
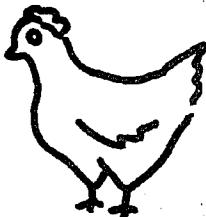




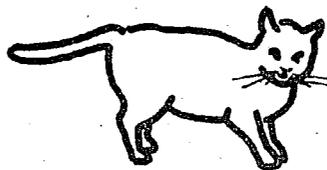
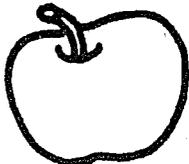
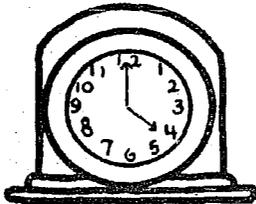




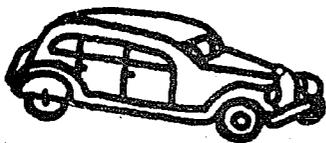
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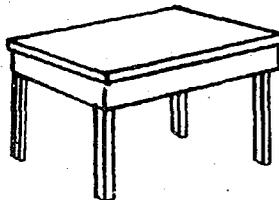
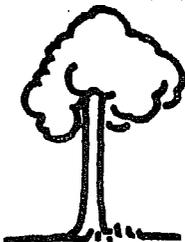
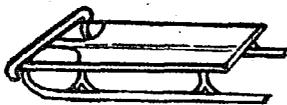
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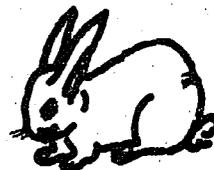
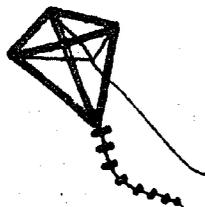
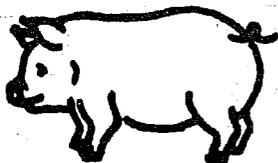
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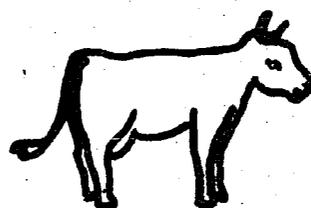
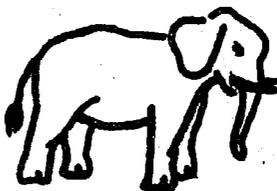
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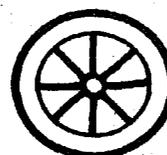
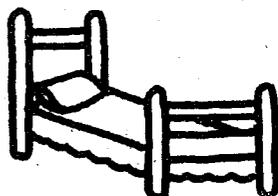
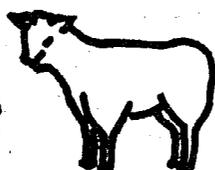
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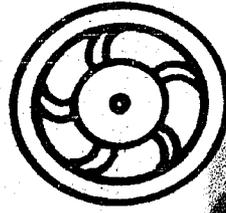
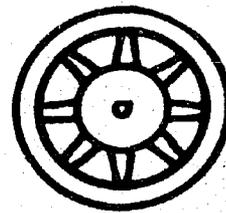
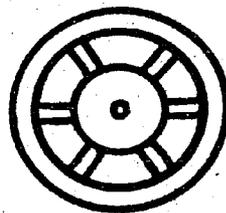
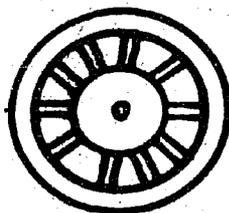
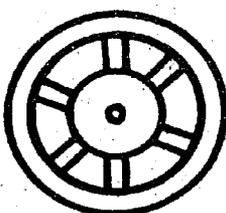
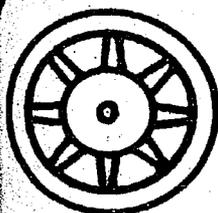
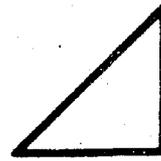
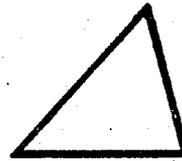
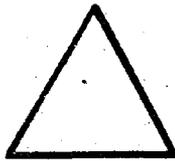
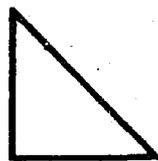
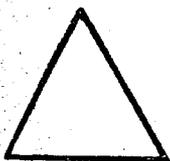
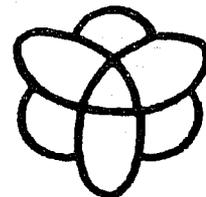
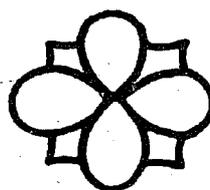
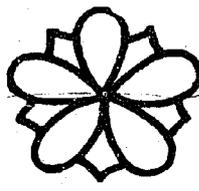
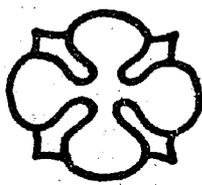
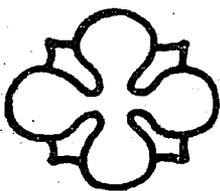
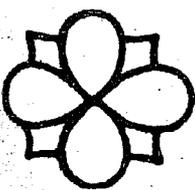
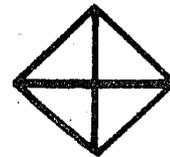
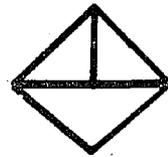
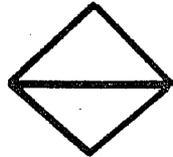
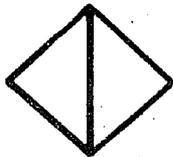
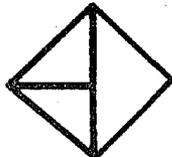
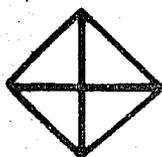
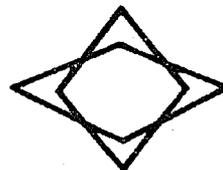
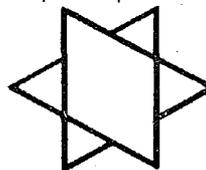
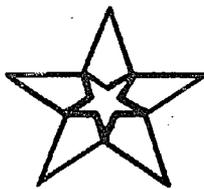
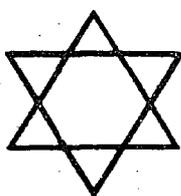
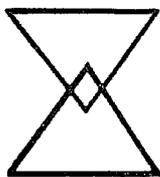
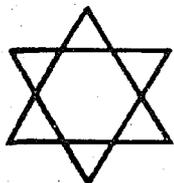
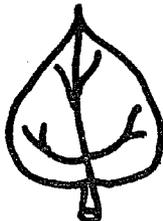
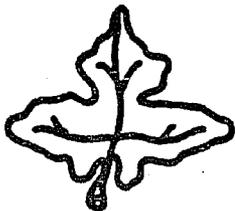
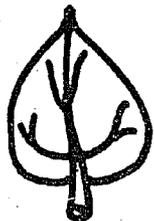
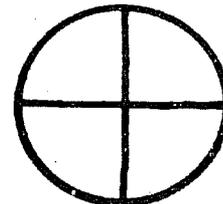
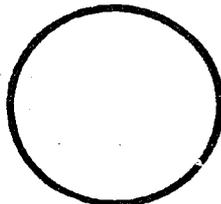
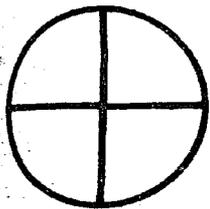
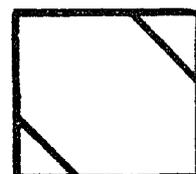
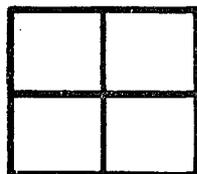
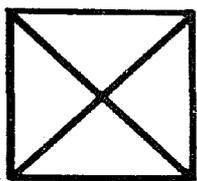
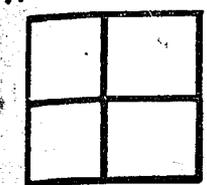


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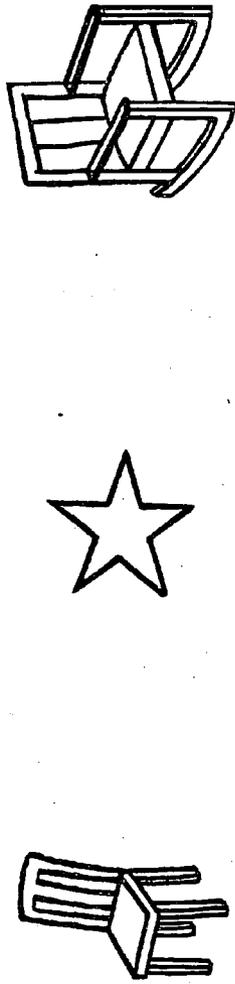




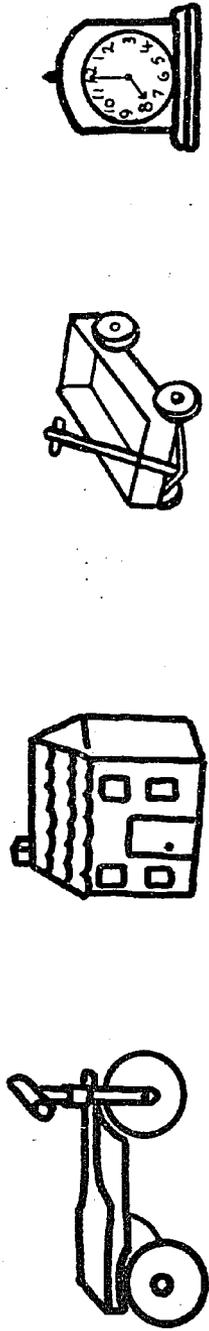
4 A



1



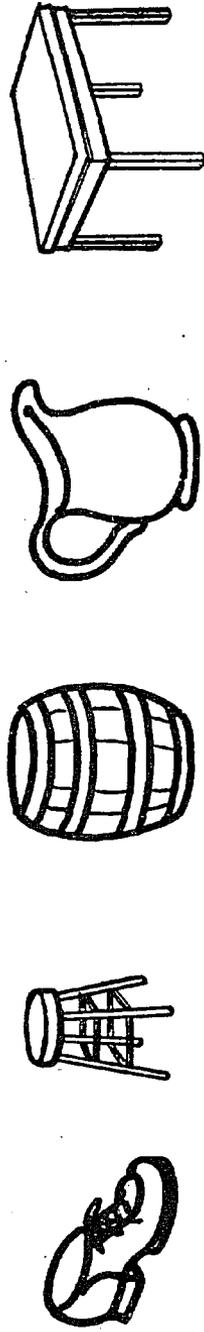
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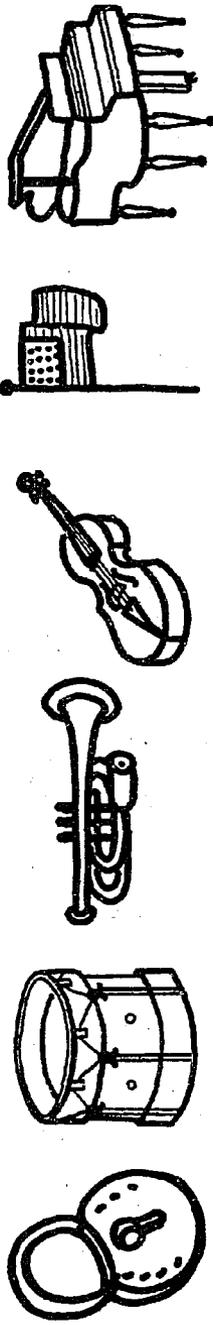
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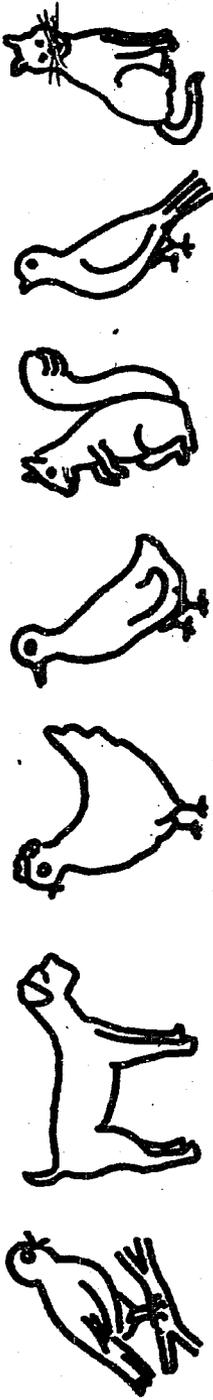
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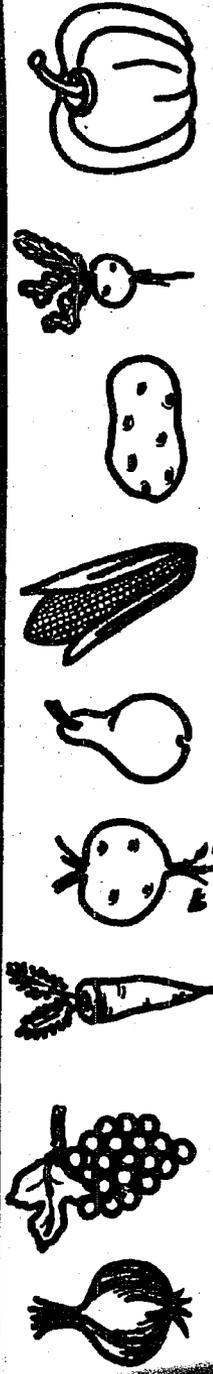
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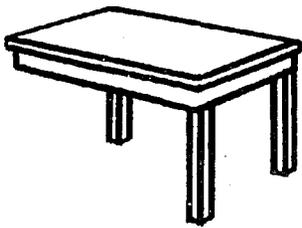
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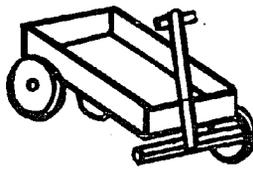
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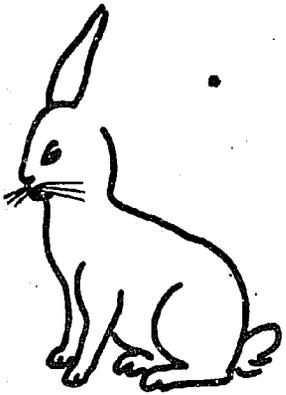
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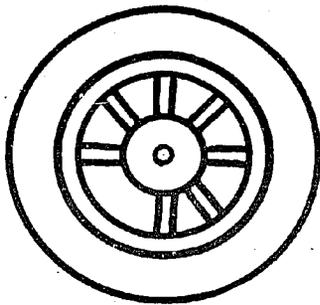
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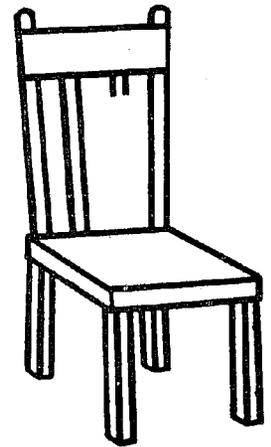
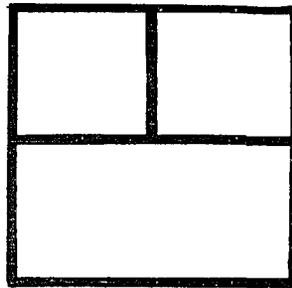
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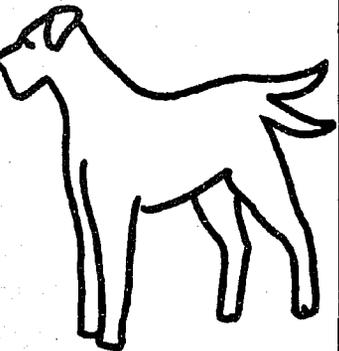
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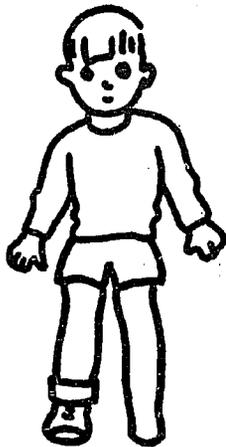
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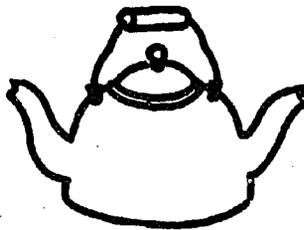
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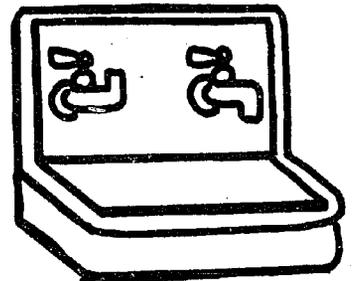
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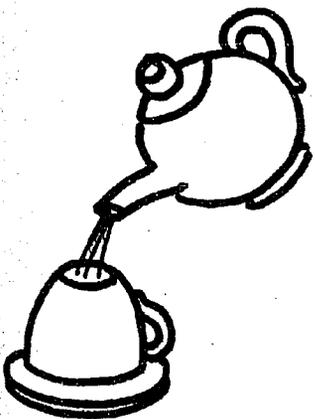
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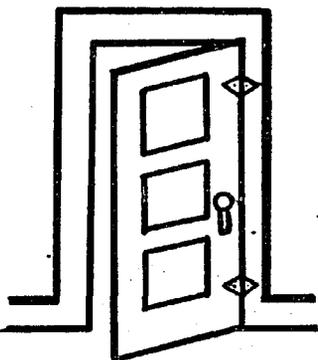
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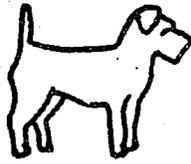
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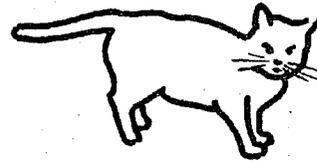
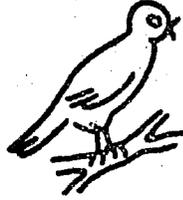
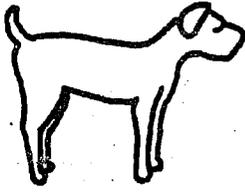
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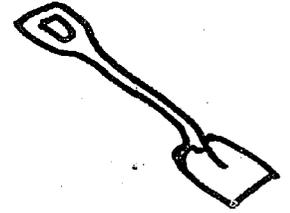
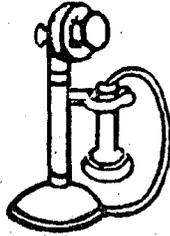
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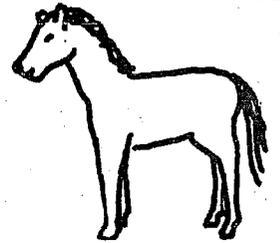
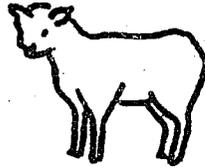
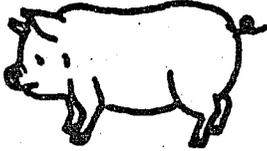
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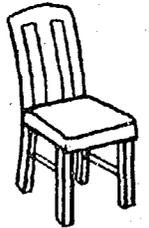
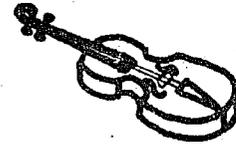
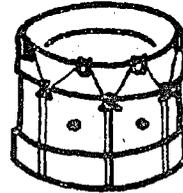
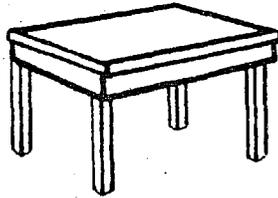
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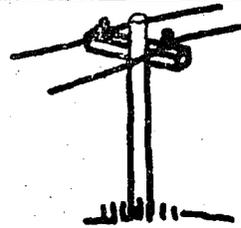
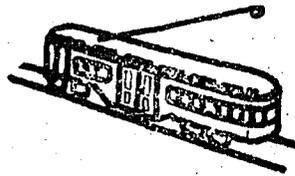
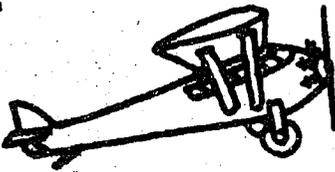
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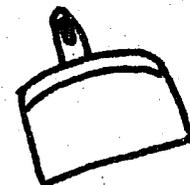
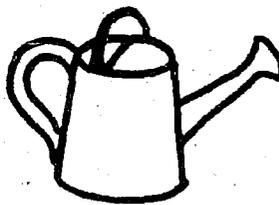
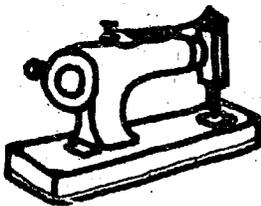
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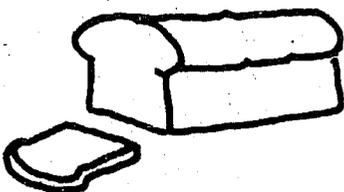
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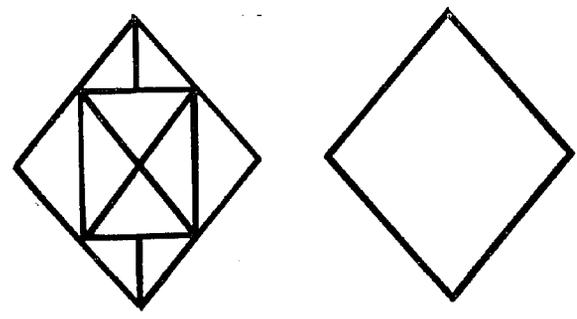
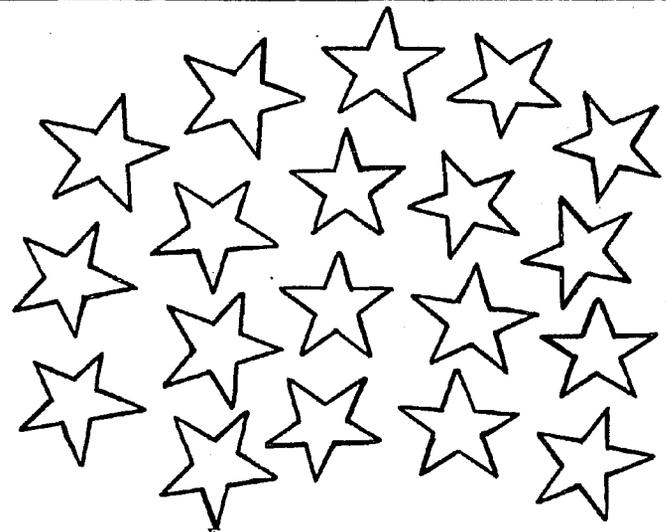
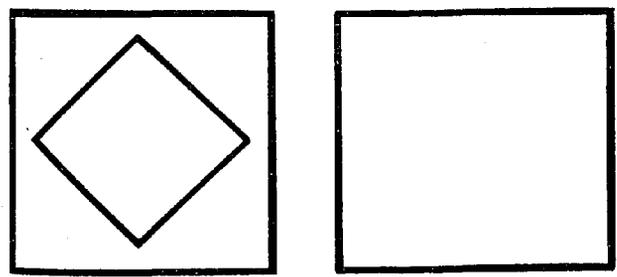
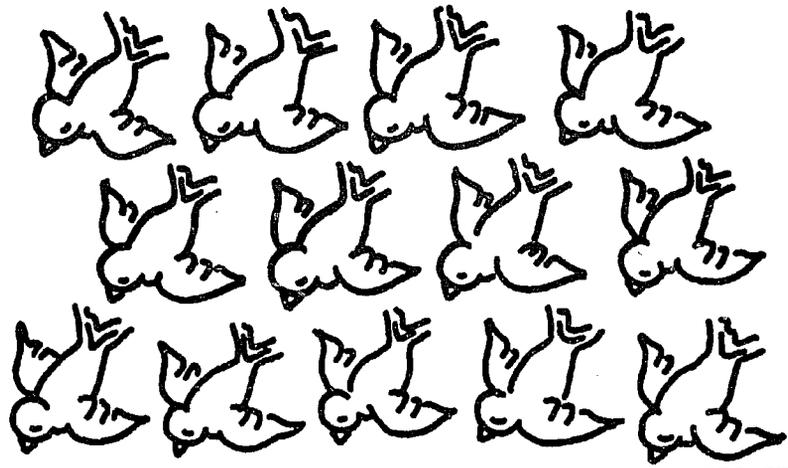
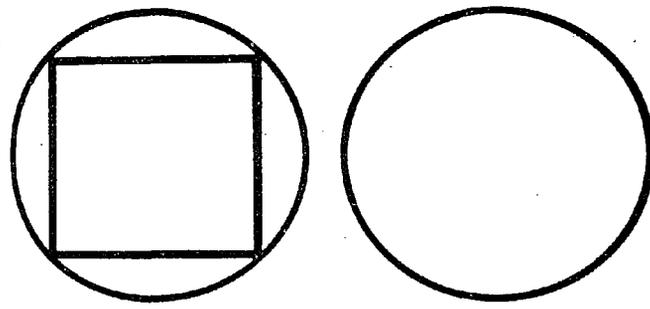
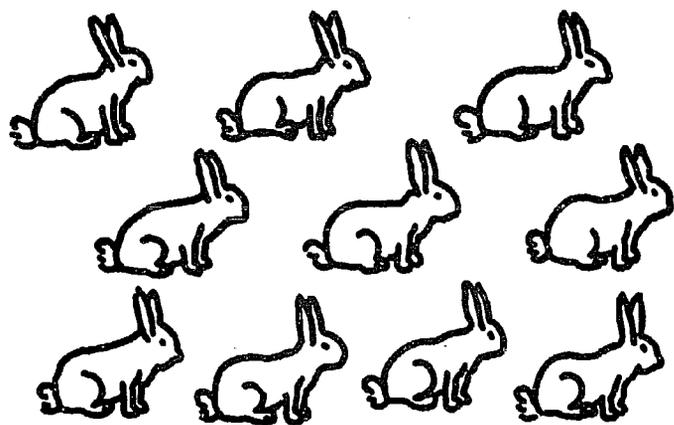
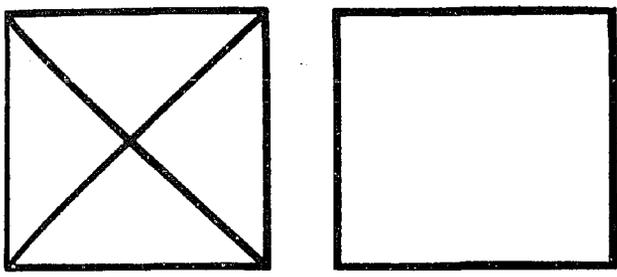
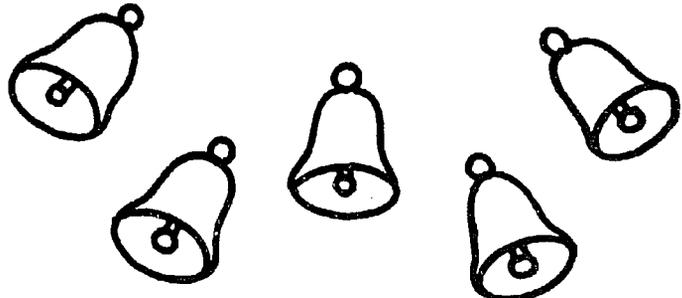
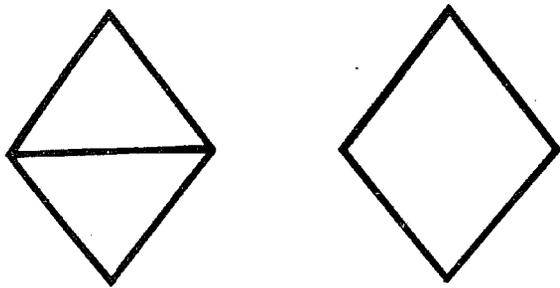
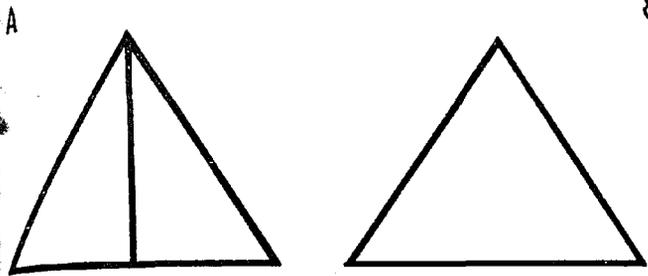


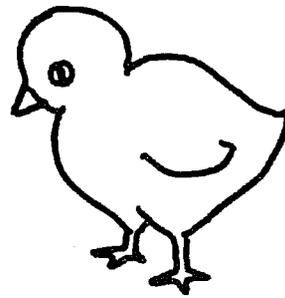
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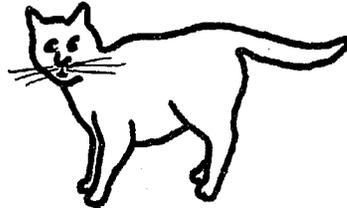




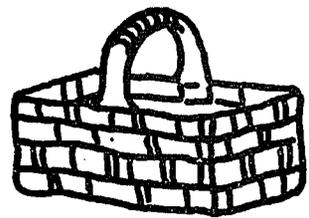
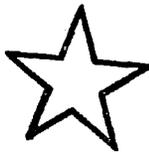
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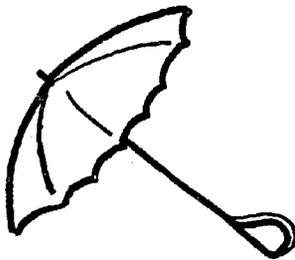
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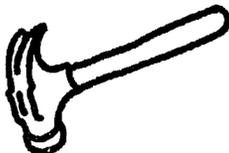
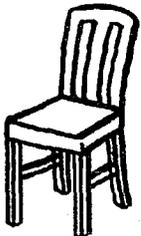
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4



5



Name.....

School.....

Date..... Room.....

Grade..... Group..... Age.....

Score

Part 1.....

Part 2.....

DETROIT
PUBLIC
SCHOOLS

READING

Test 10, Form C

DEPARTMENT OF
INSTRUCTIONAL
RESEARCH

PRACTICE FOR PART 1

	boy	
	Paste	
	dog	
	father	
	two girls	
	a boy and girl	

Devised by Paul T. Rankin and Eveline Waterbury

PART 1

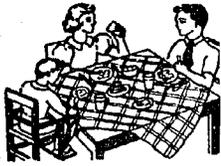


book

1

baby

2

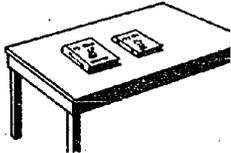


house

3

children

4

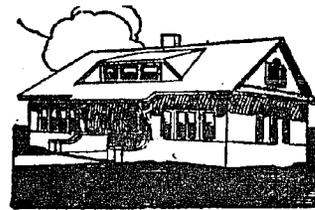


cake

5

airplane

6

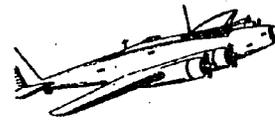


school

7

teacher

8

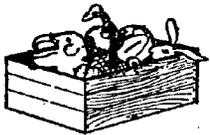


milk

9

rabbit

10



a doll

11

a coat

12

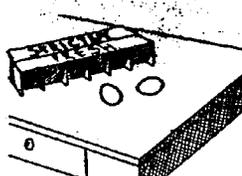


two shoes

13

two oranges

14



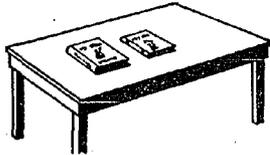
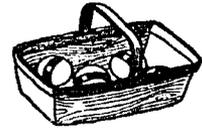


a kitten drinking

15

some children eating dinner

16



some balls in a basket

17

a dress for a doll

18

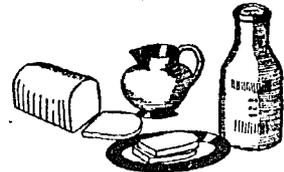


two books on the table

19

a boy putting on a coat

20



a baby drinking milk

21

some toys in a box

22



a teacher with two books

23

two eggs on a table

24

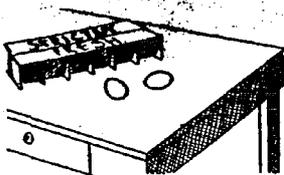


some bread and milk

25

a man riding in an automobile

26



some children eating cherries

27

a girl washing dishes

28



Name _____
 School _____
 Date _____ Room _____
 Grade _____ Age _____ Letter Rating _____

Score
 Part I _____
 Part II _____
 Total _____

Detroit
 Public
 Schools

READING I B
 Experimental Form A
 18th Week

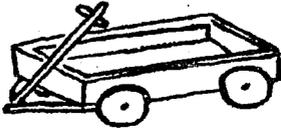
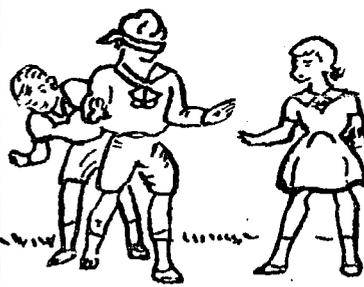
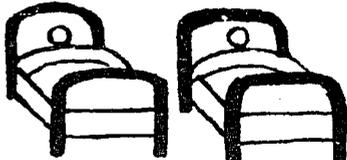
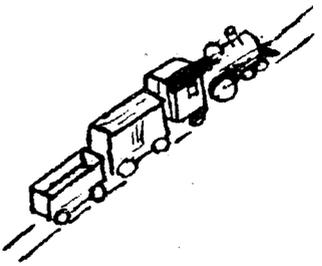
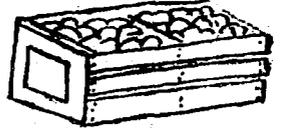
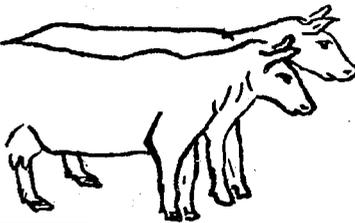
Department of
 Instructional
 Research

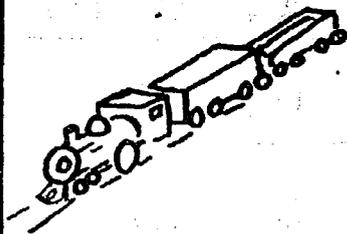
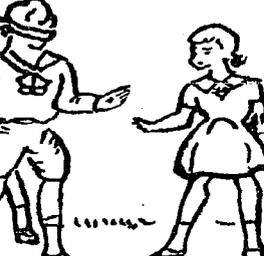
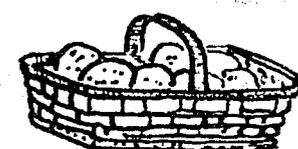
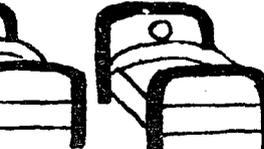
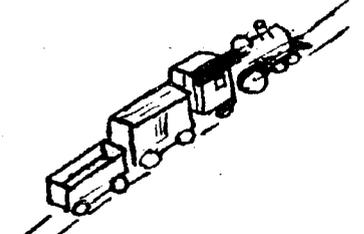
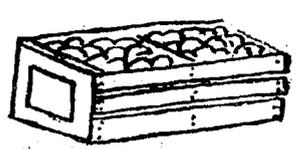
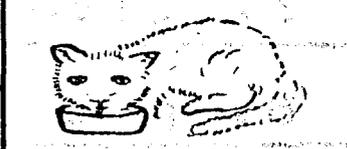
	shoes A	
	boy B	
	dog C	
	Jane D	
	Paste E	
	rabbit F	

Remarks

Devised by: A. Blaske, M. Jackman, A. Kershner, E. McDaid
 A. Meier, C. Schultz, E. Waterbury

Part I

	doll		
	a ball		
	a pet		
	a wagon		
	a coat		
	a dress		
	two barns		
	sick children		
	children playing		
	two cows		

		<p>toys in a box 11</p>	
		<p>oranges in a basket 12</p>	
		<p>farmer with a horse 13</p>	
		<p>a train going up 14</p>	
		<p>a box of oranges 15</p>	
		<p>some toys on a table 16</p>	
		<p>a train going down 17</p>	
		<p>a horse drinking 18</p>	
		<p>farmer with a basket 19</p>	
		<p>a cat drinking 20</p>	

TEACHERS NAME

Name.....
 School.....
 Date, Jan. 8, 1949. Grade.....
 Room..... Group..... Age.....

Score		
Questions	Tried	Right
Odd		
Even		
Total		

DETROIT
PUBLIC
SCHOOLS

READING
Test 5, Form L

DEPARTMENT OF
INSTRUCTIONAL
RESEARCH

PRACTICE STORIES

A. Every night Baby looks up at the sky. He is looking for something round and yellow. Last night the rain came down. Baby could not see the pretty thing in the sky.

1. Baby looks for the
(1. *sun* - 2. *snow* - 3. *moon* - 4. *rain*)
2. The pretty thing is
(1. *black* - 2. *white* - 3. *brown* - 4. *yellow*)

B. Jack likes to visit his friend in the country. Every day he takes a basket and goes to the barn. He looks in each hen's nest.

3. Jack is looking for
(1. *apples* - 2. *eggs* - 3. *corn* - 4. *leaves*)
4. Jack goes to see his
(1. *sister* - 2. *mother* - 3. *brother* - 4. *friend*)

C. On Christmas Day father gave mother something very nice. It was little and round. It had two hands. Mother looked at it to find out the time.

5. Father gave Mother a
(1. *cake* - 2. *dress* - 3. *watch* - 4. *hat*)
6. It had
(1. *a head* - 2. *arms* - 3. *hands* - 4. *feet*)

Devised by Eveline Waterbury, assisted by groups of contributing teachers

Form 8039—12-48—15M—PP—59—OL

A. Peter Rabbit eats the carrots in an old man's garden. Peter is afraid of the old man. When Peter hears him coming he gets away as fast as he can.

1. The old man makes Peter

(1. *laugh* - 2. *fly* - 3. *cry* - 4. *run*)

2. The carrots are in the

(1. *house* - 2. *bag* - 3. *garden* - 4. *store*)

B. Mary's baby sister is too little to walk. When the warm spring days come, Mary will dress Baby and take her out in her little blue wagon.

3. Baby will go for a

(1. *visit* - 2. *walk* - 3. *sail* - 4. *ride*)

4. Baby's wagon is

(1. *red* - 2. *yellow* - 3. *blue* - 4. *green*)

C. Mother took the baby out for a ride. They saw a man with many pretty balloons. The baby cried until Mother bought him a big red one.

5. The man had balloons to

(1. *sell* - 2. *give away* - 3. *keep* - 4. *hide*)

6. When the baby saw the balloons he

(1. *laughed* - 2. *cried* - 3. *sang* - 4. *talked*)

D. Mary and her little brother like to play with their dolls. Mary is the dolls' mother. She dresses them for school. Little brother is the father. He makes the dolls mind.

7. The children play

(1. *school* - 2. *store* - 3. *house* - 4. *church*)

8. Little brother makes the dolls

(1. *mind* - 2. *sing* - 3. *laugh* - 4. *cry*)

garden.
coming

E. When it is supper time, Mary always sets the table for mother and puts the food on it. After supper, she washes the dishes.

4. run)

9. At supper time, Mary always
(1. plays ball - 2. helps mother - 3. sleeps - 4. sings a song)

store)

10. Mary washes the
(1. table - 2. floor - 3. dishes - 4. food)

hen the
her out

F. Billy's dog, Spot, had never been to the country. One day he went with Billy. He ran after the chickens and barked at the cows. Billy never took him again.

4. ride)

11. Spot went to the country
(1. two times - 2. once - 3. three times - 4. many times)

green)

12. He barked at the
(1. dogs - 2. chickens - 3. cows - 4. sheep)

v a man
bought

G. We have some new reading books. We have put covers on them. We shall wash our hands before we read the stories. We shall not let our books fall on the floor.

hide)

13. We want our books to be
(1. dirty - 2. old - 3. clean - 4. black)

talked)

14. Before we read we shall
(1. work - 2. wash - 3. play - 4. sing)

ir dolls.
Little

H. We have something new. It goes very fast. After dinner father will drive us to the country. I shall sit with father. Then I can blow the horn. Mother will sit in the back.

hurch)

15. We have a new
(1. train - 2. automobile - 3. boat - 4. wagon)

4. cry)

16. We shall go to the
(1. show - 2. country - 3. bank - 4. store)

Number _____ Teacher's Name _____

Pupil _____ Grade _____ School _____

Age _____ Sex: B G Date _____ Score Detroit
Public
SchoolsEXPERIMENTAL READING VOCABULARY
Form XDepartment of
Instructional
ResearchGeneral Statement

This test is designed for the low third grade level consisting of forty vocabulary exercises of the multiple choice variety. In each exercise of the test, the base word is considered more difficult than the synonym given; therefore, the pupil's choice tests his ability to compare the word with a correct word slightly less difficult. There is no time limit but approximately fifteen minutes should be ample.

Directions: In each sentence draw a line under the word that makes the sentence true.

Sample A: The color of snow is--(1) green (2) yellow (3) white (4) red

Sample B: Fish live in the--(1) leaves (2) lake (3) garden (4) grass

1. At night it is--(1) warm (2) dark (3) cold (4) light
2. Pretty means--(1) angry (2) sad (3) beautiful (4) happy
3. Food is what we--(1) play (2) wear (3) eat (4) ride
4. Light comes from the--(1) rain (2) ground (3) air (4) sun
5. An hour is part of a--(1) game (2) name (3) hat (4) day
6. An apple is a--(1) turkey (2) squirrel (3) fruit (4) stick
7. An indian is a--(1) person (2) mountain (3) state (4) forest
8. A nest is the home of a--(1) dog (2) rabbit (3) bear (4) bird
9. A bank is a place to put--(1) eggs (2) shoes (3) ice (4) money
10. A library is a place to--(1) read (2) sing (3) sleep (4) run
11. A stone is a piece of--(1) cake (2) string (3) rock (4) silk
12. Above means--(1) outside (2) under (3) over (4) around
13. A cabin is a small--(1) church (2) animal (3) tree (4) house
14. Cream comes from--(1) water (2) tea (3) milk (4) meat

15. Wings are used by a--(1) robin (2) lion (3) cat (4) deer
16. A wheel is always--(1) bright (2) round (3) soft (4) deep
17. Tiny means--(1) bare (2) proud (3) old (4) small
18. A tub is used for--(1) drawing (2) washing (3) dancing (4) cooking
19. To guard means to--(1) protect (2) obey (3) imagine (4) bother
20. A lamb is a baby--(1) cow (2) goat (3) sheep (4) horse
21. A page is a part of a--(1) chair (2) stove (3) book (4) barn
22. Lumber is--(1) coal (2) iron (3) tin (4) wood
23. To count is to--(1) number (2) inform (3) shine (4) paint
24. A pal is a--(1) pigeon (2) friend (3) building (4) bee
25. A harbor is a place for--(1) ships (2) trains (3) cars (4) airplanes
26. We use thread in--(1) cooking (2) washing (3) baking (4) sewing
27. Your wrist is a part of your--(1) arm (2) hobby (3) clothes (4) dinner
28. Gay means--(1) merry (2) careful (3) fast (4) broken
29. Forever means--(1) sometimes (2) always (3) never (4) once
30. To bathe means to--(1) bat (2) wash (3) dress (4) brush
31. Swift means--(1) secret (2) quiet (3) rough (4) fast
32. A bundle is a--(1) trunk (2) bracelet (3) flood (4) package
33. Vacant means--(1) perfect (2) solid (3) grand (4) empty
34. A crown is worn by a--(1) guide (2) soldier (3) king (4) farmer
35. To display means to--(1) drill (2) show (3) chop (4) park
36. A racket is a--(1) noise (2) throne (3) reward (4) need
37. We smell with our--(1) mouth (2) nose (3) eyes (4) ears
38. A rake is used in the--(1) car (2) garden (3) house (4) kitchen
39. To collect means to--(1) gather (2) taste (3) dig (4) damage
40. Courteous means--(1) kindly (2) polite (3) stingy (4) thoughtful

CALIFORNIA TEST OF PERSONALITY - PRIMARY, FORM A
A PROFILE OF PERSONAL AND SOCIAL ADJUSTMENT

Devised by Louis P. Thorpe, Willis W. Clark, and Ernest W. Tiegs

Name _____ School _____ Grade _____
Teacher _____ Age _____ Last Birthday _____ Sex: Boy or Girl

COMPONENTS	Possible Score	Pupil's Score	%ile Rank	PERCENTILE										
				(Chart pupil's percentile rank here)										
				1	10	20	30	40	50	60	70	80	90	99
1. SELF ADJUSTMENT	48	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Self-reliance	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
B. Sense of Personal Worth	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
C. Sense of Personal Freedom	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
D. Feeling of Belonging	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
E. Withdrawing Tendencies (Freedom from)	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
F. Nervous Symptoms (Freedom from)	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2. SOCIAL ADJUSTMENT	48	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Social Standards	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
B. Social Skills	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
C. Anti-social Tendencies (Freedom from)	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
D. Family Relations	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
E. School Relations	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
F. Community Relations	8	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
TOTAL ADJUSTMENT	96	_____	_____	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

CALIFORNIA TEST OF PERSONALITY

Directions: The number and the question should be read clearly and slowly. The teacher should always state, "Draw a circle around the YES or the NO to show your answer."

PRACTICE QUESTIONS

- | | | |
|--|-----|----|
| A. Do you have a dog at home? | YES | NO |
| B. Did you walk all the way to school today? | YES | NO |

SECTION 1-A

- | | | |
|---|-----|----|
| 1. Is it easy for you to play by yourself when you have to? | YES | NO |
| 2. Do you feel like crying when you are hurt a little? | YES | NO |
| 3. Is it easy for you to talk to your class? | YES | NO |
| 4. Do you feel bad when you are blamed for things? | YES | NO |
| 5. Do you need help to eat your meals? | YES | NO |
| 6. Does someone usually help you dress? | YES | NO |
| 7. Do you make a fuss when things go wrong? | YES | NO |
| 8. Do you usually finish the games you start? | YES | NO |

Score Section 1-A

SECTION 1-B

- | | | |
|---|-----|----|
| 1. Do the children think you can do things well? | YES | NO |
| 2. Are the boys and girls mean to you? | YES | NO |
| 3. Do you have less friends than other children? | YES | NO |
| 4. Are most of the children smarter than you? | YES | NO |
| 5. Do your folks think that you are bright? | YES | NO |
| 6. Can you do things as well as other children? | YES | NO |
| 7. Do people think that other children are better than you? | YES | NO |
| 8. Do most of the boys and girls like you? | YES | NO |

Score Section 1-B

SECTION 1-C

- | | | |
|--|-----|----|
| 1. Do your folks sometimes let you buy things? | YES | NO |
| 2. Do you have too little time to play? | YES | NO |
| 3. Do you go to enough new places? | YES | NO |
| 4. Do your folks keep you from playing with the children you like? | YES | NO |
| 5. Are you allowed to play the games you like? | YES | NO |
| 6. Are you punished for many things you do? | YES | NO |
| 7. May you do most of the things you like? | YES | NO |
| 8. Do you have to stay at home too much? | YES | NO |

Score Section 1-C

SECTION 1-D

- | | | |
|---|-----|----|
| 1. Do you need to have more friends? | YES | NO |
| 2. Do you feel that people don't like you? | YES | NO |
| 3. Do you like to go to school? | YES | NO |
| 4. Are the children glad to have you in school? | YES | NO |
| 5. Are you lonesome even when you are with people? | YES | NO |
| 6. Are you as big and strong as most of the boys and girls? | YES | NO |
| 7. Do you have nicer folks than most other children? | YES | NO |
| 8. Do lots of children have more fun at home than you do? | YES | NO |

Score Section 1-D

SECTION 1-E

- | | | |
|--|-----|----|
| 1. Are many older people so mean that you hate them? | YES | NO |
| 2. Are you often afraid of things? | YES | NO |
| 3. Are most of the boys and girls mean to you? | YES | NO |
| 4. Do you feel bad because people are mean to you? | YES | NO |
| 5. Do many children say things that hurt your feelings? | YES | NO |
| 6. Do the boys and girls often try to cheat you? | YES | NO |
| 7. Do you often feel so bad that you do not know what to do? | YES | NO |
| 8. Would you rather watch others, than to play yourself? | YES | NO |

Score Section 1-E

SECTION 1-F

- | | | |
|--|-----|----|
| 1. Do you often bite your fingernails? | YES | NO |
| 2. Is it hard for you to go to sleep at night? | YES | NO |
| 3. Do things often make you cry? | YES | NO |
| 4. Do you catch colds easily? | YES | NO |
| 5. Are you often tired even in the morning? | YES | NO |
| 6. Are you sick much of the time? | YES | NO |
| 7. Do your eyes hurt you often? | YES | NO |
| 8. Do you often wake up because of bad dreams? | YES | NO |

Score Section 1-F

SECTION 2-A

- | | | |
|---|-----|----|
| 1. Should you mind your folks even when they are wrong? | YES | NO |
| 2. Should children fight when people do not treat them right? | YES | NO |
| 3. Is it all right to cheat if no one sees you? | YES | NO |
| 4. Should you mind your folks even if your friends tell you not to? | YES | NO |
| 5. Should you keep things that you find? | YES | NO |
| 6. Should children be nice to people they don't like? | YES | NO |
| 7. Do you need to thank everyone who helps you? | YES | NO |
| 8. Is it all right to cry if you cannot have your own way? | YES | NO |

Score Section 2-A

SECTION 2-B

- | | | |
|--|-----|----|
| 1. Do you talk to the new children at school? | YES | NO |
| 2. Is it hard for you to talk to new people? | YES | NO |
| 3. Do you say nice things to children who do better than you do? | YES | NO |
| 4. Does it make you angry when people stop you from doing things? | YES | NO |
| 5. Do you sometimes hit other children when you are playing with them? | YES | NO |
| 6. Do you play games with other children even when you don't want to? | YES | NO |
| 7. Do you help new children get used to the school? | YES | NO |
| 8. Is it hard for you to play fair? | YES | NO |

Score Section 2-B

SECTION 2-C

- | | | |
|--|-----|----|
| 1. Are people often so bad that you have to be mean to them? | YES | NO |
| 2. Do you have to make a fuss to get people to treat you right? | YES | NO |
| 3. Are things at school so bad that you try to stay away? | YES | NO |
| 4. Is someone at home so mean that you often get angry? | YES | NO |
| 5. Are some people so unfair that you try to cheat them? | YES | NO |
| 6. Do the boys and girls often quarrel with you? | YES | NO |
| 7. Do you like to push or scare other children? | YES | NO |
| 8. Do you often tell the other children that you won't do what they ask? | YES | NO |

Score Section 2-C

SECTION 2-D

- | | | |
|---|-----|----|
| 1. Are your folks right when they make you mind? | YES | NO |
| 2. Do you wish you could live in some other home? | YES | NO |
| 3. Do your folks think that you are as good as they are? | YES | NO |
| 4. Are the folks at home always good to you? | YES | NO |
| 5. Is there someone at home who does not like you? | YES | NO |
| 6. Do your folks seem to think that you are nice to them? | YES | NO |
| 7. Do you feel that no one at home loves you? | YES | NO |
| 8. Do your folks seem to think that you are not very smart? | YES | NO |

Score Section 2-D

SECTION 2-E

- | | | |
|---|-----|----|
| 1. Do you often do nice things for the other children? | YES | NO |
| 2. Is it hard to like the children in your school? | YES | NO |
| 3. Do you think that some teachers do not like the children? | YES | NO |
| 4. Do the boys and girls seem to think that you are nice to them? | YES | NO |
| 5. Would you rather stay home from school if you could? | YES | NO |
| 6. Are there many bad children in your school? | YES | NO |
| 7. Do the children at school ask you to play games with them? | YES | NO |
| 8. Do the other boys and girls say that you don't play fair in games? | YES | NO |

Score Section 2-E

SECTION 2-F

- | | | |
|---|-----|----|
| 1. Are there some nice places to play near your home? | YES | NO |
| 2. Do the people near your home seem to like you? | YES | NO |
| 3. Are the people near your home often mean? | YES | NO |
| 4. Do you have good times with people who live near you? | YES | NO |
| 5. Are there people near your home who are not nice? | YES | NO |
| 6. Are you asked to play in other people's yards? | YES | NO |
| 7. Are there some mean boys and girls who live near you? | YES | NO |
| 8. Do you stay away from other people's homes when they ask you to? | YES | NO |

Score Section 2-F

SUBJECT: Request for Final Data - Reading Readiness Pilot Study
FROM : Department of Instructional Research
TO : Teachers of Pupils Tested with Detroit Reading Readiness Test
DATE : May 29, 1944

To finally establish the degree to which the Detroit Reading Readiness Test determines the likelihood that an individual child will succeed or fail to learn to read satisfactorily in the 1B grade, it is necessary to have a statement by the teacher for each of the pupils who took the readiness test regarding his success in reading. After each name on the attached list in the column titled "Teacher's Rating", use the following rating system to indicate your opinion of the individual's achievement in reading.

E Exceptional - Excellent
S+ Very Satisfactory
S Satisfactory
S- Barely Satisfactory
UF Unsatisfactory or Failed

It should be clearly understood that the symbol UF means that the child has not succeeded in learning to read. If the child did not learn to read, but for some reason was promoted to the 1A, he nevertheless should be rated UF.

This information may be supplied as soon as it is available and sent to the Department of Instructional Research before the end of the final week of school together with the final score in Reading Test 10C for each pupil listed. This final score should be recorded in the column titled "Total Final Score Test 10C." This should not be confused with the score for the Experimental Test 1B-18th Week, for which scores have already been requested.

APPENDIX C

QUESTIONNAIRES AND COMMUNICATIONS

The following is an excerpt from the letter sent to all schools planning to start a reading readiness program in their school in September 1946.

Mr. _____
Principal of the _____ School

Dear Sir:

Next semester your school is to use certain reading readiness materials in preparation for Grade 1B. The reason for instituting a reading readiness program is to give some pupils more preparation for the regular program of reading instruction.

Studies of age-grade progress throughout the country show that approximately twenty per cent of first graders repeat at least one semester of their first year's work in school. Since the principal emphasis in almost all schools during the first year is placed on beginning reading, the high failure rate means that at least twenty per cent of all first graders have not successfully learned to read the beginning reading textbooks. Recent research studies agree that part of this difficulty is traceable to the fact that some children are not ready to read at the level prescribed.

If the child, because of mental, social, emotional, or physical immaturity, is not ready to read at the usual 1B level, the school should provide a program with standards which children can achieve. At present, some pupils are classified as failures, when in reality they have been achieving but not at the prescribed level.

The reading readiness program now being put into practice aims to discover which pupils are not ready upon entrance to the first grade, for regular reading instruction, and to furnish them with simpler materials which they can use successfully, and which will develop those areas of growth essential in bringing pupils to the point where they can learn to read successfully.

Since the pupils for whom the readiness program is planned differ in native ability, home background, and in many other factors, it is not possible to state arbitrarily how long the preparatory period may last. For some it may be six weeks, or half a semester, for others the time may be an entire semester.

It is to be expected that a pupil who spends all, or a large part of the semester upon preparation for reading will not be ready at the end of his first term to be promoted to Grade 1A. However, if he progresses steadily and successfully from reading readiness materials to regular beginning reading work he feels a continuous sense of accomplishment. For him there is no failure. He is merely delayed for a longer time before entering Grade 1B.

In order to gain their fullest co-operation it seems wise and expedient to acquaint all parents whose children are in a reading readiness group with the gist of the above discussion. It is suggested that parents in each case be informed not only that their children are doing reading readiness instead of reading but that the notation on the child's report card indicates the same. For reading readiness pupils, report cards should be marked Reading Readiness rather than Reading and parents should understand this distinction.

TO THE PARENT

This report tells you how your child is getting along in his school activities. Three types of records are given: (1) citizenship, (2) attendance, and (3) scholarship. Since good citizenship is one of the chief aims of the school, you will be interested in the report on your child's citizenship. The scholarship mark shows how well your child is doing in the school subject in relation to what he or she is able to do.

The best interests of pupils will be served by a close and sympathetic co-operation between the home and the school. You are cordially invited to visit to see what the school is doing. Please feel free to confer with the teacher or the principal concerning your child's work.

ARTHUR DONDINEAU
Superintendent of Schools

Signature of Parent or Guardian:

First Report _____

Second Report _____

Third Report _____

"The home and the school must work together
for the good of the child."

SCHOLARSHIP

Scholarship is the child's achievement in the subjects taught in the school. Both ability and interest are important. Satisfactory progress is marked S. Unsatisfactory work is marked U. An unusually high quality of work is marked E for excellent.

SUBJECTS	First Report	Second Report	Third Report
Art			
Elementary Science			
Health Education			
Literature			
Music			
Reading Readiness			
Reading			
Social Studies			

Date _____

Name _____

_____ promoted from Grade 1B Reading Readiness to Grade 1B Reading.

Homeroom Teacher

QUESTIONNAIRE TO READING READINESS TEACHERS

Your own critical judgment of the effectiveness of reading readiness instruction is an important element in any general appraisal of the reading readiness program. Through continuous experimentation and trial of various activities and procedures the last three years you probably found that certain practices proved highly successful. You may also have learned that other practices didn't "work" so well. Your opinions and evaluative judgments given here will be summarized and combined with the judgments of others who have taught reading readiness classes.

These opinions and suggestions, based on actual experience, will be helpful to other teachers, to principals, and to supervisors in planning and carrying forward this work in the future.

When you answer these questions keep in mind the particular groups of children you worked with during the three-year period.

1. What are the advantages of reading readiness classes over procedures used formerly in teaching those children not yet ready to begin reading?

2. What disadvantages do you see in reading readiness classes as compared with former methods of working with immature children?

3. What kinds of activities were most valuable in preparing the children for regular instruction in reading? (Describe briefly.)

4. How could the Reading Readiness Program in your school be improved? (List your suggestions.)

5. What reasons or explanations have been most helpful to parents in understanding why their children were assigned to Reading Readiness rather than Grade 1B?

PRINCIPAL'S QUESTIONNAIRE

The following questionnaire is designed to secure the opinions and observations of principals concerning the various administrative aspects of the Reading Readiness Program.

1. Is the Detroit Reading Readiness Test given to all 1B pupils in your school? Yes No

If you checked No, how do you determine the pupils that are to be tested and the pupils that are not to be tested? _____

2. How are Reading Readiness pupils grouped when you set up class organization at the beginning of the semester?

A. Placed in a room composed entirely of Reading Readiness pupils.

B. Placed in the regular 1B homeroom, but maintained as a separate reading readiness group.

C. Comments: _____

3. Are your first graders on a platoon schedule? Yes No

If yes, do your reading readiness pupils follow the regular platoon schedule of your regular first graders? Yes No

Comments: _____

4. What is the number of pupils you have in the reading readiness section or group this year?

A. Number of pupils in reading readiness section (in a separate room from the regular 1B's). Number

B. Number of pupils classified as reading readiness, but maintained with the regular 1B's. Number

Comments: _____

5. Have you had any adverse reactions from parents when their child was placed in Reading Readiness instead of the regular 1B grade? Yes No

6. What technics have you used to explain the program to the parents?

7. Has the Reading Readiness Report Card been adequate and satisfactory to parents and teachers? Yes No

Comments: _____

8. In your opinion, has the Reading Readiness Program been entirely successful in your school?

Yes No Qualified

(a) If you checked yes, what have you observed to be the chief values derived from the program?

(b) If you checked no, what are the chief disadvantages you have observed?

(c) If you checked qualified, state your qualification of the existing program.

SUGGESTED LETTER TO BE SENT TO PARENTS

Dear Mr. (or Mrs.) _____:

Beginning reading is a somewhat difficult step for many children. This semester the _____ School is going to use materials which will prepare certain pupils to take up reading more easily.

Your child is one of the number who is to use what is call a reading readiness workbook. This book will contain exercises which are somewhat like reading except that they are more simple. After your child has mastered this material, he will find reading less difficult than if he were given no preparation for it.

Because of the time taken in the reading readiness period, your child may not start the reading program for some weeks. When he does begin it, we hope that his growth will justify the preparatory work.

The LRR reading readiness and the B1 reading are essential parts of the B1 grade. Some pupils will complete both in one semester and some in two.

If you wish to come to the school at any time to discuss this or any other matter relating to the welfare of your child, the principal and the teacher will be glad to talk with you.

Sincerely yours,

Principal

SUBJECT: Evaluation of the Detroit Reading Readiness Program
FROM : E. W. McDaid, Department of Instructional Research
TO : _____, Principal of the _____ School
DATE : February 17, 1949

At the present time the Department of Instructional Research requests your cooperation in order to complete a three-year followup study of the Detroit Reading Readiness Program. Our concern now is to determine the present grade status of pupils who were originally placed in reading readiness in your school as of September 1946. The attached list will identify the reading readiness pupils located in your school at that time. No attempt has been made to ascertain their progress beyond the first year of instruction. Therefore, we are interested in their present status in order to make some comparisons with a similar age group of pupils designated as the control group of the study.

The experimental design of the study recognizes many variable factors existing within the two groups. However, only four factors are being held constant, namely, raw score on the Detroit Beginning First Grade Intelligence Test, chronological age, sex, and the fact that each pupil comprising the control and the experimental groups had received one full year of kindergarten instruction before being placed in regular reading or reading readiness.

Your school is one of fifty-eight original reading readiness schools from which pupils have been selected to be matched with a like number of control schools. In the final analysis we do not anticipate using the total number of schools or pupils for the study. However, before we can intelligently select a representative sample of pupils, grade status and enrolment in the school must be determined. Therefore, we are sending the attached list of reading readiness pupils who were registered in your school as of September 1946 and asking you to supply the following information concerning each pupil:

1. Record the present grade status in the column provided after each pupil's name.
2. If the pupil has left your school during this three-year period (September 1946 through February 1949), indicate the date of his leaving and the school to which he transferred.

PLEASE RETURN THE ATTACHED LIST OF PUPILS IN THE SELF-
ADDRESSED ENVELOPE ON OR BEFORE MARCH 1. ONCE AGAIN,
THANKS FOR YOUR COOPERATION AND HELP IN MAKING THIS
STUDY POSSIBLE.

SUBJECT: Three Year Followup Study of the Detroit Reading Readiness Program

FROM : E. W. McDaid, Department of Instructional Research

TO : _____, Principal of the _____ School

June 1949 terminates the three-year followup study of the Detroit Reading Readiness Program. The program started in September 1946 with approximately 1358 pupils tested and placed in reading readiness instead of the regular 1B grade. Accurate data have been recorded on these pupils at regular intervals over the three-year period. Records of a similar group (control group) have been kept over the same period. At the present we are confronted with the problem of comparing these two groups of pupils by administering the same tests to both groups. Due to the nature of the study no comparison will be made between schools.

As the study draws to a close, the collection and treatment of these data constitutes a major problem. Therefore, we have resorted to a method of scientific random sampling rather than trying to collect the data from the entire population of both rather large groups. Previous research and investigation has demonstrated that an average can be accurately estimated by selecting a sample as a basis for computation. By this method of random sampling, the following pupils in your school have been drawn for collecting the necessary data. Due to the scientific selection of these pupils, it is extremely important that accurate data be secured.

- | | |
|---------|----------|
| 1 _____ | 2 _____ |
| 3 _____ | 4 _____ |
| 5 _____ | 6 _____ |
| 7 _____ | 8 _____ |
| 9 _____ | 10 _____ |

The homeroom teacher is asked to administer three tests, our regular Detroit Reading Test 5, Form L, our new experimental Vocabulary test designed for the 2A through 6A, and the California Test of Personality. These tests can be administered during the regular testing week of June 6. Complete instructions for administering the tests are enclosed in the testing envelope. Teachers are not required to score the tests.

Complete information concerning each pupil has been placed on the front of each test viz., name, classification (reading readiness or control) grade, age code, score code, sex, etc. Teacher's name has been omitted as the pupils may be in grade 2B through 4B due to the pupil's acceleration or retardation over the three-year period.

Will you appoint a teacher to be responsible for getting the tests to the pupil's homeroom teacher and also to see that all tests are placed in the addressed envelope and returned to the Department of Instructional Research, 1346 Broadway, Room 402, Phillips Building, by June 10?

SUBJECT: Three-Year Followup Study of the Detroit Reading Readiness Program

FROM : E. W. McDaid, Department of Instructional Research

TO : Homeroom Teachers of Pupils Drawn for the Study

DATE : June 8, 1949

Enclosed in the self-addressed envelope are the tests to be administered to the pupils indicated on the title page of each test. The pupils are to be tested, at your convenience, any time during the final testing week, June 6-10. Due to the scientific selection of these pupils, it is extremely important that accurate data be secured on each pupil and every pupil be accounted for.

The homeroom teacher is asked to administer three tests: the regular Detroit Reading Test 5, Form L, our new experimental Reading Vocabulary Test, and the California Test of Personality. Complete instructions for administering the tests are enclosed in the testing envelope. Teachers are not required to score the tests.

General Instructions to Homeroom Teachers

Complete information concerning each pupil has been placed on the front of each test viz., name, classification (reading readiness or control) grade, age code, score code, sex, etc. The only information lacking is the homeroom teacher's name. This was omitted as the pupil may be in grade 2B through 4B due to the pupil's acceleration or retardation over the three-year period of the study. It is extremely important to have the homeroom teacher sign his name at the top of each test in order to locate the pupil at the end of this semester.

Homeroom teachers of the pupils drawn for the study are requested to:

1. Administer the three tests to each pupil designated on the tests.
2. If a pupil is no longer in your school, please indicate date of leaving and the school or city of his transfer.
3. Place the tests in the self-addressed testing envelope and return to the Department of Instructional Research at the close of the testing week, June 10.

The following excerpt was taken from departmental notes of August 1946 to explain somewhat further the background and thinking that went to make up the experimental design of the study.

"Early in the fall semester of 1946, Dr. Rankin requested the Department of Instructional Research to conduct a comprehensive study that would adequately appraise the Detroit Reading Program. In compliance with this request, a study was planned in two developmental stages for the sixty-four participating schools: (1) a pilot study to determine methods and techniques for securing pertinent information to adequately evaluate the effectiveness and workability of the program at the end of the first year, and (2) a followup study to determine the grade status of pupils at the end of a three-year period.

The following are three of the many questions that the study will attempt to answer:

1. What is the amount of retardation for pupils placed in the reading readiness group compared to the regular 1B control group at the end of three years of instruction?
2. What are the judgments and opinions of teachers and principals in regard to the effectiveness and workability of the Reading Readiness Program in their schools?
3. How effective has the Detroit Reading Readiness Test been in predicting a pupil's success in reading?"

APPENDIX D

STATISTICAL TABLES

TABLE I

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 1 - Vocabulary Naming

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	94	97	3
2	98	97	1
3	100	94	6
4	100	99	1
5	100	99	1
6	66	83	17
7	94	97	3
8	32	44	12
9	60	88	28
10	86	93	7
11	56	67	11
12	90	94	4
13	88	96	8
14	68	80	12
15	46	73	27
16	42	74	32
17	12	15	3
18	8	24	16
19	54	66	12
20	8	16	8
21	42	50	8
22	64	81	17
23	40	70	30
24	58	79	21
25	30	54	24
26	90	91	1
27	80	91	11
28	68	81	13
29	12	18	6
30	28	47	19
31	50	58	8

TABLE I-a

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 2 - Visual Perception of Forms

Item	Percentage Scoring Successfully		Difference
	50 Failing Pupils	All Pupils	
1	85	96	9
2	86	97	11
3	53	84	31
4	76	90	14
5	79	93	14
6	62	87	25
7	58	86	28
8	67	83	16
9	82	98	16
10	54	82	28
11	71	89	18
12	59	90	31
13	87	98	11
14	58	89	31
15	69	89	20
16	32	51	19
17	37	68	31
18, 19	<u>Sample Items</u>		
20	46	70	24
21	45	89	44
22	44	74	30
23	41	72	31
24	28	75	47
25	53	67	14
26	26	68	42
27	41	81	40
28	46	89	43
29	59	83	24
30	56	88	32

TABLE L-b

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS
Subtest 3, Motor Control

Item	Percentage Scoring		Difference	
	50 Failing Pupils	All Pupils		
1	54	88	34	
2	44	71	27	
3	90	82	-8	
4	72	80	8	
5	60	74	14	
6	44	59	15	
7	U only	22	4	
	C only	6	6	
	UC	54	88	34
8	f only	2	0	
	e only	0	0	
	t only	28	10	88 100
	any 2	16	4	32 90
	f e t	42	86	
9	b only	10	6	
	n only	0	0	
	d only	14	4	72 100
	any 2	28	32	48 90
	b n d	20	58	
10	one 0	8	2	
	two 00	0	2	
	all three	72	96	24
11	Uniform scoring found very difficult - Subjective			
12	Uniform scoring found very difficult - Subjective			
13	Uniform scoring found very difficult - Subjective			
14	Uniform scoring found very difficult - Subjective			
15	Uniform scoring found very difficult - Subjective			
16	Uniform scoring found very difficult - Subjective			
17	Uniform scoring found very difficult - Subjective			
18	Uniform scoring found very difficult - Subjective			
19	Uniform scoring found very difficult - Subjective			
20	Uniform scoring found very difficult - Subjective			

TABLE L-c

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILSSubtest 4 - Auditory Discrimination
(a) Rhyming

Item	Percentage Scoring Successfully		Difference
	50 Failing Pupils	All Pupils	
1	52	52	--
2	60	69	9
3	48	52	4
4	40	40	--
5	64	76	12

TABLE I-d

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 5 - Immediate Recall

Item	Percentage Scoring Successfully		Difference
	50 Failing Pupils	All Pupils	
1 any one	8	0	
both	91	100	9
2 any one	18	8	
both	81	92	11
3 any one	1	0	
any one	6	2	
any one	41	28	
all four	51	70	98
4 any one	4	0	
any two	11	10	
any three	26	28	
any four	27	34	
any five	23	28	
			90
	50	76	26
5 any one	17	8	
any two	19	4	
any three	10	14	
any four	19	34	
any five	17	10	
any six	6	22	
all seven	4	8	
			44
			74
	36	46	
	10	30	

TABLE L-3

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 7 - Vocabulary Use

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	97	99	2
2	96	99	3
3	95	98	3
4	93	97	4
5	45	55	10
6	85	91	6
7	95	99	4
8	80	85	5
9	95	98	3
10	92	95	3
11	80	88	8
12	94	98	4
13	87	93	6
14	59	76	17
15	53	64	11
16	79	95	16
17	54	76	22
18	68	82	14
19	79	92	13
20	50	78	28
21	92	96	4
22	94	96	2
23	81	95	14
24	63	71	8
25	29	55	26
26	42	49	7
27	56	64	8
28	50	66	16
29	28	42	14
30	55	73	18
31	18	22	4

TABLE I-11

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILSSubtest 8 - Auditory Discrimination
(b) Initial Sounds

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	48	48	--
2	46	45	-1
3	46	63	17
4	48	49	1
5	38	35	-3

TABLE I-12

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 9 - Delayed Recall

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	60	86	26
2	35	59	24
3	68	91	23
4	58	78	20
5	58	75	17
6	29	62	33
7	36	60	24
8	53	71	18
9	65	82	17
10	85	96	11

TABLE L-h

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 10 - Visual Retention of Forms

Item	Percentage Scoring Successfully		Difference	
	50 Failing Pupils	All Pupils		
1a	÷	60	80	20
1b	┌	83	94	11
2a	┌	32	50	18
	┌	5	0	--
	┌	31	48	17
2b	┌	38	44	6
	┌	6	2	--
	┌	15	34	19
3a	△	15	4	--
	△	8	2	--
	○	20	6	--
	any two	28		
	all three	9	34	25
3b	△	11	8	--
	△	21	12	--
	×	15	20	5
	any two	16	34	18
	all three	7	14	7
4a	∩	27	26	--
	∩	13	16	3
	∩	0	0	0
	∩	5	4	--
	any two	14	28	14
	any three	1	8	7
all four	0	0	0	
4b	∩	22	36	14
	∩	12	10	--
	∩	1	0	--
	∩	5	10	5
	any two	13	16	3
	any three	4	4	--
	all four	0	0	0

TABLE I-1

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 11 - Vocabulary Sentences

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	96	98	2
2	87	95	8
3	92	95	3
4	98	99	1
5	87	88	1
6	88	94	6
7	76	90	14
8	64	77	13
9	96	99	3
10	48	64	16
11	42	58	16
12	64	84	20
13	19	37	18

TABLE I-2

ITEM ANALYSIS OF DETROIT READING READINESS
STUDY OF FAILING PUPILS

Subtest 12 - Auditory Discrimination
(c) Blending

Item	Percentage Scoring Successfully		Difference
	50 Failing	All	
	Pupils	Pupils	
1	47	54	7
2	91	84	-7
3	58	56	-2
4	83	87	4
5	89	88	-1
6	59	62	3
7	55	61	6
8	48	41	-7

DETROIT READING READINESS TEST

Tentative Percentile Norms

SUBTEST 1		SUBTEST 2		SUBTEST 3	
Vocabulary		Visual Perception		Motor Control	
Score	Percentile	Score	Percentile	Score	Percentile
15	100	14	100	8	100
14	99	13	87	7	73
13	97	12	76	6	54
12	92	11	66	5	39
11	85	10	57	4	32
10	73	9	47	3	24
9	60	8	39	2	18
8	46	7	30	1	9
7	34	6	21	0	4
6	23	5	15		
5	14	4	11		
4	7	3	7		
3	5	2	4		
2	3	1	2		

SUBTEST 4		SUBTEST 5		SUBTEST 6	
Visual Retention		Delayed Recall		Immediate Recall	
Score	Percentile	Score	Percentile	Score	Percentile
19 & up	100	7	100	10	100
18	99	6	93	9	96
17	98	5	68	8	84
16	96	4	50	7	72
15	92	3	29	6	55
14	82	2	14	5	37
13	74	1	6	4	27
12	66			3	16
11	56			2	7
10	48			1	2
9	38				
8	28				
7	21				
6	16				
5	9				
4	5				
3	2				
1 & 2	1				

Tentative Percentile Norms
(Continued)

TOTAL TEST	
Score	Percentile
66 and up	100
64 - 65	99
62 - 63	98
61	97
60	96
59	94
58	93
57	91
56	89
55	86
54	83
53	80
52	77
51	74
50	70
49	66
48	62
47	59
46	56
45	53
44	49
43	46
42	42
41	39
40	36
39	33
38	30
37	27
36	24
35	21
34	18
33	16
32	14
31	12
30	10
29	9
28	8
27	7
25 - 26	6
22 - 24	5
20 - 21	4
18 - 19	3
17	2
0 - 16	1

SUBTEST 7	
Auditory (Optional)	
Score	Percentile
6	100
5	66
4	43
3	23
2	7
1	2

WORKING SHEET FOR THE COMPUTATION
OF THE MEAN AND THE STANDARD
DEVIATION

X = _____ Group _____ Test _____

x	f	d'	(d') ²	(d+1) ²
		28	784	841
		27	729	784
		26	676	729
		25	625	676
		24	576	625
		23	529	576
		22	484	529
		21	441	484
		20	400	441
		19	361	400
		18	324	361
		17	289	324
		16	256	289
		15	225	256
		14	196	225
		13	169	196
		12	144	169
		11	121	144
		10	100	121
		9	81	100
		8	64	81
		7	49	64
		6	36	49
		5	25	36
		4	16	25
		3	9	16
		2	4	9
		1	1	4
		0	0	1
Σ				
	N	A	B	C
N + 2A + B =				

Class interval = _____ (i)

Bottom of lowest step +.5i = _____ M'

Top of lowest step -.5i = _____

Mean
Computation:

1. $A \cdot i =$ _____ D*

2. $D + N \cdot M' =$ _____ E

3. $E \div N =$ _____ M

Check:

4. $M - M' =$ _____ F

5. $F \cdot N =$ _____ G*

6. $G \div i =$ _____ A(?)

S. D.
Computation:

7. $N \cdot B =$ _____ H*

8. $H - A^2 =$ _____ J*

11. \sqrt{J} _____ K

13. $K \cdot i =$ _____ L*

14. $L \div N =$ _____ o

Check:

9. $J + A^2 =$ _____ P*

10. $P \div N =$ _____ B(?)

12. $J \div K =$ _____ K (?)

15. $K \div N =$ _____ Q

16. $Q \cdot i =$ _____ o(?)

PUPILS' CODE NUMBERS DRAWN ON RANDOM SAMPLE 3, FROM
TOTAL READING READINESS POPULATION

001	002	003	004	005	006	007	008	009	010	011	012	013
014	015	016	017	018	019	020	021	022	023	024	025	026
027	028	029	030	031	032	033	034	035	036	037	038	039
040	041	042	043	044	045	046	047	048	049	050	051	052
053	054	055	056	057	058	059	060	061	062	063	064	065
066	067	068	069	070	071	072	073	074	075	076	077	078
079	080	081	082	083	084	085	086	087	088	089	090	091
092	093	094	095	096	097	098	099	100	101	102	103	104
105	106	107	108	109	110	111	112	113	114	115	116	117
118	119	120	121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154	155	156
157	158	159	160	161	162	163	164	165	166	167	168	169
170	171	172	173	174	175	176	177	178	179	180	181	182
183	184	185	186	187	188	189	190	191	192	193	194	195
196	197	198	199	200	201	202	203	204	205	206	207	208
209	210	211	212	213	214	215	216	217	218	219	220	221
222	223	224	225	226	227	228	229	230	231	232	233	234
235	236	237	238	239	240	241	242	243	244	245	246	247
248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273
274	275	276	277	278	279	280	281	282	283	284	285	286
287	288	289	290	291	292	293	294	295	296	297	298	299
300	301	302	303	304	305	306	307	308	309	310	311	312
313	314	315	316	317	318	319	320	321	322	323	324	325
326	327	328	329	330	331	332	333	334	335	336	337	338
339	340	341	342	343	344	345	346	347	348	349	350	351
352	353	354	355	356	357	358	359	360	361	362	363	364
365	366	367	368	369	370	371	372	373	374	375	376	377
378	379	380	381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400	401	402	403
404	405	406	407	408	409	410	411	412	413	414	415	416
417	418	419	420	421	422	423	424	425	426	427	428	429
430	431	432	433	434	435	436	437	438	439	440	441	442
443	444	445	446	447	448	449	450	451	452	453	454	455
456	457	458	459	460	461	462	463	464	465	466	467	468
469	470	471	472	473	474	475	476	477	478	479	480	481
482	483	484	485	486	487	488	489	490	491	492	493	494
495	496	497	498	499	500	501	502	503	504	505	506	507
508	509	510	511	512	513	514	515	516	517	518	519	520
521	522	523	524	525	526	527	528	529	530	531	532	533
534	535	536	537	538	539	540	541	542	543	544	545	546
547	548	549	550	551	552	553	554	555	556	557	558	559
560	561	562	563	564	565	566	567	568	569	570	571	572
573	574	575	576	577	578	579	580	581	582	583	584	585
586	587	588	589	590	591							

FUPILS' CODE NUMBERS DRAWN ON RANDOM SAMPLE 7, FROM
TOTAL CONTROL POPULATION

<u>001</u>	<u>002</u>	<u>003</u>	<u>004</u>	<u>005</u>	<u>006</u>	<u>007</u>	<u>008</u>	<u>009</u>	<u>010</u>	<u>011</u>	<u>012</u>	<u>013</u>
<u>014</u>	<u>015</u>	<u>016</u>	<u>017</u>	<u>018</u>	<u>019</u>	<u>020</u>	<u>021</u>	<u>022</u>	<u>023</u>	<u>024</u>	<u>025</u>	<u>026</u>
<u>027</u>	<u>028</u>	<u>029</u>	<u>030</u>	<u>031</u>	<u>032</u>	<u>033</u>	<u>034</u>	<u>035</u>	<u>036</u>	<u>037</u>	<u>038</u>	<u>039</u>
<u>040</u>	<u>041</u>	<u>042</u>	<u>043</u>	<u>044</u>	<u>045</u>	<u>046</u>	<u>047</u>	<u>048</u>	<u>049</u>	<u>050</u>	<u>051</u>	<u>052</u>
<u>053</u>	<u>054</u>	<u>055</u>	<u>056</u>	<u>057</u>	<u>058</u>	<u>059</u>	<u>060</u>	<u>061</u>	<u>062</u>	<u>063</u>	<u>064</u>	<u>065</u>
<u>066</u>	<u>067</u>	<u>068</u>	<u>069</u>	<u>070</u>	<u>071</u>	<u>072</u>	<u>073</u>	<u>074</u>	<u>075</u>	<u>076</u>	<u>077</u>	<u>078</u>
<u>079</u>	<u>080</u>	<u>081</u>	<u>082</u>	<u>083</u>	<u>084</u>	<u>085</u>	<u>086</u>	<u>087</u>	<u>088</u>	<u>089</u>	<u>090</u>	<u>091</u>
<u>092</u>	<u>093</u>	<u>094</u>	<u>095</u>	<u>096</u>	<u>097</u>	<u>098</u>	<u>099</u>	<u>100</u>	<u>101</u>	<u>102</u>	<u>103</u>	<u>104</u>
<u>105</u>	<u>106</u>	<u>107</u>	<u>108</u>	<u>109</u>	<u>110</u>	<u>111</u>	<u>112</u>	<u>113</u>	<u>114</u>	<u>115</u>	<u>116</u>	<u>117</u>
<u>118</u>	<u>119</u>	<u>120</u>	<u>121</u>	<u>122</u>	<u>123</u>	<u>124</u>	<u>125</u>	<u>126</u>	<u>127</u>	<u>128</u>	<u>129</u>	<u>130</u>
<u>131</u>	<u>132</u>	<u>133</u>	<u>134</u>	<u>135</u>	<u>136</u>	<u>137</u>	<u>138</u>	<u>139</u>	<u>140</u>	<u>141</u>	<u>142</u>	<u>143</u>
<u>144</u>	<u>145</u>	<u>146</u>	<u>147</u>	<u>148</u>	<u>149</u>	<u>150</u>	<u>151</u>	<u>152</u>	<u>153</u>	<u>154</u>	<u>155</u>	<u>156</u>
<u>157</u>	<u>158</u>	<u>159</u>	<u>160</u>	<u>161</u>	<u>162</u>	<u>163</u>	<u>164</u>	<u>165</u>	<u>166</u>	<u>167</u>	<u>168</u>	<u>169</u>
<u>170</u>	<u>171</u>	<u>172</u>	<u>173</u>	<u>174</u>	<u>175</u>	<u>176</u>	<u>177</u>	<u>178</u>	<u>179</u>	<u>180</u>	<u>181</u>	<u>182</u>
<u>183</u>	<u>184</u>	<u>185</u>	<u>186</u>	<u>187</u>	<u>188</u>	<u>189</u>	<u>190</u>	<u>191</u>	<u>192</u>	<u>193</u>	<u>194</u>	<u>195</u>
<u>196</u>	<u>197</u>	<u>198</u>	<u>199</u>	<u>200</u>	<u>201</u>	<u>202</u>	<u>203</u>	<u>204</u>	<u>205</u>	<u>206</u>	<u>207</u>	<u>208</u>
<u>209</u>	<u>210</u>	<u>211</u>	<u>212</u>	<u>213</u>	<u>214</u>	<u>215</u>	<u>216</u>	<u>217</u>	<u>218</u>	<u>219</u>	<u>220</u>	<u>221</u>
<u>222</u>	<u>223</u>	<u>224</u>	<u>225</u>	<u>226</u>	<u>227</u>	<u>228</u>	<u>229</u>	<u>230</u>	<u>231</u>	<u>232</u>	<u>233</u>	<u>234</u>
<u>235</u>	<u>236</u>	<u>237</u>	<u>238</u>	<u>239</u>	<u>240</u>	<u>241</u>	<u>242</u>	<u>243</u>	<u>244</u>	<u>245</u>	<u>246</u>	<u>247</u>
<u>248</u>	<u>249</u>	<u>250</u>	<u>251</u>	<u>252</u>	<u>253</u>	<u>254</u>	<u>255</u>	<u>256</u>	<u>257</u>	<u>258</u>	<u>259</u>	<u>260</u>
<u>261</u>	<u>262</u>	<u>263</u>	<u>264</u>	<u>265</u>	<u>266</u>	<u>267</u>	<u>268</u>	<u>269</u>	<u>270</u>	<u>271</u>	<u>272</u>	<u>273</u>
<u>274</u>	<u>275</u>	<u>276</u>	<u>277</u>	<u>278</u>	<u>279</u>	<u>280</u>	<u>281</u>	<u>282</u>	<u>283</u>	<u>284</u>	<u>285</u>	<u>286</u>
<u>287</u>	<u>288</u>	<u>289</u>	<u>290</u>	<u>291</u>	<u>292</u>	<u>293</u>	<u>294</u>	<u>295</u>	<u>296</u>	<u>297</u>	<u>298</u>	<u>299</u>
<u>300</u>	<u>301</u>	<u>302</u>	<u>303</u>	<u>304</u>	<u>305</u>	<u>306</u>	<u>307</u>	<u>308</u>	<u>309</u>	<u>310</u>	<u>311</u>	<u>312</u>
<u>313</u>	<u>314</u>	<u>315</u>	<u>316</u>	<u>317</u>	<u>318</u>	<u>319</u>	<u>320</u>	<u>321</u>	<u>322</u>	<u>323</u>	<u>324</u>	<u>325</u>
<u>326</u>	<u>327</u>	<u>328</u>	<u>329</u>	<u>330</u>	<u>331</u>	<u>332</u>	<u>333</u>	<u>334</u>	<u>335</u>	<u>336</u>	<u>337</u>	<u>338</u>
<u>339</u>	<u>340</u>	<u>341</u>	<u>342</u>	<u>343</u>	<u>344</u>	<u>345</u>	<u>346</u>	<u>347</u>	<u>348</u>	<u>349</u>	<u>350</u>	<u>351</u>
<u>352</u>	<u>353</u>	<u>354</u>	<u>355</u>	<u>356</u>	<u>357</u>	<u>358</u>	<u>359</u>	<u>360</u>	<u>361</u>	<u>362</u>	<u>363</u>	<u>364</u>
<u>365</u>	<u>366</u>	<u>367</u>	<u>368</u>	<u>369</u>	<u>370</u>	<u>371</u>	<u>372</u>	<u>373</u>	<u>374</u>	<u>375</u>	<u>376</u>	<u>377</u>
<u>378</u>	<u>379</u>	<u>380</u>	<u>381</u>	<u>382</u>	<u>383</u>	<u>384</u>	<u>385</u>	<u>386</u>	<u>387</u>	<u>388</u>	<u>389</u>	<u>390</u>
<u>391</u>	<u>392</u>	<u>393</u>	<u>394</u>	<u>395</u>	<u>396</u>	<u>397</u>	<u>398</u>	<u>399</u>	<u>400</u>	<u>401</u>	<u>402</u>	<u>403</u>
<u>404</u>	<u>405</u>	<u>406</u>	<u>407</u>	<u>408</u>	<u>409</u>	<u>410</u>	<u>411</u>	<u>412</u>	<u>413</u>	<u>414</u>	<u>415</u>	<u>416</u>
<u>417</u>	<u>418</u>	<u>419</u>	<u>420</u>	<u>421</u>	<u>422</u>	<u>423</u>	<u>424</u>	<u>425</u>	<u>426</u>	<u>427</u>	<u>428</u>	<u>429</u>
<u>430</u>	<u>431</u>	<u>432</u>	<u>433</u>	<u>434</u>	<u>435</u>	<u>436</u>	<u>437</u>	<u>438</u>	<u>439</u>	<u>440</u>	<u>441</u>	<u>442</u>
<u>443</u>	<u>444</u>	<u>445</u>	<u>446</u>	<u>447</u>	<u>448</u>	<u>449</u>	<u>450</u>	<u>451</u>	<u>452</u>	<u>453</u>	<u>454</u>	<u>455</u>
<u>456</u>	<u>457</u>	<u>458</u>	<u>459</u>	<u>460</u>	<u>461</u>	<u>462</u>	<u>463</u>	<u>464</u>	<u>465</u>	<u>466</u>	<u>467</u>	<u>468</u>
<u>469</u>	<u>470</u>	<u>471</u>	<u>472</u>	<u>473</u>	<u>474</u>	<u>475</u>	<u>476</u>	<u>477</u>	<u>478</u>	<u>479</u>	<u>480</u>	<u>481</u>
<u>482</u>	<u>483</u>	<u>484</u>	<u>485</u>	<u>486</u>	<u>487</u>	<u>488</u>	<u>489</u>	<u>490</u>	<u>491</u>	<u>492</u>	<u>493</u>	<u>494</u>
<u>495</u>	<u>496</u>	<u>497</u>	<u>498</u>	<u>499</u>	<u>500</u>	<u>501</u>	<u>502</u>	<u>503</u>	<u>504</u>	<u>505</u>	<u>506</u>	<u>507</u>
<u>508</u>	<u>509</u>	<u>510</u>	<u>511</u>	<u>512</u>	<u>513</u>	<u>514</u>	<u>515</u>	<u>516</u>	<u>517</u>	<u>518</u>	<u>519</u>	<u>520</u>
<u>521</u>	<u>522</u>	<u>523</u>	<u>524</u>	<u>525</u>	<u>526</u>	<u>527</u>	<u>528</u>	<u>529</u>	<u>530</u>	<u>531</u>	<u>532</u>	<u>533</u>
<u>534</u>	<u>535</u>	<u>536</u>	<u>537</u>	<u>538</u>	<u>539</u>	<u>540</u>	<u>541</u>	<u>542</u>	<u>543</u>	<u>544</u>	<u>545</u>	<u>546</u>
<u>547</u>	<u>548</u>	<u>549</u>	<u>550</u>	<u>551</u>	<u>552</u>	<u>553</u>	<u>554</u>	<u>555</u>	<u>556</u>	<u>557</u>	<u>558</u>	<u>559</u>
<u>560</u>	<u>561</u>	<u>562</u>	<u>563</u>	<u>564</u>	<u>565</u>	<u>566</u>	<u>567</u>	<u>568</u>	<u>569</u>	<u>570</u>	<u>571</u>	<u>572</u>
<u>573</u>	<u>574</u>	<u>575</u>	<u>576</u>	<u>577</u>	<u>578</u>	<u>579</u>	<u>580</u>	<u>581</u>	<u>582</u>	<u>583</u>	<u>584</u>	<u>585</u>
<u>586</u>	<u>587</u>	<u>588</u>	<u>589</u>	<u>590</u>	<u>591</u>							

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AUTOBIOGRAPHY

I introduce myself as one of city origin. With the exception of six years that were spent on a farm just outside of Saline, Michigan I have resided within the boundaries of the City of Detroit my entire life. My elementary education was obtained at the Goldberg and Longfellow schools; my high school or secondary training at Northwestern high school. Upon graduation from high school I obtained work with a chemical company and remained in their employ until the fall of 1931 at which time I entered Michigan State Normal College. In June, 1935 I received my A. B. degree and Michigan Teacher's Life Certificate. The last two years at Michigan State Normal College I held the position of assistant instructor in zoology and physiology.

The period from June, 1935 through March, 1936, by necessity, my interest was diverted from teaching to first aid work at the Ford Motor Company. In March, 1936 an opportunity to do substitute work in the Detroit schools was offered, which I accepted without hesitation. The following year I was assigned to Jefferson intermediate school as a teacher of science, where I remained for the next seven years. During this period I also acted as critic teacher for Wayne student teachers.

In June, 1939 I obtained my A. M. degree at Wayne University and enrolled at the University of Michigan the following year to start work on a doctorate in education, but discontinued my class work during the war years. In September, 1946 this work was transferred to Wayne University and completed in June, 1950.

An appointment to the Department of Instructional Research as Junior Administrative Assistant was received in 1943 and in June, 1949 I was promoted to Supervisor of Research. It is in this capacity I am now employed by the Board of Education.

Over the years I have held membership in a number of professional teachers' and research organizations; namely, Detroit Teachers' Association, Detroit Schoolmen's Club, Detroit Biology Club, Metropolitan Science Club, Michigan Educational Association, National Teachers' Association, Michigan Secondary School Association, American Educational Research Association, and Phi Delta Kappan, Zeta Field Chapter.