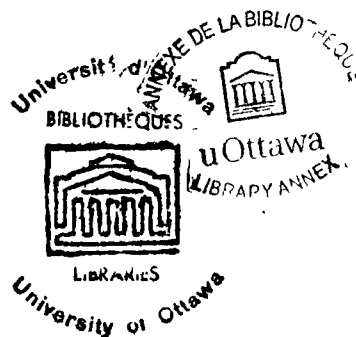


THE RELATIVE EFFECTIVENESS OF BLOOMFIELD'S LINGUISTIC
APPROACH TO WORD-ATTACK AS COMPARED WITH PHONICS WE USE

by Sister Mary Fidelia

Thesis presented to the School of
Psychology and Education of the
University of Ottawa as partial
fulfillment of the requirements
for the degree of Doctor of
Philosophy.



Ottawa, Canada, 1959

UMI Number: DC53779

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.



UMI Microform DC53779
Copyright 2011 by ProQuest LLC
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

ACKNOWLEDGMENTS

This thesis was prepared under the supervision of Professor J. N. H. Taillefer, Ph.D., of the School of Psychology and Education of the University of Ottawa.

Gratitude is here expressed to all who made this study possible.

CURRICULUM STUDIORUM

Sister Mary Fidelia Gorcowski, S.S.J., received the degree of Bachelor of Arts in 1935, and the Master of Arts degree in 1936. Both degrees were received from the Catholic University of America, Washington, D.C. The major and minor fields for the Master's degree were Education and Psychology respectively. Her thesis was entitled: A Critical Inventory of the Illustrations in Current Catholic Readers.

TABLE OF CONTENTS

Chapter	page
INTRODUCTION	vi
I.- SURVEY OF LITERATURE	1
1. Nature of Reading	3
2. The Need of Phonics as One of Several Word Perception Skills	8
3. Effectiveness of Phonics as Word-Attack Skill	10
4. When to Teach Phonics?	16
5. Methods of Teaching Phonics	26
6. The Content of Phonics Program	35b
II.- THE EXPERIMENTAL PROCEDURES	41
1. Sample Selection and Description	41
2. Principal and Teacher Orientation	47
3. Selection of Tests	52
4. The Experimental Design and Statistical Treatment	61
III.- METHOD AND MATERIALS	67
1. The Basal Reading Program	70
2. Readiness for Mechanics of Word-Attack Skills	72
3. The Method of Presentation	73
4. Content and Organization	76
IV.- RESULTS OF THE EXPERIMENT	85
1. Analysis of Data on Total Reading Scores	85
2. Analysis of Data on Paragraph Meaning	92
3. Analysis of Data on Word Meaning	98
SUMMARY AND CONCLUSIONS	105
BIBLIOGRAPHY	110
 Appendix	
A. <u>CHECK LIST FOR READING READINESS</u>	119
B. <u>METROPOLITAN READINESS TESTS</u>	123
C. <u>STANFORD ACHIEVEMENT TEST</u>	124
D. <u>ABSTRACT OF The Relative Effectiveness of Bloomfield's Linguistic Approach to Word-Attacks as Compared with Phonics We Use</u>	125

LIST OF TABLES

Table	page
I.- Reading Readiness of Three Groups of Pupils (N:660) Entering First Grades in Chicago in September 1958, Expressed in Means Obtained on Metropolitan Readiness Test - Form R	45
II.- Mean Mental Ages Determined in January 1959 of Experimental and Control Classes on the <u>Kuhlmann-Anderson Intelligence Test, Form A</u> . .	46
III.- Tests of Significance for the Main Effects on Total Reading Scores	87
IV.- Analysis of Variance for Two Methods Done Separately for Each of the Three Categories . .	89
V.- Evaluation of the Difference Between Categories I, II, and III for the Experimental Group by the t test, where $\sigma_D = .0519$ and the Smallest Sign. Diff. at $P = .01$ is 2.704	91
VI.- Tests of Significance for the Main Effects on Paragraph Meaning	93
VII.- Analysis of Variance for Two Methods Done Separately for Each of the Categories in Paragraph Meaning	95
VIII.- Evaluation of the Difference Between Categories I, II, and III for the Experimental Group By the t test, where $\sigma_D = .07$ and the Smallest Sign. Diff. at $P = .01$ is 2.704	97
IX.- Tests of Significance for the Main Effects on Word Meaning Scores	99
X.- Analysis of Variance for Two Methods Done Separately for Each of the Three Categories	101
XI.- Evaluation of the Difference Between Categories I, II, and III for the Experimental Group by the t test, where $\sigma_D = .118$ and the Smallest Sign. Diff. at $P = .01$ is 2.704	103

INTRODUCTION

Since 1939 when Dr. Leonard Bloomfield, an eminent American scholar and Sterling Professor of Linguistics at Yale University,¹ prepared his Children's Reader,² which he regarded as a complete course for teaching reading to school children, and since the United States Armed Forces Institute with Dr. Bloomfield's consent prepared after his plan a book entitled Improving Your Reading³ designed for teaching reading to illiterate soldiers and those enlisted men who showed low reading ability, there was a varying interest in this approach to reading.

During the school year 1943-1944, the plan was tried in one of Chicago's parochial schools in an uncontrolled experiment. During the course of this experiment, reading experts, supervisors, teachers, and publishers observed the application of the linguistic approach with conflicting views. The observations of the teachers who tried the plan as well as those of the numerous observers seemed to agree that the approach observed, while it did not possess the

1 Bernard Bloch, "Leonard Bloomfield", New Century Cyclopedia of Names, ed., Clarence Barnhart, New York, Appleton-Century-Crofts, 1954, Vol. I, p. 541.

2 Leonard Bloomfield, Children's Reader, 1939, (duplicated) unpublished manuscript.

3 United States Armed Forces Institute, Improving Your Reading, New York, Ginn, 1943, 96 p.

elements of a complete program as understood and accepted in contemporary practice, it could be utilized as a plan for instructing children in the skill of attacking words.

Although these empirical observations were favorable to the linguist's suggested approach, further experimentation was discontinued, first, because there were no materials for large scale use with children; secondly, because criticism spearheaded by Gray,⁴ echoed and reechoed in periodical literature and conferences on Reading,^{5,6} had a dampening effect on plans for further carrying out of the experiment. Other factors contributing equally to the discouragement of further attempts at experimentation were: (a) the fact that Bloomfield by transferring from Chicago University to Yale was not in a position to pilot the experiment by assisting the teachers with the scientific knowledge of his field, and (b) literature written by linguists in a language comprehensible to the classroom teacher on the role of linguistics in teaching of language arts was practically non-existent at that time.

⁴ William S. Gray, On Their Own in Reading, New York, Scott, Foresman, 1948, p. 29-32.

⁵ Ralph C. Staiger, "What Is Reading?" The Reading Teacher's Reader, ed., Oscar S. Causey, New York, Ronald, 1958, p. 5-9.

⁶ Paul Witty, "Phonics Study and Word Analysis" Elementary English, Vol. 30, No. 5, May 1953, p. 296-305; No. 6, October 1953, p. 373-379.

While further experimentation with the Bloomfield plan was discontinued in the parochial school of Chicago for reasons just enumerated, the approach was adapted and adopted elsewhere. Two supervisors from the Detroit Archdiocesan School system, after numerous visits to Chicago for the purpose of acquainting themselves with the rationale of the plan, tried the approach in a parochial school in Detroit. The period of trial was followed by a formation of a committee of teachers, who drew up a plan for the first grade. This plan was almost identical with Bloomfield's plan in method and the early content and sequence. It was published under the auspices of the Catholic School Board as the "New Approach to Reading".⁷

The Detroit adaptation of the linguistic approach was put to a test in an experimental situation in several schools in the Pittsburgh Diocese exactly as it was planned by Bloomfield.⁸ In this experiment the actual use of basal reading materials was deferred until the children mastered the alphabet by establishing spontaneous association of the letters of the alphabet with their corresponding phonemes.

⁷ Carroll F. Deady, "The New Approach to Reading," The Reading Problem Met and Solved, Detroit, Parochial Schools, 1948, 20 p.

⁸ Mary Louise, Sister (Wohleber), A Study of the Effects of a Systematic Program of Phonetic Training on Reading Instruction, Ed.D. thesis, University of Pittsburgh, June 1953.

A third plan which appears to be a further adaptation of the Bloomfield system has been made in the Cleveland Archdiocesan schools, where also under the auspices of the Catholic School Board, materials prepared by selected committee were published for diocesan-wide use.⁹

The interest in the Bloomfield reading approach was once again aroused by the appearance of Rudolf Flesch's "angry" book¹⁰ which focused the nation's attention on the value of phonics in reading instruction and on Bloomfield's system as a functional means for achieving success in teaching beginning reading. Where the book failed to reach the public, the metropolitan press by printing the book serially aroused an unprecedented suspicion of the methods currently used in the teaching of reading to beginners. Since Flesch in his book indicated the school and system in which the Bloomfield approach was first tried, requests to the school and the School Board for materials were numerous and representative. Among those requesting information were superintendents of schools, elementary and high school principals, research workers, teachers, and parents from practically every part of the country.

⁹ Clarence E. Elwell, et al., The Christian Child Reading Series, Cleveland, Reardon, Baer, 1954.

¹⁰ Rudolf Flesch, Why Johnny Can't Read - And What You Can Do About It, New York, Harper, 1955, ix-222 p.

The steadily growing interest in the linguistic approach and the gradually appearing literature by linguists on the role of linguistic science in reading instruction seemed to indicate the need of testing the content and sequence of Bloomfield's plan by using modern methods of teaching word-attack skills. As far as can be ascertained, the content and sequence of this plan has not been tested experimentally in a controlled situation in which the results were compared with those obtained from the use of some popular system using modern methods of teaching word-attack through phonics.

This study is a report of such an experiment, namely, the testing of the effectiveness of the content and sequence of the phonemic elements as outlined by Bloomfield by comparing the results obtained with it with the results obtained from the use of a widely-used Phonics We Use program.¹¹

The following chapters present respectively, the statement of the problem, the review of related literature and the statement of the hypothesis evolved; a description of the experimental procedures and the statistical tools used in organizing the test data; a description of the materials used by both the experimental and control groups, and lastly, the interpretation of the data and the implications for further research.

¹¹ Mary Weighen, Marjorie Pratt, and Mabel Halvorsen, Phonics We Use, Chicago, Lyons and Carnahan, 1946.

CHAPTER I

SURVEY OF LITERATURE

Beset with a multitude of problems, reading instruction offers a perennial challenge to educators especially in the English speaking countries.^{1,2} Although educational psychologists have done much to improve instruction in the field of reading, the field continues to bristle with problems at the beginner's level, particularly in the area of word-attack skills.

Since 1939 when Dr. Leonard Bloomfield, an eminent linguist, wrote his Children's Reader,³ the linguists have become more articulate.^{4,5} On the one hand, they criticize the conventional approach to reading, while on the other, they note with approval the many refinements in methods of teaching reading growing out of the continued experimentation

1 UNESCO, The Teaching of Reading and Writing - An International Survey, Chicago, Scott, Foresman, 1956, 281 p.

2 Bjorn Karlsen, "Reading Difficulties Throughout the World", The Reading Teacher, Vol. 9, No. 2, December 1955, p. 99-101.

3 Leonard Bloomfield, Children's Reader, 1939, Manuscript in the possession of the investigator.

4 Henry Lee Smith, Linguistic Science and the Teaching of English, Cambridge, Harvard University Press, 1956, p. 6, 60.

5 James P. Soffietti, "Why Children Fail to Read: A Linguistic Analysis", Harvard Educational Review, Vol. 25, No. 2, Spring 1955, p. 63-84.

in the classroom. They feel that the science of linguistics has a contribution to make to the instruction in reading, but the reading expert persistently ignores their claims.

It is the purpose of this study to bring together the improvements in the teaching of phonics as a word-attack skill and the content and sequence of the Bloomfield program in order to test the claims that an approach applying the scientific knowledge the linguist has of the structure of the English language to instruction in reading will expedite and accelerate achievement in reading at the beginner's level. The problem for investigation, therefore, is to test the effectiveness of Bloomfield's linguistic approach to word-attack skills by comparing it with a popular phonics program.

The survey of literature reviewed in preparation for this study embraces the position of the reading expert and the views of the linguist on the nature of reading; the need of teaching phonics as one of the skills of independent word attack as seen by educators; the view of the linguist on phonics as still taught by many teachers, and the findings of research on a variety of problems connected with this skill. The results of investigation in the area of word-attack skills were studied under the following headings: the need of phonics as a recognized method of teaching word-attack skills; when to teach phonics; methods of teaching phonics and their foundation, and the content of phonics program.

1. Nature of Reading.

Reading is a common tool, meaning different things to different people and meaning different things to the same person at different times. To the reading specialist with psychological orientation, reading means recognizing symbols, comprehending meaning of sentences, understanding relationships, evaluating ideas, reflecting about implications, and organizing knowledge.^{6,7,8} It is obvious from the above definition that reading involves many mental activities in the process of getting "meaning" from the printed page, which is extracted from it only when the reader brings ideas to it. It is no less obvious that the ultimate purpose of reading is the comprehension of ideas and the growth of skill in silent reading. Such is the concensus of thinking on the nature of reading, if the various conference proceedings, educational monographs, periodical literature, and teacher's manuals accompanying the basic series in reading constitute a reliable pulse of the current view underlying reading instruction.

6 William S. Gray, "The Nature and Types of Reading", Thirty-Sixth Yearbook of the National Society for the Study of Education, Part I, 1937, Chicago, University Press, p. 25-26.

7 Nancy Larriok, "How Can We Secure Parent Co-operation?" Better Readers for Our Times - International Reading Conference Proceedings, Vol. I, 1956, p. 104.

8 George Spache, "Psychological Explanation of Reading", The Reading Teacher's Reader, New York, Ronald Press, 1956, p. 11.

While the reading specialist has a complex stimulus-response concept of reading wherein the response depends upon the interaction of the stimulus and the reader's background of experience, the linguist is interested in the structure of the language to be read for he considers reading as decoding of recorded speech.^{9,10}

The position of the linguist on reading cannot be fully understood unless there is some understanding of his concept of language and meaning and the relationship existing between the language of a people and the recording of "systematized set of vocal habits" by which the members interact in terms of their culture. Womack¹¹ defines language as an arbitrary system of vocal signals by means of which groups of human beings communicate, and Smith¹² contends that "thought" and "ideas" expressed through the vehicle of thought, the "language", depend in a very real way on the nature and structure of the "vehicle". He says thought is largely the product of the language we speak and thought recorded in writing when it is decoded is reading.

9 Leonard Bloomfield, Language, New York, Holt, 1933, p. 282.

10 James P. Soffiatti, "Why Children Fail to Read: A Linguistic Analysis", Harvard Educational Review, Vol. 25, No. 2, 1955, p. 64.

11 Thurston Womack, "Is English Language Phonetic?" Elementary English, Vol. 34, No. 6, October 1957, p. 386-388.

12 Henry L. Smith, Linguistic Science and the Teaching of English, Cambridge, Harvard University Press, 1956, p. 8-10.

Clarifying further the linguist's view of recorded language, Soffietti¹³ states that "written forms stand for speech forms" that were uttered either openly or subvocally during the process of writing, and therefore, it is only natural for written words to stimulate a vocal response in the act of reading. He further points out that whatever caused these specific verbal symbols to be uttered in conveying thoughts in the first place has nothing to do with the recording of them in writing. In stimulus-response terms, writing is conditioned to vocalization which may have been preceded or accompanied by thinking.

According to Elwell¹⁴ "reading is the art and science of decoding written symbols to arrive again at the spoken symbols and the meaning "hidden therein". Soffietti concurs with Elwell as he explains the linguist's view of the nature of reading.

Thus, while the reading specialist is inclined to say, "The printed word merely acts as the trigger that releases a meaning we already possess," the linguist believes that the printed word acts as "the trigger that releases its oral counterpart," which, in its turn, releases a meaning we already possess.¹⁵

¹³ James P. Soffietti, "Why Children Fail to Read: A Linguistic Analysis", Harvard Educational Review, Vol. 25, No. 2, 1955, p. 64.

¹⁴ Clarence E. Elwell, "Reading - The Alphabet and Phonics", Catholic Educator, Vol. 22, No. 9, May 1952, p. 477-480.

¹⁵ James P. Soffietti, Op. cit., p. 69.

In order to grasp the linguist's theory underlying the act of reading, it is necessary to understand what he means by "phoneme" and "meaning" and what role these concepts play in the rationale of his approach to reading. The English language, as we know, is recorded in alphabetic writing. Each letter and certain combinations of letters represent a unit sound of speech called the "phoneme". A short sentence uttered in any language is made up of unbroken successions of speech sounds or phonemes. Each word consists of fixed combination of speech sounds, and the letters of the alphabet direct the reader to produce the sounds of the language for the given fixed combination of letters assigned to carry a certain meaning.

As culturologist, the linguist regards any language system as a system or vehicle for communicating "thought" with those sharing a common culture since "thoughts" and "ideas" are structured differently in different languages. Describing a language as a system, the linguist speaks of two kinds of meaning, the "referential meaning" and "differential meaning".

Differential meaning is simply a statement from person who has been brought up according to a particular culture to the effect that one cultural event or component of a cultural system is the same as or different from another event. If you ask a fellow American, for example, whether "pin" is the same as "bin" you are likely to get one of two responses: "Oh, no, "pin" is something you use to stick things together, and "bin" is a place where you store coal or grain," or, "No, one begins with a "p" and the other begins with a "b". The first answer is phrased in terms of referential meaning and the second in terms of differential meaning. "Pin" and "bin" are not the same word, first because they contain different "isolates" of the sound structure of English - they begin with different initial sounds. Secondly, all who know English and participate in Western culture also know that this basic difference then can be seen to be tied directly to different items in the material systems of our culture - the words mean different things, refer to different things in our cultural milieu.¹⁶

This differential meaning, growing out of the alphabetic nature of our writing is more apparent when we put together combinations of letters that do not spell a word in our culture, and yet, we find ourselves clearly directed to the utterance of English speech-sounds; thus nonsense syllables such as "lin", "nil", "nin" and "nit" are easily read.¹⁷

It is this differential meaning that is of first importance to the linguist in the process of learning to read, for it is this particular feature of the "coded" language that differentiates or sets one word apart from another.

¹⁶ Henry L. Smith, Linguistic Science and the Teaching of English, Cambridge, Harvard University Press, 1956, p. 11-12.

¹⁷ Leonard Bloomfield, Children's Reader, an unpublished manuscript, 1939, p. 14-15.

The student of reading finds it difficult to accept this concept of "meaning", for on one hand, he is a product of long term indoctrination, and on the other, the findings of linguistic science written in non-technical language which would be of value to reading specialists and teachers are not yet available.

The point of difference in the two views on the nature and the teaching of reading seems to lie in the fact that the reading specialist whose theories dominate present day practice of teaching beginning reading defines reading in terms of purposes and ultimate goals, while the linguist as a scientist in the study of languages, defines reading in terms of its nature resulting from the relationship of writing to language. Unquestionably, both views recognize reading as an indispensable tool; the difference stems from the divergent views of the nature of recorded language.

2. The Need of Phonics as One of Several Word Perception Skills.

The literature on the teaching of reading is agreed that the purpose of reading is to understand the message recorded on the page, but explicitly or implicitly it also points to the need of a skill for unlocking the printed word. This skill is referred to in literature on reading instruction as "word perception". Word perception can be attained by several methods, for the development of which

all basic reading programs provide and the courses of study call. In order to leave no doubt as to how "word-attack" is used in this study and what the importance and place of the skill is in relation to word perception, it seems necessary to clarify three concepts which are frequently used interchangeably by teachers and even authors of periodical literature on the subject of reading instruction. These concepts are "word perception", "word recognition", and "word-attack".

The concept of "word perception" as defined by Horton¹⁸ means responding instantly to a visual form with the meaning it represents in the context in which it is used. By this definition word perception is an instantaneous, automatic, and efficient recognition of a word and its meaning in the given text. Gray¹⁹ lists five major aids to word perception:

- (1) meaning clues from context;
- (2) configuration or the form of appearance of a word;
- (3) structural clues;
- (4) phonetic clues, and
- (5) the dictionary.

"Word recognition" is a facet upon which "word perception" depends. The word may be guessed from the context in which it is found - a technique which we constantly use in an unfamiliar text; it may be guessed from the configuration of

¹⁸ Dorothy M. Horton is the directing editor of the Scott, Foresman Reading Program used internationally.

¹⁹ William S. Gray, On Their Own in Reading, New York, Scott, Foresman, 1948, p. 40-41.

the word where the shape and size of the word may serve as a clue to recognizing the word, or even the resemblance of the word to another word may serve as an aid. "Word-attack" by means of phonetic clues, however, functions at the point at which instantaneous perception breaks down and neither of the four other techniques help in decoding the printed symbols. It is because word-attack skill is one upon which the reader relies when all other methods of word recognition fail that the skill is looked upon as being essential in learning to read.

3. Effectiveness of Phonics as Word-Attack Skill.

The word-attack skills, either the A-B-C or the phonics method trace respectively to Phoenicians and Charlemagne²⁰ and both parallel the history of American education according to Nila B. Smith²¹ who speaks of the changes from the A-B-C method to an all phonics approach to reading, from the whole approach to the supplementary position of phonics, from the supplementary position to built-in plans for developing skills in word-attack, and from intrinsic to functional ideas of teaching this fundamental skill. The persistence of the

²⁰ P. Witty and D. Kopel, "The Place of Phonetics in a Reading Program", Educational Administration and Supervision, Vol. 23, No. 5, May 1937, p. 321-334.

²¹ Nila B. Smith, "Phonics in Beginning Reading: Review and Evaluation", The Reading Teacher, Vol. 9, No. 2, December 1955, p. 73-80.

problem as evident in the writings of contemporary thinkers in the field of reading^{22,23} bespeaks of the complex and as yet unsolved nature of it, as well as of the open-mindedness of the educators who relentlessly search for ways of improving the functional aspects of teaching independent word-attack skills.

No studies in relation to reading are more recurring than those relating to the value of phonics as a method of word analysis. As used in relation to the teaching of reading, "phonics" consists in teaching of reading by emphasizing from the start the sounds that are represented by the letters and letter combinations.

In 1937, Witty²⁴ wrote that despite the endless controversy over phonics there was a lack of scientific data resulting from rigorously controlled experiments; that there was sufficient ground for rationalizing in favor of any view, and that the teaching practice was suggested to the teacher by the designers of the primary reading text.

In a selective review of research in reading, summarizing the seven studies on phonics during the period of

22 Albert Harris, How to Increase Reading Ability, New York, Longmans, Green, 1940, p. 20.

23 W. S. Gray, "The Nature and Types of Reading", Thirty-Sixth Yearbook of the National Society for the Study of Education, Part I, Chicago University Press, 1937, p. 25-26.

24 Paul Witty and D. Kopel, "The Place of Phonetics in a Reading Program", Educational Administration and Supervision, Vol. 23, No. 5, May 1937, p. 321-334.

1930-1940, Traxler²⁵ notes that the available data seem to justify a certain amount of consistent and systematic teaching phonics in a reading program. Thus, Agnew,²⁶ whose investigation is considered by numerous reviewers and writers on the subject as the most elaborate study of the value of phonics, concludes that consistent training in phonics increases independence in recognizing words previously learned; aids the pupil in attacking new words by giving him a method of word analysis; encourages correct pronunciation of words, and improves the quality of oral reading. Agnew in his investigation found no support to the criticism that phonics destroyed interest in reading.

Another study reported by Tiffin and McKinnis²⁷ was conducted at the Grade V-VIII level to find the extent to which phonics ability was related to reading achievement as measured by standardized tests. The results of the study showed that functional mastery of phonics is significantly related to reading power. The correlation of .70, .66 and .55 found between a test of Rogers Test of Phonetic Ability

²⁵ Arthur E. Traxler, Ten Years of Research in Reading 1930-1940, Educational Records Bulletin, No. 32, New York, Educational Records Bureau, 1941, p. 24-25.

²⁶ Donald C. Agnew, The Effect of Varied Amounts of Phonetic Training in Primary Reading, Duke University Research Studies in Education, No. 5, Durham, N.C. Duke University Press, 1939, viii-50 p.

²⁷ Joseph Tiffin and Mary McKinnis, "Phonic Ability: Its Measurement and Relation to Reading Ability", School and Society, Vol. 51, No. 1312, February 10, 1940, p. 190-192.

and the New Stanford Achievement Reading Test, the comprehension on the Iowa Silent Reading Test, and the rate score on the Iowa Silent Reading Test seemed to indicate a significant association between phonics and reading achievement.

Within the period of 1940-1945, Traxler²⁸ found research scanty and conflicting in conclusions as to the value of phonics in the development of reading ability, but certain investigations continue to provide evidence of positive correlation between word-attack by phonics and reading ability, suggesting that reading achievement tends to be aided when pupils acquire the skill of word-attack by phonics. Russell's study²⁹ with first graders in Vancouver, Canada, bore out Agnew's earlier investigation that considerable amount of phonics in the first grade has a favorable influence upon achievement in word recognition, accuracy in reading as well as in spelling. Results significantly favored the phonics group on eleven out of the twelve test used.

By diagnosing reading difficulties of 194 children of ages 6-17, Hester³⁰ using the Durrell Analysis of Reading

²⁸ Arthur E. Traxler, Another Five Years of Research in Reading 1940-1945, Educational Records Bulletin No. 46, New York, Educational Records Bureau, 1946, p. 34-37.

²⁹ David H. Russell, "A Diagnostic Study of Spelling Readiness", Journal of Educational Research, Vol. 37, No. 4, December 1943, p. 276-283.

³⁰ Kathleen B. Hester, "A Study of Phonetic Difficulties in Reading", Elementary School Journal, Vol. 43, No. 3, November 1942, p. 171-173.

Difficulties concluded that the tests seemed to show that phonic training is necessary for attack on new words.

That research conflicts is evident in the investigation of Tate, Herbert, and Zeman³¹ who reported the results of a controlled experiment in which they compared a program of teaching reading with a total absence of phonics instruction with a program of reading in which phonics was taught incidentally. They found that the incidental phonic approach was much superior in developing the ability to recognize words and to comprehend the meaning of sentences and paragraphs than the nonphonic method. This conclusion seems to contradict Tate's³² earlier findings in a controlled experiment in which he compared instruction and drill in phonics with the "look-and-say" method of developing the ability to recognize words, and found that the "look-and-say" method gave better results than the phonic instruction and drill in developing ability to comprehend reading content. An inference that might be drawn from these conflicting results within the experience of the same individual is that the use of a given method produces superior results in the phase of reading it emphasizes.

³¹ Harry Tate, Theresa Herbert, and Josephine Zeman, "Nonphonic Primary Reading", Elementary School Journal, Vol. 40, No. 7, March 1940, p. 529-537.

³² Harry Tate, "Influence of Phonics on Silent Reading in Grade I", Elementary School Journal, Vol. 37, No. 10, June 1937, p. 752-763.

Witty³³ and Turrentine³⁴ interpret the conflicting views on the value of phonics as an aid to word recognition as issuing from crudely and inadequately set up experiments, and Turrentine observes that the arguments against phonics that it engenders habits of word analysis at the expense of fluency and interest in reading may be answered "by more careful choice of materials of instruction and stricter attention to relevant psychological principles".

The position of educators on the teaching of phonics as a result of reported research is reflected in the writing of such authorities in the field as Gray³⁵ and Nila B. Smith³⁶ who hold that the question no longer is, "Shall we teach phonics?" but "When, how, and what elements shall we teach?"

³³ Paul Witty and D. Kopel, "The Place of Phonetics in a Reading Program", Educational Administration and Supervision, Vol. 23, No. 5, May 1937, p. 321-334.

³⁴ Louise G. Turrentine, "Recent Trends in the Field of Phonics", Texas Outlook, Vol. 23, (No issue), January 1939, p. 49-50.

³⁵ William S. Gray, "Laying the Foundation for Word Perception", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, New York, Scholastic Magazines, 1957, p. 83-85.

³⁶ Nila B. Smith, "What Research Tells Us About Word Recognition", Elementary School Journal, Vol. 55, No. 8, April 1955, p. 440-446.

4. When to Teach Phonics?

As early as 1935 the National Education Association, in its Research Bulletin, stated negatively a few principles for the teaching of independence in word recognition through phonics.³⁷

These principles stated positively find expression in the teacher's manuals accompanying the various series of readers. Among them the teacher is advised that the mental age of seven has been found to be the lowest at which a child can be expected to benefit from instruction in phonics. This age requirement is based on the findings of numerous investigators. Dolch and Bloomster³⁸ in a controlled experiment confirmed an earlier study made by Sexton and Herron.³⁹ Both of these studies arrived at the conclusion that beginners in reading were not able to profit by phonics instruction during the first five months according to Sexton and Herring and Dolch set the mental age at seven. A more recent study

³⁷ David H. Russell, Children Learn to Read, New York, Ginn, 1949, p. 212.

³⁸ E. W. Dolch and M. Bloomster, "Phonic Readiness", Elementary School Journal, Vol. 38, No. 3, November 1937, p. 201-205.

³⁹ Elmer K. Sexton and John Herron, "The Newark Phonics Experiment", Elementary School Journal, Vol. 28, No. 9, May 1928, p. 690-701.

conducted in Boston by Harrington and Durrell⁴⁰ examined the relationship between scores on visual discrimination and visual memory, auditory discrimination involving recognition of initial consonant sounds, rhymes, final consonants, etc., and mental age as measured by the Otis Alpha and reading success. All these traits, auditory perception, visual perception, and phonics were all found to be factors, but mental age seemed to have little relationship to reading success. The study was repeated with 1,000 children from schools in several midwestern states, and not much difference was found here between the visual perception scores of the high and low groups. Spache's⁴¹ suggestion that the instruction in phonics be delayed until 6 1/2 and 7 years, that the child be prepared first by acquiring a sight vocabulary of 50-100 words, and that auditory and visual acuity be developed first is a reasonable one. Based as it is on experimental findings, it takes care of the situation in many sections of the country where children are admitted to the first grade at the chronological age of five years and six months. This means that many of the children are immature and not ready for the complex

⁴⁰ Mary James Harrington, Sister and Donald D. Durrell, "Mental Maturity Versus Perception Abilities in Primary Reading", Journal of Educational Psychology, Vol. 46, No. 6, October 1955, p. 375-380.

⁴¹ George Spache, "A Phonics Manual for Primary and Remedial Teachers", Elementary English Review, Vol. 16, No. 4, April 1939, p. 147-149.

task of learning to read. The first five months is a unique opportunity for both the teacher and the individual child. The teacher, realizing that she lays the cornerstone of the child's educational structure, needs time to appraise his adjustment to the new environmental constellation, his experiential background, his physical, mental, and psychological development, and especially his ability to handle language since reading is a language process.^{42,43}

The emotional attitude which the child develops toward reading in this early pre-reading period is a very important factor in determining the success in learning to read. The child learns best when he is interested. A variety of rich experiences, such as getting acquainted with the school building, the principal's office, the neighboring fire department building, the policeman at the street intersection he crosses, the dairy, the many books and pictures, stories told and discussed furnish the background for the enrichment of language through a meaningful vocabulary. These enriching experiences, when recorded by the teacher for the pupils from their dictation following a discussion, stimulate the desire to be able to decode independently the symbols the teacher

⁴² Paul McKee, The Teaching of Reading in the Elementary School, New York, Houghton Mifflin, 1948, p. 142-234.

⁴³ Selma E. Herr, "Uses and Abuses of the Readiness Concept", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, p. 82-83, New York, Scholastic Magazines, 1957.

used to help them remember what they said about the experiences they had. It is in the skillful handling of children's "Experience Records", that the teacher helps the children realize the four qualities of words, namely, their meaning, form structure and sound.^{44,45,46}

The reading readiness plans outlined in teacher's manuals and the suggested testing programs and observation check lists seem to indicate that the nation-wide practice favors pre-reading experiences as an essential preliminary step to learning to read and phonics.

Under the question of time, another important aspect of word-attack through phonics begs consideration. Should phonics be taught as a separate system supplementing the basic reading program, or should it be taught as a built-in phase of the reading plan, or should instruction in phonics be incidental, that is, taught as need arises? Current practice among educators who are concerned with the teaching of reading frowns upon incidental teaching of phonics depending on the need of the child. Phonics is a skill which implies

⁴⁴ Margaret G. McKim, "Laying the Foundation for Meaningful Reading", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, New York, Scholastic Magazines, p. 85-87.

⁴⁵ Fred J. Schonell, The Psychology of Teaching Reading, Toronto, Clarke, Irwin, 1945, p. 11-43.

⁴⁶ Eleanor M. Johnson, "Pre-Phonic Training: Basis of Success in Reading", The Reading Teacher, Vol. 9, No. 2, December 1955, p. 69-72.

knowing and being able to apply the knowledge when needed. Cordts⁴⁷ points out that unless the teacher is willing to give the children enough experience in attacking new words and identifying known parts in new words, it is better not to teach phonics at all. Any skill calls for intelligent and persistent practice. It cannot be left to incidental teaching.

The practice of incidental teaching of phonics is not widely spread as a recent tri-state survey⁴⁸ seems to indicate. Of the 150 teachers, who returned the questionnaire, only 6% reported that they introduce phonetic drill incidentally only.

The review of research on the problem of teaching phonics as a separate system or as a part of the reading program into which phonics was incorporated reveals that as early as 1924 Gates⁴⁹ conducted one experiment at the first grade level in the Horace Mann School at Columbia University and another in the New York Public schools. The purpose of his experiment was to learn the effect of fifteen minute daily practice in phonics as compared with fifteen minutes of daily reading using what he called the intrinsic method.

⁴⁷ Anna D. Cordts, "What About Phonics?" Your Reading Problems, Darien, Connecticut, Educational Publishing Corporation, 1947, p. 20, 75.

⁴⁸ Barbara A. Purcell, "Methods of Teaching Reading - A Report on a Tri-State Survey", Elementary School Journal, Vol. 58, No. 8, May 1958, p. 449-453.

⁴⁹ Arthur I. Gates, "Studies of Phonetic Training in Beginning Reading", Journal of Educational Psychology, Vol. 18, No. 4, April 1927, p. 217-226.

The two groups were equated on the basis of intelligence, knowledge of the alphabet, and certain types of word recognition. Both groups were given fifteen minute practice daily for six months. At the close of this period they were given sixteen final tests. Gates concluded from the results of the tests that phonetic training was wasteful since word analysis skills may be secured by new devices.

The intrinsic method Gates used consisted of two types of materials. A series of exercises was prepared so as to stimulate thinking. Another series was arranged so as to stress understanding and to demand accurate reading of words and phrases. These exercises emphasized words with similar patterns or configurations and words with similar sounds. No phonetic practice was given, but generalizations were developed by leading the children to note likenesses and differences in words. The present-day intrinsic approach to teaching word-attack skills may be traced to this early experiment.

Garrison and Heard⁵⁰ investigated the effectiveness of the intrinsic method of word-attack comparing it with the phonic method. Two classrooms making up the experimental group were given daily drills in phonics for fifteen minutes, while two control classrooms were exposed daily for the same amount of time to the intrinsic method similar to the one

⁵⁰ S. V. Garrison and Minnie T. Heard, "An Experimental Study of the Value of Phonetics", Peabody Journal of Education, Vol. 9, No. 1, July 1931, p. 9-14.

used earlier by Gates. The experiment extended over two years, and the children were tested at the end of each year. The results favored the phonic group in the ability to recognize words and in learning to spell, but the children using the intrinsic method made smoother and better oral readers.

In 1938, Gates and Russell⁵¹ conducted a study with three groups of children. Each of the groups received a different amount of phonics. One group received the smallest amount. The second group received a moderate amount of intrinsic phonics, and a third group was given a large amount of the usual type of phonics taught conventionally.

The reported difference was not highly reliable, but the group receiving a moderate amount of intrinsic phonics exceeded the other two groups in word recognition and comprehension. Bright children seemed to be helped more by phonics than the dull children. The children who were taught by the intrinsic method read more smoothly.

The Forty-Eighth Yearbook Committee⁵² cautions teachers not to use phonics alone but in conjunction with context and

⁵¹ Arthur I. Gates and David H. Russell, "Types of Materials, Vocabulary Burden, Word Analysis, and Other Factors in Beginning Reading", Elementary School Journal, Vol. 39, No. 1, September 1938, p. 27-35, No. 2, October 1938, p. 119-128.

⁵² National Society for the Study of Education, Forty-Eighth Yearbook Part II - Reading in the Elementary School, Chicago, University Press, 1949, p. 180.

visual clues. The Committee views with alarm the revival of mechanistic and overanalytic techniques of phonetic analysis.

McDowell⁵³ alarmed at the return of a program of phonics which demands thorough training and development of phonics before the child begins to read, made a study involving ten parochial schools in the Diocese of Pittsburgh. Five schools in the experimental group used the phonic method which he described as consisting in the development of the skill of pronouncing letters, then syllables and then words and finally sentences. The control group followed the diocesan program in which phonics was used in a subsidiary fashion, but as a part of the basic reading program.

One hundred forty-two fourth grade pupils who had been exposed to the phonics method in the primary grades, and a like number of pupils who had used the intrinsic method from the beginning of the first grade were tested with the Iowa Silent Reading Test. The control group following the intrinsic program, reports McDowell, read faster, understood words better, and comprehended paragraphs better than the phonics group.

⁵³ John McDowell, "A Report on the Phonetic Method of Teaching Children to Read", The Catholic Educational Review, Vol. 51, No. 8, October 1953, p. 506-519.

Although there seems to be sufficient scientific evidence to support the theory of intrinsic method of teaching word-attack in reading, actual practice suggests that teachers find it necessary to supplement the basic program of teaching this skill. Brownell⁵⁴ in an attempt to determine the current practices in the area of teaching phonics submitted a check list to the primary teachers in thirteen states and twenty-six school systems. He received 627 returns, 198 of which were from the first grade teachers. The study of the detailed survey instrument revealed that rural teachers grade for grade emphasized phonics more than did the city teachers. With regard to phonetic plan, ninety-three teachers of the first grade indicated that they follow well-defined practices which however could hardly be called a system. With regard to scheduling time for the teaching of phonics, fifty-seven teachers stated that they set aside a period apart from reading for such instruction; forty-four had separate periods occasionally; forty-six gave training incidentally, and others made no provision for it. The study also seemed to indicate that the amount of phonetic emphasis seemed to agree closely with supervisory policies. Which

⁵⁴ William A. Brownell, "Current Practices with Respect to Phonetic Analysis in the Primary Grades", Elementary School Journal, Vol. 42, No. 3, November 1941, p. 195-206.

observation seems to be supported by Cordts⁵⁵ who in discussing phonics states that to safeguard the child against making reading an exercise in word calling most supervisors suggest that phonics be taught meaningfully apart from reading. Purcell,⁵⁶ in her tri-state report referred to above, found that more than half of teachers surveyed stated that they held separate periods for phonics daily, at least frequently, and over one-fourth checked "always" or "usually".

Wheeler,⁵⁷ in answering the question - Should phonics be taught during the reading period? - replies that if phonics is taught as one of the word recognition techniques, it should be taught as a part of the reading period. If, however, phonics is taught as a subject within itself, then it should be taught in a separate period.

It has been seen that the literature reporting studies attempting to determine the mental age at which a child is capable of profiting from instruction in phonics is agreed that the child in order to profit from such instruction should have a mental age between six and a half and seven years. It has also been seen that studies on placement of phonics favor

⁵⁵ Anna D. Cordts, "What About Phonics?" Your Reading Problems, p. 20, 75.

⁵⁶ Barbara A. Purcell, "Methods of Teaching Reading - A Report on a Tri-state Survey", Elementary School Journal, Vol. 58, No. 6, May 1958, p. 449-453.

⁵⁷ Arville Wheeler, Teacher's Question-and-Answer Book, New London, Conn., Croft, 1955, p. 19.

the intrinsic program in which phonics is an integral part of the materials which the children are reading. However, surveys of classroom practice reviewed above reveal that fairly large percentage of primary teachers supplement the regular reading instruction with a separate period in phonics.

5. Methods of Teaching Phonics.

The studies reviewed thus far were concerned with determining the role of phonics, their effectiveness in independent word-attack, age at which the child can benefit from instruction in phonics and the integration of phonics in the basic program. There remain the problems of method used in presenting phonics and the content of phonics program.

Literature yields conflicting evidence on the effectiveness of the methods used currently, the synthetic and the analytic methods. Practice seems to favor the analytic method, but there is no research to support it as being superior to the synthetic method. Witty and Kopel reflect this observation.

. . . Moreover no single phonic method has been established as definitely superior; and experimental studies are singularly unconvincing because workers have failed to control important factors such as varying degree and kind of motive in pupils and the disparate abilities of teachers.⁵⁸

⁵⁸ Paul Witty and David Kopel, "The Place of Phonetics in a Reading Program", Educational Administration and Supervision, Vol. 23, No. 5, May 1937, p. 325.

And, Durrell as late as 1955 speaks of the problem as still unsolved. Among some still unanswered questions, he includes the problem of the synthetic method.

Should we "wait until a sight vocabulary of 75 words is established" before beginning word analysis? Or should we teach the sounds of letters and combinations of them before teaching reading?⁵⁹

The widely used analytical approach consists in analyzing known words learned by sight into the constituent elements which in turn the child uses to unlock new words. The analytical method is an inductive process. Artley observes that the proponents of this method hold that it is based on sound theory of learning. They find support in the principle:

Learning proceeds most effectively and tends to be most permanent when the learner is provided with the opportunity of perceiving meaningful relationships among the elements of the goal toward which he is working.⁶⁰

Artley proceeds to point out that in the case of word-attack the "elements of the goal" are the phonic and visual elements of the word.

⁵⁹ Donald D. Durrell, "Some 'Musts' in Reading Research", The National Elementary Principal, Vol. 35, No. 1, September 1955, p. 18.

⁶⁰ A. Sterl Artley, "How and When Word-Attack Skill Should Be Taught", Better Readers for Our Times, edited by William S. Gray and Nancy Larriek, International Reading Association Conference Proceedings, Vol. 1, New York, Scholastic Magazines, 1956, p. 75-78.

Further, learning to read efficiently according to the proponents of the analytical method depends upon the child's associating meaning with words in the first contact with them.

The advocates of the synthetic method contend that they give the learner control over words he meets enabling him to comprehend better what he reads. The synthetic method is an isolated approach to the teaching of phonics. Instruction begins with recognition of the alphabet, learning the sounds of the letters and later their blends into larger units. It is a deductive method of teaching phonics.

Bear⁶¹ in his experimental study in which he compared the analytical approach with the synthetic method found that the group exposed to the synthetic method achieved much higher scores after one year of instruction. The differences he found rejected the null hypothesis on the Gates and the Metropolitan tests at the 5% level of confidence and on the Ear for Sounds Test at the 1% level of confidence.

Bear concluded from his experiment that synthetic method of instruction in phonics can be used successfully parallel to the basic reading program as a valuable supplement for developing word-attack skills through phonics.

⁶¹ David Eli Bear, A Comparison of a Synthetic with an Analytic Method of Teaching Phonics in First Grade, Doctor of Education dissertation, Washington University, 1958.

The linguist takes, as has been already noted, a firm stand in the matter of instruction in beginning reading. He believes that instruction will be improved when it is based on the understanding of the structure of the spoken language and the relation between speech sounds and orthography. English language is alphabetic and what complicates it is that twenty-six letters of the alphabet do not represent all the speech sounds of the language. If our system of writing were perfectly alphabetical as is Spanish, Bohemian, or Finnish, the child would have no difficulty in learning to read because of the one-to-one relation between the spoken and written symbols of the language.^{62,63}

Soffietti⁶⁴ raises the question whether or not the concept of reading can be developed in English by the purely alphabetic or phonemic approach and answers the question positively. However, he adds, because the English spelling system is so highly imperfect and arbitrary, beginning instruction in reading would have to consist of two phases. In phase one, the general concept of alphabetical reading

⁶² L. Bloomfield, "Linguistics and Reading", Elementary English Review, Vol. 19, No. 4, April 1942, p. 125-130; No. 5, May 1942, p. 183-186.

⁶³ Thurston Womack, "Is English a Phonetic Language?" Elementary English, Vol. 34, No. 6, October 1957, p. 386-388.

⁶⁴ James P. Soffietti, "Why Children Fail to Read: A Linguistic Analysis", Harvard Educational Review, Vol. 25, No. 2, Spring, 1955, p. 79.

would have to be given, and in phase two, the ability and fluency to read and write would have to be developed. This view reflects Bloomfield's rationale behind his Children's Reader.

. . . in order to read alphabetic writing one must have an ingrained habit of producing the sounds of one's language when one sees written marks which conventionally represent the phonemes.⁶⁵

Wohleber⁶⁶ put the linguist's concept of instruction in beginning reading to a test by experimenting with the New Approach to Reading⁶⁷ which corresponds to the Bloomfield's approach though not in sequence of content. At the first grade level, during the first semester, the children were exposed to the alphabet and the alphabetic concept of reading. After the children were able to make spontaneous association of a phoneme with a given letter, they were led to generalize from the common elements in words acquired as sight vocabulary. During the second semester, the children were introduced to reading in the conventional manner used in the school system. In addition to the regular reading periods,

⁶⁵ Leonard Bloomfield, Children's Reader, an unpublished manuscript, 1939, p. 15.

⁶⁶ Louise M. Wohleber, A Study of the Effects of a Systematic Program of Phonetic Training in Reading Instruction, Ed.D. thesis, University of Pittsburgh, 1953.

⁶⁷ Carroll F. Deady, "New Approach to Reading", The Reading Problem Met and Solved, Detroit Parochial Schools, 1948, 20 p.

the children received supplementary training in word-attack for twenty minutes daily. This supplementary instruction was continued through grade two and three.

The control group followed the plan used in the system which had an integrated problem of phonics.

From the experimental data collected, Wohleber concluded that the experimental group, exposed to the alphabet and alphabetic concept of reading before being formally introduced to reading as it is conventionally taught, made significantly greater gains than the corresponding control group. Comparison between the mean gains in general reading ability by the experimental group over the control group showed 3 months for the first grade, 8 months for the second grade, and 9 months for the third grade. The difference between the mean gains in general reading ability favored the control group with a critical ratio of 3.48 in grade one, 6.4 in grade two, and 5.5 in grade three. The reporter failed to indicate the level of confidence of the respective critical ratios.

Wohleber, in making inferences from her study, corroborates the views of linguists. Beginning reading, she observes, implies getting meaning out of a mass of very similar looking small marks on a page. The child's ability to interpret these depends upon separate skills, such as: the habit of responding with the correct phonemes to the visual symbols:

spontaneity in recognition of the letters that make up words, and coordination between letters and sounds they represent.

While there are studies that investigated and found that normal pre-school child at five knows all or at least most of the capital letters and can underline certain letters on request⁶⁸ and that well guided mastery of letter forms and the sounds they represent is closely related to reading success at the beginner's level,⁶⁹ the alphabetic principle as the basis for initial instruction is severely criticized by some reading experts.

It is on the score of the alphabetic principle as the basis for initial instruction in reading that Gray denounces Bloomfield's approach as it is described in his essay entitled Linguistic and Reading.⁷⁰ The critical review of this essay had devastating effects on the possible acceptance of the linguist's concept of reading instruction since it was given considerable space in the critic's widely circulated

68 Francis Lig and Louis Bates Ames, "Developmental Trends in Reading Behaviour", Journal of Genetic Psychology, Vol. 76, No. 2, June 1950, p. 201.

69 Frank Wilson and Cecile W. Fleming, "Letter Consciousness of Beginners in Reading", Journal of Genetic Psychology, Vol. 53, Second Half, December 1938, p. 273-285.

70 L. Bloomfield, "Linguistics and Reading", Elementary English Review, Vol. 19, No. 4, April 1942, p. 125-130; No. 5, May 1942, p. 183-186.

book On Their Own in Reading.⁷¹ The major difference between his view of word-attack and that of Bloomfield seems to be, observes Carroll,⁷² that Gray wishes the child to master phonetic word analysis skills by the analytic method and inductively by learning words as wholes while Bloomfield is willing to present some bare facts about the phonemics of the language deductively in the earliest reading lessons. Carroll, interpreting the linguist's view in question disagree with Gray who alleges that the linguist denounces learning of words as wholes in initial steps in learning to read. Actually, what Bloomfield criticizes in the whole word analytical method presently in vogue in many systems is that every word is learned as an arbitrary unit. In order to read a new word, a child must learn the new word characters; he must, therefore, memorize the letters which make up this new word-character, but these letters are arbitrarily presented without any connection with the phonemes of the word.⁷³

Elwell⁷⁴ views the whole word method for beginning reading as nonsensical as it would be to teach the Morse

⁷¹ William S. Gray, On Their Own in Reading, New York, Scott, Foresman, 1948, p. 29-32.

⁷² John B. Carroll, The Study of Language, Cambridge, Harvard University Press, 1953, p. 149.

⁷³ L. Bloomfield, Children's Reader, an unpublished manuscript, 1939, p. 22-26.

⁷⁴ G. Elwell, "Reading: The Alphabet and Phonics", The Catholic Educator, Vol. 22, No. 9, May 1952, p. 477-480.

code on a whole word basis. In the long run the method proves inefficient, besides it poses a difficulty to the child which one can best understand in trying out on himself the experiment illustrated by McKee.⁷⁵ The underlying psychology of the word method is partly Gestalt and partly the pragmatic, bond-psychology of the Dewey-Thorndike school. The underlying assumption in this theory, pursues Elwell, is that a word is not merely a collection of letters, but that it has recognizable characteristics of its own. Words, it is held, are recognized by their oneness, their total configuration. The child learns to recognize whole words, that is, the letters. This method, Elwell points out, is opposed to teaching and its complement, learning, by composition and division or method whereby the details, the letters are learned first.

Examining the foundation of the whole word and whole sentence method of teaching beginning reading, Bernardine⁷⁶ takes issue with the following statement which Harris makes in support of the method, defending it as psychologically sound.

⁷⁵ Paul McKee, The Teaching of Reading, New York, Houghton Mifflin, 1948, p. 24-38.

⁷⁶ Brother Bernardine, "Reading: Modern Methods and Thomistic Psychology", The Catholic Educator, Vol. 23, No. 8,

The principle of starting with larger units or wholes is in accord with sound psychological principles. Young children are not very analytical in their perceptions. They respond to the most obvious characteristics of the perceived object. To a baby learning to walk, any animal with four legs may be "doggy" and any person wearing trousers may be "daddy". Differences between one person and another are responded to without any clear awareness of what the distinguishing features are. Only gradually do children become aware of details as such. The earlier, primitive form of response is to the unanalyzed whole: perception of details and of the whole to the parts comes later.⁷⁷

Perception which Harris calls "the primitive form of response", points out Bernardine, is but a step in the learning process. Brennan⁷⁸ says "that percepts stimulate the operations of other internal senses - imagination, memory, and cogitative power". Percepts are not the be-all and end-all of the learning process. Bernardine warns that it is a fallacy to equate perception with learning.

The position of Elwell and Bernardine is reflected in Wegener's⁷⁹ concept of "organic" theory of teaching reading. Wegener holds that the theories in question contain partial truths. Organically both of the approaches, the alphabetic and phonics and the meaningful approach when combined complement one another and form a sound theory.

⁷⁷ Albert Harris, How to Increase Reading Ability, New York, Longmans, Green, 1950, p. 67.

⁷⁸ Robert E. Brennan, Thomistic Psychology, Macmillan, 1946, p. 182.

⁷⁹ F. Wegener, "The 'Organic' Theory of the Teaching of Reading", Education, Vol. 78, No. 8, April 1958, p. 499-503.

Thus, the analysis of words consisting in knowing the essential letters, and syllables, and sounds is a requisite part of learning to read. Building whole words, phrases, and sentences is synthesis. As the child progresses, structural analysis of words, aspects of thought processes, developed as objectives and function of reading, constitute the logical phase of learning. These form the basis of analytical reading.

Wegener sees no conflict between the alphabetic, phonic and the meaningful approach when they are viewed organically. The step by step alphabetic presentation develops habits and mind sets of an analytical type essential to learning. The whole word and sentence method provides the psychological culture within which the functional aspects of reading are cultivated. Although viewed as different parts of the entire learning process, they are complementary.

Learning to read, says Wegener, is both atomistic and organic; it involves analysis of component parts or letters, and the organic grasp of whole words in meaningful sequences in actual reading.

The linguist is in full accord with the findings of research in relation to individual differences, the newer approach to phonics, the age at which the child can benefit from introduction to word-attack skills, learning theories

showing that learning and meaning go hand in hand. Smith⁸⁰ pleads for a rapport between the linguist, psychologist, and educator, and Carroll⁸¹ speculates that Bloomfield's approach seasoned with refinements contributed by psychologists and educational theorists may have considerable merit.

6. The Content of Phonics Program.

Just as there is no conclusive evidence as to the superiority of one method over another, so there is great disparity in the lists of phonetic elements compiled by experts. Examination of literature on the subject reveals many systems proposed by recognized specialists in the field. Every writer basis his system on his theory of word-attack. Thus professional publications on the teaching of reading by Gray,⁸² McKee,⁸³ Russell,⁸⁴ Hester,⁸⁵ and numerous other

⁸⁰ H. L. Smith, Linguistic Science and the Teaching of English, Cambridge, Harvard University Press, 1956, p. 6, 60.

⁸¹ John B. Carroll, The Study of Language, Cambridge, Harvard University Press, 1953, p. 149.

⁸² William S. Gray, On Their Own in Reading, New York, Scott, Foresman, 1948, p. 126-227.

⁸³ Paul McKee, The Teaching of Reading, New York, Houghton Mifflin, 1948, p. 254-255.

⁸⁴ David H. Russell, Children Learn to Read, New York, Ginn, 1949, p. 217-219.

⁸⁵ Kathleen B. Hester, Teaching Every Child to Read, New York, Harper, 1955, p. 149-161.

reading program writers synthesize the findings of investigators who attempted to arrive at scientifically drawn up lists of phonetic elements. Causey⁸⁶ reviews various systems of phonics on the educational market and concludes that the nature and amount of phonic instruction to be given in teaching word-attack skill is debatable. Educators and teachers favoring any position and system find enough justification for their preference in current literature.

⁸⁶ Oscar S. Causey, The Reading Teacher's Reader, New York, Ronald, 1958, p. 201-203.

Summary.

The foregoing review of literature established, first, the difference between the views on the nature of reading held by the specialist in reading and that held by the linguist. The former defines reading in terms of purposes; the latter sees reading first, as a decoding process, and only after the words are decoded as "getting meaning from the printed page".

In the second and third sections respectively, the status of word recognition, specifically that of word-attack skills among the several techniques, was examined, and it was seen that the A-B-C and the phonics methods have a century's old history of development.

The fourth section reviewed the effectiveness of phonics as word-attack skill. Research although limited in scope and much of it poorly controlled offered considerable evidence that phonics instruction is effective under scientifically improved conditions, in modified amounts, and when it is taught in meaningful context.

In the fifth section, it was learned that research established the mental age of 6 1/2 to 7 years as one at which the child can benefit from instruction in phonics as word-attack skill, and that the period during which the children are arriving at the necessary maturity be used to

develop auditory and visual acuity and rich experiencing which will find expression in oral language.

It was also seen that while research indicates that an intrinsic or integrated program of phonics is most effective and as a result is strongly recommended in basal reading programs written by reading specialists, actual practice, self-initiated or imposed by school supervisors, testifies to a wide use of phonics independently of the reading program, that is, in a supplementary manner.

The question of approach was studied in section six. No evidence from research was found to support either the synthetic or analytic method in teaching phonics. Some educators reason support for the analytic method from the Gestalt theory of learning. There are others who philosophize about the fallacy of the whole word approach on the ground that the whole word method is based on false assumptions of the nature of learning. It was also seen that the "organismic" philosophy of teaching reading sees the synthetic or alphabetic approach, analytic and the whole word and whole sentence approach as complementary, each having an important place in the totality of learning to read.

Survey of the rather scanty literature by linguists on the subject of reading has shown the linguist as following with interest and approval the improvement in reading instruction resulting from research in the classroom, and as

an articulate scientist who claims that he has a contribution to make to the art of teaching reading at the beginner's level.

Lastly, it was seen that there is a great disparity in the content of phonetic elements prepared by the writers in the field of reading. Since the linguist accepts the findings of research and the resulting improvements in teaching word-attack, and since several systems of phonics recognize the primacy of the alphabet in beginning reading, the investigator concluded that the difference that exists in the Bloomfield program as compared with a currently used phonics program lies in the content and sequence of phonemic elements. There is no research available to show that the content of the Bloomfield program was tested under controlled conditions. Therefore, the problem evolved for this study was to test the effectiveness of the Bloomfield plan by comparing its results with the results obtained from the use of one of the several popular systems of phonics. The problem was formulated on the hypotheses (1) that there is no significant difference in the results obtained from the application of Bloomfield's content as outlined in his manuscript and the results secured from the use of Phonics We Use,⁸⁷

⁸⁷ Mary Meighen, M. Pratt, and M. Halvorsen, Phonics We Use, Chicago, Lyons and Carnahan, 1957.

and (2) that the Bloomfield approach is not equally effective for children who by virtue of their Readiness Status comprised each of the three groups or levels in each classroom.

CHAPTER II

THE EXPERIMENTAL PROCEDURES

The purpose of this study has been to determine experimentally the relative effectiveness of the content and sequence of phonemes outlined by Bloomfield¹ in his plan by comparing them with the content and sequence of the phonetic elements established by the authors of Phonics We Use.²

The chapter presents an account of the following: selection and description of the sample; orientation of the principals and teachers; description of the tools of measurement, and the indication of the experimental design and of the statistical treatment employed.

1. Sample Selection and Description.

To launch this experiment which involved many children and some departure from the conventional plan of instruction in reading, the necessary permission of the Superintendent of the Chicago Archdiocesan School system and of the Director of Reading was obtained and the cooperation and the good will of the Community Reading Consultant, the school principals, and the teachers were solicited.

1 Leonard Bloomfield, Children's Reader, 1939, an unpublished manuscript, 205 p.

2 Mary Meighen, et al., Phonics We Use, Chicago, Lyons and Carnahan, 1957.

A total of 1,064 first-grade pupils enrolled for the school term 1958-1959 in eleven parochial schools in the Chicago area was selected. Two essential factors played an important part in the selection of these schools, namely, the presence of parallel grades in the building and the willingness of the principals and the teachers to participate in the experiment.

To avoid any kind of unintentional bias in selecting schools, assigning of treatments and teachers, and designating subjects for levels of testing the Table of Random Numbers³ was used.

Eleven schools were selected at random from a list of twenty available schools meeting the necessary conditions. These schools were considered fairly representative of the school system since they were subject to the same organizational, administrative, supervisory, and instructional plan. Their representativeness was further increased by their being scattered throughout the Chicago area and by the fact that each school neighborhood reflected markedly similar socio-economical, environmental, and cultural patterns.

A further important step in the setting up of the experiment was the randomization of the classes and teachers in each building with regard to methods assignments.

³ E. F. Lindquist, Statistical Analysis in Educational Research, Boston, Houghton Mifflin, 1940, p. 262-264.

Since no admission test was administered to the first graders, there was no systematic assignment of children to either of the first two grades in each building. The method of dividing the children into two classes was that of chance order. The sample, therefore, was intact since all the first grade children of these schools were included in the experiment.

In September 1958, during the second week of school, the Metropolitan Readiness Test - Form R,⁴ described later in this chapter, was administered to the pupils in the eleven schools. The results of this test together with the observation of the teachers^{5,6,7} who used a Check List⁸ (Appendix A), supplied by the investigator, furnished the basis for establishing "levels" or groups for instruction in word-attack skills by either treatment.

The pupils who scored "superior"/"high normal" on the total reading readiness tests constituted the first group,

⁴ World Book, Metropolitan Readiness Test, New York, World Book, 1949.

⁵ Paul McKee, The Teaching of Reading, Boston, Houghton Mifflin, 1948, p. 181-184.

⁶ Metropolitan Readiness Test, Directions for Administration and Key for Scoring, Chicago, World Book, 1949, p. 29.

⁷ Neville Bremer, "Do Readiness Tests Predict Success in Reading?" Elementary School Journal, Vol. 59, No. 4, January 1959, p. 224.

⁸ Check list reproduced with the permission of Ginn and Company.

although occasionally a pupil who scored an "average" was included when the teacher's observation warranted such inclusion. These groups, after six to seven weeks of enrichment, were introduced to the respective programs to which they were randomly assigned.

Other pupils whose performance on the Readiness Tests revealed that they would be a poor risk in beginning formal work in reading instruction were exposed to a program which was planned to meet their needs as determined by the analysis of their test performance and teacher observation. As soon as the teachers felt that these children attained the necessary development for attacking school work, specifically instruction in reading, they were introduced to formal work in word-attack skills.

The reading-readiness status obtained on the Metro-politan Readiness Test - Form R is described in Table I. Mental ages obtained on the Kuhlmann-Anderson Intelligence - Form A are shown in Table II.

Table I.-

Reading-Readiness of Three Groups of Pupils (N:660) Entering First Grades in Chicago in September 1958, expressed in Means Obtained on Metropolitan Readiness Test, Form R.

Schools N:11	Classes N:22	Reading Categories		
		I	II	III
1	Experimental	62.0	56.9	52.5
	Control	62.9	55.8	45.4
2	Experimental	59.1	53.7	46.4
	Control	57.1	48.8	43.2
3	Experimental	62.8	52.3	48.6
	Control	62.0	56.0	53.7
4	Experimental	61.1	54.3	51.2
	Control	62.2	57.5	50.2
5	Experimental	60.0	57.5	50.1
	Control	61.1	53.4	45.5
6	Experimental	61.5	55.5	53.9
	Control	60.2	56.1	51.9
7	Experimental	57.6	53.4	51.1
	Control	59.5	54.7	48.5
8	Experimental	57.7	56.1	48.2
	Control	56.7	53.5	48.0
9	Experimental	59.6	56.6	51.3
	Control	59.2	56.8	48.7
10	Experimental	56.0	52.5	49.1
	Control	59.0	57.9	52.1
11	Experimental	59.5	53.8	50.6
	Control	58.6	53.9	46.9

Table II.-

Mean Mental Ages Determined in January 1959 of Experimental and Control Classes on the Kuhlmann-Anderson Intelligence Test, Form A.

Schools N:11	Classes N:22	Reading Readiness Groups ^a		
		I	II	III
1	Experimental	7-7	7-6	7-4
	Control	7-7	7-6	6-10
2	Experimental	7-5	7-5	6-11
	Control	7-6	7-3	6-11
3	Experimental	7-2	7-0	6-11
	Control	7-1	6-8	6-6
4	Experimental	7-7	7-3	6-9
	Control	7-6	7-3	7-2
5	Experimental	7-5	7-5	7-0
	Control	7-7	7-6	6-9
6	Experimental	7-4	7-2	7-3
	Control	7-6	7-6	7-3
7	Experimental	7-4	7-1	7-0
	Control	7-7	7-3	7-1
8	Experimental	7-3	7-4	7-3
	Control	7-4	7-2	6-11
9	Experimental	7-5	7-3	7-1
	Control	7-7	7-6	7-0
10	Experimental	7-3	7-5	7-1
	Control	7-6	7-5	7-1
11	Experimental	7-2	7-1	6-9
	Control	7-8	7-5	6-11

^a Formed in September 1958 on the basis of the Metropolitan Readiness Test - Form R.

2. Principal and Teacher Orientation.

It was deemed essential to plan some orientation program for the teachers and principals participating in the investigation. With that end in view, a two-week Study Conference was held before the opening of school in September 1958. The orientation covered the following:

- (1) acquaintance of the principals and teachers with the nature and purpose of the research problem about to be launched;
- (2) need of objectivity and precision on the part of all participants for securing reliable results;
- (3) re-examination of the concept of reading readiness in terms of classroom practice;
- (4) study of the tools of measurement and of the handbooks of directions for administering, scoring tests and interpreting results;
- (5) demonstrations of the methods to be used in building up readiness and of the method of presenting word-attack skills to be used by both groups, and
- (6) study of the content and sequence as outlined by each of the programs compared in this study.

During the first week of the Study Conference, the eleven principals, the twenty-two teachers, and the Community Reading Consultant under the leadership of the investigator concerned themselves with the study of the parts of the outline sketching the goals of the Conference; during the second week, the morning sessions were still held in common, but the afternoon meetings were held in two sections. One section

guided by the Community Reading Consultant studied the program to be followed by the control group while the second section studied the experimental program with the investigator.

Three aspects in the program of the Study Conference were emphasized as essential to the success of the study under consideration, if this investigation was to make any contribution to the teaching of reading to beginners. These were: the place of the classroom teacher in educational research, the need of objectivity and freedom from bias, and the need of rigid adherence to the programs that fell to their lot.

Since the readiness of the child, in terms of physical, emotional, social, and psychological development, plays an important part in the success in beginning reading, the participants in the Conference were led by the investigator in the re-examination of the concept of "readiness". Condensed reference material⁹ and a Check List for Readiness¹⁰ (Appendix A) furnished through the courtesy of publishers facilitated the study by helping to keep the discussion within the framework of essentials.

Adhering to the salient points in the concept of "readiness", the teachers made a thorough study of the topics,

⁹ Reading Workshop, Are Your Children Ready to Read? New York, American Book, 1948, 26 p.

¹⁰ David H. Russell, et al., "Check List for Reading Readiness", Manual for Teaching the Reading Readiness Program, Chicago, Ginn, 1948, p. 40-42.

"How can one tell that the children are ready to begin instruction in reading?" and "What can one do about helping children to get ready to read?"

With respect to the first question relating to the initial testing for appraising objectively the child's readiness, a problem inherent in the present-day overcrowded classroom conditions was raised for discussion. A suggestion was offered for consideration by the group that the teachers notify the parents of the date and time when they were to bring their child for testing. Such arrangement would allow the teachers to schedule testing in small groups of 10-15 children at a time, and to complete the task in a day or a day and a half depending on the size of the class. The testing, then, would be done under optimum conditions.

The principals decided that, while the parents waited for the children, they would speak to the two groups of parents about the meaning of the concept of readiness and the experiment to be conducted in their schools. They felt that it was necessary to enlist the understanding and interest of the parents in the experiment if there was to be no interference of home coaching by some "over the counter" recommended method.

To insure maximum uniformity in all procedures, demonstrations were held in method of developing the necessary maturity for reading, in arousing interest, and the actual introduction to word-attack.

After these precautions were taken to control as nearly as possible all variables that might bear some influence on achievement in reading, the teachers were randomly assigned to the experimental and control group and accordingly met in two separate sections to study the systems they would follow. The experimental group studied the content and sequence of the Bloomfield plan,¹¹ the experimental variable, while the control group studied the Phonics We Use¹² program.

In a special session held with the principals and the Reading Consultant, plans were evolved for the supervision of the program during the special period assigned for this experimental study. The principals felt that planned visits would encourage and sustain the teachers in their determination to be as objective as possible, since they would feel that the principal had a personal knowledge of the day-to-day progress they were making.

The Reading Consultant also planned a schedule of visits which she submitted to the principals, together with an assurance of willingness to serve on call in addition to the visits scheduled.

¹¹ Leonard Bloomfield, Children's Reader, p. 194.

¹² Mary Meighen, et al., Phonics We Use, Chicago, Lyons and Carnahan, 1957.

The following testing schedule was planned by the investigator with the assistance of the principals.

September 9-11, 1958 Metropolitan Readiness Test-Form R¹³
(Administered by the teachers
to small groups of children)

January 26-30, 1959 Kuhlmann-Anderson Intelligence Test
- Form A (Sixth Edition)¹⁴
(Administered by the principals)

March 12-13, 1959 Stanford Primary Reading Achievement
Test - Form M¹⁵
(Administered by the principals)

To keep the purpose of the investigation in the foreground, and to check upon the progress of the two groups, two meetings were held during the course of the experiment. The first meeting was held on November 1, 1958, in two sections, each in a different school with the principal of the school presiding. The time of the sectional meetings was staggered so as to enable the Reading Consultant to attend both meetings.

The investigator met both groups in December. At that meeting as at the earlier meeting, doubts pertaining to the experiment were clarified, report on the progress of the experiment was checked and an exchange of experiences and observations formed the content of the meeting.

¹³ World Book, Metropolitan Readiness Test, Chicago, World Book, 1953.

¹⁴ Kuhlmann-Anderson, Kuhlmann-Anderson Intelligence Test - Form A, Baltimore, Personnel Press, 1952.

¹⁵ World Book, Standard Primary Reading Achievement Test - Form M, 195 .

3. Selection of Tests.

The selection of tests for the twofold purpose of setting up groups for reading instruction within the classroom, and for evaluating the results of the study, was given careful consideration.

First-grade children vary greatly in their readiness to begin learning to read. In the typical school population, 25 to 30 per cent of the first-grade pupils lack the maturity and the background of common experiences necessary for a reasonable probability of success in the regular reading program.¹⁶ Reading clinicians in their diagnosis of retardation in reading find the lack of readiness among the contributing factors. Thus, Durrell, a specialist in corrective reading, in 1956, made the following statement:

Much research has been done in relation to the background abilities of children who learn to read readily as compared to those who have difficulty. It is now clear that differences in success in beginning reading depend upon a variety of pre-reading abilities that the child acquires through specific experiences at home or in school. A bright child who lacks certain of these abilities will not learn to read; a dull child who has them will make progress.¹⁷

¹⁶ California Test Bureau, Diagnosis in the Reading Program, Educational Bulletin No. 10, Los Angeles, California Test Bureau, p. 6.

¹⁷ Donald D. Durrell, Improving Reading Instruction, New York, World Book, 1956, p. 41.

Durrell is not alone in expressing this viewpoint. Authorities in the field of reading like Betts,¹⁸ Gates,¹⁹ and McKee²⁰ stress the need of determining readiness for learning to read.

Numerous readiness tests were developed for measuring these pre-reading abilities. The readiness test selected for use in this study was the Metropolitan Readiness Test. The authors of the test do not claim that the readiness tests have much value in predicting what a child will achieve academically. Rather, they suggest that the tests are designed to assist the teacher in part by assessing and diagnosing deficiencies in the reading readiness of the individual pupils.

. . . Among the chief factors that contribute to readiness for beginning schoolwork are linguistic attainments and aptitudes, visual and auditory perception, muscular coordination and motor skills, number knowledge, and the ability to follow directions and to pay attention in group work. How far advanced the school beginner will be in these skills depends upon many factors, such as his intelligence, his home background, his health and physical condition, his degree of emotional maturity, and his social adjustment and general background of experience. Lack of readiness in any of the above traits may account for a pupil's failure to learn in the first grade.

¹⁸ Emmett A. Betts, Foundations of Reading Instruction, New York, American Book, 1954, p. 103-247.

¹⁹ Arthur I. Gates, The Improvement of Reading, New York, Macmillan, 1947, p. 23-26.

²⁰ Paul McKee, The Teaching of Reading, Boston, Houghton Mifflin, 1948, p. 142-143.

The Metropolitan Readiness Tests were devised to measure traits and achievements of school beginners that contribute to their readiness for first-grade instruction. Designed for testing pupils at the end of the kindergarten year or the beginning of the first grade, these tests are contained in a sixteen-page booklet, comprising six separate tests: Word Meaning, Sentences, Information, Matching, Numbers, and Copying. . . .²¹

Of the tests that are enumerated above the first four are designed to appraise the child's readiness for instruction in beginning reading. Although the entire test was administered to the children, for the purpose of this study the data yielded by the first four tests was used.

The Metropolitan Readiness Tests are published in two forms, Form R and S. The reliability of the tests is based on six determinations, "based upon groups from 90 to 273 (average N 195) beginning-first-grade pupils."²² The coefficients were determined on scores between two alternate forms, administered a few days apart. The reliability coefficient of Test 1-4 is .828.²³

The validity of the Metropolitan Readiness Tests was found by correlating the readiness scores with first-grade achievement. The authors show correlations between Metropolitan Readiness Tests given in September 1948, with the

²¹ Metropolitan Readiness Tests, Directions for Administering and Key for Scoring, Chicago, World Book, 1949, p. 1.

²² Ibid., p. 29.

²³ Ibid., p. 30.

(average) Reading score and Number score of the Primary I Battery of the Metropolitan Achievement Tests given in February 1949. The correlation between Tests 1-4 and the average reading score on the achievement test was .475. The above validity study was made on 487 cases. In the groups involved, a group of forty-four pupils who rated "Superior" in the Reading Readiness Tests, in average Reading rated above the national norm of 1.5 on the Metropolitan Achievement Tests in Reading. Of the ninety cases that were rated on the Readiness Test "High Normal", all but five were above the norm in average reading. Of forty-six pupils rated "Poor Risk", twenty-two were below the national norm in average Reading.

Eric Gardner, in discussing this test, stated that "from the technical point of view, the Metropolitan Readiness Tests²⁴ are among the superior readiness tests now available,²⁵ and Bremer²⁶ who made a study of these tests and their value in predicting success in Reading found that the tests predict success in reading to a very limited extent, but in the hands of competent teachers, these tests are far more useful for

²⁴ World Book, Metropolitan Readiness Tests, New York, World Book, 1953.

²⁵ Oscar K. Buros, The Fourth Mental Measurements Yearbook, Highland Park, New Jersey, Gryphon Press, 1953, p. 570-571.

²⁶ M. Bremer, "Do Readiness Tests Predict Success in Reading", Elementary School Journal, Vol. 59, No. 4, January 1959, p. 222-224.

planning instruction to overcome deficiencies in readiness and establishing groups for instruction in reading.

The teachers do not rely solely upon the information yielded by Readiness tests in grouping children for instruction in reading. It is a known fact among classroom teachers that a child may score an "Average" and even a "High Normal" rating on the Readiness Test, and yet not be able to cope with the strain that the complex task of learning to read brings upon him. To implement the information secured from the test, skilful teachers make their own systematic observations for setting up groups within the classroom for instructional purposes.^{27,28,29}

To insure uniformity in observation of the children's needs, the teachers of both groups were furnished with a Check List³⁰ which would guide them in making careful observations in areas involving the child's physical, psychological, and social development. (See Appendix A.)

27 Paul McKee, The Teaching of Reading, Boston, Houghton Mifflin, 1948, p. 181-184.

28 Metropolitan Readiness Test, Directions for Administration and Key for Scoring, Chicago, World Book, 1949, p. 29.

29 Neville Bremer, "Do Readiness Tests Predict Success in Reading?" Elementary School Journal, Vol. 59, No. 4, January 1959, p. 224.

30 David Russell, et al., "Check List for Reading Readiness", Manual for Teaching the Reading Readiness Program, Chicago, Ginn, 1948, p. 40-42.

The Kuhlmann-Anderson Group Intelligence Test - Form A³¹ was administered at the end of the first semester, as it has been in the past several years in the Chicago area parochial schools. The results, however, were not intended to be considered as scientific data, but merely as a possible check of readiness in terms of mental ages.

The Kuhlmann-Anderson tests measure the general mental development that is needed to succeed in school studies. The authors claim that the tests are constructed and refined so as "to discriminate between small increments of mental development".³²

In addition to the discriminative capacity of the tests, the authors state that the tests have validity for comparing scores of successful pupils with the scores of less successful ones. Garrett³³ observes that while the tests are given under timed conditions, they seem to be primarily measures of power.

In reviewing the reliability of the test, Garrett³⁴ reports that it is high in terms of the split-half coefficient

³¹ F. Kuhlmann and R. G. Anderson, Kuhlmann-Anderson Intelligence Tests - Form A, Sixth Edition, Baltimore, Personnel Press, 1952.

³² -----, Kuhlmann-Anderson Tests Handbook, Baltimore, Personnel Press, 1952, p. 9.

³³ Oscar K. Buros, The Fourth Mental Measurements Yearbook, Highland Park, New Jersey, Gryphon Press, 1953, p. 404-405.

³⁴ Oscar K. Buros, Ibid., p. 404-405.

and the standard error of score (5.5 points of I.Q.) compares favorably with the same error of measurement in the 1937 Stanford-Binet.

Among several researches verifying the reliability of the Kuhlmann-Anderson Tests, Manwiller's study is noteworthy since it included testing at the first grade level. Manwiller³⁵ in testing in Grades 1, 4, 6, and 8 with four different group tests of mental ability, found the Kuhlmann-Anderson I.Q.'s to have a median variation of three points. I.Q.'s obtained with the other three tests had median variations ranging from four to seven points.

The norms for the final forms were established on a sampling of over 45,000 cases representing all school-age children in public, private, parochial, urban and rural schools in Minnesota, New Jersey, and Pennsylvania communities.

The Stanford Reading Achievement Test included in the Primary Battery - Form M³⁶ was used as the measure of the criterion variable.

In the booklet of Directions for Administering the Tests,³⁷ the authors state that the test is designated for

³⁵ Quoted in Kuhlmann-Anderson Test Handbook, p. 23.

³⁶ Truman L. Kelley, et al., Stanford Achievement Test, Primary Battery - Form M, Chicago, World Book, 1953.

³⁷ -----, Directions for Administering Test, Chicago, World Book, 1953, p. 1.

use at the end of Grade 1, in Grade 2, and in the first half of Grade 3.

Hobson³⁸ reviewing the test battery observes that the authorship of the tests is unparalleled, and that the standardization is adequate.

On the question of validity of the reading test, Hobson³⁹ makes a point that it is difficult to appraise the validity of the test at the first grade level in the broad sense of the term, that is, in terms of mental reactions expected as the ultimate goal of reading. Reading achievement in the first grade represents very rudimentary beginning in the realization of that ultimate goal. He asserts, however, that the test can be used to measure adequately several skills whose development is begun in Grade 1. In most systems, he says, the degree to which a child has acquired these skills determines his grade placement.

The authors of the tests caution that "the suitability of this battery for use at the end of the first grade, in any given school system, depends on the instructional program that prevails". In systems in which little formal instruction in reading is offered in the first grade, it may

³⁸ Oscar K. Buros, The Fourth Mental Measurements Yearbook, Highland, New Jersey, Gryphon Press, 1953, p. 592-593.

³⁹ Ibid., p. 592-593.

be necessary to postpone achievement testing until the second grade.⁴⁰ For purposes of this study, the investigator felt that these tests were a valid criterion of measurement since the parochial schools in the system, including the schools participating in this experiment, offer a formal program of instruction in reading as soon as the child is ready for it.

An adequate interpretation of test scores calls for knowledge of their reliability. The following reliability data as given in the Directions for Administering⁴¹ presents split-half reliability coefficients for Grade 1 for each component of the reading test. The reliability data is based on random samples of 235 pupils drawn from 34 school systems in the standardization population. The reliability coefficient for paragraph meaning is given as .856 and for word meaning as .754.

For a group test at the first grade level, reliability coefficients indicate that the tests are expected to yield results of satisfactory dependability and consistency although the authors point out that pupils in a single school system would probably exhibit somewhat less variability in the tests than the samples of pupils drawn from the various school systems.

⁴⁰ Truman L. Kelley, et al., Directions for Administering Tests, Chicago, World Book, 1953, p. 3.

⁴¹ Ibid., p. 12.

4. The Experimental Design and Statistical Treatment.

The experimental design used in this investigation was the simple "treatment-by-levels" described by Lindquist.⁴² The two systems compared constituted the treatments - the group that used the Bloomfield plan⁴³ was the experimental group, and the group that followed the Phonics We Use⁴⁴ program made up the control group. Both of these plans are described in the following chapter. The levels were the three groups in each first grade involved in the experiment. These were described above on pages 43-44.

The design indicated was selected because (1) it insured greater precision; (2) the "main" effect of the treatment (methods) furnished the test of the null hypothesis postulated for this study in Chapter I, namely, that there was no significant difference in the results obtained from the use of the Bloomfield plan when compared with the results obtained from the use of Phonics We Use, and (3) the design provided for measuring of the "simple" effect of the treatments (methods) at the different levels enabling the investigator to study the effects of the treatments and differences among them (interaction).

⁴² E. F. Lindquist, Design and Analysis of Experiments in Psychology and Education, Boston, Houghton Mifflin, 1953, p. 13-16.

⁴³ Leonard Bloomfield, Children's Reader, 1939.

⁴⁴ Mary Meighen, Marjorie Pratt, and Mabel Halversen, Phonics We Use, Chicago, Lyons and Carnahan, 1957.

The above design is based on certain assumptions which the investigator felt were satisfied in this experiment. Thus, the control and the experimental groups were considered representative of the population of the school system inasmuch as they were subject to the same organizational, administrative, supervisory, and instructional policies. The neighborhoods in which these schools were located represented a fairly similar socio-economical and cultural pattern.

Since it was necessary to use intact classes and since no admission test was administered to the first-grade entrants, the assumption that the sample was randomized was satisfied by dividing the children in each building into two classes by using the method of chance order assignment. The treatments and teachers were also randomly assigned.

Concerned about satisfying as well as possible all the assumptions underlying the "treatments-by-levels" design, the investigator further randomized the pupils within the groups by selecting ten pupils from each group or level since the groups varied in number. This facilitated statistical operation and increased representativeness.

Considering the data gathered, the investigator applied what seemed the most effective statistical technique, namely, the analysis of variance and the corresponding F-Test of significance. This statistical tool permitted in one operation to make a comparison of the two approaches to teaching

word-attack skills tested in this experiment at the beginner's level in three categories of readiness status. A further advantage of this statistical procedure was that it enabled the control of two sources of variation - those arising within the groups and the variances between the groups - making it possible to determine more precisely the probable difference in the effectiveness of the two treatments. This technique also lent itself to testing the interaction effect of these two approaches upon the pupils within each of the three categories or groups.

The validity of the F-Test of the null hypothesis used in this study requires that the criterion variable be distributed normally and that there be a homogeneity of variance. The differences in the total mean reading readiness among the eleven schools do not vary appreciably from class to class as Table I has shown. Further examination of Table I reveals that the three groups of both the experimental and control classes in each school did not show any marked differences other than those that might be due to chance. Homogeneity of variance in educational experiments is practically never satisfied, according to Lindquist⁴⁵ who, discussing the Norton study, suggests that unless the

⁴⁵ E. F. Lindquist, Design and Analysis of Experiments in Psychology and Education, Boston, Houghton Mifflin, 1953, p. 77, 83.

departure from normality is so extreme that it can be seen simply by mere inspection of the data, the variation from normality will probably have no appreciable effect on the validity of the F-Test. On the basis of this authority, the investigator deemed it unnecessary to present data on normality or homogeneity of variance of the readiness status, the assumption being that the two groups were drawn from the same population, and that there were no observable differences that could invalidate the results of the experiment.

For purposes of analysis of the data resulting from the experiment, it was necessary to determine which variance estimate was the correct one to use as the error term. Inasmuch as the design of the study corresponded to a "mixed model" described by Dayhaw⁴⁶ since it involved sampling of all schools and two fixed constants (methods and levels) the model ABC was used as one appropriate for making deductions.

The one per cent level of significance was used for the rejection of the hypothesis involved.

⁴⁶ Lawrence T. Dayhaw, Manuel de Statistique, Ottawa, Editions de l'Université, 1958, p. 461.

Summary.

In this chapter an attempt was made to present the experimental procedures followed in this study. In the first section, the sample was described, and a fairly detailed account was given of the randomization of schools, classes, teachers, and pupils involved in the experiment.

The necessary orientation of the principals and teachers was discussed in section two. It was shown that the various points of information and teaching procedures essential to an approach as unbiased as humanly possible to this investigation were studied daily for two weeks in a Study Conference, and that, at that time, the teachers and classrooms were randomly assigned to treatments.

In the third section were reviewed the tests used in this experiment. The validity and reliability of these tests were reviewed. It was noted that the Kuhlmann-Anderson Intelligence Test, normally administered in the second semester, was used as an added check on the readiness status in terms of mental ages, but that it would not be considered as a part of the scientific data.

In the final section, the experimental design and the statistical technique used in this experiment were indicated and discussed.

There remains the need of explaining the method of presentation of the word-attack skill as used by both groups and the description of the experimental variable, the content and sequence in the two approaches. These will be treated in the following chapter.

CHAPTER III

METHOD AND MATERIALS

Since the major purpose of the study reported was to consider the effectiveness of the content and sequence of the linguist's plan for teaching word-attack skills by comparing it with one of the many currently used plans, it was necessary for the purpose of the experimental design used in this investigation to bring about a rapprochement of methods and techniques, resulting from recognized research in the classroom and the content and sequence outlined by Bloomfield.¹

The necessary rapport established in the study was justifiable for several reasons. First, as was shown in Chapter I, the linguist pleads with the pedagogue that he try the linguistic approach to word-attack using the experimentally tested methods and techniques in his repertoire to test the claims the linguist makes for his approach.² Bloomfield³ and Smith⁴ attribute the waste in labor and time involved in teaching reading and the consequent poor results not to lack

1 Leonard Bloomfield, Children's Reader, 1939, an unpublished manuscript, 205 p.

2 Henry L. Smith, Linguistic Science and the Teaching of English, Cambridge, Harvard University Press, 1956, p. 6, 60.

3 Leonard Bloomfield, Ibid., p. 1.

4 Henry Lee Smith, Ibid., p. 7-11.

of pedagogical methods but to the lack of knowledge among the majority of teachers of the linguistic processes that are involved in the act of reading. Secondly, there is no indication in Bloomfield's manuscript as to the "how" of teaching reading at the earliest level other than the negative criticisms of phonics, whole-word method, and the ideational way of teaching reading.

Again, as was shown in Chapter I, his criticism of phonics is based on the same ground that the reading theorists object when they describe the then used method of teaching phonics as the "hiss-and-groan" method. Bloomfield, too, criticized the practice of isolating the speech-sounds, practice quite prevalent in his day but taboo today in the average classroom.

His criticism of word method applies to the teaching of reading by having the child learn every word as an arbitrary unit. It does not apply to the teaching by sight of a nucleus of functional words known among the teachers as "sight vocabulary". On the contrary, he wants the child to recognize and associate a phoneme or phonemes (speech-sounds) with corresponding letter or letters within the whole word. It was on the score of isolating sounds that he objected vigorously. The "sight vocabulary", learned by perceiving words as wholes, becomes a frame of reference in learning to

associate the letters of the alphabet with corresponding speech-sounds which the letters in a given word represent.⁵

Bloomfield's criticism of the ideational, sentence, or global method is summarized thus:

. . . The marks on the page offer only sounds of speech and words, not things or ideas.

So much can be said, however; the child who fails to grasp the content of what he reads is usually poor reader also in the mechanical sense. He fails to grasp the content because he is too busy with letters. The cure for this is not to be sought in ideational methods, but in better training at the stage where the letters are being associated with sounds.⁶

Carroll,⁷ Smith,⁸ and Soffietti⁹ concur with Bloomfield. They reflect Bloomfield's position that there can be no thought of cultural and psychological goals in reading at the beginner's level until he masters at least the rudimentary mechanical aspects of reading.

To present a comprehensive picture within the background of which the two approaches to word-attack skills were studied for their effectiveness, a brief description

⁵ John B. Carroll, The Study of Language, Cambridge, Harvard University Press, 1953, p. 149.

⁶ Leonard Bloomfield, Children's Reader, 1939, an unpublished manuscript, p. 30.

⁷ John B. Carroll, Ibid., p. 149-150.

⁸ Henry L. Smith, Ibid., p. 6, 60.

⁹ James P. Soffietti, "Why Children Fail to Read; A Linguistic Analysis", Harvard Educational Review, Vol. 25, No. 2, 1955, p. 63-84.

of the following is presented: the basic reading program followed by both the control and the experimental groups; procedures in developing "phonic-readiness" for word-attack skills for both the experimental and control groups; method of presentation common to both groups; and a detailed description of the experimental variable, the content and sequence of the phonetic and phonemic elements in the respective treatments or plans.

1. The Basal Reading Program.

The basal materials, followed in the experiment by both the experimental and control group, were those adopted for use in the parochial schools in the Chicago area, namely, the Faith and Freedom series.¹⁰ The teaching method recommended in the teacher's manuals is one conventionally outlined in typical series of readers and usually taught in teacher-preparation courses.

The series starts with a reading-readiness workbook. The first reading material consists of three thin paper-covered pre-primers. Next, the child is given his first hard-covered book, the primer, and finally, he is given the first reader.

¹⁰ Commission on American Citizenship, Faith and Freedom Readers, New York, Ginn, 1951.

As so many other series, the Faith and Freedom series structures the reading lesson along the following main steps:

- (1) Introduction, consisting in building up of mental set and motivation;
- (2) Building of vocabulary leads; word study and phonics;
- (3) Directed silent reading;
- (4) Oral reading;
- (5) Related activities, and
- (6) Enrichment activities.¹¹

For purposes of this study, both groups eliminated the intrinsic program of phonics integrated into the reading plan of the basal series described. Instead, both groups devoted a separate exercise to word-attack skills outside of the regular reading period. As has been previously indicated, the control classes used Phonics We Use¹² and the experimental classes used the Bloomfield plan.¹³

The supplementary period devoted to the teaching of the mechanics of word-attack consisted of twenty-minute lessons given daily to those children whose readiness for reading instruction was determined by a standardized instrument of readiness appraisal complemented by teacher observation. Both of these tools were discussed in the preceding chapter.

¹¹ Paul McKee, The Teaching of Reading in the Elementary School, Boston, Houghton Mifflin, 1948, p. 260-261.

¹² Mary Meighen, Marjorie Pratt, and Mabel Halvorsen, Phonics We Use, Chicago, Lyons and Carnahan, 1957.

¹³ Leonard Bloomfield, Children's Reader, 1939, an unpublished manuscript.

2. Readiness for Mechanics of Word-Attack Skills.

Young children arrive at the necessary stage of readiness or maturity for a given task on their own time-table. There is always a small group of children in the average first grade that shows maturity and mental development above the chronological age, but there are also those who are slower than the average group, who, due either to lack of enriching experiences in their home environment or due to their own pace of development, have to be assisted in attaining the necessary readiness for the important task of learning to read. Consequently, the teacher in the first grade usually finds children falling into three and even four categories, the bright, the average, the slow and the very slow as determined by the tools of measurement and the teacher's observation. The timing for instruction of the respective groups is determined upon the realization of the children's potentialities through the medium of stimulating classroom experiences provided in the readiness period.

Within the general readiness development period, the pre-primer phonics program of the basal reading series was followed by both groups. The necessary "sight" vocabulary was developed through experiences meaningful to the children and "Experience Records" discussed in Chapter I. Further pre-reading training preparatory to the study of phonics and phonemes as a means of word-attack was furnished. In both groups,

the children were given exercises in visual and verbal recognition of the letters of the alphabet; in auditory discrimination, especially auditory recognition of rhyming elements in words; and visual discrimination of word and letter forms.

When this phase of the basal readiness program was accomplished, the children were introduced to the word-attack plan to which they were randomly assigned. Both of these plans, as it will be shown later in the treatment of "Content and Sequence", provide for a phonic and phonemic readiness and continuously emphasize practice in associating letters with their corresponding sounds or phonemes within words through the medium of pictures and meaningful situations.

3. The Method of Presentation.

The method underlying the presentation of phonetic elements in *Phonics We Use*¹⁴ closely reflects what Bloomfield¹⁵ calls the "analogic process". By this process the pupils, through practicing on graphs having a uniform value represented in key words established as a frame of reference, acquire the habit of responding to the sight of letters by

¹⁴ Mary Meighen, et al., Phonics We Use, Chicago, Lyons and Carnahan, 1957.

¹⁵ Leonard Bloomfield, Language, New York, Holt, 1933, p. 501.

associating the correct phonemes with them. Carroll¹⁶ sheds further light on the meaning of Bloomfield's "analogic process" when he underscores that the stable norm is the phoneme instead of the alphabetic letter, therefore, the learning situation in the early stages should be so planned "that the perception of a printed word is conditioned to a previously established phonetic habit".

The following is an illustration of the method used by both groups in presenting word-attack skills. It is quoted from a Service Bulletin¹⁷ furnished to the users of the Phonics We Use¹⁸ program.

Today, when a child reads the sentence, "Jack has a duck for a pet", and he does not recognize the word "pet", he is assisted as follows:

Teacher: Like what "word" does it begin?

Child: "Pig", (or piano or pumpkin). (Using the frame of reference that has been established.)

Teacher: What is the new word?

Child: "Pet".

Some children will be able to pronounce the new word with no other aid than recognition of the initial consonant plus the contextual clue. Others will not. For them the teacher needs to continue:

¹⁶ John B. Carroll, The Study of Language, Cambridge, Harvard University Press, 1953, p. 147.

¹⁷ Educational Service Department, Service Bulletin, No. 92657, Chicago, Lyons and Carnahan, 1957.

¹⁸ Mary Meighen, et al., Phonics We Use, Chicago, Lyons and Carnahan, 1957.

Teacher: (Chooses a known similar word from child's sight vocabulary which is approximately 150 words at this time.) You know this word. What is it? (She writes "let", or "set", "met", "get".)

Child: Let. (Set, met, get.)

Teacher: (Writes "pet" below "let".) This word begins like "pig" and rhymes with "let". What is the word?

Child: Pet.

Naturally, the first time this is attempted, the responses may be slow or there may be none made. Responses become automatic with experience in other areas, so will they in a modern method of phonics.

A few children may need even more help than illustrated. For them, the teacher should continue:

Teacher: (After "let" has been pronounced, she erases the "l" and substitutes "p", changing "let" to "pet".) Watch me change "let" to the new word. What is the new word?

Child: Pet.

If the child cannot respond correctly, in a reasonable time, the word should be pronounced for him. If the child is educable, he will soon be able to respond correctly when guided in the above manner.

This method is a whole-word approach. It does not advocate drilling on arbitrary fragments of written words. Rather, it is a linguistically functional approach to the acquisition of the habit of spontaneous auditory-visual discrimination.

4. Content and Organization.

Convinced that instruction in reading can be improved only when it is founded on an understanding of the relation between speech and orthography, Bloomfield^{19,20} insists that the child should be taught to associate letter groups with previously established phonetic habits. To facilitate and promote the acquisition of spontaneous association between letters and phonemes, he divides his reading materials into what may be considered four stages. It becomes obvious on examining the four categories which he proposes that they represent the entire word-attack program to be spread over the first three or four years of the elementary school program.

The basic principles underlying the first stage as outlined by Bloomfield are that the individual letters dealt with have only one sound value, and that the making of correct associations becomes spontaneous.

His first stage provides for the mastery of each letter taught in only one phonetic value. The word "gem" is not to be included with words beginning with "g" which has

¹⁹ Leonard Bloomfield, Children's Reader, 1939, an unpublished manuscript, 205 p.

²⁰ -----, "Linguistics and Reading", Elementary English Review, Vol. 19, No. 4, April 1942, p. 125-130, and No. 5, May 1942, p. 183-186.

the value it has in "get", "got", or "gun"; for the same reason "cent" is not to be taught together with words like "eat", "can", and "cot". In this initial stage no words with silent letters (such as "knit", "gnat") should be introduced, nor words with double letters, either in the value of single sounds (as in "add", "bell") or in special values (as in "see", "too"). Words with combination of letters having special value (as "th" in them or "ea" in bean) and the letter "x" representing two phonemes are deferred to later stages.

Bloomfield, in keeping with the linguist's "differential meaning" operating in the structure of language in its written form, includes nonsense syllables such as "bam", "min", "nip", and the like. It is noted here parenthetically that the teachers using the program excluded nonsense syllables only to find some children playfully making up their own nonsense syllables.

The first reading material in Bloomfield's plan consists of two-letter and three-letter words in which the letters have the sound values assigned at the outset. Since the vowels are the letters which, later on, will present greatest difficulty, Bloomfield divides the first reading material into five groups according to the vowel letter.

In the second stage, Bloomfield takes up regular spellings in which double consonants and other digraphs appear

in consistent uses, e.g., "ll" as in "well", "th" as in "thin", "sh" as in "shin", "ch" as in "chin", "ee" as in "see", "ea" as in "bean", "oa" as in "road", "oo" as in "spoon". With the introduction of very few irregular words, such as "is" "was", and "the", he devised reading of reasonably varied content.

The third stage in his plan takes up words whose spellings may be called "semi-irregular", for example, the words "line", "shine", "while" and other monosyllabic words involving the long sounds of the vowels. At this stage also, two-syllable words, whose spelling is consistent with the other materials, are taken in: Winter, summer, butter, sister, (but not, for instance, father, mother, brother). A small group of the most common irregular words (pronouns, forms of the verb "be", "have", "do", and "go") is included for the sake of furnishing extended readings of connected text.

Consistent in his views on the approach to word-attack, Bloomfield relegates all irregularities in English orthography to the last stage in his plan. On arriving at this stage, the child has fixed by conditioning the elementary habit of responding with the correct phonemes to the letters in a given word. Now he is able to understand the rational presentation of the inconsistencies of the written English language and to acquire the skill of structural and semantic analysis of the English language within his level of development.

It should be recalled that the four stages just described represent the entire Bloomfield plan covering all of the primary grades possibly including the fourth grade in case of the slower children. The investigation reported was conducted at the first grade level. Obviously, only the earlier sections of Stage Two and the various sections of Stage One were covered respectively by pupils whose readiness status in September was appraised as "Superior", "High Normal", "Average", and "Low".

To the knowledge of the investigator, no teaching materials faithfully following and covering the entire Bloomfield plan have been published. In 1947, an A-B-C Book²¹ and a Workbook entitled Reading Is Fun²² were prepared for use, when the Bloomfield concept of approach to reading was tried in one of the parochial schools in Chicago. In 1953, the Archdiocese of Detroit²³ adapted the linguist's idea of teaching beginning reading and published a series of exercises and lesson plans worked out by a Committee of supervisors and teachers. This series at the first grade level presents the same material that Bloomfield includes in his First Stage and the early part of the Second Stage.

21 Sisters of St. Joseph, A-B-C Book, Hammond, Ind., Miller School Supplies, 1947, 112 p.

22 -----, Reading Is Fun: Workbook, Hammond, Ind., Miller School Supplies, 1947, 88 p.

23 Archdiocese of Detroit, Phonics Grade One, Detroit, Admiral Publications, 1953, 59 p.

The publications just indicated were used with the experimental group since they were the only materials available for the purpose.

The program Phonics We Use²⁴ followed by the control group is also a complete and widely used plan for teaching word-attack skill. Like Bloomfield, the authors divide the presentation of phonetic elements into stages designated as Books A, B, C, D, and E. Book A is a Readiness Book; Book B is planned for the first or second grade; Book C is indicated as material for teaching in the second or third grade; Book D is assigned to the third or fourth grade, and Book E allocates the materials outlined in the fourth, fifth and sixth grades.

The contents of each book is briefly enumerated below for comparison of the content and sequence in each of the two programs.

Book A of the series provides for experiences calculated to develop phonic readiness. The numerous lessons provide for the development of auditory discrimination through listening exercises; visual discrimination; and recognition of initial consonants through rhymes.

Book B for Grade one or two emphasizes the recognition of initial and final consonants in sentences that make use of alliteration; substitution of beginning consonants; also

²⁴ Mary Meighen, et al., Phonics We Use, Chicago, Lyons and Carnahan, 1957.

differentiation between initial and final position of consonants; use of contextual clues and variants such as the plural forms of nouns and verb endings "s", "ed", "ing".

Book C for Grades two or three reviews the initial consonants; presents consonant blends; introduces long and short vowels, consonant digraphs, vowel digraphs and diphthongs.

Book D for the third or fourth grade develops further the initial learnings about consonants, consonant blends and digraphs; furnishes more exercises on the formation of plurals; provides for the strengthening of the initial learnings about vowels and vowel digraphs; introduces vowels modified by "r", "l", and "w"; introduces three-letter blends, and begins work of structural analysis through the medium of suffixes, prefixes, and root words.

Book E, the final in the series, strengthens all previous learnings; develops generalizations about orthography heretofore not developed and places emphasis on structural analysis.

Analysis of the two systems at the first grade level reveals the following. Both systems provide for the development of Phonic-Readiness by developing auditory and visual acuity, and by underscoring the need of developing in children spontaneous recognition and association of letters of the alphabet with their corresponding sounds or phonemes in given words.

Bloomfield's plan provides for immediate presentation of consonants to which only one sound value is assigned in the initial and/or final position. Since the vowels cause the greatest difficulty, the consonants in both the initial and final positions are reviewed consistently and continuously in five sections grouped around the vowel letters.

The Phonics We Use plan, while it provides for the presentation of consonants in the initial and/or final position in the first grade, does not introduce the vowels. Vowels in this plan are introduced at the second or the third grade depending on the group of children or the school.

Summary.

In this chapter, the investigator attempted to justify the application of the modern methods of teaching word-attack through phonics to the linguist's content and sequence of teaching word-attack skills at the beginner's level. The justification was made on the following grounds. First, the linguist as a scientist, whose specialty is the study of language, feels that the findings of his science have a distinct contribution to make to the teaching of reading at the early level of instruction. He, however, admits that he does not possess the knowledge of sound educational methods to test the content and sequence he proposes. Secondly, it was necessary for the purpose of this study to reduce the problem to one experimental variable which was the content and sequence of phonemic elements in the two plans.

Since the two programs were tested within the background of the conventional reading plan followed by both groups, the basic reading program together with its pre-phonie readiness program was reviewed.

The method used by both groups was shown to be indorsed by the linguist and an illustration highlighting the method was quoted.

Finally, the content and sequence of the two programs was given in a condensed form and the difference in the two

approaches was designated on the first grade level only. The experimental data, its analysis and interpretation are presented in the next chapter.

CHAPTER IV

RESULTS OF THE EXPERIMENT

Which is the more effective in teaching reading to beginners, the Bloomfield plan? or the Phonics We Use program? The results obtained from our 660 children in 11 Chicago Parochial Schools may answer that question.

The variance of these results was analyzed under three headings: (1) In the Total or composite Reading scores, that is, a combination of two scores, namely, the paragraph meaning scores and the word meaning scores; (2) In Paragraph Meaning scores; and (3) In Word Meaning scores. Each analysis proceeds through three steps: (1) Tests for significance of double interactions; (2) Tests for main effects - methods and categories; and (3) t-tests for experimental group between categories.

1. Analysis of Data on Total Reading Scores.

The tests for significance of double interactions, using the error term $MxCxS$ (Methods x Categories x Schools) yielded no significant interactions.

Since the value of F for double interaction was not significant, a test was made for the main effects - Methods and Categories. For Methods, when the F is not significant, the appropriate error term to be used is the combination of

the SS of MxS and of the SS of MxCxS, in this case, $4.89 + 3.85$ divided by the combined degrees of freedom, $10 + 20$. The result of $(4.89 + 3.85) / (10 + 20)$ is .29 with 33 degrees of freedom. Since the F for Categories is not significant, the appropriate error term is the combination of the SS of CxS and the SS of MxCxS or $2.20 + 3.85$ divided by combined degrees of freedom, $20 + 20$. Then, $(2.20 + 3.85) / (20 + 20) = .15$ with 40 degrees of freedom.

Table III shows the difference between the Methods and Categories as follows: for Methods the F was found to be 5.4, insignificant at the 1% level of confidence, but significant at the 5% level; for Categories, test F of 112.5 was significant at the 1% level of confidence.

Since the value of F for Methods was found to be insignificant at the 1% level of confidence, the study of this principal effect was made independently within each of the categories. The SS for this F-test for the two methods was obtained at the level of each category respectively by adding the sums of squares of each group for both methods and dividing by the number within each. The degrees of freedom were those for Methods. The error term was the one used for the Methods in the case of principal effects.

Table III.-
Tests of Significance for the Main Effects on
Total Reading Scores.

Source of Variation	s ²		Error Term	F	F .05	F .01
M (Methods)	1.58	(1)	.29 (30) ^a	5.4	4.17	7.56
C (Categories)	16.895	(2)	.15 (40) ^b	112.5	3.23	5.18

^a Since the F for the double interactions was not significant, the formula for the error term is

$$\left(\frac{SS}{M \times S} + \frac{SS}{M \times C \times S} \right) / \left(\frac{df}{M \times S} + \frac{df}{M \times C \times S} \right)$$

^b Since the F for the double interactions was not significant, the formula for the error term is

$$\left(\frac{SS}{C \times S} + \frac{SS}{M \times C \times S} \right) / \left(\frac{df}{C \times S} + \frac{df}{M \times C \times S} \right)$$

As Table IV indicates, no significant difference at the 1% level of confidence was found for the two methods tested separately by the F-test within each of the three categories. There was a significant difference at the 5% level of confidence for Category I.

To determine whether there were any significant differences between Categories I, II, and III of the experimental group, a t-test was made. The formula used for the t-test was

$$\text{Significant Difference} \geq t (P = .01) \times \sigma_{\text{Diff.}}$$

The formula used for the $\sigma_{\text{Diff.}}$ was $\sigma_D = \sqrt{\frac{2\sigma^2}{n_r}}$. The σ^2 of this formula is the variance which serves as an error term in the F test for methods. The value $t (P = .01)$ is read in the Table of t for a number of degrees of freedom for that of the error term. In this case, it is 40 df which is equal to 2.704. Therefore, the significant difference $\geq 2.704 \times .0519$ or .14.

Table IV.-
Analysis of Variance for Two Methods Done Separately for
Each of the Three Categories.

Categories Considered	SS	df	Estimation of Variance	Error Term	F	F .05	F .01
I	1.66	1	1.66	.29	5.73	4.17	7.56
II	.09	1	.09	.29	----	4.17	7.56
III	.36	1	.36	.29	1.24	4.17	7.56

In Table V, the tests of the Total Reading achievement between the categories of the experimental group are given.

The mean differences between the categories for the experimental group are significant as determined by the *t* test.

In summary, then, the first analysis of variance in the Total or composite Reading scores obtained from the tests administered to the two groups shows that no significant difference was found at the 1% level of confidence when the means of the two groups were compared. However, a significant difference has been found between the categories of the experimental group.

Table V.-

Evaluation of the Difference Between Categories I, II and III
for the Experimental Group by the t-test where
 $\sigma_D = .0519$ and Smallest Sign. Diff. at $P = .01$ is 2.704.

Categories	Means Compared	Difference	Significant Difference
I - II	2.26 - 1.97	.29	Yes
I - III	2.26 - 1.76	.50	Yes
II - III	1.97 - 1.76	.21	Yes

2. Analysis of Data on Paragraph Meaning.

In testing for significance of double interactions, $MxCxS$ (Methods x Categories x Schools) was used as the error term. No significant interactions were found.

Since the value of F for the double interactions was not significant, a test was made for the main effects - Methods and Categories. For Methods, when the F is not significant, the appropriate error term to be used is the combination of the SS of MxS and the SS of $MxCxS$, in this case, $7.7 + 6.32$ divided by the combined degrees of freedom $10 + 20$. The result of $(7.7 + 6.32)/(10 + 20)$ is $.44$ with 30 degrees of freedom. Since the F for Categories is not significant, the appropriate error term is the combination of the SS of CxS and of the SS of $MxCxS$, or $4.34 + 6.32$ divided by combined degrees of freedom $20 + 20$. Then, $(4.34 + 6.32)/(20 + 20) = .27$ with 40 degrees of freedom.

Table VI shows no significant difference at the 1% level of confidence in Paragraph Meaning. For Categories the F of 82.1 was significant at the 1% level of confidence.

Table VI.-
Tests of Significance for the Main Effects on
Paragraph Meaning.

Source of Variation	s^2	Error Term	F	F .05	F .01	Signif. Diff.
M (Methods)	1.20 (1)	.44 (30) ^a	2.72	4.17	7.56	No
C (Categories)	22.16 (2)	.27 (40) ^b	82.1	3.23	5.18	Yes

a Since the F for the double interactions was not significant, the formula for the error term is

$$\left(\frac{SS}{MxS} + \frac{SS}{MxCxS} \right) / \left(\frac{df}{MxS} + \frac{df}{MxCxS} \right)$$

b Since the F for the double interactions was not significant, the formula for the error term is

$$\left(\frac{SS}{CxS} + \frac{SS}{MxCxS} \right) / \left(\frac{df}{CxS} + \frac{df}{MxCxS} \right)$$

Since the value of F for Methods was found to be insignificant at the 1% level of confidence, the study of the principal effect was made independently within each of the categories. The SS for this F-test for the two methods was obtained at the level of each category respectively by adding the sums of squares of each group for both methods and dividing by the number within each group. The degrees of freedom are those used for Methods in the case of principal effects.

As Table VII indicates, no significant difference in Paragraph Meaning was found at the 1% level of confidence for the two methods tested separately by the F-test within each of the three categories.

Table VII.-
Analysis of Variance for Two Methods Done Separately for
Each of the Categories in Paragraph Meaning.

Categories Considered	SS	df	Estimation of Variance	Error Term	F	F .05	F .01
I	2.10	1	2.10	.44 (30)	4.77	4.17	7.56
II	.71	1	.71	.44 (30)	1.61	4.17	7.56
III	.03	1	.03	.44 (30)	----	4.17	7.56

Since the value of F at the 1% level for the two methods done separately for each of the categories in Paragraph Meaning was found to be insignificant, it was determined to find out whether there were any significant differences between Categories I, II, and III of the experimental group. To do so a t -test was made. Results of the t -test on differences in the means of Paragraph Meaning scores for the experimental group are presented in Table VIII. The same formula was applied for the t -test which was used in the analysis of data represented in Table V. In this case the significant difference was $\geq 2.704 \times .07$ or .189.

When the analysis of the main effects in Paragraph Meaning was made, it was evident that there was no significant difference found at the 1% level of confidence when the means of the two groups were compared. Significant differences were found between the categories of the experimental group.

Table VIII.-

Evaluation of the Difference Between Categories I, II, III
for the Experimental Group by the t-test, where
 $\sigma_D = .07$ and the Smallest Sign. Diff. at $P = .01$ is 2.704.

Categories	Means Compared	Differences	Significant Differences
I - II	2.29 - 1.97	.32	Yes
I - III	2.29 - 1.74	.55	Yes
II - III	1.97 - 1.74	.23	Yes

3. Analysis of Data on Word Meaning.

To test the significance of double interactions MxCxS (Methods x Categories x Schools) was used as the error term. The test indicated no significant interactions.

Since the value of F for double interactions was not significant for Methods, a test was made for the main effects -- Methods and Categories. For Methods, when the F is not significant, the appropriate error term to be used is the combination of the SS of MxS and the SS of MxCxS, in this case, $3.35 + 2.61$ divided by the combined degrees of freedom, $10 + 20$. The result $(3.35 + 2.61) / (10 + 20)$ is .198 with 30 degrees of freedom.

Table IX shows the difference between Methods and Categories as follows: The F is not significant at the 1% level of confidence for Methods. There is a significant difference at the 1% level of confidence for Categories.

Table IX.-
Tests of Significance for the Main Effects on
Word Meaning Scores.

Source of Variation	s ²	Error Term	F	F .05	F .01
M (Methods)	.80 (1)	.198 (30) ^a	4.04	4.17	7.56
C (Categories)	12.29 (2)	CxS .78 (20)	15.75	3.49	5.85

^a Since the F for the double interactions was not significant, the formula for the error term is

$$\left(\frac{SS_{MxS} + SS_{MxCxS}}{df_{MxS} + df_{MxCxS}} \right)$$

Because the value of F for Methods was found to be insignificant at the 1% level of confidence, the study of the main effect was made independently within each of the categories. In Table X, the SS for this test for the two methods was obtained at the level of each category respectively by adding the sums of squares of each group for both methods and dividing by the number within the group. The degrees of freedom were those for the methods in the case of the principal effects. As Table X shows, there is no significant difference at the 1% level of confidence for any of the categories, but there is a difference at the 5% level of confidence for Category I.

Table X.-

Analysis of Variance for Two Methods Done Separately for
Each of the Three Categories.

Categories Considered	SS	df	Estimation of Variance	Error Term	F	F .05	F .01
I	1.00	1	1.00	.198 (30)	5.01	4.17	7.56
II	.03	1	.03	.198 (30)	----	4.17	7.56
III	.53	1	.53	.198 (30)	2.67	4.17	7.56

In order to find whether there were any significant differences between Categories I, II, and III of the experimental group a t-test was made. The data obtained from the t-test on the differences in the means of Word Meaning scores for Methods are presented in Table XI. The same formula was used for the t-test as was used in the analysis of data presented in Tables V and VIII. The smallest significant difference found was $\geq 2.704 \times .118$ or .319.

In summary, it may be said that when the methods are analyzed for their effect on Word Meaning, no significant differences are found at the 1% level of confidence. There is a significant difference at the 5% level of confidence. The analysis reveals a significant difference at the 1% level of confidence between Category I and III.

Table XI.-

Evaluation of the Difference Between Categories I, II, III,
for the Experimental Group by the t-test, where
 $\sigma_D = .118$ and the Smallest Sign. Diff. at $P = .01$ is 2.704.

Categories	Means Compared	Differences	Significant Differences
I - II	2.21 - 1.97	.24	No
I - III	2.21 - 1.77	.44	Yes
II - III	1.97 - 1.77	.20	No

Summary.

On the basis of the analysis made, no significant differences at the 1% level of confidence were found in the two approaches compared in relation to Total Reading, Paragraph Meaning, and Word Meaning. These findings were in the predicted direction of the null hypothesis of no significant differences in the main effect.

A significant difference at the 1% level of confidence was found for the experimental group among Categories I, II, and III. However, there were no significant differences between Categories I and II and II and III, hence the null hypothesis that the Bloomfield plan is not equally effective for children comprising the three instructional categories was rejected.

SUMMARY AND CONCLUSIONS

The purpose of this study was to test the relative effectiveness of the Bloomfield plan for teaching word-attack skills as compared with one of the conventionally used phonics programs.

The Bloomfield plan presents the content and sequence of phonemes in the order perceived by the linguistic scientist. The linguist views the letters of the alphabet and their corresponding phonemes as intrinsic to the nature of written communication which has to be decoded in reading. This decoding, the linguist emphasizes, is a necessary first step in the complex psychological activity involved in the reading process.

The limitations of the Bloomfield plan consist in the extrinsic fact that to date there are no materials available for the presentation of the linguistic approach to word-attack skills in a psychologically oriented framework integrated with the "reading for meaning" theory.

The Phonics We Use program with which the Bloomfield plan was compared is a popular program of teaching phonics. It provides ample exercises on the respective phonetic elements, and the presentation is functionally and psychologically oriented, articulating with the current theories of teaching reading. As in the Bloomfield plan, the phonetic elements are introduced analogically. However, in contrast with the

Bloomfield plan, Phonics We Use does not introduce the vowels until the second or third grade.

A study of linguist's views on the functioning of linguistics in such related disciplines as language arts indicated that the linguist is seeking a rapprochement between his views and that of the educational psychologist in the field of instruction in reading. This investigation made an attempt at the first grade level to effect such rapport between the two approaches.

The hypothesis postulated for this study was (1) that there were no significant differences in the results obtained from the application of Bloomfield's content and sequence as outlined in his manuscript and the results secured from the use of Phonics We Use program, and (2) that the Bloomfield approach is not equally effective for children comprising the three instructional categories established on the basis of readiness-status.

The experimental design set up for this study was the treatment-by-levels. The two programs for presenting the word-attack skills - the Bloomfield plan for the experimental group and the Phonics We Use for the control group - constituted the treatment. The three categories, Category I, II, and III, established on the basis of the children's measured readiness-status made up the three levels.

A total of 1,064 first grade children in eleven Parochial Schools in the Chicago area participated in this study. The eleven schools had parallel first grades making it possible to set up experimental and control groups in each building.

The Metropolitan Readiness Test, Form R was used to establish Categories I, II, and III for instructional purposes. From each category ten pupils were randomly selected. Thus, thirty pupils in every school represented each, the experimental and control group. This randomization reduced the number of experimental subjects to 660.

The experiment lasted twenty-three weeks. It was terminated with the administration of the Stanford Achievement Test - Primary Battery, Form M. The results of this test reported in terms of grade equivalents constituted the basis for testing the hypothesis.

The statistical technique of analysis of variance with its corresponding F test was used in testing the hypothesis. Four analyses were made: (1) on the Total Reading score; (2) on Paragraph Meaning; (3) on Word Meaning, and (4) on the effect of the experimental method for each of the three categories. The level of confidence was set at 1%.

The analysis of variance yielded the following. There were no significant differences found at the 1% level of confidence between the means of the experimental and control group

for (1) Total Reading; (2) Paragraph Meaning; and (3) for Word Meaning. These findings support the null hypothesis that there are no significant differences between the Bloomfield plan and Phonics We Use.

There was a significant difference at the 1% level of confidence found for Categories I, II, III of the experimental group compared successively for the Total Reading and Paragraph Meaning. In Word Meaning there was no significant difference found at the 1% level of confidence between Category I and II and between Category II and III. There was a significant difference at the 1% level of confidence between I and III. This significant difference between Category I and III is due mainly to the time element. The children of Category III, due to their lack of maturity, had to be exposed to a longer period of readiness, therefore they had just ten weeks of instruction in word-attack skills by the Bloomfield plan as compared with the children in Category I who were exposed to instruction for twenty weeks. On the basis of these findings the hypothesis that the Bloomfield approach is not equally effective for the three instructional categories is rejected.

The findings of this study seem to indicate that achievement in word-attack skills by either method is insignificant statistically at the first grade level; that the Bloomfield plan, in spite of the lack of well developed

exercises, paralleled the achievement of the Phonics We Use program; and that the Bloomfield plan is equally effective for the three instructional categories. The foregoing generalizations are applicable to the eleven schools randomly selected from the Catholic Parochial Schools found within the Chicago area.

Since word-attack skills are cumulatively developed, it appears that a full evaluation of the Bloomfield plan can be obtained only upon the termination of the program in the third or even the fourth grades.

Further, if the linguist's functional approach to word-attack in reading is to be accepted as a means contributing to the improvement of reading instruction, it is necessary that the linguist, the reading specialist, and the educational psychologist unite their efforts in cooperative research and experimentation for the purpose of preparing a program of reading instruction in which the linguist's concept of word-attack will be integrated in the present day "reading for meaning" theory.

BIBLIOGRAPHY

Agnew, Donald C., The Effect of Varied Amounts of Phonetic Training in Primary Reading, Duke University Research Studies in Education, No. 5, Durham, N.C., Duke University Press, 1939, viii-50 p.

The most elaborate study of the value and limitations of phonics reported in recent years.

Artley, Sterl A., "How and When Word-Attack Skill Should Be Taught", Better Readers for Our Times, International Reading Association Conference Proceedings, Vol. I, New York, Scholastic Magazines, 1956, p. 75-78.

Presents the learning theories underlying the synthetic and analytic methods of teaching phonics.

Bear, David Eli, A Comparison of a Synthetic with an Analytic Method of Teaching Phonics in First Grade, Doctor of Education Dissertation, Washington University, 1958, v-111 p.

Shows significant gains for the group taught by the synthetic method.

Bernardine, Brother, "Reading: Modern Methods and Thomistic Psychology", The Catholic Educator, Vol. 23, No. 8, April 1953, p. 373-376, 382.

Analyses modern methods of teaching reading in terms of Thomistic psychology of learning and finds them wanting.

Betts, Emmet A., Foundations of Reading Instruction, New York, American Book, 1954, xiii-757 p.

Presents the major problems of the elementary school teacher in relation to reading instructions with suggestions for solving them.

Bloomfield, Leonard, Language, New York, Henry Holt, 1933, ix-564 p.

A classic in the field of linguistics. The book is intended for the general reader and for the student who is entering upon linguistic work.

-----, Children's Reader, 281 p.

An unpublished manuscript. Contains the materials tested in the study.

Bloomfield, Leonard, "Linguistics and Reading", Elementary English Review, Vol. 19, No. 4, April 1942, p. 125-130, No. 5, May 1942, p. 183-186.

The author presents the main facts about reading known to the linguist and outlines his own plan of instruction in reading.

Bremer, Neville, "Do Readiness Tests Predict Success in Reading?", Elementary School Journal, Vol. 59, No. 4, January 1959, p. 222-224.

On the basis of an experiment concludes that the predictive value of readiness tests is insignificant.

Brennan, Robert E., Thomistic Psychology, New York, Macmillan, 1941, xxvi-401 p.

Unifies psychology by properly conceiving its subject matter and rightly orders its philosophical and scientific parts.

Brownell, William A., "Current Practices with Respect to Phonetic Analysis in the Primary Grades", Elementary School Journal, Vol. 42, No. 3, November 1941, p. 195-206.

A survey of practices in the teaching of phonics made in thirteen states covering twenty-six school systems.

Carroll, John B., The Study of Language, Cambridge, Harvard University Press, 1953, viii-289 p.

A survey embracing the totality of present-day inquiry into various phases of human communication as seen from the standpoint of modern linguistic science in America.

Causey, Oscar S., The Reading Teacher's Reader, New York, Ronald Press, 1958, xi-339 p.

An up-to-date collection of writings, reports, and articles which appeared in professional publications on reading methods and materials. No documentations and reference lists.

Cordts, Anna D., "What about Phonics?", Your Reading Problems, Darien, Connecticut, Educational Publishing Corporation, 1947, p. 20, 75.

Discusses practical classroom problems related to the teaching of phonics.

Deady, Carroll F., "New Approach", The Reading Problem Met and Solved, Detroit Parochial Schools, 1948, 20 p.

The approach discussed is an adaptation of the Bloomfield plan.

Dolch, E. W. and Maurine Bloomster, "Phonics Readiness", Elementary School Journal, Vol. 38, No. 3, November 1937, p. 201-203.

Concludes that a mental age of seven years is necessary for a child to benefit from instruction in phonics.

Durrell, Donald D., "Some 'Musts' in Reading Research", The National Elementary Principal, Vol. 35, No. 1, September 1955, p. 17-20.

Among the many problems suggested for research in relation to readiness is the question - should we teach the sounds of letters and the combinations of them before teaching reading?

Elwell, Clarence E., "Reading - the Alphabet and Phonics", Catholic Educator, Vol. 22, No. 9, May 1952, p. 477-480.

An argument for the teaching of reading by applying the alphabetic principle in the beginning stages of instruction.

Flesch, Rudolf, Why Johnny Can't Read - And What You Can Do About It, New York, Harper, 1955, ix-222 p.

Though full of extremely dogmatic and unfounded criticisms, it awakened the lethargic public and caused the educators to re-examine their methods of teaching reading.

Garrison, S. V. and Minnie T. Heard, "An Experimental Study of the Value of Phonetics", Peabody Journal of Education, Vol. 9, No. 1, July 1931, p. 9-14.

A comparative study of the effects of the supplementary and intrinsic methods of teaching phonics.

Gates, Arthur I., "Studies of Phonetic Training in Beginning Reading", Journal of Educational Psychology, Vol. 18, No. 4, April 1927, p. 217-226.

A comparative study of two methods of presenting phonics - the intrinsic and the supplementary methods.

-----, and David H. Russell, "Types of Materials, Vocabulary Burden, Word Analysis, and Other Factors in Beginning Reading", Elementary School Journal, Vol. 39, No. 1, September 1938, p. 27-35, No. 2, October 1938, p. 119-128.

An experiment conducted to determine the effectiveness of varying amounts of phonics upon reading achievement.

-----, The Improvement of Reading, New York, Macmillan, 1947, xix-657 p.

Outlines a program of diagnostic and remedial reading methods. Emphasizes the relation between reading disability and lack of training in phonics.

Gray, William S., "The Nature and Types of Reading", Thirty-Sixth Yearbook of the National Society of Education, Part I, Chicago University Press, 1937, p. 24-28.

An exposition of the nature and types of reading.

-----, On Their Own in Reading, New York, Scott, Foresman, 1948, xv-268 p.

Recognized as an outstanding book in presenting an effective program of word-attack skills for the elementary grades and the high school.

-----, "Laying the Foundation for Word Perception", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, New York, Scholastic Magazines, 1957, p. 83-85.

Advocates the training in all skills of word perception as soon as the children are ready for learning independent word-attack skills.

Harrington, Mary James and Donald D. Durrell, "Mental Maturity Versus Perception Abilities in Primary Reading", Journal of Educational Psychology, Vol. 46, No. 6, October 1955, p. 375-380.

Concludes that specific instruction in visual and auditory perception of word elements is essential to success in building reading vocabulary in primary grades.

Harris, Albert J., How to Increase Reading Ability, New York, Longmans, Green, 1940, xix-403 p.

Emphasizes meeting instructional needs in reading by the classroom teacher's informal methods of evaluating needs; adapting instruction to physical and other types of handicaps.

Herr, Selma E., "Uses and Abuses of the Readiness Concept", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, New York, Scholastic Magazines, 1957, p. 82-83.

Presents the role of readiness as the most strategic period of the formative years of the child's school career.

Hester, Kathleen B., Teaching Every Child to Read, New York, Harper, 1955, xi-416 p.

Excellent on the development of readiness and reading skills.

Ilg, Francis and Louis Bates Ames, "Developmental Trends in Reading Behavior", Journal of Genetic Psychology, Vol. 76, No. 2, June 1950, p. 291-312.

The study shows that the average five and six-year olds in North American culture acquire of their own accord the knowledge of the letters of the alphabet.

Johnson, Eleanor M., "Pre-Phonic Training: Basis of Success in Reading", The Reading Teacher, Vol. 9, No. 2, December 1955, p. 69-72.

An excellent treatment of the concept of readiness and its implications in a reading program.

Karlsen, Bjorn, "Reading Difficulties Throughout the World", The Reading Teacher, Vol. 9, No. 2, December 1955, p. 99-101.

A comprehensive review of UNESCO's study of reading disability existing in English and non-English speaking countries of the world. Shows a positive relationship between the phonetic complexity of a language and the incidence of reading disabilities.

Larrick, Nancy, "How Can We Secure Parent Cooperation?", Better Readers for Our Times, International Reading Association Conference Proceedings, Vol. I, New York, Scholastic Magazines, 1956, p. 101-105.

Emphasizes the need of parental cooperation in providing experiences and assisting the child at home in developing alertness and wholesome activities leading to the desire to learn to read.

McDowell, John B., "Report on the Phonetic Method of Teaching Children to Read", Catholic Educational Review, Vol. 51, No. 8, October 1953, p. 506-519.

Report of a study which compared the mechanical approach to reading with the intrinsic psychological approach of teaching phonics.

McKee, Paul, The Teaching of Reading in the Elementary School, Boston, Houghton Mifflin, 1948, xi-622 p.

Stresses the nature of the process of reading, fundamentals of reading, work-type reading, oral reading and offers many ingenious examples of sound procedures.

McKim, Margaret G., "Laying the Foundations for Meaningful Reading", Reading in Action, International Reading Association Conference Proceedings, Vol. 2, New York, Scholastic Magazines, 1957, p. 85-87.

A concrete description of a readiness period geared toward the enrichment of the child and creating a desire to learn to read.

National Society for the Study of Education, Reading in the Elementary School - Forty-Eighth Yearbook, Part II, Chicago, University of Chicago Press, 1949, x-350 p.

A comprehensive review of recent trends in reading programs, objectives and methods.

Purcell, Barbara A., "Methods of Teaching Reading-A Report on a Tri-State Survey", Elementary School Journal, Vol. 58, No. 8, May 1958, p. 449-453.

Among the methods surveyed were included current practices of teaching phonics.

Reading Workshop, Are Your Children Ready to Read? New York, American Book, 1948, 26 p.

Condensed treatment of the concept of readiness.

Russell, David H., Children Learn to Read, Boston, Ginn, 1949, xii-403 p.

Deals with principles more than with detailed suggestions or devices. Offers a fine treatment of teaching of reading at the various levels.

Schonell, Fred., The Psychology and Teaching of Reading, London, Oliver and Boyd, 1945, 156 p.

Written for teachers and parents, the book presents a scientific approach to the teaching of reading with an emphasis on readiness.

Sexton, Elmer K. and John Herron, "The Newark Phonics Experiment", Elementary School Journal, Vol. 28, No. 9, May 1928, p. 690-701.

Report on the result of a system-wide study showing that the teaching of phonics functions very little or not at all during the first five months in Grade I but begins to be of value during the second five months and of great value in Grade II.

Smith, Henry Lee, Linguistics and the Teaching of English, Cambridge, Harvard University Press, 1956, 61 p.

A terse treatment of the role of linguistics in the teaching of English. The author emphasizes the contribution the science of linguistics has to offer to the field of instruction in reading.

Smith, Nila B., "What Research Tells Us about Word Recognition", Elementary School Journal, Vol. 55, No. 8, April 1955, p. 440-446.

An all-inclusive appraisal of research on phonics by a phonics expert.

-----, "Phonics in Beginning Reading", The Reading Teacher, Vol. 8, No. 2, December 1955, p. 73-80.

Review of the history of phonics and an evaluation of present day instruction in phonics.

Soffietti, James P., "Why Children Fail to Read - A Linguistic Analysis", Harvard Educational Review, Vol. 25, Spring 1955, p. 63-84.

Presentation of a linguistic approach to reading which reflects the Bloomfield plan. The author expresses a conviction that there are psycho-linguistic reasons for believing that a linguistic approach will increase the speed and effectiveness of reading and writing instruction.

Spache, George, "A Phonics Manual for Primary and Remedial Teachers", Elementary English Review, Vol. 16, No. 4, April 1939, p. 147-149.

Answers arguments against phonics. Undesirable habits and slow uninteresting reading are not the results of phonics but the fault of poorly selected materials and failure to apply relevant psychological facts and principles.

-----, "Psychological Explanation of Reading", The Reading Teacher's Reader, New York, Ronald Press, 1956, p. 9-14.

Shows the steady progress made during this century toward broader interpretation and psychological explanation of reading.

Tate, Harry, "Influence of Phonics on Silent Reading in Grade I", Elementary School Journal, Vol. 37, No. 10, June 1937, p. 752-763.

A frequently quoted study reporting the influence of the study of phonics on Silent Reading.

Tate, Harry, Theresa Herbert and Josephine Zeman, "Nonphonic Primary Reading", Elementary School Journal, Vol. 40, March 1940, p. 529-537.

Report findings supporting the incidental phonics approach in developing the ability to recognize words independently.

Tiffin, Joseph and Mary McKinnis, "Phonic Ability - Its Measurement and Relation to Reading Ability", School and Society, Vol. 51, No. 1312, February 10, 1940, p. 190-192.

Study shows that a functional mastery of the isolated principles of phonics is significantly related to reading ability. Reading program should yield a mastery of the principles of phonics.

Traxler, Arthur E., Ten Years of Research in Reading - Summary and Bibliography, Educational Records Bulletin No. 32, New York, Educational Records Bureau, 1941, vi-195 p.

A summary and an annotated listing of significant publications in the field of reading for the period 1930-1940.

----- and Agatha Townsend, Another Five Years of Research in Reading - Summary and Bibliography, Educational Records Bulletin No. 46, New York, Educational Records Bureau, 1946, vi-192 p.

A summary and listing of important materials in the field of reading instruction for the years 1940-1945.

-----, Eight More Years of Research in Reading - Summary and Bibliography, Educational Records Bulletin No. 64, New York, Educational Records Bureau, 1955, vi-283 p.

The listing covers research for years 1945-1953.

Turrentine, Louise G., "Recent Trends in the Field of Phonics", Texas Outlook, Vol. 23, (No issue), January 1939, p. 49-50.

A study of conflicting theories and practices prevailing in the teaching of phonics.

UNESCO, The Teaching of Reading and Writing - An International Survey, Chicago, Scott, Foresman, 1956, 261 p.

Review and evaluation of prevailing practices and the efficacy of methods being employed in the teaching of reading and handwriting essential to functional literacy. A sequel to the Preliminary Report (1953), it is regarded as an important publication in UNESCO's program growing out of the Universal Declaration of Human Rights.

Wegener, Frank, "The 'Organic' Theory of the Teaching of Reading", Education, Vol. 78, No. 8, April 1958, p. 499-503.

The author maintains that the conflict over theories of teaching of reading when reconstructed within the guiding principles of an adequate philosophy of education can form a sound unified theory.

Wheeler, Arville, Teacher's Question and Answer Book, New London, Connecticut, Arthur C. Croft, 1955, 75 p.

As the title implies the author gives answers to questions posed by classroom teachers to problems concerning reading and related language arts areas.

Wilson, Frank and Cecile W. Fleming, "Letter Consciousness of Beginners in Reading", Journal of Genetic Psychology, Vol. 53, December 1938, p. 273-285.

Concludes that certain letter abilities are of basic importance in the mastery of the mechanics of reading.

Witty, Paul and David Kopel, "The Place of Phonetics in a Reading Program", Educational Administration and Supervision, Vol. 23, No. 5, May 1937, p. 321-334.

Presents historical development of phonetics, trends in teaching phonics, their effects and place in remedial reading.

Wohleber, Louise Mary, A Study of the Effects of a Systematic Program of Phonetic Training in Reading Instruction, Ed. D. thesis, University of Pittsburgh, 1953.

Compares the effects of a supplementary program of phonics with the effects of the intrinsic plan of the basal reading program.

Womack, Thurston, "Is English a Phonetic Language?", Elementary English, Vol. 34, No. 6, October 1957, p. 386-388.

The author emphasizes the need for the teacher of reading to clearly understand the relationship between writing and language and the ability to demonstrate this relationship to children learning to read.

APPENDIX A

CHECK LIST FOR READING READINESS

CHECK LIST FOR READING READINESS

Physical Readiness

- | | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 1. EYES | | |
| a. Do the child's eyes seem comfortable (does not squint, rub eyes, hold materials too close or too far from eyes)? | 1. ____ | ____ |
| b. Are the results of clinical tests or an oculist's examination favorable? | 2. ____ | ____ |
| 2. EARS | | |
| a. Is it apparent through his response to questions or directions that he is able to hear what is said to the class? | 3. ____ | ____ |
| b. Does he respond to a low-voice test of 20 feet, a whisper test of 15 inches? | 4. ____ | ____ |
| c. Do the results of his audiometer test indicate normal hearing ability? | 5. ____ | ____ |
| 3. SPEECH | | |
| a. Does he articulate clearly? | 6. ____ | ____ |
| b. Does he speak in a group with some confidence? | 7. ____ | ____ |
| c. Does he speak without gross errors in pronunciation? | 8. ____ | ____ |
| d. Does he respond to suggestions for speech correction? | 9. ____ | ____ |
| 4. HAND-EYE CO-ORDINATION | | |
| a. Is he able to make his hands work together in cutting, using tools, or bouncing a ball? | 10. ____ | ____ |
| 5. GENERAL HEALTH | | |
| a. Does he give an impression of good health? | 11. ____ | ____ |
| b. Does he seem well nourished? | 12. ____ | ____ |
| c. Does the school physical examination reveal good health? | 13. ____ | ____ |

Social Readiness

- | | | <u>YES</u> | <u>NO</u> |
|--|-----|------------|-----------|
| 1. CO-OPERATION | | | |
| a. Does he work well with a group, taking his share of the responsibility? | 14. | ___ | ___ |
| b. Does he co-operate in playing games with other children? | 15. | ___ | ___ |
| c. Can he direct his attention to a specific learning situation? | 16. | ___ | ___ |
| d. Does he listen rather than interrupt? | 17. | ___ | ___ |
| 2. SHARING | | | |
| a. Does he share materials, without monopolizing their use? | 18. | ___ | ___ |
| b. Does he offer help when another child needs it? | 19. | ___ | ___ |
| c. Does he await his turn in playing or in games? | 20. | ___ | ___ |
| d. Does he await his turn for help from the teacher? | 21. | ___ | ___ |
| 3. SELF-RELIANCE | | | |
| a. Does he work things through for himself without asking the teacher about the next step? | 22. | ___ | ___ |
| b. Does he take care of his clothing and materials? | 23. | ___ | ___ |
| c. Does he find something to do when he finishes an assigned task? | 24. | ___ | ___ |
| d. Does he take good care of materials assigned to him? | 25. | ___ | ___ |

Emotional Readiness

- | | | | |
|---|-----|-----|-----|
| 1. ADJUSTMENT TO TASK | | | |
| a. Does the child see a task, such as drawing, preparing for an activity, or cleaning up, through to completion? | 26. | ___ | ___ |
| b. Does he accept changes in school routine calmly? | 27. | ___ | ___ |
| c. Does he appear to be happy and well adjusted to schoolwork, as evidenced by relaxed attitude, pride in work, and eagerness for a new task? | 28. | ___ | ___ |
| d. Does he follow adult leadership without showing resentment? | 29. | ___ | ___ |
| 2. POISE | | | |
| a. Does he accept a certain amount of opposition or defeat without crying or sulking? | 30. | ___ | ___ |
| b. Does he meet strangers without displaying unusual shyness? | 31. | ___ | ___ |

Psychological Readiness

- | | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 1. MIND-SET FOR READING | | |
| a. Does the child appear interested in books and reading? | 32. _____ | _____ |
| b. Does he ask the meanings of words or signs? | 33. _____ | _____ |
| c. Is he interested in the shapes of unusual words? | 34. _____ | _____ |
| 2. MENTAL MATURITY | | |
| a. Do the results of the child's mental test predict probable success in learning to read? | 35. _____ | _____ |
| b. Can he give reasons for his opinions about his own work or the work of others? | 36. _____ | _____ |
| c. Can he make or draw something or illustrate an idea as well as most children of his age? | 37. _____ | _____ |
| d. Is his memory span sufficient to allow memorization of a short poem or song? | 38. _____ | _____ |
| e. Can he tell a story without confusing the order of events? | 39. _____ | _____ |
| f. Can he listen or work for five or ten minutes without restlessness? | 40. _____ | _____ |
| 3. MENTAL HABITS | | |
| a. Has the child established the habit of looking at a succession of items from left to right? | 41. _____ | _____ |
| b. Does his interpretation of pictures extend beyond mere enumeration of details? | 42. _____ | _____ |
| c. Does he grasp the fact that symbols may be associated with spoken language? | 43. _____ | _____ |
| d. Can he predict possible outcomes for a story? | 44. _____ | _____ |
| e. Can he remember the central thought of a story as well as the important details? | 45. _____ | _____ |
| f. Does he alter his own method to profit by another child's example? | 46. _____ | _____ |
| 4. LANGUAGE PATTERNS | | |
| a. Does he take part in class discussions and conversations? | 47. _____ | _____ |
| b. Is he effective in expressing his needs in classroom situations? | 48. _____ | _____ |

APPENDIX B

METROPOLITAN READINESS TESTS

Metropolitan Readiness Tests

BY GERTRUDE H. HILDRETH, PH.D., AND NELLIE L. GRIFFITHS, M.A.

TEST : FORM R



NAME _____ BOY _____ GIRL _____ DATE OF TESTING _____
Year Month Day
 TEACHER _____ SCHOOL _____ DATE OF BIRTH _____
Year Month Day
 CITY _____ COUNTY _____ STATE _____ PUPIL'S AGE Yrs. _____ Mos. _____
 GRADE _____ NUMBER OF MONTHS KINDERGARTEN TRAINING _____

TEST	RAW SCORE
1. WORD MEANING	
2. SENTENCES	
3. INFORMATION	
4. MATCHING	
Total Tests 1-4	
5. NUMBERS	
6. COPYING	
Total Tests 1-6	

This space is to be used for drawing a man.

READING READINESS

SUM OF SCORES TESTS 1-4	LETTER RATING	READING READINESS STATUS

NUMBER READINESS

SCORE TEST 5	LETTER RATING	NUMBER READINESS STATUS

TOTAL READINESS

SUM OF SCORES TESTS 1-6	LETTER RATING	TOTAL READINESS STATUS	PERCENTILE RANK

DRAWING A MAN
TEST

RATING

COPYRIGHT 1949 BY WORLD BOOK COMPANY, YONKERS-ON-HUDSON, NEW YORK, AND CHICAGO, ILLINOIS

PRINTED IN U.S.A.

This test is copyrighted. The reproduction of any part of it by mimeograph, hectograph, or in any other way, whether the reproductions are sold or are furnished free for use, is a violation of the copyright law

MRT: R-24

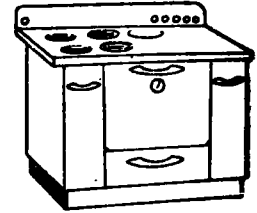
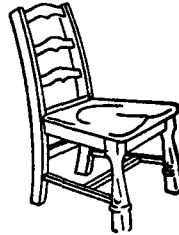
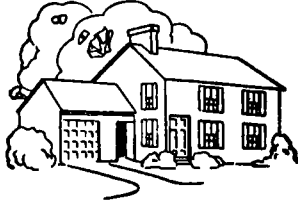
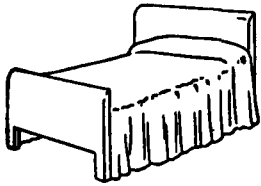
TEST 1. WORD MEANING

Metropolitan Readiness: R

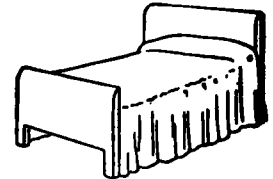
a



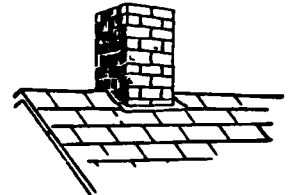
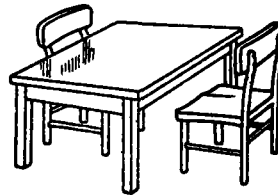
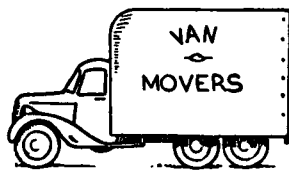
b



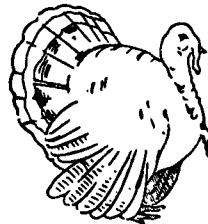
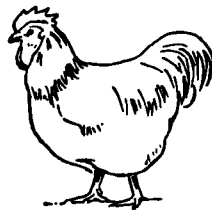
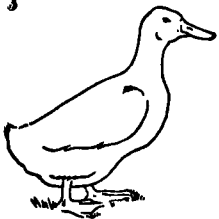
i



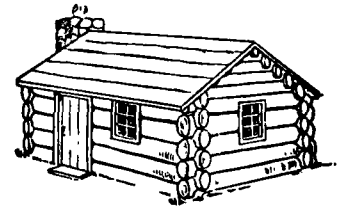
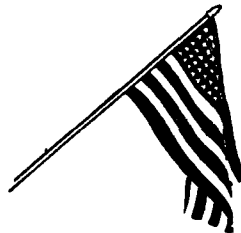
2



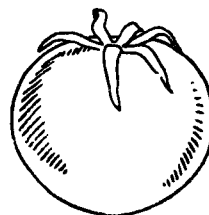
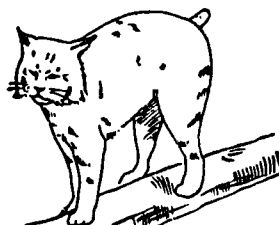
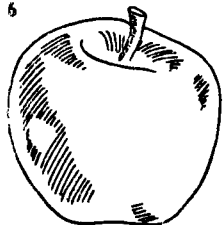
3

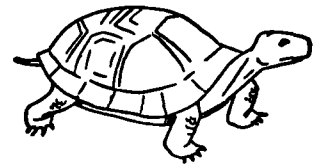
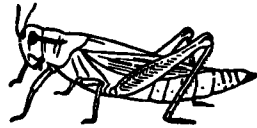
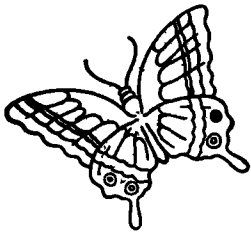


4

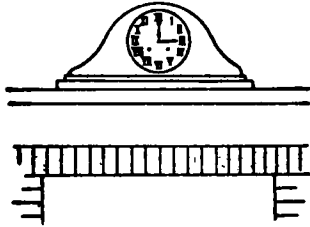


5

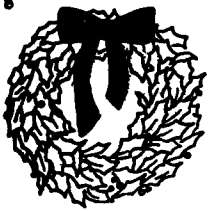




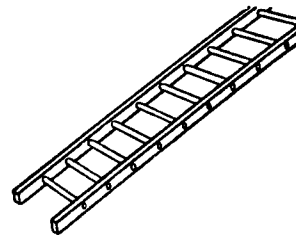
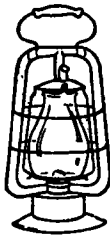
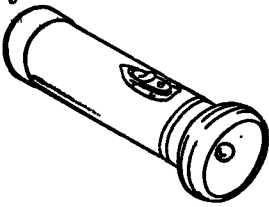
7



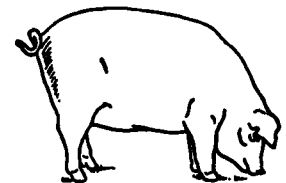
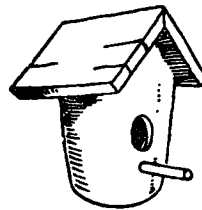
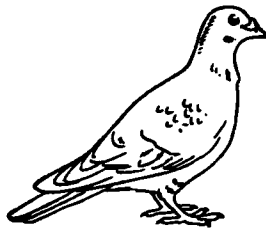
8



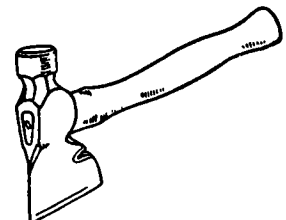
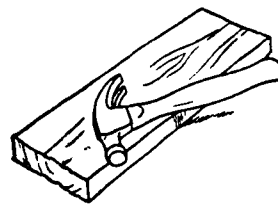
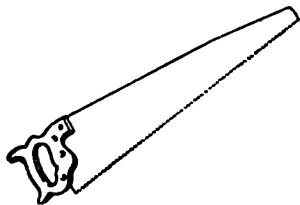
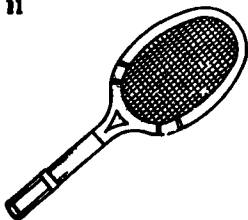
9



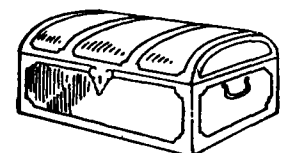
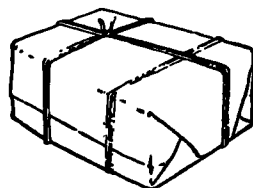
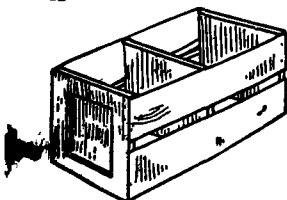
10



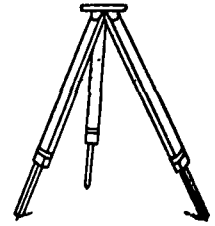
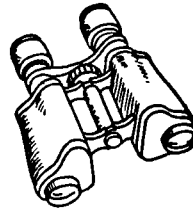
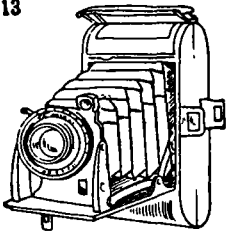
11



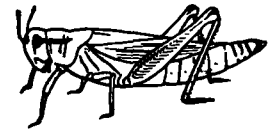
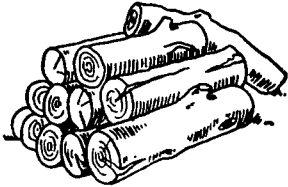
12



13



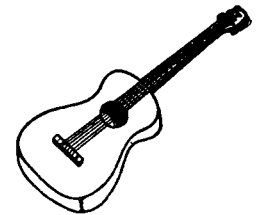
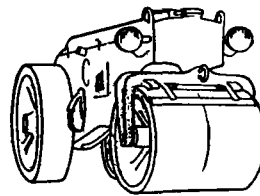
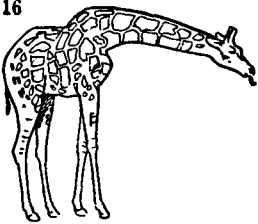
14



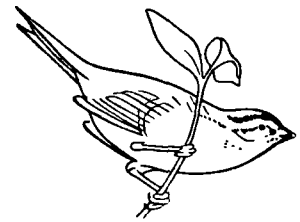
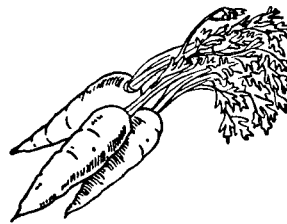
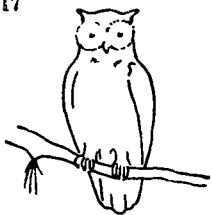
15



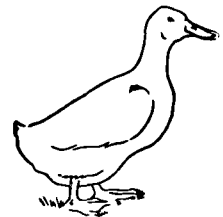
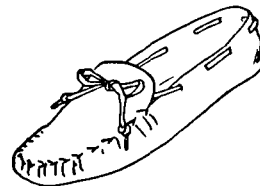
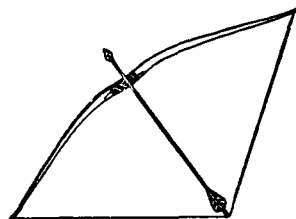
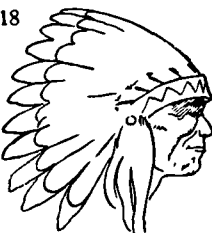
16



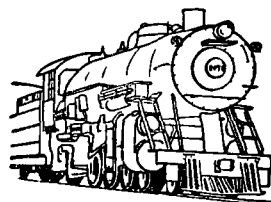
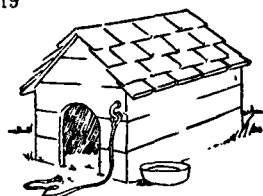
17



18



19



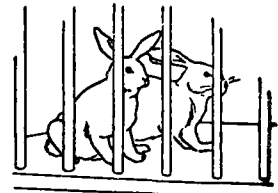
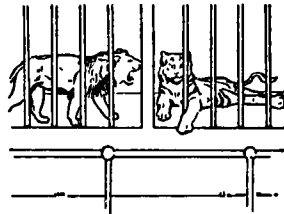
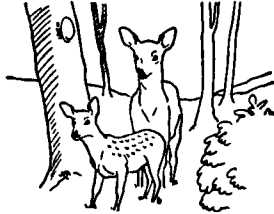
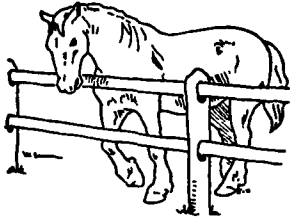
TEST 2. SENTENCES

Metropolitan Readiness: R

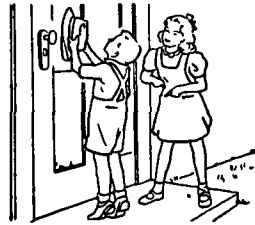
1



2



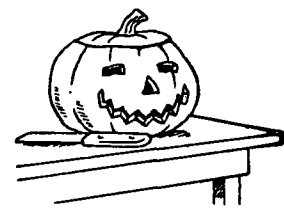
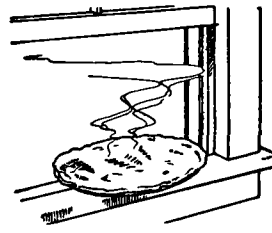
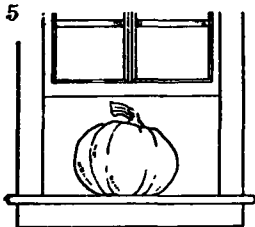
3



4



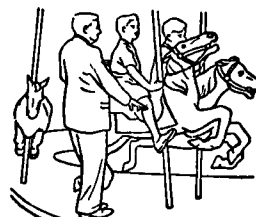
5

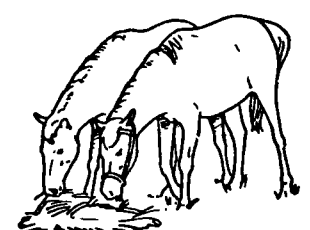
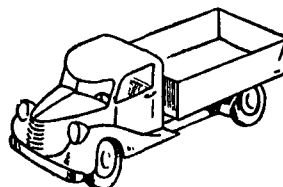
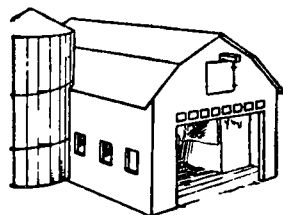
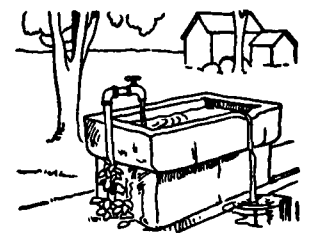
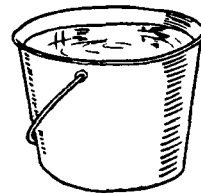
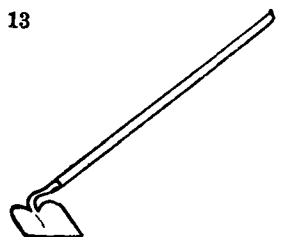
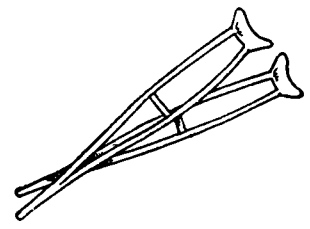
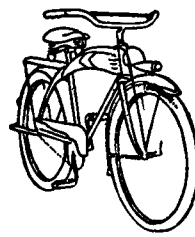
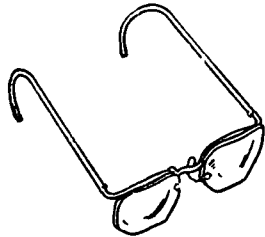
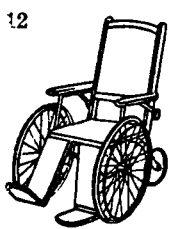
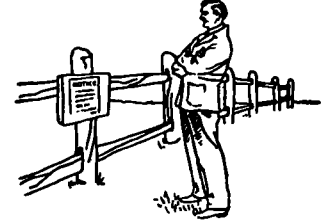
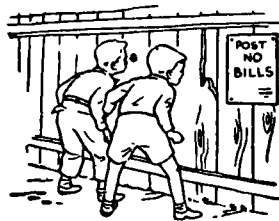
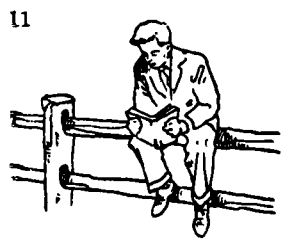
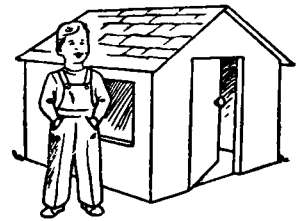
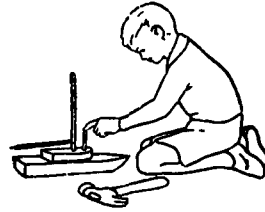
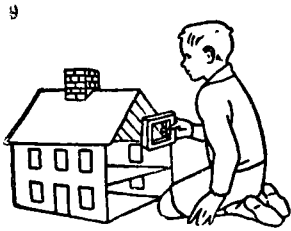
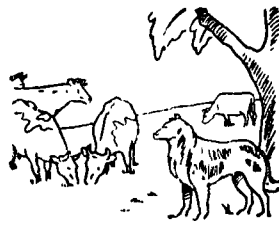


6



7

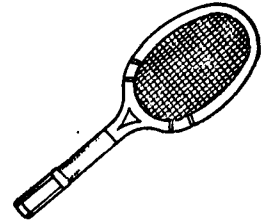
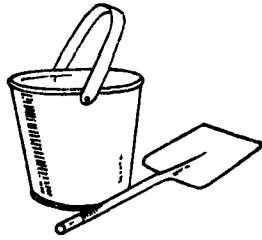
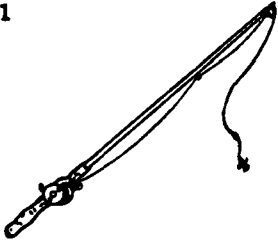




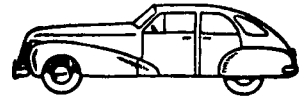
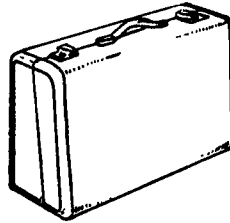
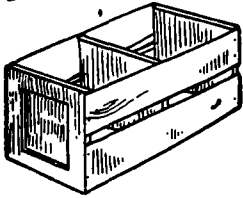
TEST 3. INFORMATION

Metropolitan Readiness: R

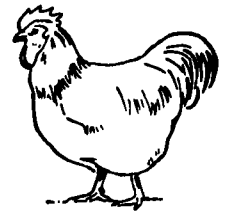
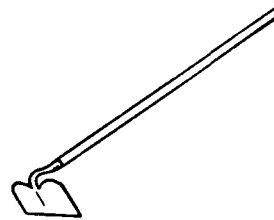
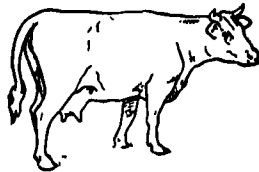
1



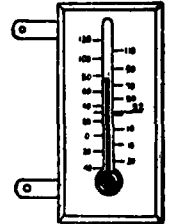
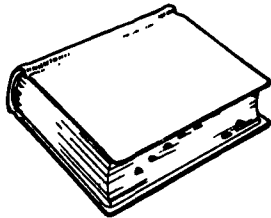
2



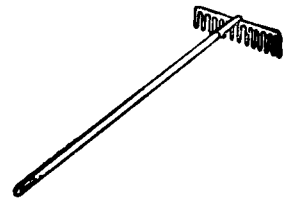
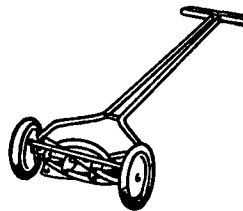
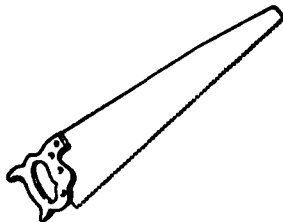
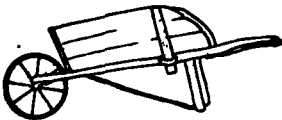
3



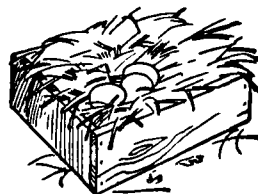
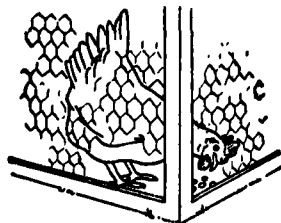
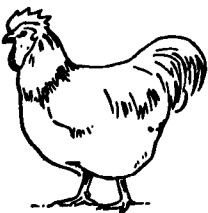
4



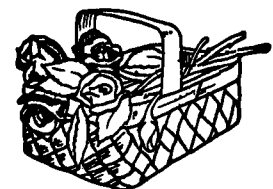
5



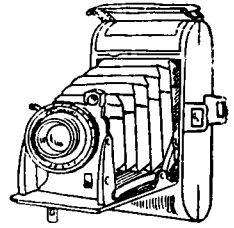
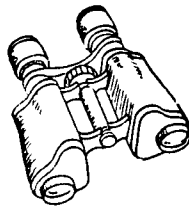
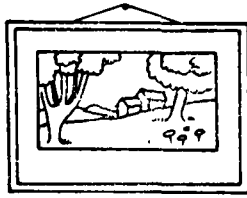
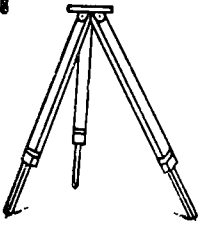
6



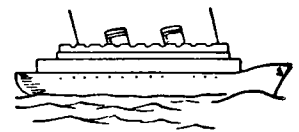
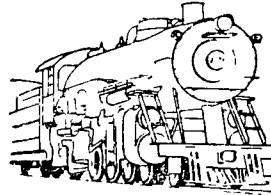
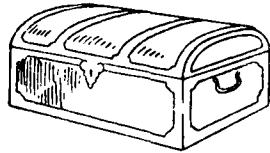
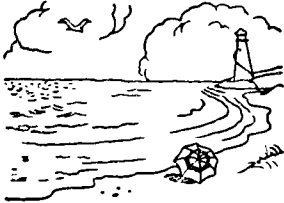
7



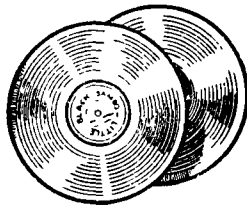
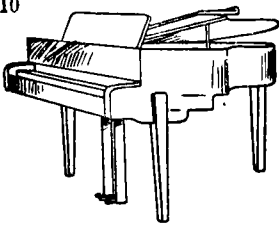
8



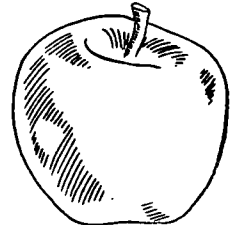
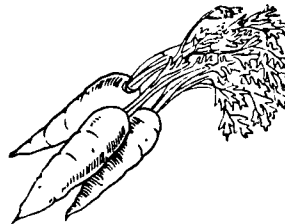
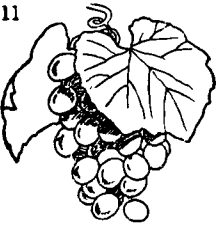
9



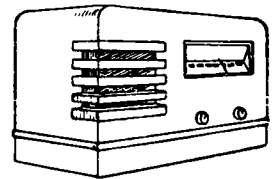
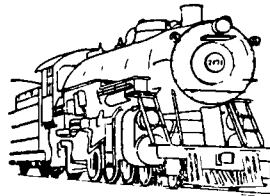
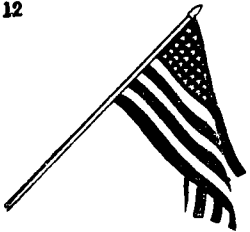
10



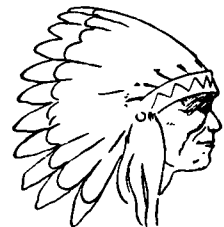
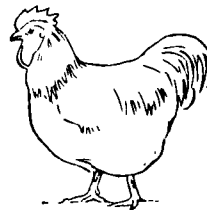
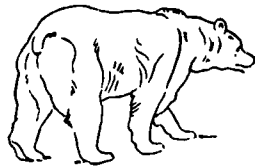
11



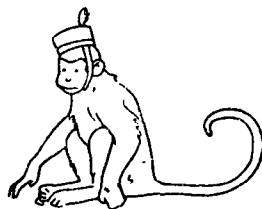
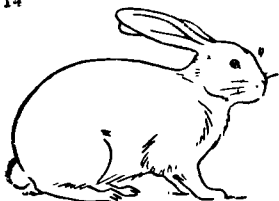
12



13

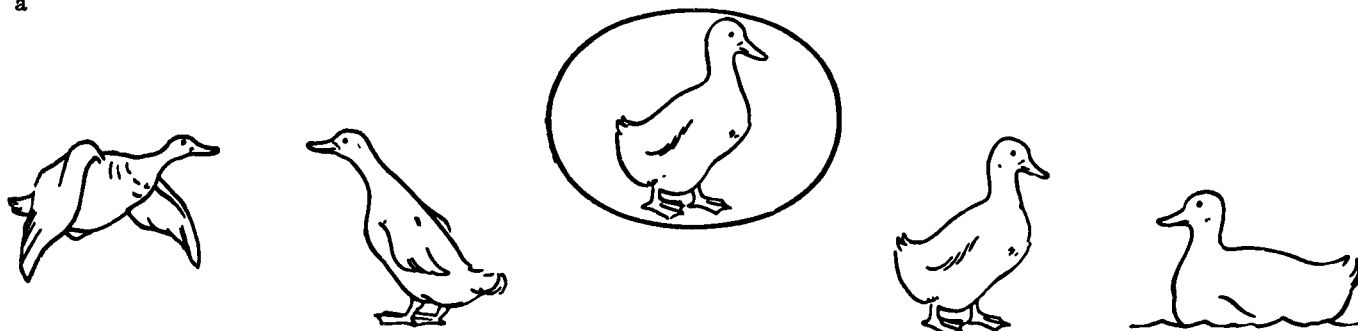


14

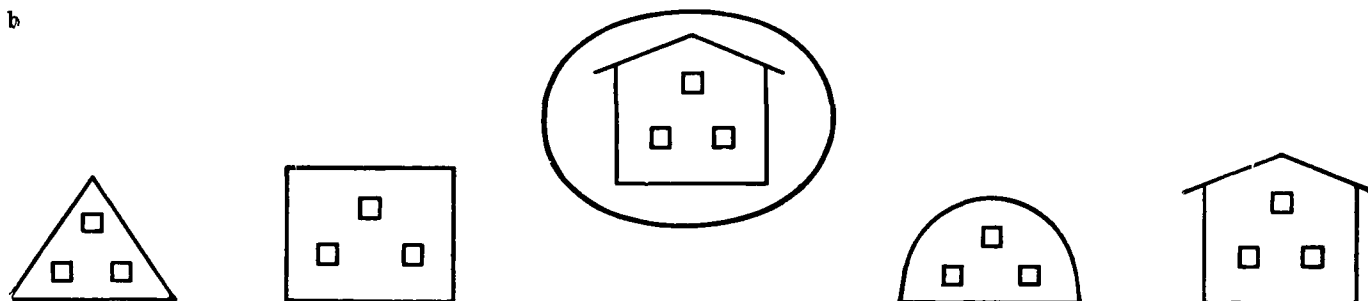


TEST 4. MATCHING

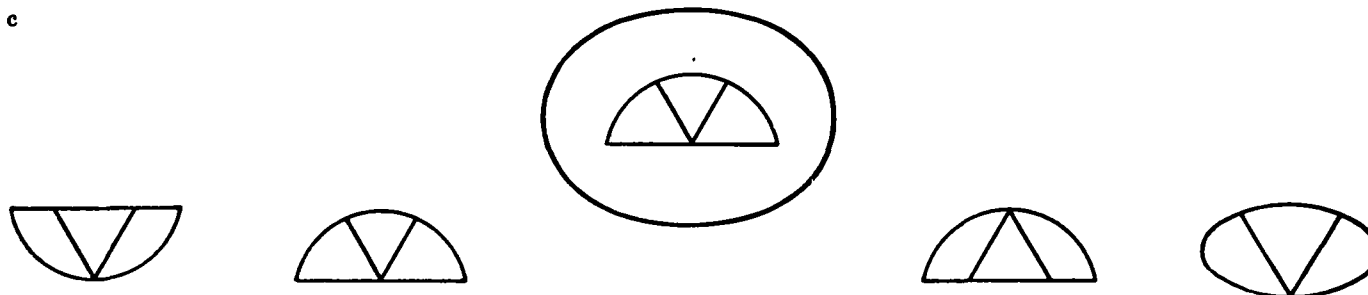
a



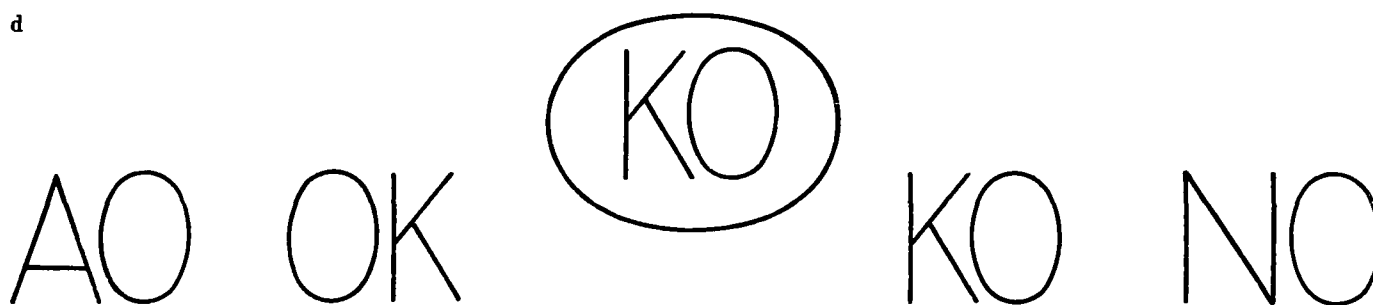
b



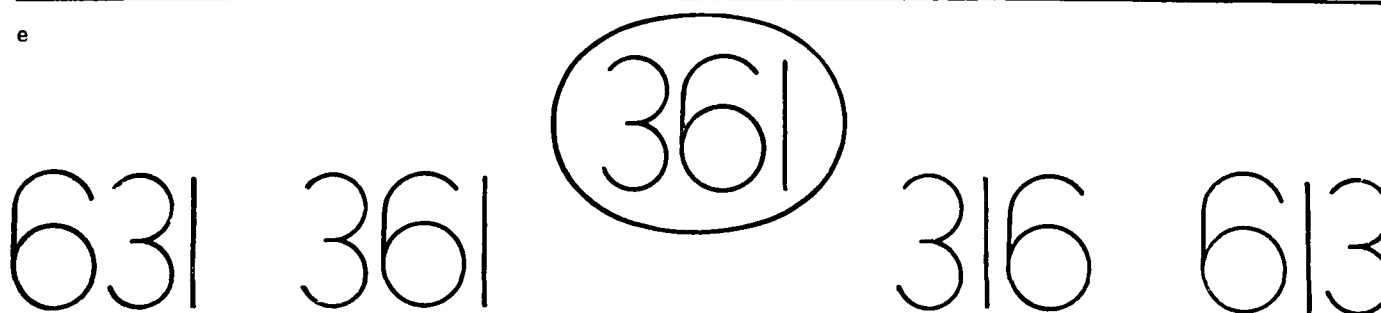
c



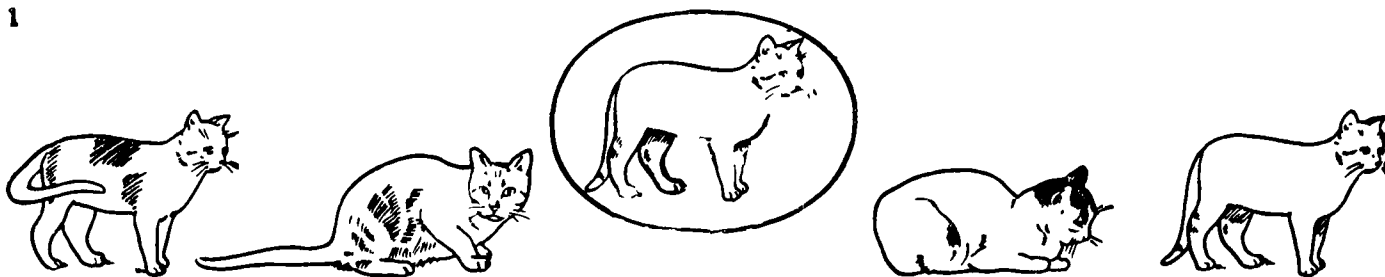
d



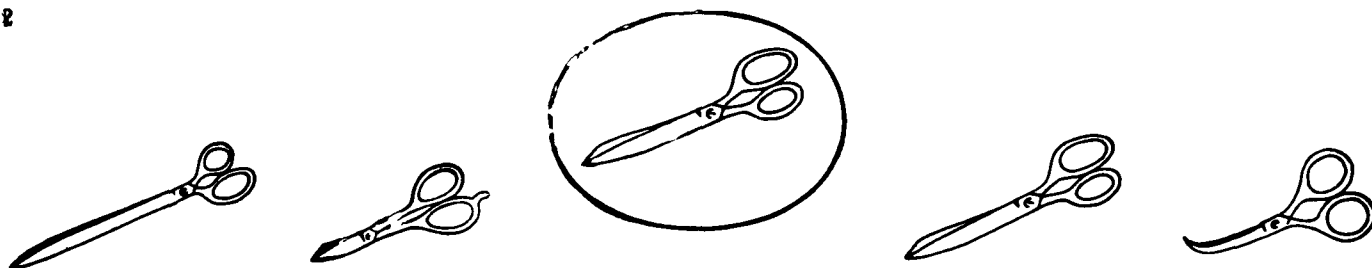
e



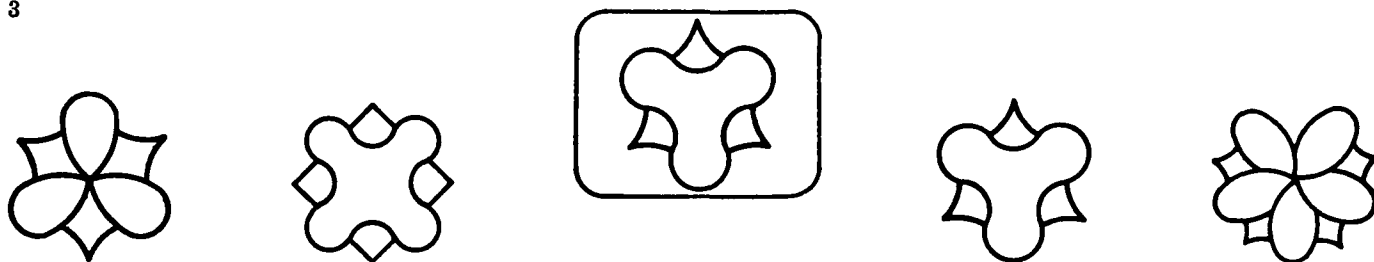
1



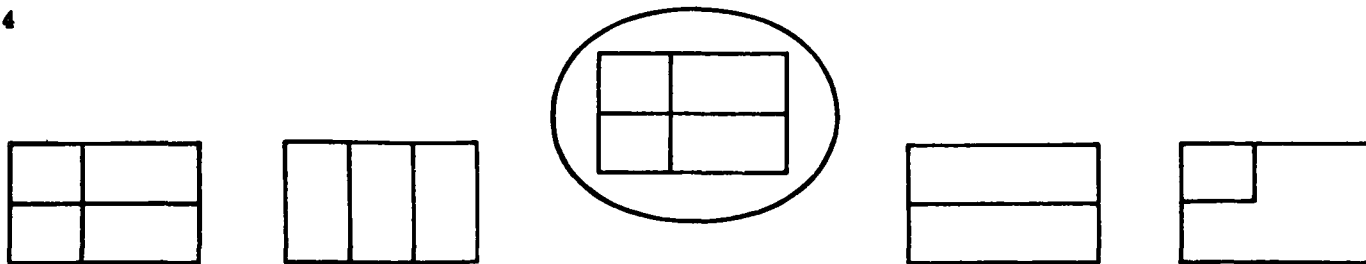
2



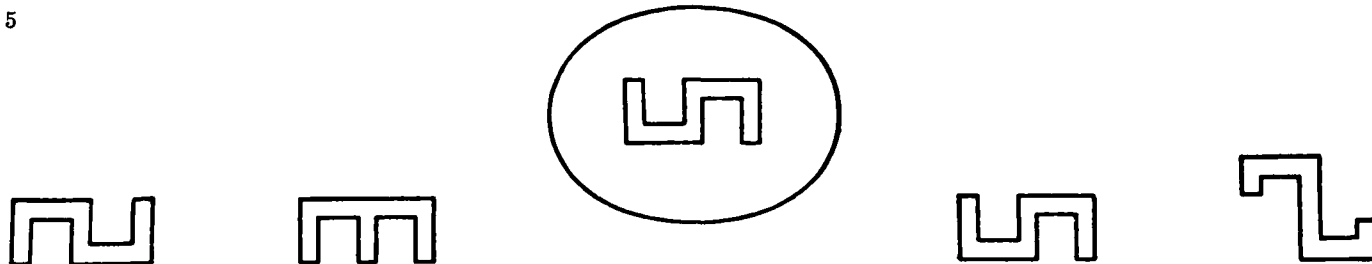
3



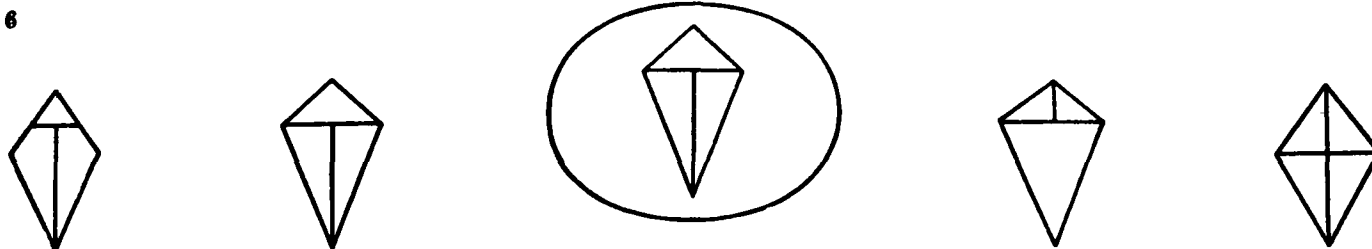
4



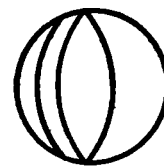
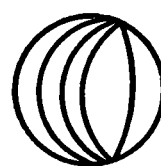
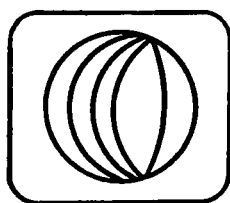
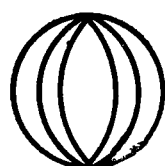
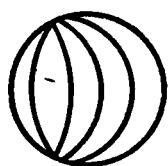
5



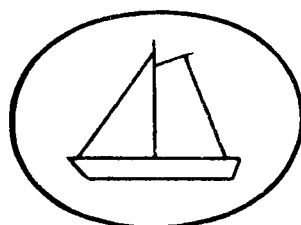
6



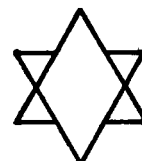
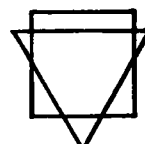
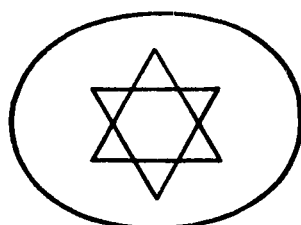
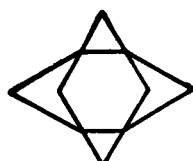
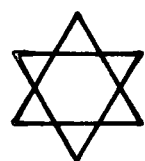
7



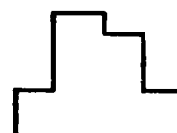
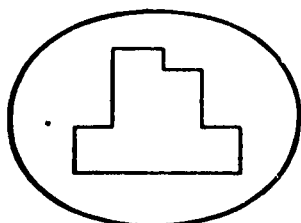
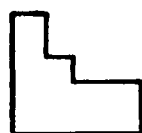
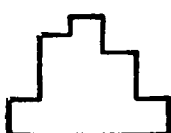
8



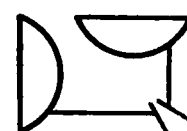
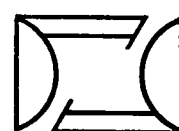
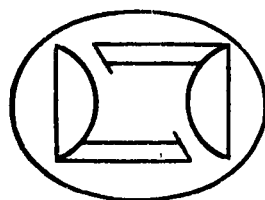
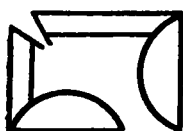
9



10



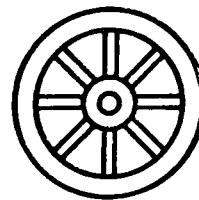
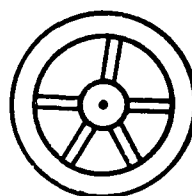
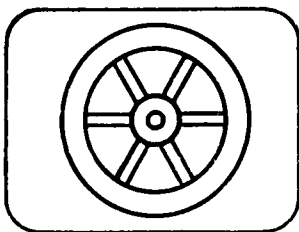
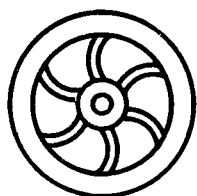
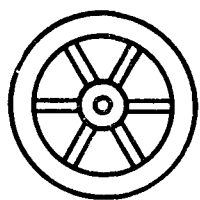
11



12



13



14

674

467

647

647

746

15

RON

RUN

RUN

NUR

UNR

16

foot

feet

feet

feat

teef

17

29

92

29

62

39

18

GV

CA

GA

AG

GA

19

garden

gedarn

garden

argden

garned

TEST 5. NUMBERS

1



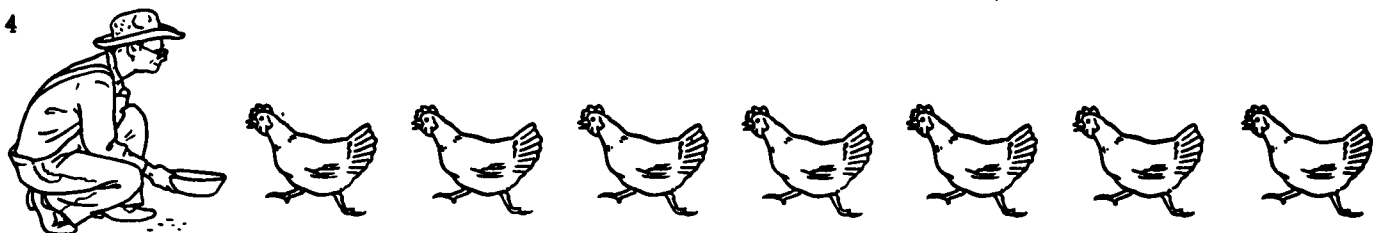
2



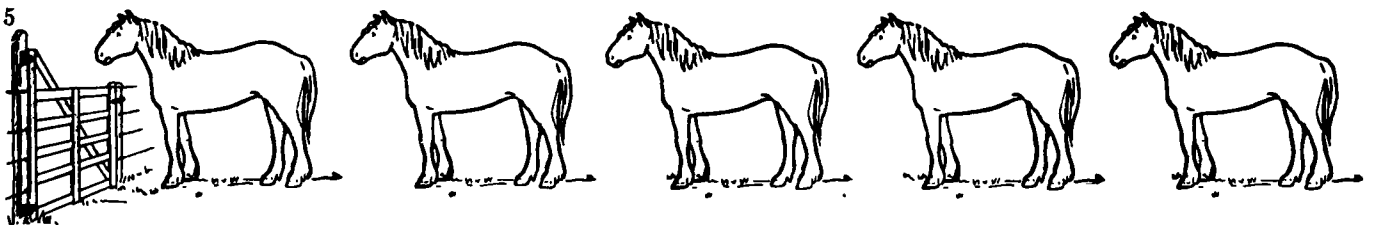
3



4



5



6-8



9-11



12



3

5

7

2

13



6

3

4

8

14



5

7

9

1

15



56

63

93

36

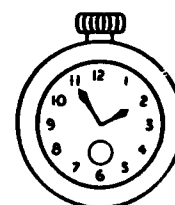
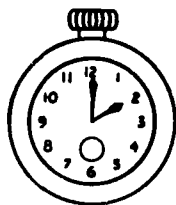
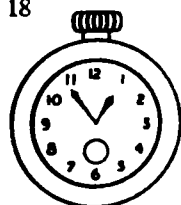
16



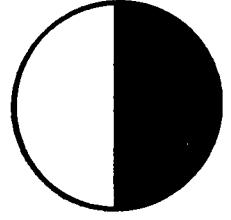
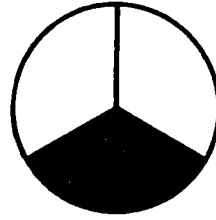
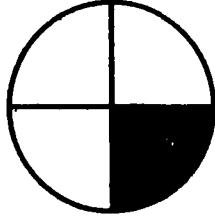
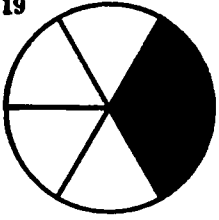
17



18



19



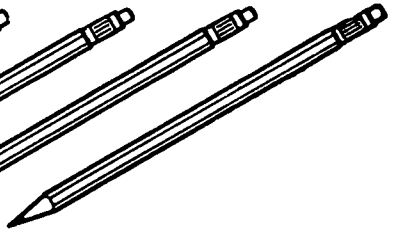
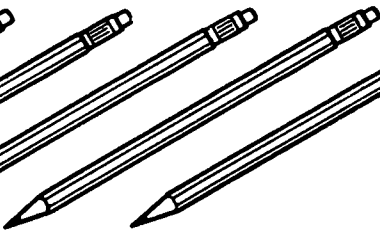
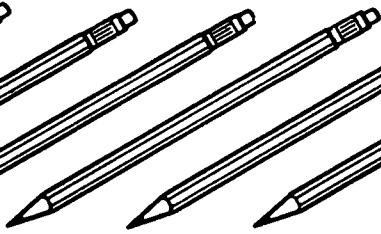
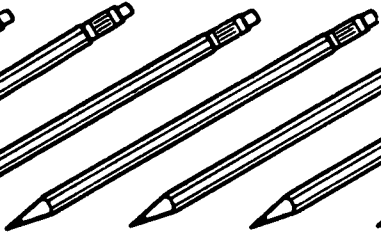
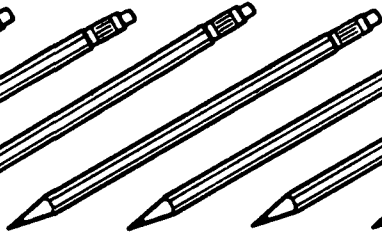
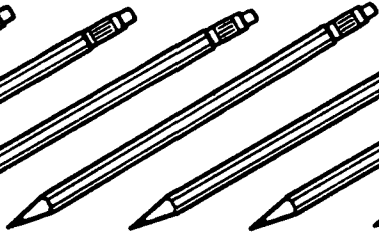
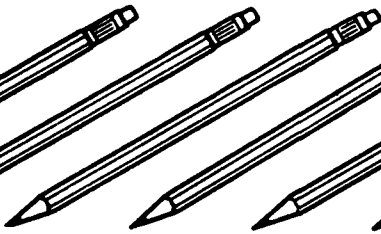
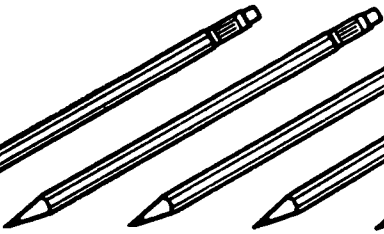
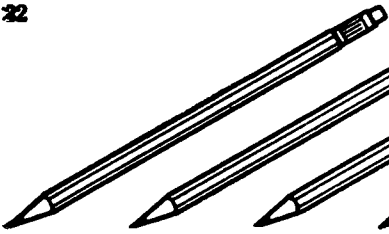
20



21



22



23

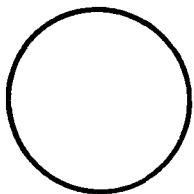


24

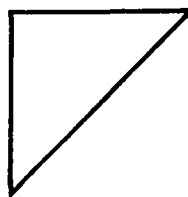


TEST 6. COPYING

a



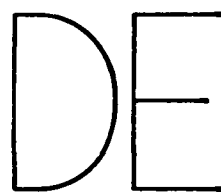
6



1



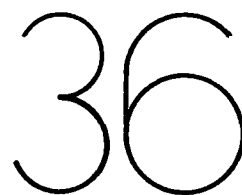
7



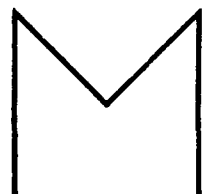
2



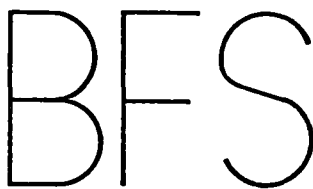
8



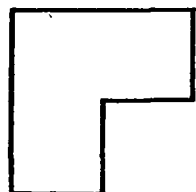
3



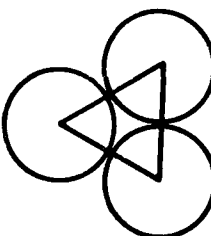
9



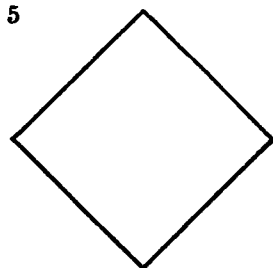
4



10



5



APPENDIX C

STANFORD ACHIEVEMENT TEST

TEST 1 *Paragraph Meaning*

DIRECTIONS: Find the one word that belongs in each space, and draw a line under the word. Do *not* write in the spaces.

SAMPLES:

Baby pets me.

I drink milk.

I say "Mew, mew."

I am a 51.

51. cow kitten pony child

Tom had two apples. Fred had four cookies. Fred said to Tom, "I will give you two 52 if you will give me one of your 53."

52. oranges cookies cakes bananas

53. apples oranges bananas cakes

Spot came to school.

The children laughed at him.

"Bow-wow!" said Spot.

Jim said, "What a funny 1."

1. joke boy dog cat

The hen jumped from the nest.

We ran to the nest.

We found three 2.

2. toys balls apples eggs

I am green.

I grow in a field.

Cows eat me.

I am 3.

3. wood water grass breakfast

See the big white rabbit.

He can run 4.

4. play fast pretty walk

We had red, white, and blue paint.

We painted the chair 5.

5. yellow black orange blue

Trot, trot, I come.

Billy is on my back.

Soon I shall eat my hay.

I am a little 6.

6. pony calf dog sheep

Saturday was John's birthday.

Six children came to his house.

They played games.

They ate ice cream and cake.

John said, "What a fine 7 I am having!"

7. present party dinner meal

Milk is one of the best foods.

In this country most people use cows' milk, but in many countries they use goats' 8. It does not taste like 9 milk.

8. meat milk cheese food

9. real fresh cows' whole

See the big white house. The door is brown. The rest of the house is 10.

10. red white blue brown

Something was stealing food.

Mother bought a trap.

She put cheese in the trap.

That night she caught a 11.

11. fly fish mole mouse

Joe ate something sweet and very cold.

It felt smooth in his mouth.

It was 12.

12. candy cake ice cream milk

TEST 1 *Paragraph Meaning* (Continued)

Ned has a new toy.
It has a long string and a tail.
It flies high up in the sky.
It is 13.

13. a bird an airplane a kite a balloon
-

Pooh is the name of a bear in a storybook. Pooh's playmates were Piglet and Rabbit. One day Pooh and Piglet went to visit 14 at his house. Rabbit gave them some cake and honey. Now Pooh was very fond of honey and he ate so much that when he started to go home, he was so fat that he couldn't get through the 15 of the house.

14. the bear Rabbit someone him
15. door window gate chimney
-

Jane could not go outdoors.
Big drops hit the windows.
The grass was getting wet.
It was starting to 16.

16. rain snow shine fall
-

At the store Mother bought meat, bread, and apples.

I asked, "Mother, will you buy me some candy?"

"No," said Mother, "I will not buy 17."

"But I will buy jam to spread on this nice fresh 18."

17. anything sweets chocolate candy
18. toast bread cake fruit

Father picked up his present.
Before he opened it he held it up to his ear.

"I know what it is," 19 said.
"It is a clock. I can 20 it tick."

19. he we I Mother
20. feel hear see watch
-

Cotton is sometimes picked by hand. Every picker carries a long sack. He walks down between the rows and pulls off the 21 and puts it into the 22.

21. cotton leaf blossom wool
22. box truck pile sack
-

We learned a new song. It began, "Robin, robin, build your nest."

Teacher said, "That is a good song to sing right now because winter is over and now it is 23."

"This is the season when 24 build nests."

23. fall winter summer spring
24. robins rabbits people boys
-

A baby cow is a calf; a baby cat is a kitten; a baby dog is a puppy. Paul has a dog named Lulu, and Alice has a cat named Susan. Lulu has a family of five 25 and Susan has four new 26.

25. calves colts kittens puppies
26. calves colts kittens puppies

TEST 1 *Paragraph Meaning* (Continued)

A forest takes a long time to grow. When we cut down trees to use for wood, we should plant more trees. If we do not 27 new trees, our fine 28 will soon be gone.

27. plant make find use
28. buildings forests homes orchards

Our family stayed all night at a camp. In the morning we built a fire to 29 our breakfast. Afterward we 30 our paper plates and cups in the flames. Then we put out the 31 with water.

29. warm cook serve eat
30. burned tried washed used
31. light plates fire towels

Flies carry dirt on their feet and bodies. We should not let them touch our food. If we keep all our 32 in covered dishes, 33 cannot 34 it.

32. candy cheese food garbage
33. mice flies children bugs
34. eat get see touch

Jim rode his bicycle straight to school. His brother Tom walked. They got to school at the same time. 35 must have started before 36 did.

35. They I Jim Tom
36. they I Jim Tom

The fireflies which are seen so often on summer nights in this country are much like the beetles called glowworms in England. The glowworm, however, does not give nearly as much 37 as the 38.

37. light heat electricity fire
38. bug butterfly beetle firefly

A magnet sometimes is shaped like a horseshoe. It will pull pieces of iron and steel to itself even when it is not touching the pieces. Jack put some tacks on the table. Then he held his 39 near the tacks. The 40 jumped from the table and stuck to the magnet.

39. hand hammer thumb magnet
40. tacks dishes steel pieces

Bob and Pat played a game of ringtoss. Each boy took two turns and threw three rings each turn. Bob scored two points the first time and three points the 41 time. 42 scored three points the first time. He said, "If I score 43 points the second time, I shall win the game."

41. same first second third
42. Pat Bob Pete He
43. any two three four

In the Sahara Desert there are no rivers. Here and there water comes to the surface in a place called an oasis. Men who cross the 44 must carry enough 45 with them to last from one 46 to another.

44. country desert ocean oasis
45. money clothing water baggage
46. side river city oasis

Dick and Bill live on a farm that has a great many cherry trees. Each summer the 47 have a roadside market where they sell the 48 from their own trees.

47. gardeners farmers girls boys
48. fruit nuts blossoms leaves

Stop.

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Gr. score	12	13	14	14	15	16	16	17	18	19	19	20	21	22	22	23	24	24	25	26	27	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	44	45	46	48	50	52	54	57	59	61	64

TEST 2 *Word Meaning*

DIRECTIONS: Draw a line under the one word that makes the sentence true, as shown in the first sample. Look at all four words and choose the best one.

SAMPLES:

A cat can

paint bark read jump

The name of a color is

farm milk red pet

- 1 A bird can
study write bark fly
- 2 A kitten will drink
nothing bread milk cookies
- 3 A robin is a kind of
man woman bird cat
- 4 A bed is a place to
sleep read sit stand
- 5 A dog
sings barks grunts talks
- 6 A ball is always
big small soft round
- 7 Do not pet a
puppy rabbit bear pony
- 8 The wind blew away the
bank road town balloon
- 9 We can write with a
pencil wheel story ruler
- 10 Alice gave her bunny some
games gloves chalk cabbage
- 11 In the fall some leaves turn
green white black yellow
- 12 A cowboy takes care of
grass sheep cattle pigs
- 13 A neighbor lives
near by far away downtown uptown
- 14 A library contains
boxes books presents money
- 15 Air is what we
breathe eat drink smoke
- 16 A minute is longer than
a second a day an hour a week
- 17 To speak means to
scold talk yell whisper

- 18 The ocean is
American water ice strong
- 19 A month is a part of a
day week year chart
- 20 We spell a
word line game book
- 21 When we guess, we are not
wise smart strong sure
- 22 A daughter is a
girl prince clerk parent
- 23 A good teacher knows how to
scold joke shout explain
- 24 A circle is
square round long wide
- 25 To come back is to
return talk walk go
- 26 To search for something means to
hide it find it lose it look for it
- 27 Great means
tall short big little
- 28 A brake is part of a
bridge gate car door
- 29 To say that Columbus discovered America means that he
found it named it settled it liked it
- 30 Distant means
before far great north
- 31 Evil things are
new strange bad loud
- 32 We get ham from
cattle horses chickens pigs
- 33 To collect means to
gather arrange buy keep
- 34 To buy ice cream is to
eat it taste it pay for it like it
- 35 Equal parts are
different the same two four
- 36 Teams usually play football in the
spring fall house snow
- 37 A straight line is
short long not crooked not slanting
- 38 To forgive is to
approve pardon win love

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Gr. score	12	13	14	15	16	17	18	18	19	20	21	22	22	23	24	25	26	26	27	28	29	30	31	32	33	34	35	37	38	40	42	44	46	48	51	53	56	59

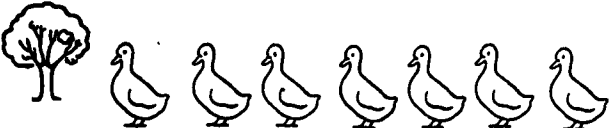
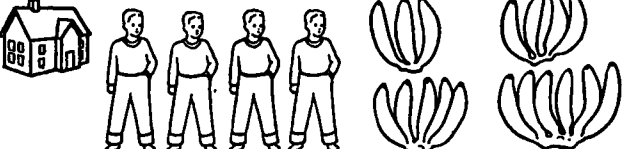
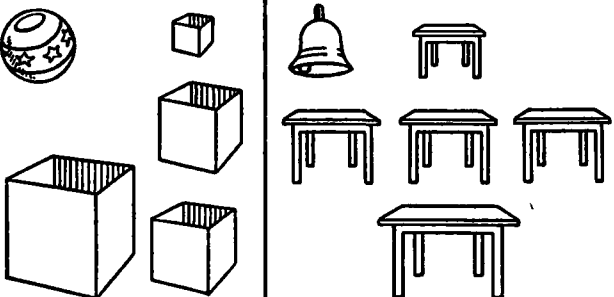
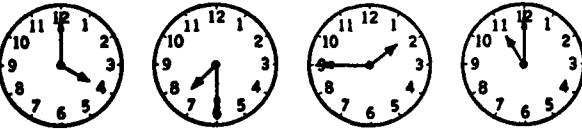
Stop.

TEST 3 *Spelling*

1.	16.
2.	17.
3.	18.
4.	19.
5.	20.
6.	21.
7.	22.
8.	23.
9.	24.
10.	25.
11.	26.
12.	27.
13.	28.
14.	29.
15.	30.

No. right	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gr. score	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	32	33	35	36	38	40	42	45		

TEST 4 *Arithmetic Reasoning*

																
																
																
	 6 2 4 5															
																
																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">1955</td> <td colspan="4" style="text-align: center;">MAY</td> <td colspan="2">1955</td> </tr> <tr> <td style="width: 12.5%;">Sun.</td> <td style="width: 12.5%;">Mon.</td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;">Wed.</td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> <td style="width: 12.5%;"></td> </tr> </table>		1955		MAY				1955		Sun.	Mon.		Wed.			
1955		MAY				1955										
Sun.	Mon.		Wed.													
																
 71 29 58 37	 1 5 9 15															

14 How many are 1 ball and 2 balls? -----

15 There are 5 black kittens and 2 white ones. How many kittens are there all together? -----

16 Fred gathered eggs from three nests. One nest had 3, another 3, and another had only 2. How many eggs were there all together? -----

17 Jack's dog had 7 baby puppies. Jack gave 4 to his friends. How many puppies were left? -----

18 Carol has 2 red dresses, 4 blue dresses, and 3 yellow dresses. How many dresses is that all together? -----

19 Nan got 10 toys for her birthday and has lost 3. How many has she left? -----

20 Helen has 16 dolls and Rita has 9 dolls. Helen has how many more dolls than Rita? -----

21 One dime and two nickels are how many cents? -----

22 Our team scored 16 points in the first game, 6 points in the second, and 14 in the third. How many points did we score in all three games? -----

23 Martha says she will read 8 books each month next summer. How many books will she read in three months? -----

24 Nancy's mother gave her a dollar to buy meat. Nancy received 23 cents in change. How many cents did the meat cost? -----

25 Bill had a board 18 inches long. He cut off a piece 1 foot long. How many inches long was the remaining piece? -----

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Gr. score below 10	10	11	12	13	14	15	16	17	18	19	21	22	24	26	28	30	32	34	37	40	43	46	49		

TEST 5 *Arithmetic Computation*

DIRECTIONS: Get the answers to these examples as quickly as you can without making mistakes. Look carefully at each example to see what you are to do.

Addition:

$$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$$

Subtraction:

$$\begin{array}{r} 4 \\ - 2 \\ \hline 2 \end{array}$$

Add $\begin{array}{r} 2 \\ 1 \\ 4 \\ \hline \end{array}$	$6 + 5 =$	Add $\begin{array}{r} 34 \\ + 75 \\ \hline \end{array}$	Add $\begin{array}{r} 46 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ - 63 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ - 4 \\ \hline \end{array}$
$\begin{array}{r} 69 \\ - 63 \\ \hline \end{array}$	Add $\begin{array}{r} 0 \\ 9 \\ 3 \\ 8 \\ \hline \end{array}$	$16 - 9 =$	Multiply $\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$	Add $\begin{array}{r} 467 \\ + 470 \\ \hline \end{array}$	$2 \times 7 =$
Multiply $\begin{array}{r} 43 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 83 \\ - 59 \\ \hline \end{array}$	$\begin{array}{r} 137 \\ - 83 \\ \hline \end{array}$	Add $\begin{array}{r} 257 \\ 61 \\ 836 \\ \hline \end{array}$	Multiply $\begin{array}{r} 130 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 718 \\ - 127 \\ \hline \end{array}$
Divide $3 \overline{)963}$	Divide $3 \overline{)18}$	$\begin{array}{r} 926 \\ - 587 \\ \hline \end{array}$	Add $\begin{array}{r} \$ 8.54 \\ + 4.70 \\ \hline \$ \end{array}$	Divide $2 \overline{)168}$	$\begin{array}{r} 601 \\ - 546 \\ \hline \end{array}$

Stop.

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	
Gr. score	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

APPENDIX D

ABSTRACT OF

The Relative Effectiveness of Bloomfield's Linguistic
Approach to Word-Attacks as Compared with Phonics We Use

APPENDIX D

ABSTRACT OF

The Relative Effectiveness of Bloomfield's Linguistic Approach to Word-Attacks as Compared with Phonics We Use.¹

This investigation was an attempt to test the claims made by Bloomfield and other linguists that the linguistic science has a partial solution to one facet of the reading problem, namely, the word-attack skill; hence the content and sequence of the Bloomfield plan were compared with the content and sequence of the conventional Phonics We Use Program.

More precisely, this experiment was designed to determine the relative effectiveness of the Bloomfield plan in Total Reading, in Paragraph Meaning, and in Word Meaning, and to learn whether the plan is equally effective for three categories of readers as they were established by teachers for instructional purpose.

First graders (N:660) from eleven schools randomly selected from the Catholic Parochial Schools of Chicago were subjected first to the Metropolitan Reading Test, Form R, and twenty-three weeks later to the Stanford Achievement Test - Primary Battery, Form M. The results were analyzed for variance and the level of confidence of 1% was chosen.

¹ Sister Mary Fidelia, doctoral thesis presented to the School of Psychology and Education, University of Ottawa, Ontario, 1959, x-127 p.

The findings of this study seem to indicate that the differences in achievement in word-attack skills by either method are not statistically significant at the first grade level; that the Bloomfield plan, in spite of the lack of well developed exercises, paralleled the achievement of the Phonics We Use program; and that the Bloomfield plan is equally effective for the three instructional categories chosen.

Since word-attack skills are cumulatively developed, it appears that a full evaluation of the Bloomfield plan can be obtained only upon the termination of the program in the third or even the fourth grades.