

SUPPLEMENTARY EDUCATIONAL MONOGRAPHS

Published in conjunction with

THE SCHOOL REVIEW *and* THE ELEMENTARY SCHOOL JOURNAL

NUMBER 40 · SEPTEMBER 1933

IMPROVING INSTRUCTION IN READING

AN EXPERIMENTAL STUDY

By

WILLIAM S. GRAY

With the assistance of

GERTRUDE WHIPPLE



THE UNIVERSITY OF CHICAGO · CHICAGO · ILLINOIS

SUPPLEMENTARY EDUCATIONAL MONOGRAPHS

Published in conjunction with

THE SCHOOL REVIEW *and* THE ELEMENTARY SCHOOL JOURNAL
NUMBER 40 · SEPTEMBER 1933.

IMPROVING INSTRUCTION IN READING

AN EXPERIMENTAL STUDY

By

WILLIAM S. GRAY

PROFESSOR OF EDUCATION
THE UNIVERSITY OF CHICAGO

With the assistance of

GERTRUDE WHIPPLE

THE UNIVERSITY OF CHICAGO · CHICAGO · ILLINOIS

IMPROVING INSTRUCTION IN READING
AN EXPERIMENTAL STUDY

PREFACE

The report presented in this monograph was made possible by a subvention from the Commonwealth Fund. The conditions and motives which prompted this investigation are described at some length in chapter i.

Grateful acknowledgment is hereby made to the scores of teachers and school officers who co-operated. Whatever value attaches to the findings may be attributed very largely to their untiring and productive efforts.

W. S. G.

June, 1933

TABLE OF CONTENTS

	PAGE
LIST OF TABLES	ix
 CHAPTER	
I. NATURE AND SCOPE OF THE STUDY	1
II. SUMMARY OF RELATED STUDIES	9
III. NATURE AND SCOPE OF THE INITIAL SURVEY	29
IV. STUDY AND INTERPRETATION OF THE RESULTS OF THE SURVEY	50
V. PRELIMINARY ADMINISTRATIVE AND SUPERVISORY ACTIVITIES	70
VI. CONSTRUCTIVE ACTIVITIES DURING 1926-27	85
VII. METHODS AND RESULTS IN SCHOOL UNIT A	115
VIII. METHODS AND RESULTS IN SCHOOL UNITS B, C, AND D	137
IX. METHODS AND RESULTS IN THE EXPERIMENTAL SCHOOLS	162
X. SUMMARY AND INTERPRETATIONS	208
INDEX	223

LIST OF TABLES

TABLE	PAGE
I. DISTRIBUTION, ACCORDING TO DATE OF PUBLICATION, OF TWENTY-EIGHT STUDIES OF READING MADE IN THREE TYPES OF ADMINISTRATIVE UNITS	9
II. REPRESENTATIVE AIMS OF TEACHING READING AS REPORTED BY 404 TEACHERS IN 29 SCHOOLS	52
III. AIMS OF TEACHING READING AS REPORTED BY NINETEEN TEACHERS IN ONE SCHOOL	53
IV. REPRESENTATIVE ACTIVITIES OF THE READING PERIOD REPORTED BY 404 TEACHERS IN 29 SCHOOLS	55
V. NUMBER OF BOOKS AVAILABLE FOR READING IN GRADES I-VI IN REPRESENTATIVE SCHOOLS	56
VI. NUMBER OF PAGES READ DURING 1925-26 BY GROUPS OF SUPERIOR, MEDIUM, AND SLOW READERS IN GRADES I-VI OF SEVEN REPRESENTATIVE SCHOOLS	58
VII. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS OF DIFFERENT SCHOOLS DURING TWO MONTHS	59
VIII. AVERAGE SCORES ON THE STANDARDIZED ORAL READING PARAGRAPHS IN SCHOOL UNITS A, B, C, AND D IN MAY, 1926	63
IX. MEDIAN SCORES ON THE DETROIT WORD RECOGNITION TEST MADE IN GRADES I B AND I A IN SCHOOL UNITS A AND C IN MAY, 1926	63
X. MEDIAN SCORES ON THE HAGGERTY READING EXAMINATION, SIGMA I, MADE IN GRADES I A AND II A IN SCHOOL UNITS A, B, C, AND D, IN MAY, 1926	64
XI. MEDIAN SCORES ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, MADE IN GRADES II B-VI A IN SCHOOL UNITS A, B, AND C IN MAY, 1926	64
XII. MEDIAN RATE SCORES ON THE COURTIS SILENT READING TESTS MADE IN GRADES II B-VI A IN SCHOOL UNITS A, B, AND C IN MAY, 1926	65
XIII. MEDIAN SCORES ON THE MONROE STANDARDIZED SILENT READING TESTS MADE IN GRADES III-VI IN SCHOOL UNIT D IN MAY, 1926	66

TABLE	PAGE
XIV. MEDIAN SCORES IN RATE AND ACCURACY OF ORAL READING MADE IN GRADES I A-VI A IN EXPERIMENTAL SCHOOLS A, B, C, D, AND E IN MAY, 1926	67
XV. MEDIAN SCORES ON THE HAGGERTY READING EXAMINATION, SIGMA I, MADE IN GRADES I A AND II A IN EXPERIMENTAL SCHOOLS A, B, C, D, AND E IN MAY, 1926	68
XVI. MEDIAN SCORES ON THE MONROE STANDARDIZED SILENT READING TESTS MADE IN GRADES III A-VI A IN EXPERIMENTAL SCHOOLS A, B, C, D, AND E IN MAY, 1926	69
XVII. AVERAGE COMPREHENSION SCORES MADE BY PUPILS IN SIX SCHOOLS IN SCHOOL UNIT A ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN MAY, 1926	88
XVIII. SCORES MADE BY PUPILS IN SCHOOL UNIT A ON FIVE READING TESTS IN MAY, 1926	118
XIX. AVERAGE SCORES ON THE STANDARDIZED ORAL READING PARAGRAPHS AND MEDIAN SCORES ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, MADE BY PUPILS IN TWELVE SCHOOLS IN SCHOOL UNIT A, IN MAY, 1926	120
XX. MEDIAN SCORES ON TESTS OF ORAL AND SILENT READING IN GRADES I A-VI A IN ONE SCHOOL	128
XXI. SCORES MADE BY PUPILS IN SCHOOL UNIT A ON FIVE READING TESTS IN MAY, 1926, AND MAY, 1927.	133
XXII. SCORES MADE BY PUPILS IN SCHOOL UNIT A ON THREE READING TESTS IN MAY, 1926, MAY, 1927, AND MAY, 1928	135
XXIII. SCORES MADE BY PUPILS IN SCHOOL UNIT B ON FOUR READING TESTS IN MAY, 1926	139
XXIV. SCORES MADE BY PUPILS IN SCHOOL UNIT B ON FOUR READING TESTS IN MAY, 1926, AND MAY, 1927.	144
XXV. NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS IN SCHOOL UNIT B DURING TWO MONTHS IN 1926 AND IN 1927	145
XXVI. SCORES MADE BY PUPILS IN SCHOOL UNIT B ON THREE READING TESTS IN MAY, 1926, MAY, 1927, MAY, 1928, MAY, 1929, AND MAY, 1930.	146
XXVII. SCORES MADE BY PUPILS IN SCHOOL UNIT C ON FOUR READING TESTS IN MAY, 1926	149
XXVIII. SCORES MADE BY PUPILS IN SCHOOL UNIT C ON FOUR READING TESTS IN MAY, 1926, AND MAY, 1927.	153

LIST OF TABLES

xi

TABLE	PAGE
XXIX. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS IN SCHOOL UNIT C DURING TWO MONTHS IN 1926 AND IN 1927	154
XXX. SCORES MADE BY PUPILS IN SCHOOL UNIT D ON THREE READING TESTS IN APRIL, 1926	157
XXXI. MEDIAN SCORES MADE BY FIRST- AND SECOND-GRADE PUPILS IN SCHOOL UNIT D ON THE HAGGERTY READING EXAMINATION, SIGMA I, IN APRIL, 1926, AND APRIL, 1927	159
XXXII. AVERAGE SCORES MADE BY PUPILS IN SCHOOL UNIT D ON THE STANDARDIZED ORAL READING PARAGRAPHS AT FOUR TESTINGS	160
XXXIII. MEDIAN SCORES MADE BY PUPILS IN SCHOOL UNIT D ON THE MONROE STANDARDIZED SILENT READING TESTS IN APRIL, 1926, AND APRIL, 1927	160
XXXIV. AVERAGE SCORES MADE BY PUPILS IN SCHOOL UNIT D ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN SEPTEMBER, 1926, APRIL, 1927, AND APRIL, 1928	161
XXXV. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS IN THREE SCHOOLS DURING TWO MONTHS IN 1926	165
XXXVI. MEDIAN SCORES MADE BY PUPILS IN THREE SCHOOLS ON THREE READING TESTS IN MAY, 1926	166
XXXVII. MEDIAN SCORES MADE BY PUPILS IN THREE SCHOOLS ON THE HAGGERTY READING EXAMINATION, SIGMA I, IN MAY, 1926, AND MAY, 1927	172
XXXVIII. MEDIAN SCORES MADE BY PUPILS IN THREE SCHOOLS ON THE MONROE STANDARDIZED SILENT READING TESTS IN MAY, 1926, AND MAY, 1927	173
XXXIX. MEDIAN SCORES MADE BY PUPILS IN THREE SCHOOLS ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN JUNE, 1927	174
XL. MEDIAN SCORES MADE BY PUPILS IN THREE SCHOOLS ON THE ORAL READING CHECK TESTS IN MAY, 1926, AND MAY, 1927	174
XLI. MEDIAN SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL A ON THREE TESTS IN MAY, 1927, AND IN JUNE, 1930	178
XLII. MEDIAN SCORES MADE BY PUPILS IN SCHOOLS A, M, AND N ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN SEPTEMBER, 1929, AND FEBRUARY, 1930	179

TABLE	PAGE
XLIII. MEDIAN SCORES AND MENTAL AGES OF PUPILS IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL ON THE OTIS GROUP INTELLIGENCE SCALE	181
XLIV. MEDIAN SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL ON THREE READING TESTS IN MAY, 1926	183
XLV. NUMBER OF PUPILS TESTED IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL AND MEDIAN SCORES MADE ON THE OTIS GROUP INTELLIGENCE SCALE.	187
XLVI. AVERAGE SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL ON THE STANDARDIZED ORAL READING PARAGRAPHS IN SEPTEMBER, 1926, AND IN MAY, 1927	187
XLVII. MEDIAN SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN SEPTEMBER, 1926, AND MAY, 1927	188
XLVIII. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS IN EXPERIMENTAL SCHOOL C AND THE CONTROL SCHOOL	188
XLIX. QUARTILE SCORES OF PUPILS IN TWO COLORED SCHOOLS ON THE OTIS GROUP INTELLIGENCE SCALE.	190
L. MEDIAN SCORES MADE BY PUPILS IN TWO COLORED SCHOOLS ON THREE TESTS IN MAY, 1926.	192
LI. MEDIAN SCORES MADE BY PUPILS IN TWO COLORED SCHOOLS ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN SEPTEMBER, 1926, AND MAY, 1927	196
LII. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY THE PUPILS IN TWO COLORED SCHOOLS	197
LIII. QUARTILE SCORES OF PUPILS IN EXPERIMENTAL SCHOOL E AND THE CONTROL SCHOOL ON THE OTIS GROUP INTELLIGENCE SCALE	199
LIV. MEDIAN SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL E AND THE CONTROL SCHOOL ON THREE READING TESTS IN MAY, 1926	201
LV. AVERAGE SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL E AND THE CONTROL SCHOOL ON THE STANDARDIZED ORAL READING PARAGRAPHS IN SEPTEMBER, 1926, AND MAY, 1927	205

LIST OF TABLES

xiii

TABLE	PAGE
LVI. MEDIAN SCORES MADE BY PUPILS IN EXPERIMENTAL SCHOOL E AND THE CONTROL SCHOOL ON THE STANFORD ACHIEVEMENT TEST, READING EXAMINATION, IN SEPTEMBER, 1926, AND MAY, 1927	206
LVII. MEDIAN NUMBER OF BOOKS READ INDEPENDENTLY BY PUPILS OF EXPERIMENTAL SCHOOL E AND THE CONTROL SCHOOL	206

CHAPTER I

NATURE AND SCOPE OF THE STUDY

During the period from 1920 to 1925 the Educational Research Committee of the Commonwealth Fund subsidized the study of a series of important curriculum and learning problems relating to different school subjects. In the field of reading, for example, laboratory studies were made of the fundamental habits of recognition (1),¹ of various types of silent reading (5), and of the causes and remedial treatment of serious deficiencies in reading (2). A summary was also prepared of the results of scientific studies relating to reading that had been published before July 1, 1924 (3). The professional literature on reading published during the last decade shows clearly that the influence of these investigations has been significant and far reaching.

In 1925 the members of the Educational Research Committee reviewed the progress which had been made in the scientific study of school subjects and considered at length the problems which merited further investigation. As a result of their discussions, two important conclusions were reached: first, that research relating to curriculum and learning problems was going forward far more rapidly than were efforts to apply the results in improving school practices; and, second, that there was urgent need for a detailed study of the problems involved in reorganizing and improving teaching in harmony with the results of scientific studies. Accordingly, funds were appropriated for an intensive study of ways and means of applying the results of research in improving both the content and the methods of teaching. Reading was selected as the field for investigation inasmuch as desirable changes in teaching that subject had been more or less clearly defined as a result of published studies, committee reports (6), and critical discussions.

Statement of purposes.—The chief purposes of the proposed study may be stated briefly as follows:

¹ The numbers in parentheses refer to the bibliographical references at the end of the chapter.

1. To determine ways and means of reorganizing and improving the teaching of reading in harmony with the results of scientific studies.

2. To study the character of the administrative, supervisory, and teaching difficulties encountered in a supervisory campaign planned to improve instruction in reading.

3. To determine the effect, if any, on the achievement of pupils that accompanies and follows vigorous efforts to improve teaching.

In order to achieve these purposes, a series of supplementary aims was adopted. For example, steps were taken early in the investigation to develop among supervisors and teachers a clear understanding of the social objectives of reading, of the relation of reading to various school activities, and of needed changes in the content and the methods of teaching reading. Furthermore, efforts were made to awaken interest in the problems of teaching reading and to secure the hearty co-operation, initiative, and creative effort of all teachers in the schools that participated. In addition, steps were taken to develop among teachers an objective attitude toward reading problems and skill in the use of techniques that are helpful in studying them. Effort was thus made to lay a foundation for intelligent study of reading problems that would continue through local initiative and effort long after the investigation had been completed.

Current value of the study.—The practical significance of a study directed by the foregoing aims is even more apparent today than in 1925, largely because of the fact that the scientific study of reading problems has been going forward recently with increased vigor and has greatly extended our knowledge of desirable reading practices. Furthermore, recent social changes and a growing appreciation of the need for fundamental reforms in school activities make a reorganization of instruction imperative today in many school systems. The changes introduced should harmonize with the results of scientific studies and with progressive trends in teaching. The supervisory problems involved should be clearly understood and intelligently solved. Methods should be adopted which will promote an inquiring attitude on the part of staff members and initiative in attacking their problems.

In view of the recent trend to reduce, in school systems, the supervisory staffs; the results of this study appear at an opportune time. They relate specifically to such problems as the following: Is professional leadership essential in effecting needed reforms? If economies in supervision are necessary, how can needed guidance in improving teaching be provided? Through what agencies and by what means can instruction be modified in harmony with the results of scientific studies and, at the same time, be maintained at a high level of efficiency? Since the results of this study supply more or less conclusive answers to some of these questions, it is hoped that the report may serve as a stimulus and, in a sense, as a guide during the period of radical reconstruction which elementary education now faces.

Scope of the study.—It seemed advisable at the outset to limit the investigations to the elementary-school field for three reasons: (1) Most of the scientific studies that were available in 1926 related to reading problems at that level. (2) The results of these studies indicated that the foundation of desirable reading interests and habits should be more or less thoroughly established by the end of Grade VI. (3) The problems involved in improving reading in junior and senior high schools are radically different from those of the lower grades. They required additional study before an investigation of the type here proposed could be undertaken to advantage in secondary schools.

In order to carry on the investigation at the elementary-school level under widely different conditions, the co-operation of two groups of schools was secured. The first group included four school units which differed widely in size and in the type of supervision provided. These will be referred to hereafter as School Units, A, B, C, and D. A brief description of each follows.

1. School Unit A was located in a city of about 35,000, which had ten elementary schools. In addition to the superintendent, the staff included a primary supervisor, a supervisor of Grades IV, V, and VI, a supervising principal in practically all elementary schools, and a corps of 110 teachers.

2. School Unit B was in a city of about 8,000 which had four elementary schools. The superintendent, who was the chief supervisory

officer, was assisted by one principal in directing a staff of thirty-four teachers.

3. School Unit C was in a village of 300 which had one elementary school. The staff included a principal, who taught full time, and four teachers. A rural-school director, who was a member of the county superintendent's staff, visited the school once a week.

4. School Unit D was a rural school of 24 pupils. The teacher was supervised by the county superintendent, who visited the school at intervals throughout the year.

The second group included five schools representing widely different racial, social, and economic conditions. These will be referred to hereafter as Experimental Schools A, B, C, D, and E. A brief statement concerning each follows.

1. Experimental School A was a seventeen-room elementary school in a residential suburb that ranks very high socially and economically. Prior to the school year 1926-27 the school was supervised entirely by the staff in the central office. Beginning in September, 1926, a supervisory officer was assigned to the building to devote most of her time to reading problems.

2. Experimental School B was located in the same suburb as School A. Most of the pupils came from very good homes. However, this school was in a different school district and under a different administration. The principal devoted all her time to administration and supervision.

3. Experimental School C was in an industrial suburb. It was attended by children of the second or third generation of immigrants to this country. They came from homes that represented somewhat widely different social and economic conditions. The fact that many of the parents moved frequently provided an unstable school population. The principal was responsible for the supervision of two schools.

4. Experimental School D was in the heart of the colored belt of Chicago. It was supervised by a full-time principal.

5. Experimental School E was in the shadows of the steel mills of South Chicago. It was attended largely by children of foreign-born parents and was directed by a full-time principal.

Associated with the five experimental schools were four others which served as control schools.

All the schools included in the study were located in the northern half of Illinois. The study was thus restricted to a limited area in order that the constructive work done and the problems and difficulties encountered could be studied more or less carefully by the investigator. This plan also facilitated frequent conferences with administrators, supervisors, and teachers.

Outline of major steps.—The study as a whole continued for five years, beginning in the autumn of 1925 and closing in the spring of 1930. It was divided into three main parts or divisions. The first was an initial survey made during the school year 1925-26 to determine the status of reading in the schools, the nature of the reading activities provided, the amount and the character of the free reading of the pupils, and the achievement of the pupils near the close of the school year. In addition, effort was made to stimulate an inquiring attitude among supervisors and teachers concerning reading problems and to develop keen interest in improving both the content and the methods of teaching.

The second part of the study was carried on during the school year 1926-27. At this time special effort was made to effect such changes and improvements in teaching reading as seemed desirable and practical in each school. In this connection, numerous steps were taken of which the following are typical: The pupils were tested carefully at the beginning of the school year to determine their achievement and needs in reading. The teachers then made desirable changes in the content and the methods of teaching reading in their respective rooms. They were aided in this connection by the systematic study of recent professional literature relating to reading; by discussions of the results of scientific studies of reading and of progressive trends based on these studies; and by demonstrations, personal conferences with supervisors, and other supervisory means. Paralleling such steps detailed studies were made of the administrative, the supervisory, and the teaching problems encountered and of the methods which could be used to advantage in overcoming the difficulties. At the close of the school year duplicate forms of the tests which had been used at the beginning of the year were given to determine the progress of the pupils during the year.

The third part of the study extended from September, 1927, to June, 1930. During this period an effort was made to determine the

permanent values of the constructive program initiated in 1926-27, as measured by continued efforts of school officers and teachers and by the results of reading tests. On account of internal changes in some of the schools, it was not possible to pursue this part of the study in all the schools. However, measures of the progress of the pupils were secured for three school units in June, 1928, and for two school units in June, 1930.

Sources of information and guidance.—Those who co-operated in the study relied on five sources of information and guidance in their efforts to reorganize and improve the teaching of reading:

1. In harmony with the major purpose of the investigation, continuous use was made of the results of scientific studies relating to reading. By July 1, 1926, more than five hundred such studies had been published. Their chief findings had been summarized (4) and were available in convenient form. During the school year 1926-27 113 additional studies were published. Important conclusions justified by these studies were also summarized as rapidly as the published reports appeared.

2. The *Report of the National Committee on Reading* (6) proved of great practical value in this study. Inasmuch as its recommendations were based on reliable evidence, in so far as possible, and on the judgments of experts, whenever adequate evidence was lacking, this study supplemented to distinct advantage the help that could be secured directly from scientific literature. The fact that its recommendations were organized either in terms of a program of instruction or of specific reading problems added to the usefulness of the study for both supervisors and teachers.

3. Recent books and articles relating to reading and to the principles and the techniques of supervision formed a third source of very helpful information. Many of these sources referred to the results of scientific studies and discussed at length their practical applications. Inasmuch as most of the materials relating to reading were written specifically for the use of teachers in service, they could be read and interpreted readily.

4. A fourth source of useful information related to current practice in teaching reading. Before the study was well under way, the need arose for some means by which instruction in reading could be

classified according to its breadth and excellence. A detailed study was therefore made of the content and the method of teaching reading as found in the schools that co-operated and as described in recent literature. An analysis of this information led to the identification of five types of teaching which differed greatly in breadth and quality. These types of teaching will be described at length in chapter iii.

5. The fifth source of information included reports of previous campaigns to improve instruction in reading. In a sense, these reports are scientific in character and belong in the first of the sources mentioned. They have been listed here separately for purposes of emphasis. They proved most suggestive both to the investigator and to the administrative officers who co-operated.

Other sources were used at times and will be referred to frequently in subsequent chapters. These included such items as lists of published materials, courses of study, and bulletins and pamphlets of various types.

Organization of the report.—The methods and the results of related studies will be summarized briefly in chapter ii. Additional facts relating to this investigation, the various steps taken, and the findings and conclusions will be presented in subsequent chapters under the following general headings: nature and scope of the initial survey; study and interpretation of the results of the survey; preliminary administrative and supervisory activities; constructive activities during 1926-27; methods and results in School Unit A; methods and results in School Units B, C, and D; methods and results in the experimental schools; and summary and interpretations.

BIBLIOGRAPHICAL REFERENCES

1. BUSWELL, GUY THOMAS. *Fundamental Reading Habits: A Study of Their Development*. Supplementary Educational Monographs, No. 21. Chicago: Department of Education, University of Chicago, 1922. Pp. xiv+150.
2. GRAY, WILLIAM S., with the co-operation of DELIA KIBBE, LAURA LUCAS, and LAWRENCE W. MILLER. *Remedial Cases in Reading: Their Diagnosis and Treatment*. Supplementary Educational Monographs, No. 22. Chicago: Department of Education, University of Chicago, 1922. Pp. viii+208.
3. GRAY, WILLIAM S. *Summary of Investigations Relating to Reading*. Sup-