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ABSTRACT

This abstract bibliography is a reader's companion to the Ruth Strang monograph "Reading Diagnosis and Remediation," which was published jointly by the International Reading Association and the ERIC Clearinghouse on Retrieval of Information and Evaluation on Reading (ERIC/CRIER) in 1968. It contains complete citations and abstracts of all of the research articles reviewed by Strang for the monograph, and is updated to include pertinent research which has appeared in print since that publication. The same categories are used in arranging the abstracts as were developed for the monograph, making it possible to use the bibliography as a source of further information while reading the monograph or as an organized guide to a large body of research without reference to the monograph. Categories include introduction; correlates and causes of reading achievement and disability; severe reading disability (dyslexia); diagnostic techniques; problems of diagnosis in special groups; remediation of reading disabilities; and trends, needs, and future directions. An author index, ordering instructions for ERIC documents and University Microfilms dissertations, and a listing of ERIC/CRIER Reading Review Series Bibliographies are included. (MS)

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ERIC/CRIER READING REVIEW SERIES

Bibliography 31

Reading Diagnosis and Remediation:
A Companion Bibliography to
Ruth Strang's Monograph

Compiled by the
ERIC/CRIER Staff

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Information on the ERIC System:

ERIC

ERIC is a decentralized, national information system which acquires, abstracts, indexes, stores, retrieves, analyzes, and disseminates significant and timely educational information. ERIC's full name is the Educational Resources Information Center, and it is funded through the Bureau of Research, USOE. ERIC was founded to reduce limitations in the identification, transfer, and use of educational information. In short, the major goal of ERIC is to enable school administrators, teachers, researchers, information specialists, professional organizations, graduate and undergraduate students, and the general public to keep up-to-date on research and research-related knowledge in education. ERIC accomplishes this through strengthening existing educational information services and providing additional ones.

ERIC/CRIER

The ERIC Clearinghouse on Retrieval of Information and Evaluation on Reading (ERIC/CRIER) is one of the 20 clearinghouses in the ERIC system. ERIC/CRIER is located at Indiana University and is cosponsored by the International Reading Association and the University in cooperation with USOE. Each of the clearinghouses in the ERIC system operates within a specific area of education defined in its "scope" note. ERIC/CRIER's domain of operation includes:

...research reports, materials and information related to all aspects of reading behavior with emphasis on the physiology, psychology, sociology, and teaching of reading. Included are reports on the development and evaluation of instructional materials, curricula, tests and measurements, preparation of reading teachers and specialists, and methodology at all levels; the role of libraries and other agencies in fostering and guiding reading; and diagnostic and remedial services in school and clinic settings.

INTRODUCTION

Reading Diagnosis and Remediation, an International Reading Association research fund monograph, was published jointly by IRA and ERIC/CRIER in 1968.

In her monograph, Dr. Ruth Strang included a review of diagnosis and remediation. Explored within the pages of the publication were the nature and levels of diagnosis, the correlates and causes of reading achievement and disability, diagnostic techniques, the problem of diagnosis in special groups, and remedial practices.

This bibliography is a companion to Dr. Strang's 1968 publication. Abstracts of all the articles which appeared in the monograph can be found within this bibliography arranged as they were in the monograph. The bibliography also includes an update of studies in the area of reading diagnosis and remediation. Material published since the 1968 publication date through 1970 is included and arranged in the same categories used in the original monograph.

The following sources were used to update the original Strang publication:

Recent Doctoral Dissertation Research in Reading, Supplement 2 (Available from the ERIC Document Reproduction Service, ED 035 793, microfiche \$0.65, hard copy \$6.58). This supplement covers research published between July, 1968 and June, 1969.

USOE Sponsored Research on Reading, Supplement 1 (Available from the ERIC Document Reproduction Service, ED 031 606, microfiche \$0.65, hard copy \$3.29). The supplement includes research published between 1966 and July, 1969.

Summary of Investigations Relating to Reading, July 1, 1967 to June 30, 1969, July 1, 1968 to June 30, 1969. These summaries appeared in the Winter issue of the Reading Research Quarterly.

The updated information together with the studies included in the 1969 monograph makes this bibliography of even more value to reading teachers and clinicians. It is intended to give the reader a point of view regarding diagnosis leading to remediation, to familiarize them with correlates and causes of reading problems, and to acquaint them with a large number of diagnostic tests.

With the increased emphasis on specialized reading programs in schools today this bibliography should be of particular interest, not only to reading teachers, specialists, and clinicians, but to classroom teachers and school principals.

PART I--INTRODUCTION

An attempt to present an understanding of the reading process itself as a prelude to any diagnosis of reading problems is made in this part. Also included are studies dealing with the frequency of reading disabilities, the nature of diagnosis, diagnosis on different levels, and contribution of research.

Bateman, Barbara. "Learning Disorders," Review of Educational Research, 36 (February 1966) 93-119.

A review of the literature dealing with learning disorders is presented. Overviews and classifications are given. Areas considered are the etiology of learning disorders, characteristics of children with learning disorders, diagnostic testing, remediation of learning disorders, and issues and needed research. The review does not cover the literature dealing with emotional disturbance as a primary etiological factor in learning disorders. Coverage of the area of learning disorders involving reception and expression of the spoken word is limited. A bibliography is included.

Kirk, Samuel A. "Reading Problems of Slow Learners," The Underachiever in Reading, H. Alan Robinson, Ed. Supplementary Educational Monographs. No. 92, 62-69. (Chicago: University of Chicago Press, 1962.)

Discrepancies in abilities and achievements of children with similar IQ's indicate that classifications into such neat categories as "slow learner," or "mentally retarded" do not give an adequate functional diagnosis which can lead to remediation or education programing. Two of the many types classified as "slow learners" are children retarded in IQ and reading due to subcultural factors and children retarded as a result of psychological deficiencies. The first group comes from low socioeconomic urban areas where social and economic rehabilitation must accompany school improvement as full treatment. The second group manifests reading retardation in such specific areas as visual, associational, and vocal and motor expression ability, sound blending and discrimination, perceptual speed, or visual closure and discrimination. Remediation must include treatment for the specific disability manifested by these individuals.

Strang, Ruth. "The Reading Process and Its Ramifications," Tenth Annual Convention, International Reading Association Invitational Addresses, 48-72. (Newark, Delaware: International Reading Association, 1965.)

The author discusses the reading process said to be a factor of the reader's goals, the degree to which he possesses or has acquired prerequisites

for learning, and the effectiveness of the teaching procedures to which he is subjected. This complex view of reading is discussed under the four main headings of product, prerequisites, process, and procedures. Under product are included the main competencies, results, or goals that are to be achieved, including vocabulary, word recognition skills, and comprehension. Under prerequisites are reading readiness; mental abilities; linguistic factors; listening comprehension; and value system, motivation, and self-concept. The reading process is discussed on four levels: chemical, neurological, psychological, and behavioral. Under the last main heading of procedures the author presents a formula that describes the teaching process.

Section 1: Frequency of Reading Disabilities

Vernon, M. D. "The Investigation of Reading Problems Today," British Journal of Educational Psychology, 30 (June 1960) 146-54.

Current methods of investigating reading problems are discussed in a critical review of 17 British and American research studies in reading. Two types of investigating techniques are examined: (1) comparison of the reading achievement of classes taught by different methods to discover the best methods of teaching reading, and (2) the selection of a group of children retarded in reading and the comparison of their characteristics with those of a group of normal or superior readers to investigate the causes of failure in learning to read. Problems and weaknesses in the methods of investigation for group studies and for individual studies are emphasized. The implications of the findings are discussed. It was concluded that more must be known about the fundamental nature of reading disability before specific causes can be singled out from the multiple factors which affect reading ability. References are included.

Section 2: The Nature of Diagnosis

Strang, Ruth. Diagnostic Teaching of Reading. (New York: McGraw-Hill Book Company, 1964.) 314 p.

Intended as a guide for teachers, reading specialists, psychologists, principals, and guidance workers, this diagnostic approach to reading emphasizes the importance of student self-appraisal and of diagnosis as an intrinsic part of teaching. The Introduction outlines briefly principles and points of view and overviews diagnostic information, its sources, and synthesis. Part 1 presents detailed descriptions of procedures and record forms which can be used with groups or individuals and describes the role of the teachers, classroom observation, oral reading as a diagnostic technique, retrospective and introspective reports, ascertaining interests,

and uses of tests. Other procedures presented in Part 2 must be administered individually. Subjects discussed include physical factors in diagnosis, individual reading tests, indicators of reading potential, interview techniques, projective methods, and how to interpret and synthesize information. A bibliography follows each chapter, and appendixes provide an analysis of reading tests and a checklist of instruction needs. An index is included.

Section 3: Diagnosis on Different Levels

Brown, Don A. "Educational Characteristics of Adult Illiterates: A Preliminary Report," New Frontiers in College-Adult Reading, G. B. Schick and M. M. May, Eds. National Reading Conference Yearbook, 15 (1966) 58-68.

Descriptive information concerning 28 adult Negro illiterates who attended adult basic education classes of the Buffalo City Schools was presented. The subjects were almost all of rural background. The reasons for not attending school given most often were: a need to remain at home, lack of available schools, and parental or personal disinterest. Forty-two percent had no one who could read in their present family situation. The reasons given for wanting to learn to read were to take care of personal needs, to get a job, to get a better education, and to read the Bible. When allowed to choose from fictitious book titles, at least 90 percent selected those related to vocational improvement, personal appearance, religion, peace, health, and history. On the Wechsler Adult Intelligence Scale the subjects performed poorly on Digit Symbol, Digit Span, Similarities, Information, and Block Design. From an inventory of skills, interests, and knowledge constructed for this study and from standardized test data, it was concluded that the subjects exhibited a great lack of common knowledge on which to base instruction and that a program should provide for broad educational growth rather than narrow skill development. It was also concluded that since their environment is both sterile and painful, the logical topic for reading instruction may not be their social plight. References are included.

Burnett, Richard W. "The Diagnostic Proficiency of Teachers of Reading," The Reading Teacher, 16 (January 1963) 229-34.

The development of an instrument which would measure a teacher's skill in using diagnostic procedures to solve the problems involved in the teaching of reading, which would also hold some promise of providing insight into why individuals differ in proficiency in this skill, is reported. The resulting test is described and validating procedures given. To evaluate the effectiveness of the test, three groups differing in training and experience were tested: a group of 75 undergraduate students; a group of 93 elementary teachers with bachelor's degrees representing up

to 30 years' experience in different types of school systems; and 19 reading specialists. It was found that the reading specialists significantly outscored the teachers and that the latter significantly outscored the students. The mean differences were significant beyond the .01 and the .05 levels respectively. All variances compared in the study were tested for homogeneity by the F-test and found to be homogeneous at the .01 level. All tests reported are two-tail tests. Reliability measures would indicate that the test is of suitable difficulty. Broader uses of tests of this nature are discussed. References are given.

Cohn, Robert. "Neurological Concepts Pertaining to the Brain-damaged Child," Speech and Language Therapy with the Brain-damaged Child, W. T. Daley, Ed., 13-36. (Washington, D.C.: Catholic University of America Press, 1962.) N. B. There are no chapter designations in this book.

With the intent of applying concepts of neurological science to the general problem of brain damage, especially in children, the article defines brain damage and discusses various types; observes the role of neurology; catalogues significant direct spontaneous behavioral observations; notes the value of tests for statistical and prognostic data which could maximize chances for biological adaptation; and lists and discusses with examples several categories by which to organize a neurological examination: language, motor action, sensory status, reflex activities, personal and environmental characteristics, and the electroencephalogram (EEG). The EEG receives special consideration. Aphasia and word blindness also receive full discussion, with examples. Conclusions point out the inadequate correlations of brain pathology with the inability to learn, retain or recall, as well as the general imprecision of data; and call for further research, while warning against labeling the brain damaged as untrainable.

Newton, Kenneth R., et al. A Suggested Method for Pre-School Identification of Potential Reading Disability. 40 p. (OEC-6-10-144, 1966) ED 015 114, microfiche \$0.65, hard copy \$3.29 from EDRS.

The relationships between prereading measures of visual-motor-perceptual skills and reading achievement were studied. Subjects were 172 first graders. Pretests and post-tests for word recognition, motor coordination, and visual perception were administered. Fourteen variables were tested. Results indicated that form-copying was more effective than IQ as a predictor of reading disability. The correlation between age and reading was lowest. Appendixes provide examples of testing materials and an outline of the training sessions. Twenty-nine references are listed.

Section 4: Contribution of Research

Anderson, William James. A Study of the Evolution of Remedial Reading in the Elementary Schools of America, 1900-1964. 203p. (Ed.D., Baylor University, 1968) Dissertation Abstracts, 29, No. 6, 1764-A. Order No. 68-15,811, microfilm \$3.00, xerography \$9.25 from University Microfilms.

The historical study of the development of remedial reading in American elementary schools placed emphasis on the philosophy and objectives, the need for remedial reading, the selection of pupils, the diagnostic procedures, the instructional techniques, and the evaluative criteria of remedial reading. Two broad periods were dealt with: 1900 to 1949 and 1950 to 1964. Data were obtained by informal interviews and correspondence with reading authorities and from a review of the literature. The periods are characterized by giving emphasis to the general aims, methods, and materials utilized in each.

Bateman, Barbara. "Learning Disorders," Review of Educational Research, 36 (February 1966) 93-119.

A review of the literature dealing with learning disorders is presented. Overviews and classifications are given. Areas considered are the etiology of learning disorders, characteristics of children with learning disorders, diagnostic testing, remediation of learning disorders, and issues and needed research. The review does not cover the literature dealing with emotional disturbance as a primary etiological factor in learning disorders. Coverage of the area of learning disorders involving reception and expression of the spoken word is limited. A 96-item bibliography is included.

Bond, Guy L., and Tinker, Miles A. Reading Difficulties: Their Diagnosis and Correction. Second Edition. (New York: Appleton-Century-Crofts, Inc., 1967.) 564p.

In view of the widespread reading disability in schools, this text for teachers, remedial teachers, and clinicians discusses some of its causes and presents a program for improvement. The first major section deals with fundamental principles of reading instruction, and emphasizes the need to incorporate various aspects of different teaching methods according to the pupils' individual differences. The second major section is devoted to the nature and causes of reading disability, with physical, emotional, intellectual, and educational factors described and evaluated. Part 3 deals with diagnosis, discussing specific questions which must be answered and surveying specific approaches and instruments used. Aspects of remedial treatment comprise the major theme of part 4. Separate chapters discuss ways to develop such things as word recognition

or right-left perception. The final section is concerned with special problems, such as developing interest and taste, or treating specifically handicapped children. Several case studies are presented. There is an index, and the appendixes list IQ and reading tests, texts on reading, sources of graded books, sources for materials, and bibliographies of reading literature.

Curr, W. and Gourlay, N. "The Effect of Practice on Performance in Scholastic Tests," The British Journal of Educational Psychology, 30 (June 1960) 155-67.

The practice effect for standardized tests in word reading, reading comprehension, and mechanical arithmetic when tests are given at varying time intervals to subjects at the average level of accomplishment and to those testing 2 years below was measured. Subjects were chosen randomly from pupils between 9 and 10 years of age attending four primary schools in Birmingham, England. Pupils at the average level of ability were at the 9-5 year level; pupils 2 years below average were at the 7-5 year level. Four groups, each composed of six boys and six girls, and two groups of 12 boys and 12 girls each were used in the study. Initial, mean, and final scores and gains in months were tabulated for each group for each interval of practice. Practice effect was greatest for reading comprehension, only slight for the arithmetic test. It was noted that gains made by the controls could be explained in terms of maturation and practice effect. Evidence of a coaching effect was demonstrated when retests were given to both remedial and control groups a year after the close of the experiment. Gains varied with the type of test used and disappeared in 3 to 12 months. It appeared that remedial education produced no permanent results. References are given.

Dunham, J. "The Effects of Remedial Education on Young Children's Reading Ability and Attitude to Reading," The British Journal of Educational Psychology, 30 (June 1960) 173-75.

An experiment to obtain evidence about the effectiveness of remedial education is summarized. A remedial group consisting of 20 severely retarded 9-year-old children of about average intelligence took part in remedial reading lessons once or twice weekly for 6 months. They were paired with a control group of children on the waiting list for remedial education according to age, intelligence, reading ability, and the socio-economic area of the school. The remedial children worked in small groups of not more than six as part of the normal work of an L.E.A. Remedial Education Service. Reading ability, retardation, WISC (Wechsler Intelligence Scale for Children), and attitude to reading were measured. The real gain of the experimental group was the difference between the mean gains of the experimental and control groups. There was evidence that remedial education was effective in improving the reading ability of

severely retarded 9-year-old children of about average intelligence and that the favorable effect of remedial education on the attitudes to reading of the same children was much less than the effect on reading ability. Further research into selection procedures was recommended. Tables are included.

Gray, Gordon Walter. Origin and Development of the College or University Reading Clinic in the U.S. 303p. (Ed.D., The University of Tennessee, 1967) Dissertation Abstracts, 29, No. 1, 61-A. Order No. 68-9801, microfilm \$3.90, xerography \$13.75 from University Microfilms.

A survey covering the origin and development of college and university reading clinics was made by means of questionnaire. Each clinic was asked for general data such as its date of establishment, departmental attachment, present director, etc., along with questions regarding original objectives, changes in objectives, present primary approach to remediation, etc. The answers were summarized and 12 conclusions were reached, some of which follow: the four earliest reading clinics were attached to psychology departments; a decided trend toward unrestricted enrollment has been established in the past 12 years; there was a sharp increase in the number of clinics established between 1956-1967; the teaching of specific reading skills and the use of commercially prepared systems are the primary approaches adopted for remediation; in order of frequency, the silent reading, oral reading, and intelligence tests are the tests most often administered.

Hafner, Lawrence E. Improving Reading in Secondary Schools. (New York: The Macmillan Company, 1967) 445p.

The 58 articles included in this anthology of surveys, important research, methods, and problem areas in the teaching of reading in secondary schools are divided into 12 units. Each unit and each selection is preceded by an introduction, and each article has a series of study questions. Section topics are: (1) The Roles of Reading in Modern Life, (2) A Modern Definition of Reading, (3) Developing the Ability to Decode Words, (4) Developing the Ability to Understand, Interpret, React Critically, and Apply Insights Gained through Reading, (5) The Development of Word Meanings, (6) Using Reading in Research-Study Situations, (7) Evaluation in Reading, (8) Reading, Learning, and Human Development, (9) Flexibility--Reading for Different Purposes, (10) Reading in Content Areas, (11) Encouraging Reading Interests and Tastes, and (12) Helping Disadvantaged and Reluctant Readers.

Harris, Theodore L.; Otto, Wayne; and Barrett, Thomas C. "Summary and Review of Investigations Relating to Reading July 1, 1966 to June 30, 1967," The Journal of Educational Research, 61 (February, 1968) 243-64.

Summaries and reviews of 165 empirical research studies (July 1, 1966 to June 30, 1967) in the sociology, psychology, physiology, and teaching of reading are presented. Separate bibliographies follow each section. Sociology of reading subheadings include (1) environmental influences, (2) characteristics of reading materials, (3) reading habits and preferences, and (4) psycho-social effects of reading. The psychology of reading is subdivided into (1) psychological correlates of reading achievement, (2) aspects of the learning process, and (3) components of the reading task. Subtopics under the physiology of reading include (1) neurological aspects of reading, (2) sensory integration and reading, and (3) vision and reading. Studies in the teaching of reading include (1) federally supported studies of reading in grades 1 and 2, (2) the teacher and reading instruction, (3) analysis of reading materials, (4) the utility of phonic generalizations, (5) developmental aspects of reading instruction, (6) assessment and prediction of reading achievement, and (7) reading improvement.

Hausmeier, Herbert J. and Quilling, Mary. Research and Development Activities in R & I Units of Four Elementary Schools of Madison, Wisconsin, 1966-67. 31p. (OEC-5-10-154, Wisconsin University, Madison, 1968) ED 021 696, microfiche \$0.65, hard copy \$3.29 from EDRS.

The research and development activities of Research and Instruction Units at four elementary schools in Madison, Wisconsin, during the 1966-67 school year are summarized. Individualization and motivation were the focal points of these projects; special attention was given to language arts. Neither of the language environment programs yielded significant results, but pupils in the experimental group showed progress as great as or greater than that of control pupils. In a comparison of reading approaches for first-grade children, the linguistic approach was effective for girls; the basal reader approach was more successful for boys. In a sixth-grade unit, pupils using individualized reading materials performed better than pupils using basal readers. With the aid of reading consultants, the staff of one school developed a scope and sequence of skills for an individualized reading program. Primary pupils exposed to this program made greater gains in reading vocabulary and comprehension than would usually be expected. The reading program is being implemented at all grade levels in four schools for the 1967-68 school year.

Heckerl, John R. and Sansbury, Russell J. "A Study of Severe Reading Retardation," The Reading Teacher, 21 (May 1968) 724-29.

A summary of the backgrounds, diagnostic evaluations, and remedial techniques used in group and individual remedial reading instruction for six boys between the ages of 11 and 14 years is presented. Five of the boys were diagnosed as primary reading retardation cases, and the sixth was diagnosed as brain-damaged. Data are presented for a 3-year period

of instruction, including summers, and a followup test 2 years later. Mean gain scores on the Gates Primary Reading Tests and the Gates Basic Reading Tests showed that the period of greatest growth in reading occurred during the 3 years of the remedial program; minimum gains or regressions occurred when the boys returned to public school programs without provisions for further remediation. A mean gain of 3.2 years in Oral Reading and 1.9 years in Silent Reading occurred over the 3-year period. Guideposts are suggested for group remedial therapy. It is concluded that through intensive remediation many reading retardates may reach a fourth- or fifth-grade reading level. Tables and references are included.

Hillman, H. H. and Snowdon, R. L. "Part-Time Classes for Young Backward Readers," The British Journal of Educational Psychology, 30 (June 1960) 168-72.

An attempt to determine whether part-time teachers could help backward readers to make significant improvement in a specific remedial reading program is reported. Subjects, 130 children from 26 junior schools, participated in the scheme which was planned to relieve child guidance clinics of purely educational work which deprived them of the opportunity to give specialized psychological service. Remedial classes consisted of 12 girls each, and met twice each week. Work was terminated upon recommendation of a coordinating teacher. Pupil selection was based upon 2-year retardation in reading as decided by the head teacher and classroom teacher concerned. Except for eight children, no intelligence test scores were available, but Burt's Graded Vocabulary Test of Reading Accuracy was used as a measure of progress. Each of the seven teachers was free to orientate instruction to the age, interest level, and difficulties peculiar to each child, and a consistently "phonic" rather than a "whole-word" or "sentence-method" approach was adopted. Materials and related activities were used extensively to enlarge and reinforce reading and writing experiences and to vary teaching techniques. Success was measured by a retest on the Burt test, which showed an average improvement of 11 months for one term and 2 years 5 months for three terms. Conclusions indicate definite value of the scheme for the Durham County school system. References are included.

Moran, R. E. "Levels of Attainment of Educable Subnormal Adolescents," British Journal of Educational Psychology, 30 (November 1960) 201-10.

The academic achievement of educationally subnormal adolescents in 15 London secondary schools was evaluated. The experimental group included 300 subnormal adolescents, ages 14 to 16, consisting of 160 boys and 140 girls. These subjects were from the top classes of eight E.S.N. boys' senior schools and seven E.S.N. girls' senior schools. The mean Terman-Merrill mental age of the experimental group was 9-5. Fifty children from one junior and one secondary school, ages 7 to 11, with mental ages similar to those in the experimental group served as controls. All cases came from working class and lower middle class residential districts.

All tests, except reading and intelligence, were specially adapted so that they required no reading ability. Tests were administered as untimed group tests in the following order: mental arithmetic, craft, language, spelling, reading, general information, intelligence. Results indicated a wide range of variability in attainment level among subjects in the experimental group and potential of working at a higher level among some of the children. Recommendations are made for directing the E.S.N. school curriculum towards vocational guidance and social maturity rather than towards a dependence on verbal facility. Television is suggested as supplementary medium of instruction to take advantage of the E.S.N. children's relatively superior visuo-perceptual ability. Tables and references are included.

Morris, Joyce M. Standards and Progress in Reading. (London: The National Foundation for Educational Research in England and Wales, 1966) 493 p.

A followup study of children in the Kent (England) Education Authority Schools was reported. The first study investigated the relationships between the ability of over 8,000 children age 7 to 11 to read with understanding and nine characteristics of the 60 primary schools they attended. The second phase consisted of (1) extensive studies in representative samples of primary schools, (2) intensive studies in 10 selected schools, and (3) followup studies of selected children to the stages when they entered their first jobs. Personal, school, and home attributes of good and poor readers were studied. It was concluded that a multiplicity of factors contributes to reading progress. Appendixes include sample materials, tables, statistical analyses, titles of books recommended by teachers of junior classes, and a review of recent research on reading and related topics with a selected bibliography.

Pontius, Sharon and Huelsman, Charles B., Jr. "Research Guidelines: Remedial Reading and Counseling," Ohio Reading Teacher, 2, No. 3 (February 1968) 21-23.

This review of six studies examining the effects of counseling and remedial reading instruction on elementary and secondary pupils describes the method and the findings of research articles whose subjects had both socioeconomic adjustment problems and reading deficiencies. The author interprets these articles and suggests that therapeutic treatment combined with reading programs positively affect both, that counselors should be acquainted with remedial reading, that a total approach should be utilized to integrate the child's interests and emotions with academics, and that the elementary counselor should work with teachers to promote reading skills. References are included.

Roberts, Geoffrey R. "A Study of Motivation in Remedial Reading," The British Journal of Educational Psychology, 30 (June 1960) 176-79.

Three forms of motivation, each combined with a method of teaching reading, were compared under normal classroom conditions in England. The motivational types were curiosity, gregariousness, and competition. The reading methods combined with the motivational types were Fernald, Gates, and Monroe respectively. Data from 42 children, ranging in chronological age from 9.4 to 10.9, were included in the statistical calculations. Each method was taught for 20 weeks, five half-hour sessions per week. The subjects, from low cultural backgrounds, were grouped according to reading ability. Sleight's Non-Verbal Intelligence Test and Schonell's Graded Word Reading Test were administered. Means, rank correlations, and Fisher's t were used to analyze the data. Method A, curiosity, coupled with the Fernald method, was superior as a means of teaching reading to retarded readers between the ages of 9 and 11 years.

Robinson, Helen M; Weintraub, Samuel; and Smith, Helen K. "Summary of Investigations Relating to Reading, July 1, 1966 to June 30, 1967," Reading Research Quarterly, 3 (Winter 1968) 151-301.

Three hundred and ten reports of research dealing with reading which were published from July 1, 1966 to June 30, 1967 are summarized. The studies are grouped into six major categories: (1) specific topics, such as beginning reading, grouping, and reading disability; (2) practices and preparation of teachers; (3) the sociology of reading, including such topics as investigations of mass media, readership, and the effect of reading; (4) the physiology and psychology of reading, including studies in such areas as perception, language, and factors related to reading disability as well as a new area of investigations concerned with home and family relationships; (5) the teaching of reading; and (6) the reading of atypical learners. Studies of instructional techniques and materials have been greatly expanded by the U. S. Office of Education First-Grade Reading Studies and the second grade extension of some of them. An annotated bibliography of 310 titles is included.

Roswell, Florence, and Natchez; Gladys. Reading Disability: Diagnosis and Treatment. (New York: Basic Books, Inc.; Publishers, 1964) 248 p.

By integrating pertinent theory and methodology gleaned from education, psychology, and psychiatry; the complex causes, diagnosis, and treatment of reading disability are explored. Teachers, reading specialists, psychologists, as well as graduate and undergraduate students should find two unique features. First the teacher's and the psychologist's approaches to diagnosis are compared. Second, the different materials and approaches used for a wide range of ages and abilities are discussed, from the 9-, 12-, and 16-year-old primary level readers to the older nonreader

to the bright, underachieving high schooler. Other things included are: causes of reading disability, psychotherapeutic principles of remedial reading instruction, methods for teaching word recognition, basic comprehension, study skills, and vocabulary. The last chapter presents six cases illustrating a wide variety of problems. Children's books, work books, teaching devices, and games are mentioned throughout the text. Special bibliographies on neurophysiological and emotional factors and on phonics and individualized readings follow Chapters 1 and 5. Appendixes offer word lists, tests, books, and other materials.

Strang, Ruth. "Exploration of the Reading Process," Reading Research Quarterly, 2 (Spring 1967) 33-45.

Research on the dynamic process by which individuals of different abilities and backgrounds comprehend and interpret what they read is discussed as a prerequisite to effective teaching. Various methods employed to study the reading process, such as analysis of errors, introspective-retrospective verbalization, case studies, and observation of individuals' responses to reading situations, are noted. Four doctoral dissertations, which explore some aspect of the reading process are described. The first is a study of the underlying mental abilities that may facilitate or block reading achievement. The second uses a combination of methods to ascertain the reading process that severely retarded readers employ in trying to comprehend two types of selections. The third is an exploration of the relation between self-concept and achievement; the fourth is an example of the use of a modified critical incident technique to obtain information on the influence of reading on high school students' concepts, attitudes, and behavior. References are listed.

Weintraub, Samuel. "Research," The Reading Teacher, 21 (January 1968) 369-73, 401.

Selected research concerned with eye-hand preference and its relationship to reading is grouped as follows: three studies dealing with laterality and the changes which take place with age, eight studies concerning laterality and reading achievement, and three studies exploring the possibility that laterality may be linked with neurological differences. The following trends are noted from the research: (1) hand preference in general becomes more stable with age; (2) little relationship between laterality and reading achievement has been established; and (3) mild neurological damage may cause certain eye-hand patterns. References are included.

Weintraub, Samuel, "Research," The Reading Teacher, 21 (May 1968) 769-73.

Studies investigating oral language fluency (excluding vocabulary) and reading achievement found little relationship between these variables. Measures such as the total number of words used, the length and complexity of sentences, and the number of different words used have been compared with readiness at the first-grade level and with the reading achievement of older children. It seems that the lack of any positive relationship may be due to the inadequacy of these measures of oral fluency. Because research has demonstrated that "maturity in language is a function of environment and intelligence," a certain level of verbal ability is essential for reading success; however, children must learn the differences between conversation and spoken prose. Further research in this area is needed. References are included.

PART II--CORRELATES AND CAUSES OF READING ACHIEVEMENT AND DISABILITY

Studies appear in this part which cover characteristics and conditions that may be related to achievement and/or disability in reading. All are factors of which a teacher, parent, clinician, etc. need be aware of for observing, interviewing, and testing purposes.

Bluestein, Venus W. "Factors Related to and Predictive of Improvement in Reading," Psychology in the Schools, 4 (July 1967) 272-76.

Twenty-eight variables were correlated with reading improvement in the case of 152 elementary school children who had improved as a result of remedial instruction. "Improvement in reading" was defined as average yearly gains in reading during remediation. The top 27 percent (high achievers) and the bottom 27 percent (low achievers) of the sample were compared on those variables that had been found to correlate with reading improvement. The following factors correlated significantly with the criterion: grade, preremedial achievement in reading and arithmetic, degree of disability, listening comprehension level (positive), and months of remediation and repeated grades during remediation (negative). The following variables correlated significantly with the criterion when a multiple R was computed: IQ, age, and preremedial arithmetic achievement (positive); months of remediation, sex (female), repeated grades prior to or during remediation, and emotional-social problems evident at the end of remediation (negative). It was concluded when predicted scores were compared with actual scores that although many of the variables studied did correlate significantly with reading improvement, none could be used to predict growth in reading sufficiently well on an individual basis. Of the variables examined, preremedial reading and arithmetic achievement seemed to be the best potential predictors. References are included.

Coleman, James C. and Sandhu, Malathi. "A Descriptive-Relational Study of 364 Children Referred to a University Clinic for Learning Disorders," Psychological Reports, 20 (June 1967) 10-91-105.

The Psychological Clinic School at the University of California at Los Angeles conducted a descriptive relations study of 364 children with learning disorders. The center specializes in the assessment and treatment of learning disorders and is directly concerned with research and training in this area. This study attempts to delineate characteristics of the nonsocially disadvantaged learning disorder population. The subjects were placed with a group characterized by grossly inadequate school performance involving failing grades or with a group exhibiting a reading deficit of more than 1 year beyond their age-grade expectancy. A mass of data shows the various variables involved. Subgrouping percentages are reported for the following areas--reading achievement, IQ, emotional adjustment, age, and sex. The study attempted to point out the salient

characteristics of a large learning disorder population and to show the relation of various background variables to subject characteristics. Certain tentative inferences concerning distinguishable subgroups are made.

Cromer, Ward and Wiener, Morton. "Idiosyncratic Response Patterns among Good and Poor Readers," Journal of Consulting Psychology, 30 (February 1966) 1-10.

The reading response pattern of poor readers was studied. It was hypothesized that poor readers respond less consensually than good readers and that both groups make more errors on material which is designed to evoke idiosyncratic patterns of responding. Subjects were 40 male and 8 female fifth graders in New England. Twenty-four of the children were considered remedial readers. They were matched with other students on grade, sex, age, and IQ. Stimulus materials were four stories equated on all but tense and content, a cloze task, an association task, and an identification task. Time and procedures of administration were controlled. Analysis of variance was used to analyze the data. Poor readers made significantly more errors on the stories. Tense was a significant factor; content was not. On the cloze task, good readers made significantly more correct word associations. On the association task, the good readers did better. There was no difference between groups on the identification task. References are included.

De Hirsch, Katrina; Jansky, Jeannette Jefferson; and Langford, William S. Predicting Reading Failure: A Preliminary Study. (New York: Harper & Row, 1966) 144 p.

Specific contributions to the field of language disorders are reported. A predictive index is presented for diagnostic use in schools. Through its use teachers may be able to identify at the kindergarten level those children who are high risks of academic failure. Also, clinical findings concerning full-term and prematurely born children are discussed in terms of maturational delays related to factors affecting lags in learning. A bibliography, glossary, and background sources are listed.

Feldmann, Shirley. "Predicting Early Success," Reading and Inquiry. International Reading Association Conference Proceedings, 10 (1965) 408-10.

A study was made to attempt to deal more definitively with one area of early reading learning, that of diagnosis and prediction of reading achievement. A new predictive and diagnostic test, the Reading Prognosis Test, was designed to be predictive of future reading achievement as well as to give diagnostic information about present skill levels. The new

test is used before formal reading instruction begins; it measures particular skills in language and perceptual discrimination. The results of a fourth validation study of the test, using 300 children in a large urban area and in a suburban community, are given. This fourth validation study showed as much promise for prediction as did the three previous studies. References are included.

Graubard, Paul S. "Psycholinguistic Correlates of Reading Disability in Disturbed Delinquent Children," The Journal of Special Education, 1 (Summer 1967) 363-68.

Psycholinguistic correlates of reading disability are identified in 35 children (between 8 years, 6 months and 10 years, 11 months of age) placed by the court in residential treatment because of antisocial behavior. The Illinois Test of Psycholinguistic Abilities (ITPA) served as the major measuring instrument and was supplemented by tests measuring auditory closure, right-left discrimination, and eye-hand coordination. The study concluded that the subjects did deviate from normal communication processes and that special teaching designed to remediate their weaknesses was needed. Most deficits appeared at the integrational level and in the visual motor channel. Additional findings and recommendations for remedial treatment are discussed. References are included.

Grotberg, Edith H. "Learning Disabilities and Remediation in Disadvantaged Children," Review of Educational Research, 35 (December 1965) 413-25.

A review of learning disabilities and remediation in disadvantaged children is presented. Factors associated with the disabilities and remediation are surveyed. These factors include intelligence; school achievement; reading retardation; linguistics and language patterns; perception, conception, cognition, and vocabulary; and cumulative effects of social and cultural background. Suggestions are made for developing a theoretical system within which research on remediation can be examined. Research on remediation includes programs, experiments, and the role of the teacher. A bibliography is included.

Hawker, James R. "A Further Investigation at Prompting and Confirmation in Sight Vocabulary Learning by Retardates," American Journal of Mental Deficiency, 72 (January 1968) 594-98.

Fifty-six retarded children learned an eight-item sight vocabulary list to a criterion of one perfect test trial and were tested for both recall and recognition retention immediately, and after 1 and 7 days. A 2x2x2 factorial design was employed in which the three variables were

training procedure (Prompting or Confirmation), grouping of response alternatives (Same or Different Concept), and method of presentation (Word-Pictures or Picture-Words). Training procedure and grouping of response alternatives were not significant factors in either acquisition or retention. Method of presentation had no significant effect on acquisition performance, but both the recall and recognition retention data showed that more items were correctly recalled under method Word-Pictures than method Picture-Words. It was also found that the pattern of retention scores varied for recall and recognition; the recall scores decreased significantly over the 7-day period while the recognition scores did not. Tables, graphs, and references are included.

Hayes, Robert B. and Wuest, Richard C. Factors Affecting Learning to Read. 162 p. (CRP-3124, OEC-6-10-122, Pennsylvania State Department of Public Instruction, Harrisburg, 1966) ED 010 615, microfiche \$0.65, hard copy \$6.58 from EDRS.

Four different reading programs were evaluated using 302 second-grade pupils who had participated in the same programs in grade 1. In addition to the study conducted in the second grade, a pilot study was continued into grade 3, and a modified version of the grade-1 study was made again in grade 1. The four reading programs involved were--(1) a "whole-word," ability group, eclectic, basal approach of Scott, Foresman, 1960 Edition, (2) the preceding approach supplemented by a phonics workbook, "Phonics and Word Power," published in 1964 by American Education Publications, (3) the phonic, filmstrip, whole-class approach, published in 1963 by J. B. Lippincott Company, and (4) the 1964 "Early to Read," ability grouping program of i.t.a. (initial teaching alphabet) Publications, Inc., followed by the "Treasure of Literature Series," published in 1960 by Charles E. Merrill Books, Inc. In three of five Lippincott classes, two of five i.t.a. Merrill classes, two of five "Phonics and Word Power" classes, and none of four Scott, Foresman classes, 50 percent or more pupils achieved at least one-half above their predicted levels. It thus appeared that the first three reading programs enabled pupils to achieve higher reading scores (as measured by the Stanford Achievement Tests). In terms of effectiveness with ability groups, the Scott, Foresman approach appeared to be particularly effective with pupils of low IQ, the Lippincott program with those of average IQ, and both the Lippincott or i.t.a. programs with those of high IQ. All results of the study were viewed as tentative.

Holmes, Jack A. "Personality Characteristics of the Disabled Reader," Journal of Developmental Reading, 4 (Winter 1961) 111-22.

A comprehensive examination of the relationship of personality development to reading ability was conducted through documentary analysis. Studies of personality traits and success in reading or spelling from grade school through college level are reported, and the literature is

reviewed. Experimental attempts to establish a relationship between certain personality traits and success in reading or spelling have yielded inconsistent results--positive at the lower grade levels, negative at the high school and college levels. These inconsistencies are explained by the offered gradient shift hypothesis, and further credence is gained if these developmental changes are pictured as a gradual process of internalizing into deep-seated value systems what was initially, in the child, merely a superficial role-mask or persona guide for behavior. Out of such childhood notions of what one's self-image ought to be, deep-seated value-convictions called mobilizers are developed. Mobilizers are defined and their roles are discussed. References are appended.

Kass, Corrine E. "Psycholinguistic Disabilities of Children with Reading Problems," Exceptional Children, 32 (April 1966) 533-39.

The psycholinguistic correlates of reading disability were examined. Twenty-one elementary school children between the chronological ages of 7 years and 9 years 11 months served as subjects. Factors which were controlled were IQ, grade, reading retardation, and auditory and visual defects. An expanded version of the Illinois Test of Psycholinguistic Ability (ITPA) was administered. Standard scores for the sample subjects were compared with the population norms for each subtest. The data were analyzed by z and t tests. Children with reading disabilities were not deficient in the visual motor subtests at the representational level. Reading disability subjects were deficient in the Auditory and Visual Sequencing, Visual Automatic, Sound Blending, Mazes, Memory-for-Designs and Perceptual Speed subtests. This sample tended to have certain psycholinguistic disabilities at the integrational level. Theoretical implications, practical implications, figures and tables, and references are included.

Levy, Joel Robert. Selected Etiological Factors in Reading Retardation among Elementary School Children. 172 p. (Ph.D., The University of Texas at Austin, 1968) Dissertation Abstracts, 29, No. 2, 482-83-A. Order No. 68-10,858, microfilm \$3.00, xerography \$8.00 from University Microfilms.

Using as a basis of selection the discrepancy between reading expectation and actual reading achievement, four groups of 20 cases each were organized as follows: (1) severely retarded primary-level reading deficit (SP), (2) severely retarded intermediate-level reading deficit (SI), (3) non-severely retarded primary-level reading deficit (NP), and (4) nonseverely retarded intermediate-level reading deficit (NI). Among the physical factors and family environmental elements examined were the occupational status of parents, eyedness, term of gestation, and family attitude toward reading problems. The findings, achieved by means of 2x2 factorial categorical data, by continuous data analysis of variance, and by multiple discriminant analysis, were interpreted as indicative of differential home atmospheres within each group. The home atmosphere of the SP and NP groups

was typified by a hopeful attitude toward the child's ability to improve in reading. Parental rejection for reading failure typified the SI group, and parental overprotectiveness typified the NI group. In the investigator's conclusions, focus upon environmental and emotional factors rather than upon physical factors appeared to be the most fruitful approach to the problem of etiology when differences between levels of retarded readers were accounted for.

Lovell, K. and Gorton, A. "A Study of Some Differences Between Backward and Normal Readers of Average Intelligence," British Journal of Educational Psychology, 38 (June 1968) 240-48.

Matched groups of 50 normal and 50 backward readers of normal intelligence were selected from primary school students and compared on a battery of visio-spatial and neuro-psychological tests. Normal readers scored significantly higher than backward readers on measures of reading age, language age, auditory-visual integration, sound-symbol association, spatial orientation, left-right discrimination, and the test of motor impairment. Factor analysis revealed different matrices for the two groups, with age the only common factor correlated to reading age in the two groups. Tables and references are included.

Lovell, K.; Gray, E. A.; and Oliver, D. F. "A Further Study of Some Cognitive and Other Disabilities in Backward Readers of Average Non-Verbal Reasoning Scores," British Journal of Educational Psychology, 34 (November 1964) 275-79.

The disabilities of backward readers of average or better nonverbal reasoning ability were examined. The Watts-Vernon Reading Test and the N.F.E.R Non-Verbal Test No. 3 were administered to 1,853 fourth year students in 14 secondary schools in England. Of these, 30 boys and 25 girls who were all poor readers with average or better nonverbal reasoning scores were matched with average to good readers on four factors. Eight individual tests were administered to all pairs of students: Wechsler Intelligence Scale for Children (WISC) Vocabulary test, WISC Block Designs test, Thurstones's revision of Gottschaldt Figures, Shapiro's test of Rotation, Bender-type designs, spatial orientation, a sentence copying test, and a dictation test. The t-test was used to test the difference between means. There was a significant difference between means. There was a significant difference between the backward and non-backward readers on the WISC Vocabulary test for both sexes. The non-backward boys performed significantly better than the backward boys on the Bender-type test and the Gottschaldt test. Backward readers made more errors on the dictation test, and backward boys made more errors than backward girls. References are included.

MacLean, George and Kear, Edward. The Collection and Statistical Evaluation of Quantitative Data for Hand-Eye Coordination with Respect to Determining Its Correlation with Reading Disability at Both the Primary and Secondary School Levels. Final Report. 36 p. (OEC-1-6-068324-0653, Clarkson College of Technology, Postdam, New York, 1967) ED 020 861, microfiche \$0.65, hard copy \$3.29 from EDRS.

The possibility of a correlation between hand-eye coordination and reading disability was investigated. Children from grades 2 to 12 were tested to determine their hand-eye coordination using a portable testing device for quantitative measure recently developed. The subjects included approximately 1,700 normal public school students and 290 students diagnosed as poor readers by reading clinics. The subject's reading ability was determined through the use of the standardized reading tests administered by school personnel. Statistical analysis of the data, after it was normalized for the effect of age, indicated no correlation between hand-eye coordination and reading disability above the second-grade level. However, since this was the youngest group tested, more work must be done in the younger age range before any conclusions can be reached. References are listed, and six appendixes of detailed data analysis are included.

Malmquist, Eve. Factors Related to Reading Disabilities in the First Grade of the Elementary School. ACTA Universitatis Stockholmiensis, Stockholm Studies in Educational Psychology 2. (Stockholm: Almqvist and Wiksell, 1960) 428p.

A comparative study of different groups of readers at the end of their first year in the primary schools are conducted in Sweden to clarify the relationship of certain factors with reading disabilities. The main investigations took place in Kristianstad in 1951-52 and involved 399 children from 56 classes. Different kinds of instruments, such as reading tests and rating scales for the assessment of personality traits were designed and standardized. Multifactorial analysis of variance of high order was used to analyze the data. A list of the types of various errors in reading and spelling made by different groups of readers was made and analyzed. To investigate the degree of consistency of the reading disabilities, a follow-up study in grade 4 of the reading ability of those children who took part in the investigations in grade 1 was made. The methods, results, conclusions, and implications of the entire investigation are described in detail. Tables and a bibliography are included.

McMurray, J. G. "Some Correlates of Reading Difficulty in Satisfactory and Disabled Readers: A Preliminary Study in Grade 3," Ontario Journal of Educational Research, 5 (Spring 1963) 149-57.

This report represents a pilot study 1) to elicit through teacher opinion the incidence of factors believed to be negatively associated with satisfactory reading achievement, 2) to examine the incidence and nature of reading errors likely to appear with third graders who are regarded as disabled readers, and 3) to obtain experience and opinions which might serve as designs for further studies and offer suggestions for improving reading instruction. Two check lists were used with principals and all Grade 3 teachers for 742 pupils, ranging in age from 7 years, 2 months to 11 years, 5 months, with a mean of 8 years, 6 months. Check List I contained 35 items relating to Factors Which May Precipitate Specific Reading Difficulties - to be checked for items believed to be characteristic for each child. Check List II, entitled An Evaluation of Reading Errors, contained 29 items representing the kinds of reading errors made by third graders.

Tabular information indicates the percentage frequency for cases with and without reading problems, the degree of significance between the two groups, and percentage frequency of types of reading errors check for disabled readers. References are given.

Otto, Wayne. "Consensuality of Good and Poor Readers' Word Associations with Verbal and Pictorial Stimuli," Psychology in the Schools, 6 (January 1969) 68-72.

Idiosyncratic versus consensual responses to 25 concrete nouns and to pictures were investigated by comparing association responses of good and poor readers. It was speculated whether the specificity of concrete nouns would delimit poor readers' potential associations and idiosyncratic responses and whether the latter were likewise associated with verbal but not pictorial stimuli. There were 72 subjects of average intelligence in grades 2, 4, and 6. Two methods of scoring the poor readers' responses were utilized: the conventional plan based on consensuality among good readers and consensuality among all subjects. The poor readers were significantly more idiosyncratic on both types of scores. Words evoked significantly more consensual responses than did pictures. The fourth and sixth graders did not differ from each other, but both differed from the second graders. Differences among individual stimuli were significant. References are included.

Peck, Harris B., et al. "Reading Disability and Community Psychiatry," American Journal of Orthopsychiatry, 36 (April 1966) 420-33.

A study designed to examine methods for predicting reading disability and to evaluate group and family approaches to the prevention and treatment of reading disability and some of the complex of pathologic processes with which it is associated is presented in two parts. Because reading disability is often indicative of deeper psychological problems in child or family, its prediction and detection in the early elementary

years could provide community psychiatry with an opportunity for meaningful intervention. The study suggests ways to identify which of the children who have difficulty in learning to read are indicators of a family in trouble. Methods for intervening into the pathology within the child, his family, and classroom using a family questionnaire, the school's reading readiness test, group consultation groups with teachers, and group counseling for parents are described. Tables and references are included.

Robinson, H. Alan. "Reliability of Measures Related to Reading Success of Average, Disadvantaged, and Advantaged Kindergarten Children," The Reading Teacher, 20 (December 1966) 203-09.

An attempt to find, develop, or adapt test instruments to identify visual, auditory, and visuo-motor abilities in kindergarten children is reported. The subjects were 258 kindergarten children in three schools from advantaged, average, or disadvantaged neighborhoods. The reliability of the eight tests administered was computed. The Goodenough Draw-A-Man Scale appeared to be reliable at the three socioeconomic levels. The Visuo-Motor Test was more reliable for the disadvantaged group. The total score on the Ortho-Rater Vision Test did not appear to be a reliable measure. The Metropolitan Readiness Tests and the Columbia Mental Maturity Scale were very reliable for the disadvantaged and average groups. The Auditory Discrimination Test by Joseph M. Wepman seemed to be reliable for advantaged kindergarten subjects. The Letter Discrimination Test was extremely reliable for the disadvantaged and average subjects, but low in reliability for the advantaged group. The Word Discrimination Test appeared to be quite reliable for the disadvantaged and average subjects also, but low again for the advantaged subjects. Tables and references are included.

Sheperd, George. "Selected Factors in the Reading Ability of Educable Mentally Retarded Boys," American Journal of Mental Deficiency, 71 (January 1967) 563-70.

The reading process and the ability of 20 pairs of educable retarded boys matched for mental age but not for reading age were studied. The subjects were classified as adequate or inadequate readers. Tests, analyzed with Chi-square and t-test techniques, showed a significant difference favoring the adequate group on all measures of silent and oral reading ability. A comparison of reading error patterns revealed more faulty vowels and consonants, reversals, omission of sounds, substitution of words, and words aided and refused in the inadequate group. The adequate group made significantly more repetitions. The inadequate group was markedly inferior in sound blending. There was a significant difference favoring the adequate group in the fund of basic information. There was no significant difference between the two groups on tests of auditory discrimination, memory-for-design ability, visual closure, and handedness, eyedness, or lateral dominance. Both groups were below

their mental age level in visual motor sequential ability. Teacher ratings of total social and emotional adjustment and home conditions revealed no significant differences between the groups. However, teacher ratings of academic adjustment showed that the adequate students were apparently working up to capacity in reading, but the inadequate ones were not. It was concluded that the differences center around the inadequate readers' lack of word attack skills, especially in phonics, and in the use of contextual aids. Direct teaching and continuous attention to these deficiencies are recommended. References are listed.

Stanchfield, Jo M. "Differences in Learning Patterns of Boys and Girls," Self and Society, M. P. Douglass, Ed. Yearbook of the Claremont Reading Conference, 32 (1968) 218-27.

Eight pairs of first-grade classes were arranged so that experimental classes contained three-fourths boys or three-fourths girls. These classes were taught with complete segregation one period each day. At the beginning and end of the school year, the Harsh-Solberg Survey of Primary Reading Development was administered. No significant differences were found between control and experimental groups at the end of the first year. The boys demonstrated active, aggressive behavior, poor verbal skills, lack of interest, and low auditory discrimination and listening skills. In a second study materials were designed to interest male classes. Again there were no significant differences in the achievement of boys during the year. A third year, teachers used special materials prepared in a summer workshop, accompanied by manuals for the teachers. Using these materials both the boys and the girls in the experimental groups scored higher than those in the control groups. No sex data were reported for this study. References are included.

Vernon, M. D. "The Investigation of Reading Problems Today," British Journal of Educational Psychology, 30 (June 1960) 146-54.

Current methods of investigating reading problems are discussed in a critical review of 17 British and American research studies in reading. Two types of investigating techniques are examined: (1) comparison of the reading achievement of classes taught by different methods to discover the best methods of teaching reading and (2) the selection of a group of children retarded in reading and the comparison of their characteristics with those of a group of normal or superior readers to investigate the causes of failure in learning to read. Problems and weaknesses in the methods of investigation for group studies and for individual studies are emphasized. The implications of the findings are discussed. It was concluded that more must be known about the fundamental nature of reading disability before specific causes can be singled out from the multiple factors which affect reading ability. References are included.

Wanat, Stanley and Levin, Harry. Studies of Oral Reading--XI. The Eye-Voice Span--Reading Efficiency and Syntactic Predictability. 17 p. (OEC-6-10-156, Cornell University, Ithaca, New York, 1967) ED 017 402, microfiche \$0.65, hard copy \$3.29 from EDRS.

The relationships between reader efficiency in processing sentences and differences in the deep structure of the stimulus sentences were studied. The efficiency of processing, as measured by the subjects' eye-voice span, varied with changes in the deep structure. Comparisons were made between reader processing of pairs of sentences in which the surface structure was the same, but in which the deep structure was different. The eye-voice span measure validly discriminated between sentences with the same surface structure but with differing deep structure. The results were interpreted to suggest very tentatively that the efficiency of reading processing is (1) a function of the congruence or constraints between the surface structure and the deep structure of sentences, and also (2) a function of the number of structural "categories" required in the deep structure.

Wood, Frank H. The Relationship of Measures of Attainment Value and Achievement Expectancy to the Reading Achievement of First-Grade Children from Low-Income Families. 82 p. (OEC-3-7-078111-3137, Minnesota University, Minneapolis, 1967) ED 016 601, microfiche \$0.65, hard copy \$3.29 from EDRS.

This investigation focused on the usefulness of a procedure for obtaining measures of the motivation of first-grade children from low-income families to achieve in reading which did not require written or oral verbal responses from the subjects. Measures of achievement motivation were correlated with teacher ratings of efforts to achieve in reading and actual reading achievement as measured by standardized tests administered at the end of first grade. The sample was 70 first graders from three classrooms in two inner city schools in Minneapolis, Minnesota. The reading achievement motivation scores showed moderate stability, but correlations with the measures of achievement efforts were low. Attainment value measures correlated most highly with concurrent measures of achievement and efforts, while achievement expectancy measures had strength as predictive measures. Stronger patterns of relationship were found for girls as contrasted with boys and for white subjects as contrasted with Negro and Indian subjects. Scattergrams indicated u-shaped distributions with high and low achievers reporting high motivation to achieve. It was noted that this group of inner city first graders reported generally high motivation to achieve. Appendixes, tables, and a bibliography are included.

Section 1: Listening Comprehension (Auding)

Brown, Charles T. "Three Studies of the Listening of Children," Speech Monographs, 32 (June 1965) 129-38.

Three studies were made of children's listening: (1) the relationships between listening ability and the radio and television habits of children, (2) the relationships among listening ability and the number and position of children in the family, and (3) the relationships among listening, reading, intelligence, and scholastic achievement. Fourth-, fifth-, and sixth-grade Amish and nonAmish children were used as subjects for all three experiments. In the first experiment, three hypotheses were tested--(1) that children who watch television are better listeners than those who do not was supported at the .01 level of significance, (2) that children who watch television less than 2 hours a day are better listeners than heavy watchers was rejected, and (3) that the girls are better listeners than the boys was rejected. The hypotheses in the second experiment were: (1) that middle children are better listeners than the oldest or youngest child which was rejected, and (2) that children of smaller families are better listeners than those of larger families which was supported only for the nonAmish. In the third experiment four hypotheses were investigated--(1) that listening and intelligence are highly correlated was supported, (2) that listening and reading scores are highly correlated was supported, (3) that listening is more closely related to intelligence than to reading was rejected, and (4) that listening is more closely related than reading to scholastic achievement was supported when teacher grades served as criterion and rejected when achievement test scores were used as criterion. References and tables are included.

Cooper, J. Louis. "The Effect of Training in Listening on Reading Achievement," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11 (1966) 431-34.

The relationship of training in listening and improved reading achievement was investigated. Under the assumption that reading is a type of mental listening, the experiment was concerned with 223 eighth-grade pupils. Except for specific training in listening for the experimental group, a basic instructional program was followed by all students. Alternate test forms were used to measure progress. Gains for the experimental group were significant for both listening and reading, particularly in growth in paragraph comprehension and overall change in reading accomplishment. References are listed.

Devine, Thomas G. "Listening," Review of Educational Research, 37 (April 1967) 152-58.

Selected research in listening contributing to an evolving theory of listening is reviewed. Studies include investigations of factors influencing the teaching of listening, the relationship of reading and listening, listening, speaking and intelligence, and measures of listening ability. In general, the studies support the assumption that listening ability can be improved by instruction and that listening is affected by maturity, manner of presentation, personality, and interest in the material presented. Recommendations for further study and a bibliography are included.

Devine, Thomas G. "Reading and Listening: New Research Findings," Elementary English, 65 (March 1968) 346-48.

In the light of recent research, an examination of two basic assumptions about reading and listening is presented. The assumption that instruction in listening (or reading) affects student competence in reading (or listening) is challenged. Listening instruction in at least four studies failed to result in significant reading gains. The second basic assumption challenged is that there is a high correlation between reading and listening test scores. Recent studies intimate that two of the most widely used tests of listening measure something other than listening--most likely verbal comprehension. That reading and listening are related is not questioned. The paper, however, does reveal that some basic assumptions about the reading-listening relationship are not supported. The need for research designed to test a general theory of language and thinking is proposed. References are included.

Duker, Sam. "Listening," Review of Educational Research, 34 (April 1964) 156-63.

Although research completed during the last 3 years has increased knowledge about listening, research coordination is poor, and results of all but doctoral dissertations are not readily accessible, according to this survey, which reviews and discusses significant research results and questions raised by them. Some of the major questions include: Can listening skills be taught? Does listening training aid comprehension of foreign languages? How valid are listening tests? What is the relationship between reading and listening or learning and listening? What is the effect of visual versus oral presentations? Is there a difference between listening performance and listening ability and does this raise problems for teaching and measurement? What possibilities are inherent in speeded speech? One neglected area of research noted is the teaching of critical reading. A bibliography is included as well as a short discussion of available bibliographies on listening.

Duker, Sam. Listening Bibliography. (New York: Scarecrow, 1964) 211 p.

The guidelines used in compiling this annotated bibliography on listening are as follows: (1) references dealing with audition and hearing have been excluded, (2) only some of the literature discussing the merits of listening in the process of learning have been included, (3) references regarding communication and communication theory have been generally omitted, (4) material concerning listening to music has been excluded, (5) all the items included are available, (6) textbook chapters on teaching methods in the area of listening have been omitted, (7) material found in elementary and high school texts and curriculum studies have been excluded, (8) references concerning radio and television have generally not been included, and (9) the compiler has personally examined and read every item cited. An effort was made to indicate extracts, summaries, and abstracts which exist for each entry, although it was impossible to be absolutely thorough. The work on this bibliography was begun in Iowa State Teachers College Library in 1952 and was continued with the help of the New York Public Library, the Academy of Medicine Library, the Engineering Societies Library, the Teachers College Library, Columbia University Library, and Brooklyn College Library.

Haberland, John A. "A Comparison of Listening Tests with Standardized Tests," Journal of Educational Research, 52 (April 1959) 299-302.

The relationships of the listening abilities of 110 Hope College freshmen to intelligence, scholastic aptitude, scholastic success, and personality factors were investigated. Subjects, 62 men and 48 women, were divided into Group A, students in regular freshman English classes, and Group B, students in the reading improvement course. Each group was divided according to sex. Results on three listening tests--the Brown-Carlson, the Michigan State College, and the Stephens College--were compared with the subtest scores on five standardized tests. Coefficients of correlation calculated by means of the Spearman rank differences formula between total scores on each listening test and the subtests of the standardized tests indicated some of the following conclusions: The degree of correlation between listening tests and standardized tests depended upon the listening test used and the ability of the students. Tests of listening ability were not in agreement and yield vastly different results when correlated with scores on standardized tests. The Brown-Carlson test reflected greatest agreement with linguistic sections of standardized tests. References are included.

Holmes, Jack A. and Singer, Harry. The Substrata-Factor Theory--Substrata Factor Differences Underlying Reading Ability in Known-Groups. (Berkeley: University of California, 1961) 372 p.

This experiment was designed to further earlier investigations of the general "substrata-factor theory of reading" and to test two hypotheses at the high school level of such known-groups as (1) total, (2) boys versus

girls, (3) bright versus dull, (4) fast versus slow readers, and (5) powerful versus nonpowerful readers. The major hypothesis stated that different known-groups use different substrata-factor hierarchies for the purpose of reading with speed and/or power. The minor hypothesis was that a person must learn to read by learning to integrate that characteristic hierarchy or working-system of substrata factors which will maximize the use of his strong abilities or skills and minimize the use of his weak ones. Approximately 50 independent test variables were used for diagnostic comparison among the known-groups of the study. These studies gave conclusive proof of the correctness of the major hypothesis. As a general statement, the minor hypothesis was not substantiated, but means were provided by accumulated study evidence to modify the hypothesis in order to make it valid. A synthesis of centroid and substrata factors was then made and a preliminary foundation of reading ability criteria prepared.

Horowitz, Milton W. and Berkowitz, Alan. "Listening and Reading, Speaking and Writing: an Experimental Investigation of Differential Acquisition and Reproduction of Memory," Perceptual and Motor Skills, 24 (February 1967) 207-15.

An experimental investigation of two processes each for acquisition and reproduction of a memory trace is reported. A closed-end cognitive task using a passage from "The War of the Ghosts" was used with 56 college students who listened to a taped recording or read the passage. Response was obtained through spoken or written expression. Number of types, tokens, types/token ratios, and cognitive units were analyzed. The results were divided into differences between mode of acquisition and mode of expression. The analysis of cognitive ideas indicated that thought processes through spoken expression tended to be looser, wordier, more repetitive, and more productive of additions than thought processes reproduced through writing. Speakers who read produced more omissions, more additions, and fewer ideas. The close alliance of listening and speaking and of reading and writing in the acquisition of memory was confirmed, and further research for elaboration of the thesis is in progress. References are listed.

Kellogg, Ralph Edward. A Study of the Effect of a First Grade Listening Instructional Program Upon Achievement in Listening and Reading. 161 p. (OEC-4-7-0684-69-0015, San Diego County Department of Education, California, 1966) ED 012 232, microfiche \$0.65, hard copy \$6.58 from EDRS.

A first-grade listening skills program was designed to be taught as an integral part of the language arts program and to improve achievement in listening and reading. The components and guidelines for the experiment are specified. Thirty-three classrooms in 22 elementary schools in San Diego County participated. The treatment groups were a traditional approach and an experience approach. Within each treatment group 40

structured or unstructured literature listening lessons of 20 minutes each were taught. A post-test only control design was utilized. Analysis of variance was used to analyze the data. The Pintner-Cunningham Primary Intelligence Test, the Stanford Achievement Test, and the Wright Listening Comprehension Test were administered. Teachers evaluated the lesson plans. The structured program within the traditional group caused a significant difference in all listening and reading achievement for boys, tied only in listening vocabulary for girls. The structured program in the language experience group significantly affected total listening achievement and reading vocabulary for both boys and girls. Other results, conclusions, recommendations, limitations, appendixes, tables, figures, and a bibliography are included.

Lundsteen, Sara W. "Teaching and Testing Critical Listening in the Fifth and Sixth Grades," Elementary English, 41 (November 1964) 743-47, 752.

On the assumption that critical listening is not only a measurable factor but also a necessary skill that can and should be taught systematically to children, 300 fifth- and sixth-grade Texans were divided into control and experimental classes. Both groups scored above average mentally and academically, and showed about equal ability in listening on preexperiment tests. Experimental classes received 18 lessons on critical listening, in which they learned to detect a speaker's purpose, propaganda techniques, and to apply analysis and qualitative judgment. All groups then took the Lundsteen Listening Test, for which retests produced a reliability coefficient of .72 and correlations with other measures of critical listening ranged from .26 to .64. Lundsteen scores revealed: (1) significant differences between experimental and control groups, (2) significantly higher scores for the sixth than for the fifth grade, and (3) slightly higher scores for girls. Moreover, 90 percent of teacher reports indicated carryover into other school and home activities. The conclusion is that the initial hypotheses were well founded, and a call for a far-reaching program in critical development is issued. A brief review of related studies and references are included.

Lundsteen, Sara W. "Listening, Reading and Qualitative Levels of Thinking in Problem Solving," California Journal of Educational Research, 18 (November 1967) 230-37.

An investigation was made of the interrelationships of test variables with regard to presentation by listening and presentation by reading. Four unfinished problem-stories with 12 multiple-choice questions for each story were presented to four sixth-grade classes (86 students). Two of the stories were listened to and two were read by the students. The scores from these two measures as well as their qualitative subscores and scores from additional measures of reading and scholastic aptitude were analyzed for intercorrelation. Three aspects of the findings stood out: (1) the

expected low association between the reading and listening variables; (2) the low association between abstract, functional, and concrete levels; and (3) the presence of substantial association between the abstract problem-reading variable, reading achievement, and general scholastic aptitude. References are included.

Nichols, Ralph G. and Stevens, Leonard A. Are You Listening? (New York: McGraw-Hill Book Company, Inc., 1957) 235 p.

The authors claim that since research shows we listen at approximately 25 percent level of efficiency, listening as a skill can and should be improved through training and practice. The differences between oral and written language are defined, and various aspects of effective listening, including suggestions for development, are discussed. Topics such as improving concentration, notetaking, listening to propaganda, and conference listening are included. Good listening practices are reviewed for special groups, among which are business executives, salesmen, and families. Forty-four suggestions of ways teachers can improve listening in the classroom are given. A bibliography is included.

Reddin, Estoy. "Listening Instruction, Reading, and Critical Thinking," The Reading Teacher, 21 (April 1968) 654-58.

Information was sought to test whether instruction in listening would have positive effects upon the development of reading skills and critical thinking. An experimental and a control group using 381 fourth, fifth, and sixth graders in two suburban Philadelphia schools were tested in reading and critical thinking at the beginning and the end of the experiment. Listening instruction, given to the experimental group only, consisted of a series of 18 lessons utilizing a variety of approaches and materials. Proved were the hypotheses that there would be no significant differences in skill in reading to identify main ideas or in gains in critical thinking between the groups after listening instruction. The hypothesis of no difference in skill in reading for details was accepted for grades 4 and 5 but was rejected for grade 6. However, it was suggested that the amount of direct instruction over a longer period might have made a significant difference in the reading skills. References are included.

Van Valkenburg, John. Learning through Listening: Implications for Reading. 164 p. (Ed.D., The University of Rochester, 1968) Dissertation Abstracts, 29, No. 6, 1692-A. Order No. 68-15,881, microfilm \$3.00, xerography \$7.60 from University Microfilms.

Interrelationships between listening and reading were explored within the context of a "listening-socio-cultural" area. The findings

indicated that a series of listening lessons based on Russell and Russell's Listening Aids through the Grades and Educational Developmental Laboratories' Listen and Think Program were effective in increasing listening and reading comprehension. It was noted that students classified as low socioeconomic status gained more from the listening experiences than did the high socioeconomic status students. This difference in gain suggests that listening lessons might be used successfully to compensate for the lack of experiential breadth in culturally deprived children, since it appears that low socioeconomic status students are able to learn many of the skills necessary for effective reading through training in listening. Further research is recommended.

Weintraub, Samuel. "What Research Says to the Reading Teacher: Listening Comprehension," by Deborah Weiss. The Reading Teacher, 20 (April 1967) 639-47.

This article discusses the relationships between listening and reading comprehension as receptive communication skills. Attention is directed to a review of research concerned with the isolation of a distinct listening factor and conditions affecting listening comprehension as measured by an adapted cloze technique. Studies on the improvement of listening in the intermediate grades are briefed. The conclusion is drawn that if parallels between listening and reading instruction can be constructed, then crash attempts to improve listening skills should be avoided. Also, the exclusive use of tapes is questioned. Further study of the interference of dialect differences in oral and written material is recommended. References are listed.

Westover, Frederick L. "A Comparison of Listening and Reading as a Means of Testing," Journal of Educational Research, 52 (September 1958) 23-26.

An investigation of the effects of listening to questions, as contrasted to reading questions, on students' performance on objective tests is described. The subjects, 198 students of varied academic levels in a University of Alabama course in elementary psychology, were distributed among seven sections. A test composed of 40 objective questions, some true-false and some multiple-choice, was given each time two chapters in the textbook were completed. The 20 questions comprising the listening form of the test and the 20 comprising the reading form were alternated in presentation. Eight paired listening and reading tests were administered. At the close of each testing period, the subjects were asked which kind of test administration they preferred, listening or reading. No group differences were found among college students in performance on tests administered by listening or by reading. Students of high and low scholarship and high and low mental ability seemingly performed equally as well on the listening tests as on the reading tests. The findings suggest that teachers might well vary the method of presenting objective tests to their students. A summary of related literature and references are given.

Winter, Clotilda. "Listening and Learning," Elementary English, 43 (October 1966) 569-72.

The relationship between listening and intelligence and listening and general school achievement is reported. Students were 563 fourth, fifth, and sixth graders from two schools in Texas. Scores on the STEP Listening Comprehension Test, the Science Research Associates Achievement Test, and the California Test of Mental Maturity were correlated. Findings indicated above average listening ability for all of these pupils, but the mean was slightly higher for girls than for boys. There was a significant improvement in listening competence from the fourth to sixth grade. A highly significant and moderate relationship existed between listening and intelligence. Also, a highly significant moderate relationship between listening comprehension and total school achievement was shown on achievement tests. Recommendations are made for expanded training and planned experiences in this area. References are included.

Witty, Paul A. and Sizemore, Robert A. "Studies in Listening, I: Relative Values of Oral and Visual Presentations," Elementary English, 35 (December 1958) 538-52.

Studies of the relative values of visual and oral presentation as avenues for learning published from 1892 to 1958 (part 1 in a series of three articles on research in listening) are summarized in chronological order. Nine conclusions drawn from the studies surveyed are listed. A 25-item bibliography is given.

Witty, Paul A. and Sizemore, Robert A. "Studies in Listening, II: Relative Values of Oral and Visual Presentations," Elementary English, 36 (January 1959) 59-70.

Twenty-three studies in listening, part 2 in a series on listening, published from 1892 to 1958 emphasizing the relative values of oral and visual presentation are summarized. Specific topics discussed are (1) the effectiveness of lecture presentation as compared with reading, (2) the value of oral presentations accompanying the seeing of movies, compared with reading the same stories or hearing them told, (3) the relative merits of oral versus written examinations, and (4) the relative effectiveness of oral versus visual presentation of advertising materials. Conclusions are drawn from the research in each of these four areas of listening. References are listed.

Witty, Paul A. and Sizemore, Robert A. "Studies in Listening, III: The Effectiveness of Visual and Auditory Presentations with Changes in Age and Grade Levels," Elementary English, 36 (February 1959), 130-40.

Investigations dealing with the effectiveness of auditory and visual presentations in association with changes in age and grade level, with the use of certain types of materials, with the difficulty of materials and the rate of presentation, with the effect of length of the presentation, and with the relative values of the readability formula in listening and in reading are summarized. It was concluded that any difference in learning efficiency may be traced not to the visual or to the auditory presentation, but to factors such as the difficulty or the nature of the materials to be learned, the way in which the material is presented, and its suitability in terms of the experience and interests of the groups studied. Apparently, most of the experiments on listening have failed to take into account the significance of the interest factor. Suggestions are made for further research. References are included.

Section 2: Oral Language and Speech Defects

Blank, Marion; Weider, Serena; and Bridger, Wagner H. "Verbal Deficiencies in Abstract Thinking in Early Reading Retardation," American Journal of Orthopsychiatry, 38 (October 1968) 823-34.

A comparison of normal and retarded readers matched for IQ revealed deficiencies in conceptualization during the beginning stages of reading. The 12 normal and 12 retarded first-grade readers were given four tests. First they were asked to select dot patterns that represented lights organized spatially, spatially-temporally, and temporally. The two latter organizations proved significantly difficult for retarded readers. The second test required matching visual spatial patterns. No significant differences were found between the scores of the two groups. The third task required verbal labeling of the same types of light sequences used in the first test. The retarded readers had significant difficulty with spacing. The fourth test required reproduction of a rhyming sequence. No significant differences were found between the two groups. The deficiencies in conceptualization suggested by the test results indicated to the authors the possibility of a casual relationship between reading retardation and deficiencies in conceptualization. Tables and references are included.

Fleming, James T. "Oral Language and Beginning Reading: Another Look," The Reading Teacher, 22 (October 1968) 24-29.

The relationship between oral language and beginning reading is examined in the light of prominent research and important questions are reappraised. The distinction between the content of oral language as speech and the content of reading materials as written language is made, and the complexity of the relationship between them is pointed out. The research questions considered are the adequacy of research measures, syntax

versus vocabulary, and the effects of teachers' attitudes toward language on beginning reading. The author concludes that the relationship between teaching and testing may place too much emphasis on vocabulary and insufficient emphasis on the child's ability to utilize syntactic options. Further, the author concludes that the views of the teacher must be sufficiently enlightened to recognize that reading competence must be emphasized over the acquisition of language properties. References are included.

Monroe, Marion. Children Who Cannot Read. (Chicago: The University of Chicago Press, 1932) 205 p.

Remedial reading instruction provided for a group of 415 reading-disabled children at the Institute for Juvenile Research is reported. Both the qualitative and quantitative measurement of defects are described, including typical student profiles. Visual, auditory, motor, conceptual, and methodological causative factors of reading disability are discussed. The remedial methods and materials used are described in detail, including test directions. Methods of instruction were selected with a view to overcoming deficits in abilities rather than to building on strengths. Methods were selected which required an overt motor response on the child's part. Instruction for the most part was individual. Results for 185 children who received instruction according to the described methods and for 50 reading disability control cases are reported. Numerous case studies, tables, and a bibliography are included.

Robinson, Helen M. "Perceptual and Conceptual Style Related to Reading," Improvement of Reading Through Classroom Practice, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 9, Part 2 (1964) 26-28.

Psychologists have postulated perceptual styles emphasizing whole or part perception. Several recent studies from primary through college level students have supported the conclusion that whole perceivers tend to learn more effectively than part perceivers. The possibility that the pattern persists into the conceptual domain is suggested by a few investigations of reading beyond the level at which perception is the dominant aspect of reading. While most high school and college students appear to be able to move from wholes to parts according to purpose, it is possible that other rely heavily on a single perceptual and conceptual style. Only longitudinal studies over a number of years can test this hypothesis. Should it be confirmed, then obviously rigorous analysis of the etiology of each type will suggest the possibilities of change, and/or the necessity for adapting instructional methods to individual learning styles.

Section 3: Visual and Auditory Efficiency

Bateman, Barbara. "The Efficacy of an Auditory and a Visual Method of First Grade Reading Instruction with Auditory and Visual Learners," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 105-12.

In order to determine the efficacy of auditory and visual reading instruction eight first-grade classes were divided into four control and four experimental groups. The Illinois Test of Psycholinguistic Abilities (ITPA) was given to half the classes during their kindergarten year. The experimental group was divided on the basis of their auditory or visual propensities as indicated on the ITPA subtests. Two of the experimental classes were taught to their weaknesses and two were taught to their strengths. The control group was divided in half and was given auditory and visual instruction. At the end of grade 1, the Gates Primary Word Recognition and Paragraph Reading subtests and an author-constructed spelling test were administered. The results significantly favored the auditory method. There was no interaction between preferred modality and method of instruction used. The data suggested that auditory learners should be taught to their strengths and visual learners to their weaknesses.

Beery, Judith Williams. "Matching of Auditory and Visual Stimuli by Average and Retarded Readers," Child Development, 38 (September 1967) 827-33.

Fifteen children of normal intelligence with specific reading disability and an equal number of controls matched for IQ, sex, and age were compared with respect to their performance on three tasks: Birch and Belmont's test of auditory-visual integration, a longer version of the same test, and a third test which employed the same configurations but which interchanged the stimulus and response modalities of the original task. The performance of the dyslexic children was inferior to that of their controls on all three tasks. No differences could be demonstrated in the ability of these tasks to discriminate between the two groups. The findings are discussed in the light of other research dealing with auditory-visual integration and appear to be consistent with the results of the other investigators. References are included.

Busby, Walter A. and Hurd, Donald E. "Relationships of Auditory and Visual Reaction Times to Reading Achievement." Perceptual and Motor Skills, 27 (October 1968) 447-50.

Investigation of reaction time as it related to reading used a random sample of pupils from grades 2, 4, and 6. Reaction stimuli were a red light, a green light, a high tone of 1,200 cps, and a low tone of 400 cps, embedded in a series. Response was by lifting a finger from a

key. Each subject had 198 trials. Shifting reaction time was not independent of reaction time in either auditory or visual channels. Auditory-visual reaction time was not significantly related to intelligence or reading achievement as measured by the vocabulary or comprehension sections of the California Achievement Tests. Auditory-visual reaction time decreased with age but was unrelated to sex, race, or socioeconomic status. References are included.

Chang, Thomas M. C. and Chang, Vivian A. C. "Relation of Visual Motor Skills and Reading Achievement in Primary-Grade Pupils of Superior Ability," Perceptual and Motor Skills, 24 (February 1967) 51-53.

The relationship of reading achievement to visual-motor development among superior and gifted primary pupils was studied. Subjects were second and third graders in Hawaii. Bender-Gestalt, Wechsler Intelligence Scale for Children, and reading achievement data were examined for grade levels and identification of Low and High Bender-Gestalt subgroups. At grade 2 level, the subgroups with superior visual-motor skills were also superior to the average subgroups in reading. Correlations were significant between Bender Gestalt and IQ. At grade 3 no significant differences occurred for reading, nor were there significant differences between Bender-Gestalt, intelligence, and achievement. Findings indicate a positive and significant relationship between visual-motor development and reading achievement for younger superior and gifted children. For pupils 13 months older, both Low and High Bender-Gestalt groups earned comparable achievement scores. A similar, but longitudinal study of superior and gifted pupils is suggested for more precise identification of associative abilities which facilitate reading development. References are listed.

Eames, Thomas H. "Visual Handicaps to Reading," Journal of Education, 141 (February 1959) 3-35.

A study concerning the comparative eye condition of students who fail in reading with that of unselected groups of children is summarized. The cases were drawn from those seen by the author at the Harvard Psycho-educational Clinic, Boston University Educational Clinic, various school surveys made by him, and from private cases. The number involved is 3,500, of which half are reading failures and half are unselected school children. Both groups ranged in age from 5 through 17 years of age, with median IQs of 102 and 109 respectively. The report is divided into five sections: an introduction on the physiology of reading, a discussion of eye handicaps to reading, a summary of a comparative study of eye conditions among reading failures and unselected pupils, a section on classroom help for the child with eye difficulties, and a description of the Eames Eye Screening Test. Each section except the one on classroom aids has a bibliography in the form of footnotes, additional listings, or both. A list of textbooks suitable for use with the blind or partially seeing child is given with the discussion of this problem.

Eames, Thomas H. "The Effect of Anisometropia on Reading Achievement," American Journal of Optometry and Archives of American Academy of Optometry, 41 (December 1964) 700-02.

The purpose of this study was to find what differences in reading achievement, if any, existed between two groups and what improvement in reading scores might result from correction of refractive defects, followed by continued instruction in the pupil's regular classes. The achievement of 50 pupils, all unselected as regards failure or nonfailure in reading, but divided into control and experimental groups of 25 each, the controls having equal refractive conditions in each eye and the experimentals having anisometropia, is compared. Eye examinations and a series of tests, including two forms of the Gates Silent Reading, were given. Results of the Kuhlman-Anderson Intelligence Quotients test administered at an earlier date were used. That anisometropia is a more important contributing factor in reading retardation than equal refractive conditions in each eye, regardless of type, is suggested by the findings. A thorough listing of procedure and data are listed and charted.

Erickson, Richard C. "Visual-Haptic Aptitude: Effect on Student Achievement in Reading," Journal of Learning Disabilities, 2 (May 1969) 256-60.

The reading achievement of 325 seventh-grade boys who were enrolled in four junior high schools in a large city system and classified primarily as visual, indeterminates, and haptic (kinaesthetic or tactile) perceivers was investigated. The Successive Perception I test, a motion picture test, required viewing of the parts of a figure to determine if the parts were integrated as a whole. Subjects who correctly identified 20 or more of the 35 patterns in the Successive Perception I test were considered visual; 15 to 18, indeterminates, and 13 or below as haptic. Analysis of variance revealed that on the reading part of the Iowa Tests of Basic Skills the visual group was significantly (.01) superior to the other two groups. Furthermore, the indeterminates were superior to the haptics. Tables and references are included.

Flax, Nathan. "The Clinical Significance of Dominance," American Journal of Optometry and Archives of American Journal of Optometry, 43 (September 1966) 566-81.

Fifty-eight studies dealing with dominance as a factor in reading retardation, especially visual dominance as it relates to reading disability, are surveyed. The lack of agreement concerning the nature of severe reading disability as well as the relationship of visual dominance to reading has produced conflicting studies. To illustrate the lack of agreement concerning the nature of severe reading disability, one report lists 16 synonyms for developmental dyslexia, each representing a different description and theoretical basis. This particular report concluded

that while cerebral functional asymmetry relates to apasia, the relationship of cerebral dominance to learning to read is, at this time, speculative. Eye dominance factors which involve an eye in terms of sighting, controlling or predominance, do not relate at all to reading disability. Visual field dominance may be more promising, but the complexity of inter-hemispheric connections makes the possibility of finding easily identifiable relationships remote. Other aspects of visual function, apart from dominance, are more likely to be helpful in understanding the reversal and perceptual problems of retarded readers. A bibliography is included.

Ford, Marguerite P. "Auditory-Visual and Tactual-Visual Integration in Relation to Reading Ability," Perceptual and Motor Skills, 24 (June 1967) 831-41.

The relationship of auditory-visual integration and tactual-visual integration to intelligence and reading achievement was studied in a sample of 121 white fourth-grade boys in Bloomfield, New Jersey. The tactual-visual integration test required subjects to explore tactually raised geometric forms which were out of sight. Four visual geometric forms were then exposed successively, and subjects were required to choose the form which matched the one felt. In the auditory-visual integration test, subjects were presented a rhythmic auditory pattern tapped out by the experimenter and were required to identify a visual dot pattern which matched it. In addition, two subtests of the Gates-McKillop Diagnostic Test were administered to all subjects--the Oral Reading and Words, Untimed Presentation. The tactual-visual test performance was analyzed in terms of speed, thoroughness of tactual exploration, consistency in the use of one or both hands, position choices (response set), and methods used to solve the task. The auditory-visual test performance was analyzed in terms of position choices and methods used to solve the task. The present study indicated no relationship between the two intersensory tasks. References and tables are included.

Fuller, Gerald B. and Ende, Russell. "The Effectiveness of Visual Perception, Intelligence and Reading Understanding in Predicting Reading Achievement in Junior High School Children," The Journal of Educational Research, 60 (February 1967) 280-82.

A study was conducted to correlate reading achievement with visual perception, intelligence, and reading for understanding for 347 junior high school students from a high socioeconomic area. Formal tests for perception, mental ability, and reading comprehension were basic to the computation of correlation coefficients between achievement and the three variables. A significance beyond .01 was obtained for each variable. On an analysis of multiple regression and correlation, the combination of the factors was more powerful as predictors than any one variable. The tests were considered valuable for initial screening for reading disability at

this level. It was found that 76 percent of reading achievement was attributable to the relation of reading achievement to the three factors studied. References are included.

Giebink, John W. and Goodsell, Linda L. "Reading Ability and Associative Learning for Children with a Visuomotor Deficit," American Educational Research Journal, 5 (May 1968) 412-20.

A task involving learning an auditory response to a visual stimulus was presented to 72 primary-grade children with visuomotor deficits, as indicated by the Bender Visual Motor Gestalt Test, to test the following hypotheses: (1) there will be no differences in the number of trials to learn geometric forms and simplified Japanese characters when the complexity of the stimuli is equated, (2) good readers will learn lists of paired associates with fewer trials than poor readers, and (3) there will be no differential relationship between type of paired associate learning task and reading ability. The subjects were classified as "good" or "poor" readers according to the classroom mean on reading tests. A 2x2x3 analysis of variance was performed on task, grade level, and reading ability. The results did not confirm the first hypothesis: geometric forms as a stimulus were more difficult than simplified Japanese characters, but the second and third hypotheses were supported. It was suggested that associative ability may assist a child in compensating for a perceptual deficit in learning to read and that it may be an indicator of reading readiness or a diagnostic test for reading problems. References are included.

Graber, Sidney Walter. A Study of Inter-Sensory Integration and Related Skills, and Their Relationship to Reading Achievement. 149 p. (Ed.D., Wayne State University, 1967) Dissertation Abstracts, 29, No. 4, 1145-A. Order No. 68-9963, microfilm \$3.00, xerography \$7.00 from University Microfilms.

The original Birch-Belmont study of auditory-visual integration was replicated. Other variables such as temporal-spatial translation, immediate memory span, and directionality were probed to determine the effect of these on certain cognitive and perceptual tasks involved in reading. The subjects ranged in ages from 9 years, 3 months to 11 years, 2 months and in reading ability from 2 or more years below grade level to 4 years above grade level. They were divided into groups according to their reading levels. While the experiment was interpreted as substantiating Birch and his associates' findings regarding intersensory integration, the primacy attributed to this particular factor in the earlier study was placed in a questionable position. Other variables seemed to be present in the tasks. Some subjects were considerably handicapped in the equivalent tasks of the study by "directionality" errors. Immediate memory could not be eliminated as a factor from any of the tasks. The data also supported the view that temporal-spatial translation was not significant for performance.

Gruber, Ellis. "Reading Ability, Binocular Coordination and the Ophthalmograph," Archives of Ophthalmology, 67 (March 1962) 280-88.

Findings of a study of reading ability, binocular coordination, and the ophthalmograph are presented. Fifty patients, taken at random in a private practice, with ages ranging from 10 to 68, were studied. An orthoptic analysis was performed on each patient. The reading ability of each was studied by means of analyzing the graph produced by photographing their eye movements during reading with the ophthalmograph. The instrument, graph, and methods of calculating the reading data are described. The study failed to show a correlation between reading ability and binocular coordination. The graph was unreliable in showing muscle imbalance and lack of fusional ability. Tables, figures, and references are included.

Hartung, Joseph Edward. Visual Perceptual Skills, Reading Ability and the Young Deaf Child. 82 p. (Ph.D., Washington University, 1968) Dissertation Abstracts, 29, No. 12, 4184-A. Order No. 69-8998, microfilm \$3.00, xerography \$4.40 from University Microfilms.

The reading deficiency of deaf children was investigated to ascertain whether either knowledge of code or normal visual perception skills could be the underlying cause. To study these, a tachistoscopic-type presentation of verbal and nonverbal, pronounceable and unpronounceable English trigrams and Greek trigrams was made. A group of 30 children with normal hearing acted as control for the group of 30 orally trained deaf children. The age range in both groups was from 7 years 5 months to 9 years. There was no difference in the scores of either group with regard to the correct identification of the Greek trigrams, which indicates similar perceptual ability in both deaf children and children with normal hearing. However, the children with normal hearing scored considerable higher in reproducing English trigrams than did the deaf children, which indicates that children with normal hearing do better when the recall of alphabetic material or code is required.

Huelsman, Charles B. "Some Recent Research on Visual Problems in Reading," American Journal of Optometry and Archives of American Academy of Optometry, 35 (November 1958) 559-62.

Nine research studies on visual problems in reading published since 1950 are organized and examined. The studies relate to outline form perception, to the use of the tachistoscope, and to general visual achievement. By bringing these studies into focus, contrasts and controversies apparent among recently published research are revealed. References are listed.

Hurd, Donald E. A Study of the Relationship Between Reading Achievement and Sense Modality Shifting. 25 p. (OEC-3-7-068688-0112, 1967) microfiche \$0.65, hard copy \$3.29 from EDRS.

A study was conducted to determine the relationship between visual and auditory singular modal responses and modal shifting behavior to reading achievement with control for such variables as intelligence, age, sex, and socioeconomic status. Subjects were 120 second, fourth, and sixth graders from Peoria, Illinois, public elementary schools. Measures of the following variables were obtained for each student: auditory and visual reaction times, visual-auditory shifting and singular modal auditory and visual response, intelligence, socioeconomic status, and reading achievement. Correlations and t tests were used to analyze the data. Modal shifting was independent of socioeconomic status. Random relationships existed between sense modality shifting and reading achievement. Differences were not found between reaction times to the singular visual and auditory channels and the shifting between the two channels of communication. References and tables are included.

Kahn, Dale and Birch, Herbert G. "Development of Auditory-Visual Integration and Reading Achievement," Perceptual and Motor Skills, 27 (October 1968) 459-68.

The interrelationships among auditory-visual integrative competence, IQ, and types of reading task were studied in 350 boys from grades 2 through 6 (70 at each grade level). Visual and auditory discrimination skills, auditory rote memory, and the application of verbal labels to physical stimuli were examined as possible mediators of the relation of auditory-visual integration to reading. The test previously used by Birch and Belmont was used and extended by adding 10 new items. Reading was measured by the Metropolitan Achievement Tests, and the Lorge-Thorndike Intelligence Test provided verbal and nonverbal IQ scores. Coefficients of correlation of the integrative test with both vocabulary and comprehension were positive and significant at all grade levels, most being in the range from .42 to .57. From the 350 subjects, the 10 scoring highest and 10 scoring lowest on the integrative test in each grade were given the same test individually 4 days later. Most subjects made no errors or very few. Little difference was found between high and low scores suggesting that the problem was not in either modality but in the integrative ability. Also, immediate memory span correlated insignificantly with the integrative scores. Tables and references are given.

Katz, Phyllis A. and Deutsch, Martin. "Modality of Stimulus Presentation in Serial Learning for Retarded and Normal Readers," Perceptual and Motor Skills, 19 (October 1964) 623-33.

The relation of auditory and visual learning efficiency to age and reading level was studied. Forty-eight Negro males in first, third, and

fifth grade in New York City were classified according to reading ability. Reading ability was ascertained by administration of the Gates Advanced Primary Reading Test (grades 3 and 5) and the Reading Prognosis Test of the Institute for Developmental Studies (grade 1). The upper and lower 30 percent of the frequency distribution comprised the normal and retarded reader sample. Three serial learning tasks consisting of eight items each were presented to the learner: auditory, visual, and a combination. The visual presentation consisted of drawings. The learning tasks were presented individually; time was controlled. A mixed analysis of variance was used to analyze the data. Good readers remembered more items. The memory for auditory stimulus was the poorest for all subjects. Older children performed more efficiently, and retarded readers learned more slowly than good readers. Poor readers had difficulty with auditory stimuli. References are included.

Kingston, Albert J., Ed. "Research for the Classroom: Visual Deficiencies and Reading Disabilities," by Carl L. Rosen. Journal of Reading, 9 (October 1965) 57-61.

The role of visual sensory deficiencies in the causation of reading disability is discussed. Previous and current research studies dealing with four specific visual problems which have been found to be negatively related to successful reading achievement are listed. The four problems are: farsightedness, astigmatism, binocular incoordinations, and fusional difficulties. Four primary responsibilities of the school concerning visual problems as applicable to the classroom teacher are cited: (1) the detection of visual problems; (2) the referral of the child to those professionally qualified; (3) the adjustments of instruction technique, methods and expectations based upon the nature and severity of the visual problem; and (4) leadership and participation in research. A bibliography is included.

Lawson, Lawrence J., Jr. "Ophthalmological Factors in Learning Disabilities," Progress in Learning Disabilities, H. R. Myklebust, Ed., Chapter 7, 147-81. (New York: Grune and Stratton, 1968.)

Following an extensive review of the research on visual factors and reading or learning disabilities, study of the relationships between ocular conditions and learning disabilities was reported. Eighty-two children with learning disabilities but of average or above-average mental ability were examined. Thirty-eight (46 percent) were found to have abnormalities of vision. The two groups (vision problems or no vision problems) were compared by various computer analyses on 19 behavioral variables. The latter included total, partial, and subtest scores on the Wechsler Intelligence Scale for Children, a social quotient, four of the Detroit Designs tests, oral and silent reading measures, and the Heath Rails. The F ratio revealed a significant difference only for level of

comprehension and the Heath Rails. With multiple discriminant analysis, the greatest difference appeared in the Heath Rails. Other vectors of difference, in order, were Block Design, Picture Completion, Picture Arrangement, Visual Span for Objects, Goodenough IQ, Detroit Designs, and Paragraph Meaning. Factor analyses of the data for the two groups revealed five factors. Factor 1 indicated that intellectual abilities predominate irrespective of the status of the visual apparatus. Factor 2 consisted essentially of verbal functions. Factors 3, 4, and 5 were less specific and more difficult to categorize. The aggregate of findings led to the conclusion that ophthalmological information is highly relevant to learning disabilities. Tables and references are given.

Leton, Donald A. "Visual-Motor Capacities and Ocular Efficiency in Reading," Perceptual and Motor Skills, 15 (October 1962) 407-32.

This study attempts to evaluate psychometric tests of visual-motor capacities and to develop clinical procedures for electrical recording of ocular-motor patterns. Prefacing the study is a review of literature in the areas of ocular-motor coordination, sex differences in reading disability, and visual perception and discrimination. Twenty-one subjects for the study were selected from the intermediate grades of three elementary schools in California. Thirteen boys in the experimental group were selected from remedial classes, and the eight boys in the control group were chosen from regular classes. Aside from the usual group tests, background and developmental information was obtained and a psychometric battery of six tests was used. Visual screening was included and electro-oculogram recordings were made for three series of tracings. Measurement of results are graphically depicted through a series of graphs, tables, and descriptive observations. An annotated bibliography is included. (74 references)

Muehl, Siegmund and King, Ethel M. "Recent Research in Visual Discrimination: Significance for Beginning Reading," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 434-39.

Fifteen recent research studies concerning visual discrimination are included, and their implications for beginning reading instruction are presented. Results are cited in the areas of transfer of discrimination learning, identification of significant discrimination cues, effectiveness of simultaneous or successive material presentation in matching tasks, success of cue combinations for sight reading, and relationships between letter-naming ability and reading success. Teaching recommendations based upon the research are presented as follows: (1) All visual discrimination training should be with word and letter stimuli. (2) The simultaneous matching format which exists in most prereading books is adequate. (3) The earliest visual discrimination exercises should use letter stimuli.

(4) Just prior to beginning reading instruction, visual discrimination exercises should combine sound and meaning with visual word form. (5) At the beginning of a reading lesson, students should have practice in discriminating among new vocabulary. (6) And additional cues such as pictures and student pronunciation should be given with new, similar vocabulary words. Further research is recommended. References and charts are included.

Nolan, Carson Y. and Ashcroft, Samuel C. "The Visually Handicapped," Review of Educational Research, 39 (February 1969) 52-70.

A general review of research material related to the education of the visually handicapped includes material on tactile reading. The research review begins with a consideration of the research sources and of general aspects of education for the visually deprived. Other pertinent subject areas reviewed include studies of partially seeing children, abstract functioning and concept development, and a section on technological research in reading materials. A bibliography is included.

Olson, Arthur V. "School Achievement, Reading Ability, and Specific Visual Perception Skills in the Third Grade," The Reading Teacher, 19 (April 1966) 490-92.

The relationship between school achievement, reading ability, and six visual perceptual abilities as measured by the Frostig Development Test of Visual Perception was investigated. One hundred and twenty-one third graders, 64 boys and 57 girls, were administered the California Achievement Test (CAT), the California Short-Form Test of Mental Maturity, 1963 revisions, Hearing Sounds in Words Test (Primary), and the Visual Memory of Words Test (Primary) from the Durrell Analysis of Reading Difficulty. Eye-motor coordination, figure-ground, position in space, and spatial relations were not significantly related to any of the subtests on the California Achievement Test. There was a negative correlation between all variables and chronological age. Correlation between the IQ and other variables was highest with the total score on the Frostig, .66; arithmetic reasoning on the CAT, .60; and synthesizing sounds, .59. Conclusions are listed.

Park, George E. "Ophthalmological Aspects of Learning Disabilities," Journal of Learning Disabilities, 2 (April 1969) 189-98.

Research dealing with vision and reading was reviewed, and results based on the Electroencephalograph (EEG) for 100 dyslexic children were reported. Abnormal EEG's were found in 36 percent. Comparison of that group with the group with normal EEG's revealed some differences which were listed. The author concluded that the EEG constitutes a significant

technique for the study of dyslexic children, and the results may be related to visual data. References are included.

Peterson, Raymond P. "Patterns of Eye Movements in Rapid Symbol Identification and Their Relation to Reading Achievement," Perceptual and Motor Skills, 28 (February 1969) 307-10.

The eye-movement patterns of 45 third graders to tachistoscopically projected digit and letter patterns were analyzed. Reading scores for students from two schools were related to six eye-movement patterns. Twenty slides of digits and letters arranged vertically, horizontally, and obliquely were presented tachistoscopically for one-half second. Subsequently the relationships to reading, measured by the New York State Elementary Schools Reading Test, were analyzed. The basic patterns were horizontal, left-to-right; horizontal, left-to-right; dropping to a lower line; up obliquely, left-to-right; down obliquely, left-to-right; down obliquely, right-to-left; and irregular, with shifting patterns. The largest proportion of subjects from each school fell into the last category. Scores on comprehension and word-meaning tests did not distinguish the groups, and some reversals of trends were found for the two schools. References are included.

Popp, Helen M. "The Measurement and Training of Visual Discrimination Skills Prior to Reading Instruction," Journal of Experimental Education, 35 (Spring 1967) 15-26.

The effects of test-specific discrimination training are discussed. One hundred and twenty-seven beginning first graders were pretested for visual discrimination of bigrams and trigrams. Selected pupils were assigned either to the experimental group which received test-specific discrimination training or to the control group which received nontest-specific discrimination training. Pretest and post-test scores for individuals and for the two groups were compared. Results indicated that all subjects in the experimental group performed satisfactorily on items for which they had been specifically trained. A statistically significant difference was found between the performance of the experimental and control groups. Training was successful with individuals as well as with groups. It was concluded that if the specific behavior desired is carefully analyzed, tests can be devised to determine whether or not that behavior is in a student's repertoire; practicable and effective training programs can be constructed for those who need them. Specific revisions and reconstructions for the program used in this study are suggested. References are listed.

Rengstorff, Roy H. "The Types and Incidence of Hand-eye Preference and Its Relationship with Certain Reading Abilities," American Journal of Optometry and Archives of the American Academy of Optometry, 44 (April 1967) 233-38.

A study was conducted to investigate the incidence of different types of hand-eye preference and to determine what relationship existed between types of preference and reading speed and comprehension. Subjects (5,546) from six population samples were tested for hand-eye preference. The samples were drawn from clinic patients, Army officers, cadets, military recruits, and clinic files. The most common type of hand-eye preference was right hand/right eye (62%). The most common type of mixed preference was right hand/left eye (29%). Unilateral preference consisted of 66.4% of the total sample. Two experiments were conducted which were related to the second purpose of the study. In the first, 78 Army officers were administered the Cooperative English Test. Subjects with unilateral preference had higher mean scores on the test. Clinic patients served as subjects in the second experiment. They were asked to describe their reading ability as slow, fast, or average. The percentage describing their reading as average was the same for both the unilateral and mixed preference groups. A discussion of the results is included.

Robinson, Helen M. "Diagnosis and Treatment of Poor Readers with Vision Problems," Clinical Studies in Reading II. Supplementary Educational Monographs, No. 77. Chapter 1, 9-28 (Chicago: University of Chicago Press, 1953).

Examples are given of the types of visual problems encountered, the visual screening tests used, the procedures for referral, and the teaching adaptations which have been tried at the University of Chicago's Reading Clinic. Two detailed case studies of boys with at least normal intelligence but with visual and reading problems are described, and the high incidence of visual problems among poor readers is noted. Emphasis is placed on the need for maximum communication and cooperation between the remedial reading teacher and the eye specialist. Using books and tests with clear and large type, having the students read with one eye, introducing reinforcing games and activities, and utilizing film strips are suggested methods for adapting reading instruction to children with reading and visual problems. Questions are raised concerning the possible general relationships between visual efficiency and reading progress; the reliability, validity, and completeness of existing visual screening tests; and the behavioral items that best predict vision problems. Further research in these areas is recommended.

Robinson, Helen M. "Visual Efficiency and Reading Status in the Elementary School," Clinical Studies in Reading III, Helen M. Robinson and Helen K. Smith, Eds. Supplementary Educational Monographs, 97, 49-65. (Chicago: University of Chicago Press, 1968.)

The Primary Mental Abilities Test and three reading achievement tests were administered to 820 pupils, almost equally distributed among the first

eight grades. About 990 coefficients of intercorrelation and a factor analysis were calculated for each grade. Eight factors found at each grade level included a reading factor and vision factors which failed to load significantly on the reading factor. Therefore, no patterns or constellations of vision factors could be related to reading. Further examination of the data compared the mean visual scores of 63 good with 60 poor readers. Poor readers were characterized by greater amounts of hyperopia and binocular incoordination. Both test-retest validity and reliability, compared to refraction, were reported for each battery of tests. Tables are included.

Rosenbloom, Alfred A., Jr. "The Relationship Between Aniseikonia and Achievement in Reading," Clinical Studies in Reading III, Helen M. Robinson and Helen K. Smith, Eds. Supplementary Educational Monographs, 97, 109-16. (Chicago, Illinois: University of Chicago Press, 1968.)

An extensive visual examination of 40 retarded readers and a matched group of average readers was carried out. Both the critical ratio and chi square revealed no significant differences in the proportion of pupils in each group exhibiting 1.00 percent or more of aniseikonia. However, both groups exhibited unexpectedly large proportions of clinically significant amounts of aniseikonia: experimental, 25 percent and control, 17.5 percent. Further examination revealed suppression of one eye on either the Spache Binocular Reading Test of the Hand-Eye Coordination Tests. The author concluded that the suppression may have been a compensation for aniseikonia. Tables are included.

Shea, Carol Ann. "Visual Discrimination of Words and Reading Readiness," The Reading Teacher, 21 (January 1968) 361-67.

A test of visual discrimination was developed with 134 kindergarten children and tested against the Metropolitan Reading Readiness Tests, Form R, and the Lorge-Thorndike Intelligence Test to see which would provide the best estimate of reading readiness and the best prediction of reading achievement in grade 1. The tests were then given to 76 first-grade children, and results were analyzed using frequency distributions of scores and Chi square computation for the lowest quartile. Intercorrelations of scores on the various tests showed the combination of Lorge-Thorndike and Visual Discrimination Test to be a better estimate of readiness than any other combination. It was concluded that these findings support the theory that visual discrimination ability is a necessary prerequisite to first-grade reading achievement with the sight method of instruction. References are included.

Shearron, Gilbert F. "Color Deficiency and Reading Achievement in Primary School Boys," The Reading Teacher, 22 (March 1969) 510-12, 577.

The reading scores, measured by the Metropolitan Achievement Tests, of boys classified as mild, medium, and strong in color deficiency were compared. Subjects, in the primary grades, were secured by screening with the American Optical Company's Hardy, Rand, and Ritter Pseudo-isochromatic Plates. It was found that 5.67 percent of boys and .32 percent of girls were color deficient. The percentage of color deficient Negro boys was 3.12 compared to 6.83 percent of white boys who were color deficient. When the white color-deficient boys were compared with controls, no significant differences in reading achievement were found. Likewise, no significant differences were found in reading achievement among the mild, medium, and strong color-deficient groups. It was concluded that there was no significant relationship between color deficiency and reading achievement. References are included.

Silvaroli, Nicholas J. and Wheelock, Warren H. "An Investigation of Auditory Discrimination Training for Beginning Readers," The Reading Teacher, 20 (December 1966) 247-51.

The extent to which children acquired the auditory signs for their language signals and whether these children needed auditory discrimination training were studied. Three low socioeconomic level schools were selected to participate. All children attending morning kindergartens were administered the auditory discrimination subtests of the Harrison-Stroud Reading Readiness Test and the Wepman Auditory Discrimination Test. These tests were also used as a post-test measure. Sixty randomly selected children were placed in each an experimental and control group. The experimental group was subdivided into two groups. The experimental groups had 15 minutes per day of auditory discrimination training for 5 weeks. Analysis of variance was used to analyze the data. Significant gains were made by the experimental group on post-test scores as measured by the Wepman Test. The Harrison-Stroud test indicated inconsistent results. From the results of the study it was concluded that the group tests were not appropriate for 6-year-old children in lower socioeconomic groups. References are included.

Solan, Harold A. "Visual Processing Training with the Tachistoscope: A Rationale and Grade One Norms," Journal of Learning Disabilities, 2 (January 1969) 30-37.

This investigation was carried out to establish a set of expected tachistoscopic responses which would identify children in grades 1, 2, and 3 whose visual sensory maturation was lagging. A percentile scale was constructed on the performance of 250 children whose average age was 6 years, 5 months. Three digits were exposed tachistoscopically to first

graders at speeds of .1 seconds and .01 seconds to determine means and percentile norms. Mean scores of 21 at .1 seconds and 19.4 at .01 seconds were found. Coefficients of correlation between number of correct digits and reading scores on the Metropolitan Achievement Tests were .50 at .1 exposure and .43 at .01 exposure.

Spache, George D. and Tillman, Chester E. "A Comparison of the Visual Profiles of Retarded and Non-Retarded Readers," Journal of Developmental Reading, 5 (Winter 1962) 101-09.

A comparison of the visual profiles of retarded and nonretarded readers was made. One hundred fourteen cases from the University of Florida Reading Laboratory Clinic were randomly selected from those classified retarded in reading. One hundred one were randomly selected from those classified as "nonretarded" for the study. Readers in grades 1 to 3 were classified as retarded when they scored at a level 1 year below their school grade placement, while readers in the fourth grade and above were retarded if they scored 2 years below their school grade placement. Intellectual variables were controlled by basing classification on mental age. Conclusions supported the general idea that defects resulting in fusion difficulties are strongly related to reading difficulty. The retarded readers were poorer in left-eye acuity, showed marked differences in acuity of the separate eyes and failed the test of binocular acuity in significant numbers. Table and references are included.

Starnes, David R. "Visual Abilities vs. Reading Abilities," Journal of the American Optometric Association, 40 (June 1969) 596-600.

Optometric examination techniques were applied to third-grade pupils, and an F ratio was obtained for the differences between means of good and poor readers in this pilot study. The relationships between visual abilities or visual perception and reading ability among good and poor readers were examined. The 18 third-grade students were divided into groups of eight good readers and 10 poor readers and were tested with a group of visual abilities tests and with several visual-perceptual-motor tests. No significant differences between mean scores of the two groups on tests of visual acuity or phorias were found. Good readers tended to be near-sighted and poor readers farsighted. Significant differences, favoring the good readers, were found on the perceptual abilities tests. However, no relationship was found between any single visual ability and any single perceptual ability. References are included.

Waldstreicher, Joel S. "Eye-Movement Photography--An Effective Diagnostic Aid," Optical Journal and Review of Optometry, 103 (December 1, 1966) 23-27.

The Ophthalmograph or Reading Eye Camera produces a binocular reading graph of eye movements as the subject reads before it and beads of light reflected from the camera are photographed on moving film. Fixations, interfixation movements, return sweeps, regressions, and duration of fixations are all recorded. Other diagnostic information revealed on the reading graph includes all the changes in performance made to compensate for inadequate visual function, such as inadequate binocular coordination, under- and over-convergence, or prolonged fixations indicating acuity problems such as latent hyperopia or astigmatism. The instrument provides a thorough diagnostic tool both for private practitioners and for institutions such as reading clinics and remedial education centers.

Warner, Dolores. "Lingual Deviation, Visual Perception, and Reading Achievement," Reading Horizons, 9 (Fall 1968) 7-18.

The relationship of nine variables to reading achievement was investigated at grades 3 and 4. The subjects were of Caucasian, Mexican-American, Negro, and Oriental ethnic groups with median IQ's of 130.6. Through a structured interview, lingual deviation was observed in grammar, vocabulary, or pronunciation. Visual perception required identification and reproduction of alphabetic sequences and those with one letter out of order in three-, six-, and nine-letter combinations. Emotional reaction was determined on a nine-point scale dealing with degree of participation as a subject. Socioeconomic status was based on parental occupation and residence. Reading achievement was determined by scores on the California Achievement Test. No significant difference in reading achievement was found among ethnic groups when intelligence was held constant. Likewise, no significant differences among ethnic groups were found in socioeconomic level, sex, age, and emotional reaction to the interview. Significant differences were found in lingual deviation, especially in pronunciation of vowels and in visual perception. Tables and references are included.

Wheelock, Warren H. "An Investigation of Visual Discrimination Training for Beginning Readers," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 101-05.

The effect of training in recognition and discrimination of capital letters on visual discrimination was investigated. Visual discrimination subtests 1, 2, and 4 of the Lee-Clark Reading Readiness Test were administered before and after instruction, as was the Letter-Form-Training Criterion Test constructed by the investigator. Forty-five kindergarten children (experimental group) were instructed 15 minutes each school day for 1 month with strip film exposures of the letters. The control group, also composed of 45 kindergarten children, from extremes of socioeconomic levels, received no training. Analysis of covariance revealed that the experimental group made significant gains on the Lee-Clark tests, compared

to controls, and that the greatest gains were made by the lower socioeconomic group. Significant gains were also made in the Letter-Form test. References are included.

Wheelock, Warren H. and Silvaroli, Nicholas J. "An Investigation of Visual Discrimination Training for Beginning Readers," Journal of Typographic Research, 1 (April 1967) 147-56.

Visual discrimination ability was studied. Ninety kindergarten students in three schools were randomly selected for one experimental group and one control group of 45 students each. Both high and low socioeconomic extremes were identified within each group. The experimental group was given training 75 minutes weekly for 1 month in instant recognition of capital letter forms, without naming or sounding the letters. A filmstrip series was developed in 5 lessons to give practice in distinguishing 16 letter forms. Letter pairs that were the same were marked with a square in the following frame so that self-checking came immediately after each response. The teacher also analyzed differences between letters for the students. A tachistoscopic device was used when flashing was required. The Lee-Clark Reading Readiness Test, subtests one, two, and four, and the author-developed Letter-Form-Training Criterion Test were given as pretests and post-tests. Analysis of covariance showed a significant difference (.01 level of confidence) for the experimental group subjects who received training in letter form. Learning to make the required letter-recognition response did enhance visual discrimination ability. The attention-concentration learning by the experimental group was mentioned as a limiting factor of this study. Children from the upper socioeconomic group scored best in pretesting, while children in the lower socioeconomic strata benefited most from the training classes. Tables and footnote references are included.

Wilson, F. R. and Lane, H. L. Hue Labeling and Discrimination in Children with Primary Reading Retardation. 25 p. (OEC-3-6-061784-0508, 1967) ED 015 112, microfiche \$0.65, hard copy \$3.29 from EDRS.

The labeling and discrimination of colors were studied in children with primary reading retardation and in a matched group of normal children. Ten male students in Michigan representing an age range of 9 years 10 months to 14 years 10 months were chosen as subjects. Developmental, mental, educational, neurological, psychiatric, and psychometric data were collected on each subject. Either the Gates Reading Test or the California Reading Test was administered. Each retarded reader was matched with a normal reader of approximately the same age and intelligence. The spectral locations of boundaries between color categories were comparable in the groups. The discrimination functions obtained for both groups were better than those predicted. The normal group performed significantly more accurately than the retarded readers. Both groups showed a positive correlation between predicted and obtained discriminability scores. Tables and references are included.

Winters, John J., Jr. and Gerjuoy, Irma R. "Recognition of Tachistoscopically Exposed Letters by Normals and Retardates," Perception and Psychophysics, 5 (January 1969) 21-24.

A comparison of letter recognition under conditions which could and could not permit eye movements used three populations: (1) educable retardates, (2) equal chronological age (CA) normals, and (3) equal mental age (MA) normals. Consonants, except Q, were randomly selected and assigned to each corner of a square position on each card, making a total of 10 cards. The cards were exposed tachistoscopically to each of the three groups. The 30 subjects reported aloud the letters that they saw. Comparisons of correct responses revealed no sex differences. More correct responses were given with long than with short exposure. The groups of subjects differed significantly in number of correct responses under long exposure, with the retardates and the equal CA normals lowest and highest. There were significantly more correct responses to the right than to the left hemifield targets under short exposure for retardates and the equal CA group, but no significant differences under long exposure. Letters were perceived in the upper half more frequently than in the lower half. Under long exposure, the sequence of correct responses by quadrant was most commonly upper left, upper right, lower left, and lower right. The findings were interpreted to show right hemifield superiority only when scanning was impossible. Tables and references are included.

Young, Francis A. "Reading, Measures of Intelligence and Refractive Errors," American Journal of Optometry and Archives of American Academy of Optometry, 40 (May 1963) 257-64.

Correlation coefficients were computed between right eye and left eye refractive errors and the scores on the Stanford-Binet and the California Test of Mental Maturity for 251 students in the Pullman study. In addition, 117 students were given the Durrell-Sullivan Reading Achievement and Capacity test. The population was split into a hypermetrope, a middle or modal, and a myopes group. The three groups were compared on reading achievement and capacity. The myopes were significantly better readers than the hypermetropes and were generally better readers than the modal group. There were no differences between the reading capacity scores of the three groups.

Section 4: Auditory Factors in Reading Diagnosis

Barkline, Kenneth Stewart. Auditory Distraction and Reading Achievement. 161 p. (Ph.D., University of Minnesota, 1968) Dissertation Abstracts, 29, No. 12, 4315-A. Order No. 69-6792, microfilm \$3.00, xerography \$7.60 from University Microfilms.

The effect of auditory distractibility on reading comprehension was studied. An individualized test based on the cancellation of letters in a text of German prose was devised. The number of letters cancelled and the errors of each of 77 6½- to 7-year-old first-grade boys were compared under two conditions: with and without classroom noise. The change in performance under the two conditions served as the criterion for the subjects' reactivity to extraneous auditory stimuli. Subjects were also classified according to high or average reading readiness. Significant interaction of reactivity and reading readiness was found upon analysis of the data. The interaction would seem to suggest that students of average ability who were either facilitated or impaired in letter performance by aural distractions showed poorer reading comprehension than those whose performances were not influenced by classroom noise. On the other hand, high readiness students whose performances were modified showed better reading comprehension than those whose performances remained unchanged.

Evans, James R. "Auditory and Auditory-visual Integration as They Relate to Reading," The Reading Teacher, 22 (April 1969) 625-29.

Auditory acuity and discrimination studies and studies of auditory-visual integration are reviewed. The relationship between impaired auditory acuity and reading retardation, the more tenuous relationship between auditory discrimination and reading retardation, and the importance of auditory discrimination in the development of a sight vocabulary are pointed out. Auditory-visual integration skills were found to be markedly inferior in groups of poor readers, even when other factors such as auditory memory, auditory and visual discrimination, and IQ were held constant. The author concludes that attention to auditory functions is warranted in readiness and remedial classes. References are included.

Feldmann, Shirley C.; Schmidt, Dorothy E.; and Deutsch, Cynthia P. "Effect of Auditory Training on Reading Skills of Retarded Readers," Perceptual and Motor Skills, 26 (April 1968) 467-80.

Sixty-four third graders from socially disadvantaged backgrounds were assigned to one of three treatment groups or to a control group. Treatment groups received reading instruction or auditory training or both. Batteries of auditory and reading tests were given before and after treatment. There was no evidence that any of the four groups showed superior post-test performance. The negative results were discussed in terms of timing of intervention programs. The findings suggested that there may be complex interrelationships of teacher and pupil variables with learning to read. References are included.

Gruber, Leslie and Steer, M. D. "Auditory Perceptual Abilities of Institutionalized Mentally Retarded Children," American Journal of Mental Deficiency, 70 (September 1965) 287-90.

The auditory perceptual abilities of institutionalized mentally retarded children were studied. Thirty-seven children between the ages of 9 and 18, institutionalized at the Fort Wayne State School for Retarded Children and Adults, were used as subjects. All had normal hearing for pure tones, intelligible speech, and a minimum mental age of 5 years. The subjects were divided into two articulatory groups in accordance with their articulation indices calculated by Barker's (1960) procedures, thus forming a high articulation group with 18 subjects and a low articulation group of 19 subjects. Five auditory perceptual tests were administered to each subject: the Peabody Picture Vocabulary Test (PPVT), Templin Speech Sound Discrimination Test, and three tests constructed by the experimenter. All tests except the PPVT were presented to the subjects by means of a tape recorder. Differences in perceptual performance within the various subgroups were analyzed by single classification analysis of covariance procedures. No differences in mean score performance between institutionalized male and female retardates were indicated on any of the perceptual tasks. Other results are discussed. A table is included. References are appended.

Haspiel, George S. and Bloomer, Richard H. "Maximum Auditory Perception (MAP) Word List," Journal of Speech and Hearing Disorders, 26 (May 1961) 156-63.

The need for an ordered vocabulary designed to train children with a hearing loss to hear the differences between phonetic elements and between words is discussed. A definition of the Maximum Auditory Perception (MAP) Word List is given, and its usefulness in permitting the clinician to develop those skills necessary to distinguish between phonetic elements in word combinations is noted. The sequence of sounds is based on discriminability, developmental order, and frequency of occurrence. The selection of words on the MAP Word List and its applications are discussed. An alphabetically arranged copy of the MAP Word List and references are included.

Mangrum, Charles Thomas II. A Comparison of the Performance of Normal and Dyslexic Readers on the Auditory Test of Dichotic Stimuli and the Visual Test of Dichoptic Stimuli. 148 p. (Ed.D., Indiana University, 1968) Dissertation Abstracts, 29, No. 6, 1826-A. Order No. 68-17,280, microfilm \$3.00, xerography \$7.00 from University Microfilms.

The performance of a group of normal readers and that of a group of dyslexic readers on the Auditory Test of Dichotic Stimuli and the Visual Test of Dichoptic Stimuli were compared. For this purpose, a consensus

definition of the dyslexic reader and of the normal reader were developed. The subjects were sixth-grade students from the Bloomington Metropolitan Schools in Bloomington, Indiana. The Auditory Test of Dichotic Stimuli yielded no statistically significant differences between the groups. However, certain subtests of the Visual Test of Dichoptic Stimuli were statistically significant. The clinical value of the auditory and visual instruments under the modified definition of dyslexic reader was not demonstrated.

McNeil, John D. and Coleman, James C. Auditory Discrimination Training in the Development of Word Analysis Skills. 99 p. (OEG-7-14-1430-290, California University, Los Angeles, 1967) ED 018 344, microfiche \$0.65, hard copy \$3.29 from EDRS.

The hypothesis that children who are taught to hear and designate separate sounds in spoken words will achieve greater success in learning to analyze printed words was tested. The subjects were 90 kindergarten children, predominately Mexican-Americans and Negroes. Children were randomly assigned to one of three treatments, each of 3 weeks duration. An autoinstructional program in beginning reading, an autoinstructional auditory training program that used no visual stimuli, and noninstruction in reading and auditory discrimination. After the three experimental treatments, all the children received programmed lessons in reading identical to those in the first treatment above. Achievement was measured by errors during instruction in reading, scores earned on a test of word analysis skills, and scores earned on an auditory discrimination test. It was found that the auditory treatment resulted in lower reading error rate and more successful performances in both the task of word analysis and auditory discrimination. The exclusively auditory program followed by instruction in reading more effectively improved skills for analyzing printed words. Auditory training on selected phonemes helped learners associate graphemes and phonemes even when the phonemes were different from those in training. Auditory training was especially beneficial to boys and children of lower intelligence. References, appendixes, and examples of tests and lessons used are included.

Morency, Anne. "Auditory Modality and Reading," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 17-21.

A longitudinal study of 179 pupils investigated the development of auditory discrimination and visual memory and their relationship to one another and to reading achievement. Pupils were tested upon entering first grade and at the end of the second and third grades to determine changes in auditory and visual perception scores which related to reading. The Wepman Auditory Discrimination Test, an experimental test of auditory memory, experimental tests of visual memory and discrimination, and the Metropolitan Readiness and Achievement Tests were used. The t-test showed

significant improvement in both auditory and visual perceptual scores, except in visual memory. Coefficients of intercorrelation between visual and auditory gains were not significant, showing differential modality development. Coefficients of correlation between the first-grade auditory test scores and third-grade achievement were low but significant. Likewise the coefficients for the visual test scores were low but significantly related to all but language usage. Tables and references are included.

Richardson, J. A. "Physical Factors in Reading Failure," Australian Journal of Educational Psychology, 2 (April 1958) 1-10.

A study was conducted to discover consistent causal factor patterns entering into reading failure. Each of the 97 children selected for the retarded group was matched with one in the successful reader group on the bases of chronological age, ACER Junior Non-Verbal Intelligence Quotient, sex, nationality, and physical factors. Each of these 194 children was subjected to an intensive case study covering (1) family and personal background, (2) educational history, (3) personality and behavior characteristics, (4) present physical condition and developmental history, and (5) diagnostic reading tests. Medical and vision tests were given each child. Information was collected on 85 factors of possible significance in reading success or failure. Of these, 27 were considered in the final analysis. Clear differences between the retarded and successful children were related to functional deviations such as nail biting, thumb sucking, constant facial contortions, tics, masturbation, and extreme restlessness. Differences between groups of severely physically handicapped retarded and successful readers were also reported. Reference and tables are included.

Stott, D. H. "Infantile Illness and Subsequent Mental and Emotional Development," Journal of Genetic Psychology, 94 (June 1959) 233-51.

The connection between early illness and reading retardation was studied. Children in Bristol, England, who had spent at least two weeks in the hospital between 7 and 11 years ago served as subjects. The 142 children were matched with 133 controls on birth date. The head teacher rated the children on a five point scale of reading achievement. Personality was assessed by the Bristol Social Adjustment Guides. Cultural level was determined by a rating on a five point scale. Chi squares reading as rated by the teacher, and percentage were used to analyze the data. The hospital group was significantly more retarded in reading than the control group. The cultural level proved to be a factor in scholastic success, but did not account for the backwardness of early-hospital children. Pneumonia stood out as closely associated with reading retardation. Subjects who had multiple early hospitalization were significantly more retarded in reading than those with a single hospitalization. A significant proportion of the backward children were of "unforthcoming" personality. References and tables are included.

Stuart, Irving R. "Perceptual Style and Reading Ability: Implications for an Instructional Approach," Perceptual and Motor Skills, 24 (February 1967) 135-38.

The relationships between reading grade levels and scores on the Wittin's Embedded Figures Test, Short Form, for 40 male and 43 female seventh and eighth graders identified as good or poor readers are reported. Test results indicate a strong positive correlation between field independence and reading grade achievement. On the basis of these findings, identification of individual perceptual styles before initiating reading instruction is recommended. Study limitations are noted. References and data tables are included.

Wepman, Joseph M. "Auditory Discrimination, Speech, and Reading," Elementary School Journal, 60 (March 1960) 325-33.

The Wepman Auditory Discrimination Test is described as a means of measuring auditory maturity and, consequently, the possible benefits derived from phonic instruction in reading and from auditory training in speech. The test is composed of word pairs. The child decides whether the sounds of these pairs are alike or different. Three criteria are used in pairing the words--(1) the frequency of use, (2) the position and phonetic category, and (3) the syllable length. Audition develops on at least three levels--acuity, understanding, and discrimination and retention. The detection of immature auditory discrimination ability would permit maximizing the use of the child's better developed means of learning until the developmental process reaches a balance. The auditory discrimination, articulation, intelligence, and reading achievement of 156 first and second graders were compared. A close relationship was found between auditory discrimination and speech accuracy of articulation. There was also a positive relationship between poor reading achievement and auditory discrimination ability. Definitions of auditory discrimination, phonics, phoneme, and phonetics are given, and seven references are included.

Section 5: Perception and Conceptualization

Alexander, Duane and Money, John. "Reading Ability, Object Constancy, and Turner's Syndrome," Perceptual and Motor Skills, 20 (June 1965) 981-84.

The hypothesis that inability to recognize changes in the form, position, or directional orientation of objects (letters) due to neurocognitive deficits in space-form perception and/or directional orientation may be responsible for specific reading disability was tested. The Gates Reading Survey was administered to 17 female patients with Turner's

syndrome, a cytogenesis disorder which is frequently accompanied by deficits of form perception and of direction sense. The reading ability of this group was not deficient. Thus, if space-form and directional-sense deficits are related to reading disability, they must be specifically related to the language function and its symbolic written representation. A table showing the achievement levels on the Gates Reading Survey is included.

Arciszewski, Raymond Arthur. The Effects of Visual Perception Training on the Perception Ability and Reading Achievement of First Grade Students. 178 p. (Ed.D., Rutgers--The State University, 1968) Dissertation Abstracts, 29, No. 12, 4174-A. Order No. 69-9294, microfilm \$3.00, xerography \$8.20 from University Microfilms.

The effects of visual perception training on the perception and reading ability of first graders was studied, and correlations between such factors as intelligence, perception, sex, age, and reading achievement were sought. Two hundred and fifteen subjects were divided into three groups, one of which received training according to the Frostig Program for the Development of Visual Perception. Another group received intensive phonics training, and the third received straight basal reading instruction. The experimental period lasted 22 school weeks. The results indicated that first graders who received visual perception training did not improve either their visual perception or reading achievement more than those receiving phonics or basal reading instruction. Furthermore, findings from ulterior statistical analysis of post experimental data, using the criterion of intellectual ability, revealed no significant difference in the training methods.

Ashlock, Patrick. "The Visual Perception of Children in the Primary Grades and Its Relation to Reading Performance," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 331-33.

This study is concerned with the collection of data pertaining to 1) the relative value of some types of visual perception tests to reading performance, 2) visual perceptual performance as a function of the nature of the stimulus, and 3) the decrease of importance of visual perception as a predictor of reading performance as the grade level increases. Subjects were 15 boys and 15 girls in the second semester of each of the first, second, and third grades. The subjects had no serious language or bilingual problems. Tests were administered for visual and auditory screening, verbal intelligence, visual perception and reading performance. Tests of the proposals were established by correlating each visual perception test with reading performance, with correlations converted to a Fisher z score and averaged for each category, through two analyses of variance for repeated measurements, and through the use of multiple correlation. Results

are evaluated for each of the three proposals and specific recommendations are presented. Study procedure is broken down in tabular form, statistical findings are summarized.

Ball, Thomas S. and Owens, Earl P. "Reading Disability, Perceptual Continuity, and Phi Thresholds," Perceptual and Motor Skills, 26 (April 1968) 483-89.

This paper reports the results of two experiments designed to provide a critical test of Kephart's assumption that the disabled reader's perceptual process is quantitatively inferior. One study involved 20 disabled readers and 20 normal achievers from Tippecanoe County, Indiana; the second, 12 disabled readers and 12 normal achievers from California. A test based on the phi phenomenon was employed. All subjects had normal visual and auditory acuity. The phi threshold data was treated by analysis of variance. The control and reading disability groups responded in essentially the same manner as shown by the fact that neither the difference between groups nor the groups' X figures interaction was significant. The results reinforce Birch's claim that perceptual discrimination is intact among disabled readers, but they fail to support Kephart's notion that these readers rely exclusively upon detail cues, especially the sides of figures, as the basis for making perceptual discriminations. References are included.

Barrett, Thomas C. "The Relationship Between Measures of Pre-Reading Visual Discrimination and First Grade Reading Achievement: A Review of the Literature," Reading Research Quarterly, 1 (Fall 1965) 51-76.

A review of the literature concerning the relationship between measure of pre-reading visual discrimination and first grade reading achievement is given. The relative predictive power of visual discrimination of letters, words, geometric designs, and pictures when these abilities are studied individually and in combination is indicated. Studies investigating visual discrimination at the beginning of first grade and reading achievement later in first grade are included. The investigations are presented under three major categories--those that study the relationship between verbal-visual discrimination, those that relate nonverbal visual discrimination, and those that compare the relationships of various types of visual discrimination with reading achievement when these relationships are obtained under similar conditions. Tables and references are included.

Benger, Kathlyn. "The Relationships of Perception, Personality, Intelligence, and Grade One Reading Achievement," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12. Part 4 (1967) 112-23.

In an effort to determine factors relevant to reading success, two stratified samples, each with 30 students matched by sex, were carefully selected from above and below average students as determined by the Edmonton Public School Word Recognition Test and the Gates Primary Paragraph Reading Test. Subjects came from lower-to-upper-middle class levels, and atypical subjects were screened out. Visual perception, auditory discrimination, aural vocabulary, intelligence, and personality were related to reading at the end of the first grade. Visual perception was measured by the Frostig Developmental Test of Visual Perception; auditory discrimination, by the Wepman Auditory Discrimination Test; aural vocabulary, by the Peabody Picture Vocabulary Test; intelligence, by the Stanford Binet Test; and personality, by a five-point teacher scale. The personality rating for concentration correlated most highly with reading. Excluding intelligence, the best combination of factors was concentration, visual, and auditory perception. However, the three accounted for only 36 percent of the variation. Tables and references are included.

Bergan, John R. A Study of the Relationships Between Perception and Reading. 104 p. (OEC-6-10-082, Arizona University, Tucson, 1967) ED 017 435, microfiche \$0.65, hard copy \$6.58 from EDRS.

A developmental study of perception and its relationships to reading as measured by the California Reading Test, the Gates-McKillop Diagnostic Reading Test, a word reversal test, and a reversed words in context test is reported. The perceptual task of match adjustment was used as the spatial orientation measure and for both shape and size constancy. Match recognition was used for speed of processing information. Subjects were 50 second, 56 fourth, and 56 sixth graders. The results of tests of intelligence, achievement, spatial relations, word reversals, and size and shape constancy were analyzed. None of the intercorrelations of the perceptual tests was significant. The speed of processing information correlated significantly with intelligence, and the achievement scores for all groups accounted for the most variance. Spatial orientation and reversals were related significantly to achievement in both fourth- and sixth-grade groups. With an increased amount of information, differences between high and low achievers became significant. Size and shape constancy proved an important variable in the early grades. The results of the project point out the impracticality of the search for general perceptual ability and suggest that no such ability exists. Test instructions and a bibliography are included.

Birch, Herbert G. and Belmont, Lillian. "Auditory-Visual Integration in Normal and Retarded Readers," American Journal of Orthopsychiatry, 34 (October 1964) 852-61.

Procedures used to study the relation of auditory-visual integration to reading retardation in normal and retarded readers are described. Test

results show clearly that defects in auditory-visual integration contribute to reading incompetence. However, it is noted that it would be incorrect to assume that difficulty in judging auditory-visual equivalences is the sole factor underlying reading incompetence. Experimental data are tabulated and graphed. References are given.

Birch, Herbert G. and Belmont, Lillian. "Auditory-Visual Integration, Intelligence and Reading Ability in School Children," Perceptual and Motor Skills, 20 (February 1965) 295-305.

The developmental course of auditory-visual equivalence was studied in 220 elementary school children. It was found that improvement in auditory-visual integration was most rapid in the earliest school years and reached an asymptote by the fifth grade. The correlations obtained between IQ and auditory-visual integration suggested that the two features of functioning were associated by not synonymous. In contrast, the correlations between IQ and reading ability rose with age. These opposing age trends in correlations found between reading ability and auditory-visual equivalence and between reading ability and IQ are interpreted in terms of the possible attenuating effect introduced by the low age ceiling of the auditory-visual test. The possibility that in acquiring reading skill primary perceptual factors are most important for initial acquisition, but more general intellectual factors for later elaboration, is also considered when interpreting age trends. Pertinent tables, graphs, and a reference list are included.

Blank, Marion. "Cognitive Processes in Auditory Discrimination in Normal and Retarded Readers," Child Development, 39 (December 1968) 1,091-101.

Three experiments were conducted to determine why poor readers score lower than normals on auditory discrimination tests. The first experiment focused on language structure, especially degree of inflection. The Wepman Auditory Discrimination Test, in English and Hebrew, was given to 23 normal and 23 retarded Israeli first graders. The retarded readers scored significantly lower than the normal readers and demonstrated more difficulty in distinguishing the ends of words than their beginnings. The second experiment asked the subject to repeat pairs of Hebrew words, thus eliminating the same-different concept. Analysis of the retarded readers' mistakes revealed a tendency to perseverate. As before, their test scores were lower than those of the normal readers. The third experiment required the subject to repeat all of the words used in the second experiment one at a time. Separation of the pairs avoided perseveration and produced no significant differences between the retarded and the normal readers' scores. The author concluded that the retarded readers' auditory discrimination was affected by the stimulus demands of the test situation. Tables and references are included.

Breniman, Emery Richard. Visual Discrimination Learning and Retention in Institutionalized Educable Mentally Retarded Children. 144 p. (Ed.D., The Pennsylvania State University, 1967) Dissertation Abstracts, 29, No. 3, 810-A. Order No. 68-11,969, microfilm \$3.00, xerography \$6.80 from University Microfilms.

Visual discrimination learning and retention of institutionalized, educable mentally retarded (EMR) children, trained to recognize consonant-vowel-consonant (CVC) trigrams in a paired-associate task, was studied. The vowels were colored to facilitate discrimination from other letters. Two samples of 45 EMR's each from two different institutions were randomly assigned to one of three treatment groups, differing only in the color of the vowels (red, blue, or black). The data analysis utilized the Lindquist (1953) Type III design, as well as the Scheffe and Tukey procedures. A comparison with Adair's (1966) study was made by t-ratio analysis. The results of this comparison supported the theory that discrimination increases with increased dissimilarity of cues. Significant retention was implied from the decreased number of trials necessary during the relearning period. The introduction of color produced no significant effects.

Caffey, John. "Auding," Review of Educational Research, 25 (April 1955) 121-38.

After defining auding as the process of hearing, listening to, recognizing, and interpreting or comprehending spoken language, literature on the field is surveyed under a variety of topics, including: auding courses and their evaluation; the relationship of auding to such variables as IQ, sex, age, or paternal occupation; auding and reading, listening, and hearing; the auding text--written or spoken; factors in speech perception; the impact of mass mediums; tests and measurements; and critical auding. Literature featuring various psychological sidelights and discussing objectives for further research is also included, as is an extensive bibliography.

Chang, Thomas M. C. and Chang, Vivian A. C. "Relation of Visual-Motor Skills and Reading Achievement in Primary-Grade Pupils of Superior Ability," Perceptual and Motor Skills, 24 (February 1967) 51-53.

The relationship of reading achievement to visual-motor development among superior and gifted primary pupils was studied. Subjects were second and third graders in Hawaii. Bender-Gestalt, Wechsler Intelligence Scale for Children (WISC), and reading achievement data were examined for grade levels and identification of Low and High Bender-Gestalt subgroups. At the grade 2 level, the subgroups with superior visual-motor skills were also superior to the average subgroups in reading. Correlations were significant between Bender-Gestalt and IQ. At grade 3 no significant differences occurred for reading, nor were there significant differences between Bender-Gestalt, intelligence, and achievement. Findings

indicate a positive and significant relationship between visual-motor development and reading achievement for younger superior and gifted children. For pupils 13 months older, both Low and High Bender-Gestalt groups earned comparable achievement scores. A similar, but longitudinal study of superior and gifted pupils is suggested for more precise identification of associative abilities which facilitate reading development. References are listed.

Deutsch, Cynthia P. "Auditory Discrimination and Learning: Social Factors," Merrill-Palmer Quarterly of Behavior and Development, 10 (July 1964) 277-96.

The slum child's inability to discriminate and recognize speech sounds and his difficulty in skills which are dependent on good auditory discrimination are discussed. The environment and the developmental level of the child are hypothesized as important factors in the development of auditory discrimination. Several studies relating to the development of auditory discrimination skills are presented. Data from a number of projects using the Wepman Auditory Discrimination Test are given. The apparent importance of auditory discrimination and general auditory responsiveness for verbal performance and reading ability is noted. Tables and references are included.

Durrell, Donald D. and Murphy, Helen A. "The Auditory Discrimination Factor in Reading Readiness and Reading Disability," Education, 73 (May 1953) 556-60.

Literature concerning auditory discrimination as a factor in reading readiness and reading disability is surveyed. Areas of discussion include the effects of ear training on beginning reading, several methods of ear training, and status studies in auditory analysis of word elements. The evaluation of methods of ear training indicated that special practice in visual discrimination brought gains that were comparable to ear training. When time of training was held constant, combination of the two yielded gains superior to either. Observations of disability readers in clinical setting indicated that almost every child with a reading achievement below first grade had a marked inability to discriminate sounds in words. Studies revealed that auditory discrimination improved with training and that this improvement usually resulted in a marked increase in rate of learning to read. References are included.

Dykstra, Robert. "Auditory Discrimination Abilities and Beginning Reading Achievement," Reading Research Quarterly, 1 (Spring 1966) 5-34.

The relationships between prereading measures of auditory discrimination and reading achievement at the end of first grade are reported

Data were gathered on 632 pupils in the Minneapolis Public Schools who were administered seven tests of auditory discrimination, selected from published reading readiness tests, and a group intelligence test at the beginning of first grade. Two tests of reading achievement were given at the end of the year. Relationships were assessed by means of correlation and multiple regression analysis. Analysis of sex differences was done through use of t tests. Intercorrelations among auditory discrimination measures and between each measure and subsequent reading achievement were uniformly low. Intelligence was significantly related to reading achievement. Significant sex differences in performance on three of the auditory discrimination tests and on both of the reading tests favored the girls. The conclusions and educational implications are discussed. Tables and references are included.

Elkind, David and Deblinger, Jo Ann. Reading Achievement in Disadvantaged Children As a Consequence of Non Verbal Perceptual Training. Final Technical Progress Report. 20 p. (OEC-1-7-06881-0381, Rochester University, N. Y., 1968) ED 021 704, microfiche \$0.65, hard copy \$3.29 from EDRS.

The theoretical orientation based on perceptual development, proposed by Piaget in 1961, is the starting point of this investigation. According to Piaget, the perception of the young child is "centered" on dominant aspects of the field. With maturity, perception becomes "decentered" and progressively freed from the field. The visual training materials used in this experiment were designed with this principle in mind. The hypothesis that training in perceptual activity would improve reading skills was proposed. Sixty second-grade Negro children attending an inner city school in Rochester were matched in perceptual activity and reading achievement and split into a control group and an experimental group. The control group studied from a commercial reading program (The Bank Street Readers), while the experimental group was trained with the series of nonverbal perceptual materials noted above. The experimental group made significantly greater progress in word form and word recognition than the control group. However, with regard to "Meaning of Opposites," they did more poorly. This seems to indicate that nonverbal perceptual training did not affect reading comprehension. References are included.

Elkind, David and Deblinger, Jo Anne, "Perceptual Training and Reading Achievement in Disadvantaged Children," Child Development, 40 (March 1969) 11-19.

The effect of training in perceptual activity on the reading improvement of 54 second-grade inner-city Negro pupils was investigated. Two groups of children were matched on the basis of perceptual ability and reading achievement as measured by the Picture Ambiguity Test (PAT), the Picture Integration Test (PIT), and the California Achievement Tests. Experimental and control groups met in training sessions for three half-hour periods a week for 15 weeks. Control children worked with the Bank Street

Readers, and experimental groups had nonverbal exercises designed to train perceptual skills. Mean differences between the pretest and post-test measures on the three instruments were subjected to a t-test analysis for significance. The experimental group had a significantly higher mean score (.05 level) on the PIT and on the Word Recognition and Word Form subtests of the California Achievement Test. Tables and references are included.

Elkind, David and Weiss, Jutta. "Studies in Perceptual Development, III: Perceptual Exploration," Child Development, 38 (June 1967) 553-61.

Perceptual performance as a joint function of the nature of the stimulus configuration was studied. Subjects were 85 children from 5 to 8 years of age. Pictures of common objects were presented in both structured and unstructured array. Results indicated an age-related decrease in unsystematic patterning and an age-related increase in complex patterning. Data supported the hypothesis that patterns of visual exploration can be regarded as motor skills acquired as a result of maturation and practice. Also, results suggested that children having difficulty with reading continue to use spontaneous practice after average readers have progressed beyond the constraints of the stimulus configuration. References are included.

Epstein, William. "Experimental Investigations of the Genesis of Visual Space Perception," Psychological Bulletin, 61 (February 1964) 115-28.

The methodology and findings of experimental studies by different researchers on the origin of space perception are reviewed and evaluated. The object is to find the extent to which visual space perception is innate rather than learned. The studies reviewed are of three types: (1) studies of dark-reared animals and humans with sight newly restored; (2) studies of newborn animals and humans; and (3) studies of animals for which the visual stimulation of the environment was artificially controlled from birth. Results of these experiments were inconclusive, but the evidence indicates that more work needs to be done on the specific correlates of visual stimuli; for example, depth perception seems innate, but discernment of textural density seems learned. A bibliography of the literature discussed is included.

Farnham-Diggory, Sylvia. "Symbol and Synthesis in Experimental Reading," Child Development, 38 (March 1967) 221-31.

Fifty normal boys and girls from the Los Angeles Public School System and 30 brain-damaged boys and girls from the Kennedy Child Study Center of Santa Monica, California, participated in a study to compare their ability on tasks of learning pictographs and logographs for eight words and then

reading logograph sentences. All 80 of the children tested demonstrated perfect comprehension of the eight words. The results strongly suggest that children must achieve a state or stage of neurological readiness for conceptual synthesis. Skill in associating a graphic symbol with a word may be demonstrated by very young children 2 or 3 years before they can demonstrate skill in integrating the ideas the words represent. Further research into the development of integrative progresses should utilize experimental reading codes that are not only less pictorial but also include signals for integrative operations. References are given.

Faustman, Marion Neal. "Some Effects of Perception Training in Kindergarten on First Grade Success in Reading," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 99-101.

The effects of selected kindergarten lessons in perception on first-grade reading achievement were investigated. Children were chosen randomly and two groups of 14 classes each were designated as experimental and control. Teachers were randomly assigned to either group after having been matched on years of experience and teaching competence. All teachers were given inservice aid in the use of new kindergarten guides and in developing language skills. In addition, experimental teachers received aid in teaching perception skills. The Winterhaven Perception Ability Forms Test was given in September and May of the kindergarten year to determine growth in perception. In November and May of the first grade, the same children were tested with the Gates Word Recognition Test to determine growth in perception and word recognition achievement in the experimental group than in the control group. A post study is planned to determine the continuing effects of the perceptual training given the experimental group.

Fennema, Elizabeth H. "Mental Imagery and the Reading Process," Elementary School Journal, 59 (February 1959) 286-89.

The relationship between reading and mental imagery was studied. Two groups of children in Madison, Wisconsin, one group who had completed third grade and the other who were just beginning third grade, read silently a story containing no color or action words. An interviewer asked each child to describe the pictures he would draw to represent the story. Each child's responses were taped and given a mental image score based on the number of mental images of all kinds described. The number of mental images described by any one child ranged from one to 33. Thirty-five of the 39 children formed more mental images than action mental images. The various mental-image scores and scores on reading ability and intelligence were correlated. In Group I, negative correlations were found between reading ability and the various mental-image scores. In Group II, the correlations between reading ability and the mental-image scores were close to

zero. Correlations between each mental-image score and the intelligence scores were significantly negative. Results indicated that children with lower intelligence formed more mental images than the brighter children. Findings are discussed. A table is included.

Fullwood, Harry Lee. A Follow-Up Study of Children Selected by the Frostig Developmental Test of Visual Perception in Relation to Their Success or Failure in Reading and Arithmetic at the End of Second Grade. 56 p. (Ph.D., The University of Oklahoma, 1968) Dissertation Abstracts, 29, No. 7, 2035-A. Order No. 68-17,586, microfilm \$3.00, xerography \$3.00 from University Microfilms.

This study was planned as a followup of Ferguson's research, carried out at the University of Oklahoma, which indicated that first-grade children having high visual perception according to results from the Frostig Developmental Test of Visual Perception performed significantly better in reading than did children with low visual perception. Approximately 80 percent of the two groups utilized by Ferguson in 1966-67 were administered achievement tests during the last week of April and the first week of May 1968, toward the end of the subjects' second school year. The children who had scored high on visual perception in the Ferguson study performed significantly better in reading and arithmetic than did those who had made low scores.

Gibson, Eleanor J. et al. "A Developmental Study of the Discrimination of Letter-Like Forms," Journal of Comparative and Physiological Psychology, 55 (December 1962) 897-906.

This experiment studied qualitatively and quantitatively the development of visual discrimination of letter-like forms in 167 children, 4 through 8. Twelve forms, with 12 transformations each were constructed, and 12 Roman letters with similar transformations were administered as a control test to the kindergarteners. All subjects had to match a standard form with an identical form placed among its transformations. Overall errors decreased with age, but discrimination difficulties differed for different transformations. Initial errors were greatest for perspective changes and least for topological changes, with rotations and reversals falling between. Errors made with real letters correlated significantly with errors made with letter-like forms. From developmental error curves for the four transformations comes a hypothesis for distinctive features: discrimination of features critical for distinguishing objects already experienced is transferred to graphic discrimination; discrimination learning for distinctive features of letters continues from this point, but proceeds slowly, if at all, for varying grapheme features not critical for distinguishing them. Illustrations, tables, charts, references are included.

Goins, Jean Turner. Visual Perceptual Abilities and Early Reading Progress. Supplementary Educational Monographs, No. 87. (Chicago: University of Chicago Press, 1958) 108 p.

The visual perception competence of first graders was assessed and correlated with reading achievement. The effects of visual form training on learning to read was also studied. Subjects were 120 first graders from Chicago. The Thurstone tests of visual perception, the Chicago Reading Tests, and intelligence tests were administered. Training in visual form lasted 10 weeks. Correlations, intercorrelations, and critical ratios were used to analyze the data. Scores on Pattern Copying, Reversals, and the combined perceptual score correlated most highly with reading achievement. Two factors of visual perception were revealed--one related to speed of perception and the other to strength of closure. No positive effect was produced by the training. Conclusions, implications, references, and tables are included.

Gredler, Gilbert R. "Performance on a Perceptual Test with Children from a Culturally Disadvantaged Background," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 86-91.

The value of the Minnesota Percepto-Diagnostic Test (MPD) with children from culturally disadvantaged backgrounds in a metropolitan school system was investigated. The subjects were 19 Negro third- and fourth-grade students from a Negro school and 11 Caucasian third and fourth graders from a Caucasian school who had IQ's between 80 and 110 on the Good-enough Draw-A-Man Test. In addition, they were given the reading battery of the Metropolitan Achievement Tests, and teachers rated their adjustment on the Child Behavior Rating Scale. No significant differences between Negro and Caucasian subjects in intelligence were found. The Negro group had significantly (.05) higher rotation scores on the MPD test, and the means of both groups could be rated as pathological. Both groups scored below norms on the reading tests, but there were no significant differences between the two groups. Teacher's ratings reflected average adjustment. Teacher ratings and MPD rotation scores tended toward reverse relationships. A comparison was made with 15 reading disability clinic subjects (14 Caucasian and 1 Negro) who received a degree of rotation score significantly higher than the Caucasian sample originally used. References are included.

Hagin, Rosa A.; Silver, Archie A.; and Hersh, Marilyn F. "Specific Reading Disability: Teaching by Stimulation of Deficit Perceptual Areas," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 368-70.

The principles and techniques utilized in an investigation of stimulation of areas of perceptual deficit in the teaching of children with

specific reading disability are described. Subjects were 40 boys, 8 to 11 years old, who were referred to the Bellevue Hospital Mental Hygiene Clinic because of behavior and school learning problems. The subjects were divided into two groups and paired on the basis of age, IQ, psychiatric diagnosis, and neurological status. Group 1 was given 6 months of training for two 45-minute periods per week in various perceptual stimulation techniques. Group 2 was given conventional teaching from a basal reading series for the same amount of time. Tests used for evaluation were the Bender-Gestalt, Marble Board Test, Tactile Figure Group Test, Extension Test, Right-Left Discrimination Test, Wepman's Test of Auditory Discrimination, Goodenough Drawing, and Finger Schema Test. Significant improvement is reported for Group 1 on all areas of perceptual measurement; Group 2 did not improve significantly. Other results are discussed and evaluated. It is concluded that perception is modifiable by training and that improved perception is reflected in increased reading achievement. References are given.

Hurley, Oliver L. "Perceptual Integration and Reading Problems," Exceptional Children, 35 (November 1968) 207-15.

The proposition that measures of visual-tactual-kinesthetic integration would distinguish between adequate and inadequate readers was investigated. The subjects were 40 pairs of second- and third-grade pupils from two towns, matched on IQ score, sex, and age. One of each pair was an adequate reader, and the other was an inadequate reader. Three tests of short-term visual memory, three of spatial ability, and four of intersensory integration were administered. An analysis of the derived data revealed that the main effect of reading on intersensory integration was not significant. Although the hypotheses were not supported, it was implied that a relationship might exist between the method of teaching reading and the kind of reading problem observed. Tables and a bibliography are included.

Kass, Corrine E. "Psycholinguistic Disabilities of Children with Reading Problems," Exceptional Children, 32 (April 1966) 533-39.

The psycholinguistic correlates of reading disability were examined. Twenty-one elementary school children between the chronological ages of 7 years and 9 years and 11 months served as subjects. Factors which were controlled were IQ, grade, reading retardation, and auditory and visual defects. An expanded version of the Illinois Test of Psycholinguistic Ability (ITPA) was administered. Standard scores for the sample subjects were compared with the population norms for each subtest. The data were analyzed by z and t tests. Children with reading disabilities were not deficient in the visual motor subtests at the representational level. Reading disability subjects were deficient in the Auditory and Visual Sequencing, Visual Automatic, Sound Blending, Mazes, Memory-for-Designs and

Perceptual Speed subtests. This sample tended to have certain psycholinguistic disabilities at the integrational level. Theoretical implications, practical implications, figures and tables, and references are included.

Leider, Alice Blake. "Relationship of Visual Perception to Word Discrimination," Clinical Studies in Reading III, Helen M. Robinson and Helen K. Smith, Eds. Supplementary Educational Monographs, 97 (1968) 104-08.

Word discrimination as related to the strength of closure factor identified by Goins was investigated. The subjects were 70 fourth-grade pupils for whom recent scores on the Kuhlman Anderson Group Intelligence Test and the Chicago Reading Test, B3, were available. Three tests of visual perception and two forms of a word discrimination test were administered. When intercorrelation coefficients were calculated, it was found that the combined Reversals and Pattern Copying Tests by Goins correlated with the Huelsman Word Discrimination Test at .677, with the Chicago Reading Test at .699, and with the Kuhlman Anderson Test at .707. The major implication of the study noted was that strength of closure may be at least one of the factors common to intelligence and reading achievement at the fourth grade. References and tables are included.

Lloyd, Bruce. "The Effects of Programmed Perceptual Training on the Reading Achievement and Mental Maturity of Selected First Grade Pupils: A Pilot Study," Journal of the Reading Specialist, 6 (December 1966) 49-55.

Thirty first-grade children were given weekly training for 12 weeks in depth perception using the Howard-Dolman instrument. A control group of 34 first-grade subjects was selected in the same school. Comparisons of pretesting and post-testing were made using the Lee-Clark Reading Test, the California Tests of Mental Maturity, and the Howard-Dolman instrument. Pretesting also included the Keystone Visual Survey (Telebinocular). Means, standard deviations, and critical ratios were computed for all tests. The data showed that the program in visual-tactual training had no measurable effect on reading achievement. There was a 15.47 point gain in the non-language area of the California Tests of Mental Maturity for the experimental group and a significant difference between experimental and control groups in post-test performance in the language area. The results of the Howard-Dolman instrument testing showed that performance was significantly improved with programmed perceptual training. The results seem to agree with findings by Goins, Durrell, and Lloyd. It is recommended that an enlarged study be conducted to determine the meaning of a sustained rise in nonlanguage IQ. Tables and references are included.

McAninch, Myrene. "Identification of Visual Perceptual Errors in Young Children," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 507-12.

Six aspects of visual perception abilities are defined--(1) form discrimination, (2) form constancy, (3) figure-ground differentiation, (4) part-whole relationship, (5) spatial organization, and (6) meaningful interpretation. Several instruments for testing each of these abilities and combinations of these abilities are presented. Although instruments are available for the identification of visual perceptual errors, these tests at best provide only a gross measure of perceptual dysfunction and afford highly unreliable results. The question is raised as to whether the testing instruments measure skills relevant to the reading process. A bibliography is included.

McCormick, Clarence C.; Schnobrich, Janice N.; and Footlik, S. Willard. "The Effect of Perceptual-Motor Training on Reading Achievement," Academic Therapy Quarterly, 4 (Spring 1969) 171-76.

The effect of perceptual-motor training on reading achievement using 63 first-grade pupils from two classes, randomly assigned to either a perceptual-motor activities group or a control group, was studied. Teachers and volunteer mothers were instructed in training procedures for the experimental program. Children met in groups of five for 2 hours a week over a 9-week period. Exercises included cross-lateral crawling, walking, balancing, hopping, skipping, and jumping rope. The Pintner-Cunningham Primary Test was administered to obtain a measure of IQ, and test, retest scores on the Metropolitan Achievement Tests, Primary I (MAT) were used to assess growth in reading. No significant differences were obtained for the total first-grade groups. However, when means and standard deviations were compared for children who scored in the lowest third of the original MAT administration, the gains exhibited by the experimental group were statistically significant (.01 level). Tables are given.

McLeod, John. "Some Perceptual Factors Related to Childhood Dyslexia," Reading Instruction: an International Forum, Marion D. Jenkinson, Ed. Proceedings of the International Reading Association First World Congress of Reading, 1 (1967) 167-77.

Twenty-three retarded 7-year-old Australian readers were compared with 23 normal 7-year-old Australian readers. The comparisons utilized the subtests of the Wechsler Intelligence Scale for Children and the i.t.a., Wepman's Auditory Discrimination Test, Northwestern University Auditory Test No. 4, auditory reproduction of words in context, written reproduction of tachistoscopically presented letter sequences, and an AR score from the Dyslexia Schedule questionnaire. A Principle Axis factor analysis of 29 variables yielded five factors, only one of which (visual-motor) did not contribute to the prediction of group membership of the 46 subjects. The two factors making the largest contribution were Sequencing-Integrative and Auditory Language Input Capacity. They were followed by Encoding and Planning. The four factors yielded a multiple correlation coefficient of about .85 with the criterion. References are included.

Money, John. "Dyslexia: A Post Conference Review," Reading Disability: Progress and Research Needs in Dyslexia, John Money, Ed., Chapter 1, 9-33 (Baltimore, Maryland: John Hopkins Press, 1962.)

In an overview of conference proceedings, dyslexia is defined in terms of what it is as well as what it is not. The main body of the review discusses such things as the rationale for the existence of specific dyslexia, compares traumatic and developmental dyslexia, points out problems of diagnosing developmental dyslexia, and dwells for some time on the dyslexic's difficulties with directional orientation, resulting in reversal and translocation of letters. The review further presents examples of dyslexia in Japanese and Spanish speakers and examples of inventory memory and concept memory, and discusses visile and audile types. "Faddism" is the term applied to attempts to correlate current incomplete research on cerebral dominance, visual defects, and hormones with specific dyslexia. Other topics reviewed are the predominance of male dyslexics over female, and the incidence of epilepsy brought on by reading. The conclusion states the conference opinion that the great need is for more experimental and detailed clinical studies since the disease syndrome is not discernible in large scale surveys and samples.

Olson, Jack R. "A Factor Analytic Study of the Relation Between the Speed of Visual Perception and the Language Abilities of Deaf Adolescents," Journal of Speech and Hearing, 10 (June 1967) 354-60.

Thirty-nine deaf subjects aged 12 to 16 years from two states residential schools for the deaf were administered five visual perceptual test measures (22 scores) and three language measures (10 scores) to determine whether the skills of visual perception were related to language acquisition. The data were converted to a correlation matrix, and a factor analysis was performed. The correlation coefficients and the 10 factors extracted from this matrix showed that the measures of visual perception and the language tasks used in this investigation were positively related. References are listed.

Otto, Wayne. "Color Cues as an Aid to Good and Poor Readers' Paired-Associate Learning," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 39-44.

Good and poor readers of average ability from grades 2, 4, and 6 were selected for a study of the effect of color on children's learning of a paired-associate task. Equal numbers of boys and girls from each reading level and each grade level were assigned to either a black and white or a color presentation of a paired-associate list. The list consisted of five pairs, a common geometric form paired with a consonant-vowel-consonant trigram. The list was learned to a criterion of one correct anticipation of the entire list with serial presentation and one correct anticipation of the entire list with scrambled presentation. Analysis of variance

techniques showed that only grade and reading ability effects were significant with serial trials, and none were significant with scrambled trials. Good readers tended to benefit more from the color cues than did poor readers, and the benefit tended to increase with grade level. References are included.

Polenz, Ralph J. An Analysis of the Performance of Second Grade Boys with Visual Perceptual Deficiencies and Second Grade Boys with Satisfactory Visual Perception on the Gray Oral Reading Test. 128 p. (Ed.D., University of South Dakota, 1968) Dissertation Abstracts, 29, No. 8, 2447-A. Order No. 69-3127, microfilm \$3.00, xerography \$6.20 from University Microfilms.

Differences in the number and types of reading errors made by second-grade boys were studied in order to determine what influence varying levels of visual perception might have upon them. Colaterally, an effort was made to determine the degree of relationship which might exist between five types of visual perception and eight classes of reading errors. The sample population was selected on the basis of a preliminary visual perception test, for which the Frostig Developmental Test of Visual Perception was used. IQ scores were obtained by the administration of the Peabody Picture Vocabulary Test and were compared with the results of the visual perception test. The Gray Oral Reading Test was given to determine the number and types of reading errors. The mean number of total reading errors, errors of gross mispronunciation, and insertions was significantly higher in children with visual perception deficiencies than in children with satisfactory perceptual abilities. Significant relationships were found between eye-motor coordination, figure-ground perception, constancy of shape, and the errors of gross mispronunciation and insertion, as well as the total number of reading errors.

Pronovost, Wilbert and Dumbleton, Charles. "A Picture-Type Speech Sound Discrimination Test," Journal of Speech and Hearing Disorders, 18 (September 1953) 258-66.

The Mansur Speech Sound Discrimination Test was revised and administered to 434 first graders, 10 percent of whom were shown to be deficient in speech sound discrimination by test results. Although the mean, median, and mode for the total group showed a negatively skewed distribution, indicating test unreliability for definitive studies of the normal population, the Mansur test is still useful as an individual diagnostic instrument. The split-half method obtained a reliability coefficient of .88, but no conclusions could be drawn as to the order of difficulty of specific sound pairs. Only three unlike pairs had validities of less than the .01 level. Most errors were made on unlike pairs, while errors of like-different were most common on like pairs. Although the pattern of responses favored the middle picture, this has slight influence on the test's validity.

A greater limit on validity is the articulation of the tester, for emphasized sounds cause a child's score to be higher than it should be. Greater validity could be obtained by a tape recorded test under controlled conditions. References are included.

Rabinovitch, Ralph D. "Dyslexia: Psychiatric Considerations," Reading Disability: Progress and Research Needs in Dyslexia, John Money, Ed., Chapter 5, 73-79. (Baltimore, Maryland: John Hopkins Press, 1962.)

For 15 years' diagnostic observations of reading deficit cases referred to Hawthorn Reading Clinic, three major groupings emerge: (1) Secondary Reading Retardation, characterized by normal potential but with an exogenous cause; (2) Brain Injury with Reading Retardation, a clear-cut manifestation visible on neurological examination; and (3) Primary Reading Retardation, impaired reading ability with no perceptible brain damage, the cause biological or endogenous. Groups two and three can be classified as dyslexia. Diagnosis considers such things as IQ, physical capacity, development, emotional freedom to learn, motivation, and opportunity. Primary Reading Retardation is characterized by: Reading Process Disturbance, or inability to transfer sounds to symbols; Broader Language Deficits, such as difficulty in name finding; Specific Conceptual Deficiency in Orientation, or inability to translate perceptions into symbols; and body-image problems or subjective reactions to orientations. The conclusions note that psychotherapy helps children in group one, but those in two and three need intensive, long-term therapy begun as early as possible, even though results are limited, in order to counteract psychological reactions to the difficulty.

Radaker, Leon D. "Imagery and Academic Performance," Elementary School Journal, 63 (November 1962) 91-95.

Results of an experiment to determine the effect of training on students' ability to form visual images are reported, and the beneficial effects of visual imagery upon academic subjects discussed. When the study was extended to retarded children, parallel results were achieved. Apparently training in imagery was effective for children at all levels of intelligence. The instruments used were four author-made tests: The Visual Imagery Index, the Memory for Designs Test, the Memory for Objects Test, and the Memory for Word Forms Test. The purposes and methods for developing these tests are described. Subjects were a random sample of 29 boys and 31 girls, all fourth-grade pupils in the public schools of Butler, Pennsylvania. The IQ's (from 79 to 132), chronological ages (from 8 to 11 years), and socioeconomic factors were considered. The subjects were randomly assigned to three experimental groups. The control group had six sessions of free play and social conversation. One experimental group had two 45-minute sessions wherein they were given training in the creation of images for selected assorted words, and the second group had six similar sessions.

The experimental groups showed significant gains in performance over the control group. Six sessions were no more effective than two sessions. A table showing initial and final gains on tests of visual imagery is provided. References are included.

Reed, James C. "The Relationship Between the Primary Mental Abilities and Reading Achievement at Given Developmental Levels," The American Psychologist, 13 (July 1958) 324.

Multiple correlations between reading tests and intelligence tests administered to children in grades 1, 4, and 7 show that there is a change in both the magnitude and the components of intelligence relating to a given task, and that this change corresponds to the developmental stages of the child. Primary reading ability is independent of Thurstone's V, whereas advanced reading is highly related to it. There is an individuation of the intellectual processes with increased age, and complex reading tasks can best be predicted by specific components of intelligence rather than by gross measures.

Rouch, Roger Lewis. The Relationship of Certain Selected Factors of Visual Discrimination to Performance in Beginning Reading. 139 p. (Ed.D., Ball State University, 1967) Dissertation Abstracts, 29, No. 1, 73-74-A. Order No. 68-32244, microfilm \$3.00, xerography \$6.60 from University Microfilms.

The following measurable visual discrimination tasks were studied in order to ascertain their relation to performance in beginning reading: matching word forms, matching geometric forms, letter discrimination, and distinguishing between figure and background by responding to the figure. The sample population consisted of 203 first-grade pupils who were analyzed by sex, IQ, and reading achievement. The data, derived from the American School Reading Readiness Test, the Frostig Program for the Development of Visual Perception, the Developmental Test of Visual Perception, the Strauss picture test of pure visual perception, and the Rouch test to distinguish between figure and background, were analyzed by means of coefficients of correlation and t-tests. Little difference was found in the extent to which word matching, letter discrimination, and symbol matching were related to performance in beginning reading. The portion of the study concerning the relationship between the ability to distinguish figure from background and beginning reading performance were inconclusive.

Rudnick, Mark; Sterritt, Graham M.; and Flax, Morton. "Auditory and Visual Rhythm Perception and Reading Ability," Child Development, 38 (June 1967) 581-87.

The relationships between perceptual tests and reading achievement and intelligence were studied. Three perceptual tests were administered to 36 third-grade boys from a middle class suburban public school. The first test was an auditory-temporal pattern delivered via earphones (test A). The second was a visual stimulus delivered via a blinking light (test V), and the third was the Birch and Belmont pencil-tap stimulus involving visual and auditory cues (B-B test). Ten items administered after each test were the criterion measure. The Iowa Tests of Basic Skills and the Lorge-Thorndike Intelligence Scale were administered. The results of the testing were compared with a previous study in which fourth graders served as subjects. The third graders made more errors on the A and V tests, but did not differ from the fourth graders in mean errors on the B-B test. Most correlations among the test scores were generally not as high as those for fourth graders. Mental age was a significant independent predictor which accounted for about 30 percent of the variance of reading scores. A discussion, tables, and references are included.

Rutherford, William L. "Vision and Perception in the Reading Process," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 503-07.

Research on visual problems and visual perception in relation to learning to read is reviewed. Vision begins when light strikes the retina. Once the visual image is formed, perception begins. There is no consensus among authorities concerning the relationship between visual defects and reading. The importance of ocular control and depth perception cannot be overstressed. Research has shown that a young reader must fixate his eyes twice on each word in order to recognize it. Symptoms of visual difficulties which a teacher might observe include losing the place while reading, moving the head frequently while reading, strained posture, tension while doing close work, facial contortion, and excessive eye rubbing. The successful reader must be able to relocate objects in space. Training in perception can increase reading achievement. The two categories of perceptual training, basic and advanced, are discussed. Nineteen articles are cited.

Scott, Ralph. "Perceptual Readiness as a Predictor of Success in Reading," The Reading Teacher, 22 (October 1968) 36-39.

Further tests were made in a followup study of the hypothesis that seriation, ordering by size or orientation of objects, was related to and predictive of achievement at the end of grade 2. The study also investigated whether a test of seriation ability administered in kindergarten differentiated at the second-grade level between children who were experiencing difficulty from those who were not. Children who had been given the Seriation Test in kindergarten were administered the subtest of the California Achievement Tests (CAT) in February or March of grade 2.

A cutoff point of .3 of a year above or below grade level on the CAT was used to identify readers who were experiencing difficulty and those who were progressing well. A coefficient of correlation of .59, significant at the .005 level, was obtained between the CAT and the total score on the Seriation Test. A significant chi square was obtained when the two groups of readers were studied, indicating that the Seriation Test was a good predictor of reading achievement at grade 2. Tables and references are included.

Silbiger, Francene and Woolf, Daniel. "Perceptual Difficulties Associated with Reading Disability," Proceedings of the College Reading Association, 6 (1965) 98-102.

Ninety Drew University freshmen were divided into good and poor reading groups and were tested with the Keystone Visual Skills Tests in an experiment to see what correlations existed between reading and perceptual difficulties at the college level. On the nine visual tests used, the poor readers were significantly different from the good readers on tests of convergence at near and far points and of visual efficiency in both eyes. On all tests associated with reading difficulty and low achievement, the poor readers were significantly below the good readers. It was concluded that this research demonstrated the relationship between perceptual and reading abilities in college students and that, in view of the findings, college students should be given tests of perceptual ability. References are included.

Silver, Archie A. and Hagin, Rosa A. "Specific Reading Disability: A Twelve-Year Follow-Up Study," American Journal of Orthopsychiatry, 33 (March 1963) 338-39.

A 12-year followup study of specific reading disability is reported. The differences in the nature and extent of perceptual and neurological maturation in the various subgroups of reading disability were investigated. In 1961 and 1962, 25 subjects with specific reading disability as children were tested, and the results were compared to a test taken 12 years earlier at the Bellevue Hospital Mental Hygiene Clinic. It was found that maturation does not overcome specific perceptual and neurological problems and that the most severely hampered child readers were also the most inadequate adult readers.

Slobodzian, Evelyn Birdsall. The Relationship between Certain Readiness Measures and Reading Achievement at Level One. 157 p. (Ed.D., Temple University, 1968) Dissertation Abstracts, 29, No. 4, 1053-A. Order No. 68-14,151, microfilm \$3.00, xerography \$7.40 from University Microfilms.

Performances in visual-perceptual decoding, motor encoding, and oral encoding were measured prior to formal reading instruction. These results, measured in 115 first-grade subjects, were related to the eventual reading achievement of the subjects with the goal of locating single measures or combinations of measures capable of predicting reading success. Readiness tests administered early in the school year included the Wechsler Intelligence Scale for Children (WISC), the Illinois Test of Psycholinguistic Ability subtests on visual decoding and auditory-vocal association, the Harrison-Stroud Letter-naming subtest, and the Lee-Clark Reading Readiness Test. The post-tests were given near the end of the school year, and the children were classified into four groups: high achievers, high-average achievers, low-average achievers, and low achievers. It was found that successful readers generally had significantly higher WISC verbal and performance scores and full-scale IQ's than did nonachievers. The results of this study indicate that the use of the Lee-Clark Reading Readiness Test for predicting individual achievement is somewhat questionable.

Stavrianos, Bertha K. and Landsman, Sylvia C. "Personality Patterns of Deficient Readers with Perceptual-Motor Problems," Psychology in the Schools, 6 (April 1969) 109-23.

Patterns of responses to the Rorschach Test were searched for among 311 privileged boys, two-thirds of whom showed lag or dysfunction in some aspect of the perceptual-motor processes; 151 were adequate readers and 160 were deficient. The Rorschach patterns included normal, mild outer restriction, severe outer restriction, inner restriction, constriction, acting out, and perseveration and/or rejection. Four-way comparisons of adequate and deficient readers, with and without perceptual-motor problems, yielded myriad differences within and among categories on the Rorschach accompanied by age changes. The data seem to support the conclusion that deficient readers exhibited relatively few normally balanced and mature personality patterns. No significant differences in personality appeared between adequate and deficient readers with perceptual-motor dysfunction; although, many trends were found. The differences were more closely related to intelligence and age than to reading difficulty. Tables and references are included.

Sterritt, Graham M. and Rudnick, Mark. "Auditory and Visual Rhythm Perception in Relation to Reading Ability in Fourth Grade Boys," Perceptual and Motor Skills, 22 (June 1966) 859-64.

The relationships among the mean scores of 36 fourth-grade boys on measures of intelligence; reading comprehension; and tests of visual, auditory, and visual-auditory perception were studied. The subjects were of high general intelligence, but the variability of the group on all three measures was large. Visual test results indicated that the ability to transpose from temporal to spatial formats within the visual modality did not differentiate good from poor readers. Auditory test results indicated

that either the capacity to transpose from auditory-temporal to visual-spatial formats or the auditory pattern perception was the primary function related to reading. It was concluded that auditory-temporal rhythm perception or the ability to transpose from auditory-temporal to visual-spatial patterns is related to reading in a way not fully accounted for by general intelligence. References are listed.

Swanson, Rebecca Glover. A Study of the Relationship between Perceptual-Motor Skills and the Learning of Word Recognition. 294 p. (Ph.D., University of South Carolina, 1968) Dissertation Abstracts, 29, No. 7, 2158-A. Order No. 69-480, microfilm \$3.80, xerography \$13.20 from University Microfilms.

The effects of a perceptual-motor training program on second-grade children who were below grade level in word recognition skills were studied. Sixty-three lower socioeconomic Negro students were randomly selected for the sample. Each child's weaknesses were diagnosed in terms of his ability to perform specific tasks, and treatment was based on this diagnosis. One experimental group received perceptual-motor instruction only; the other experimental group received both perceptual-motor instruction and the regular reading program. The control group received only the regular reading program. While both experimental groups achieved significantly higher mean scores in word recognition after treatment, the findings showed no significant difference between the progress of the two groups.

Thompson, Bertha Boya. "A Longitudinal Study of Auditory Discrimination," Journal of Educational Research, 56 (March 1963) 376-78.

A study to determine the relation of auditory discrimination (AD) and intelligence test scores to success in primary reading was conducted. One hundred-five entering first-grade children were administered the following auditory discrimination tests over a period of 2 years: the Wepman Test for Auditory Discrimination, Form A; Boston University Speech Sound Discrimination Picture Test; and Auditory Discrimination and Orientation, a subtest of the Science Research Associates Reading Analysis; Aptitude, Form A. The Wechsler Intelligence Scale for Children was administered. Two measures of reading achievement were used: Gates Advanced Primary Reading Test, Type AWR, Form 1, and Type APR, Form 1. An arbitrary scaling method was used to determine the adequacy of the auditory discriminative ability of each individual. Good readers and poor readers were established using two criteria. Auditory discrimination and intelligence are reported to be highly correlated. The results of a statistical analysis are listed. A number of recommendations based upon the findings of the study is indicated. References are included.

Vernon, M. D. "Ten More Important Sources of Information on Visual Perception in Relation to Reading," The Reading Teacher, 20 (November 1966) 134-35.

Ten studies on visual perception and reading are summarized. Better readers showed greater clarity, accuracy, and appreciation of detail in Rorschach inkblots than did poor readers (Ames and Walker, 1964). Poor readers showed disturbance in figure-ground perception on the Marble Board test and difficulty in the structuralization and organization of Gestalten (DeHirsch, 1954). Poor readers showed greater score variability on tests of five types of visual activity than did normal readers (Frostig, LeFever, and Whittlesey, 1961). The ability to match letter-like shapes increases with age (Gibson, Gibson, Pick, and Osser, 1962). Accuracy in figure reproduction increases with age and seems to depend on the number of parts in the figure (Graham, Berman, and Ernhart, 1960). Spatial difficulties are the main cause of dyslexia and dysgraphia in poor readers with no retarded speech development (Ingram, 1960). Of two groups of backward readers, one showed language impairment, and the other showed low Wechsler Intelligence Scale for Children performance scores and sequential ordering disability (Kinsbourne and Warrington, 1963). Dyslexia is related to disordered perception and directional sense (Money, 1962). Poor readers have difficulty perceiving and memorizing details of shape (Vernon, 1957). Perception development in children and adults is discussed (Vernon, 1962).

Vernon, Magdalen D. Visual Perception and Its Relation to Reading. (Newark, Delaware: International Reading Association, 1966) 12 p.

This annotated bibliography presents abstracts of 55 studies ranging in date from 1952 to 1965 within four headings--perception of shape by young children, perception of words by children, perception in backward readers, and perception of shapes, letters, and words by adults. Listings include journal articles, books, and monographs and are arranged alphabetically according to author within each category. Short introductory remarks by the compiler are included before the divisions.

Wachs, Theodore D. and Cromwell, Rue L. "Perceptual Distortions by Mentally Retarded and Normal Children in Response to Failure Information," American Journal of Mental Deficiency, 70 (May 1966) 803-06.

After the application of social learning theory to mental retardation, it was predicted that retardates under failure stress would show greater perceptual distortion than would normal children. Twenty-two retardates and 22 normals were given a tachistoscopic presentation of visual stimuli under nonstress conditions. One-half of the subjects in each group were told they had failed and would have to repeat the task. The other half were presented the task under nonstress conditions again. As predicted, the increase in perceptual distortion was greater in the "failed"

retardates than in the other three groups. The other three groups did not differ in perceptual distortion increment. The findings are discussed in terms of social learning theory. References are listed.

Walters, Richard H. and Doan, Helen. "Perceptual and Cognitive Functioning of Retarded Readers," Journal of Consulting Psychology, 26 (August 1962) 355-61.

An experiment to compare the performance of advanced, average, and retarded readers on a series of perceptual, perceptual motor, and cognitive tasks was conducted. Subjects were 54 boys in grades 7 and 8 in two suburban Toronto public schools, classified according to IQ and achievement (Dominion Tests) and placed in two groups. Subjects in the School A group were rewarded for their performance. Subjects from School B were not rewarded. All subjects were given three tests: (1) the Steer-Beatty Closure-Threshold Test of perception; (2) the Perceptual-Differentiation Test (Gibson and Gibson); and (3) a symbolic learning test involving the association of visual symbols with objects. Scores were compared between groups A and B and among the advanced, average, and retarded readers. Results revealing better general performance by advanced and average readers than by retarded readers are reported. Retarded readers were found to be weak in perceptual discrimination, symbolic learning, and reaction time. A discussion of the findings is given. Tables and references are included.

Walters, Richard H. and Kosowski, Irene. "Symbolic Learning and Reading Retardation," Journal of Consulting Psychology, 27 (February 1963) 75-82.

An investigation concerning symbolic learning in retarded readers is reported. Tools for the investigation included both auditory and visual stimuli, the use of a composite reading score, and rewards appropriate to the 72 boys drawn from grades 6, 7, and 8 who attended one school located in a socioeconomically homogeneous suburban community. Subjects' scores derived from formal tests were used, and the IQ range of students was restricted to between 90 and 126. Advanced, average, and retarded readers were assigned to reward and nonreward conditions in an attempt to maintain a balance among the six subgroups in age, grade level and in reading-intellectual discrepancy scores. In order to discover possible differences in visual and auditory acuity, measures were obtained on both the orthorator and the audiometer. In addition to the overall analysis of variance, separate analyses of variance were carried out for the visual and auditory tasks. Results are indicated both in tables and in the discussion of the project. References are listed.

Walter, Richard H.; Van Loan, Malle; and Crofts, Irene. "A Study of Reading Disability," Journal of Consulting Psychology, 25 (August 1961) 277-83.

A study of the adaptation of the psychoanalytic theory of reading disability was conducted under the auspices of the clinic staff at the University of Toronto. The 58 subjects, chosen from a group of 86 boys of average intelligence and free of physical handicaps and behavior problems, were in grades 3 to 6, from one suburban school. The group was divided between advanced readers (one year beyond mental age), and average readers, or those with discrepancies less than 6 months between reading age and mental age. Tools for the research included tests for measuring fear and avoidance of looking, parent preference, perceptual measures involving recognition of form, and figure-ground confusion tests. Analysis of results and a discussion of findings as related to the psychoanalytic theory are included. References are listed.

Wepman, Joseph M. "Auditory Discrimination, Speech, and Reading," Elementary School Journal, 60 (March 1960) 325-33.

The Wepman Auditory Discrimination Test is described as a means of measuring auditory maturity and, consequently, the possible benefits derived from phonic instruction in reading and from auditory training in speech. The test is composed of word pairs. The child decides whether the sounds of these pairs are alike or different. Three criteria are used in pairing the words--(1) the frequency of use, (2) the position and phonetic category, and (3) the syllable length. Audition develops on at least three levels--acuity, understanding, and discrimination and retention. The detection of immature auditory discrimination ability would permit maximizing the use of the child's better developed means of learning until the developmental process reaches a balance. The auditory discrimination, articulation, intelligence, and reading achievement of 156 first and second graders were compared. A close relationship was found between auditory discrimination and speech accuracy of articulation. There was also a positive relationship between poor reading achievement and auditory discrimination ability. Definitions of auditory discrimination, phonics, phoneme, and phonetics are given, and seven references are included.

Wepman, Joseph M. "Dyslexia: Its Relationship to Language Acquisition and Concept Formation," Reading Disability: Progress and Research Needs in Dyslexia, John Money, Ed., Chapter 12, 179-86. (Baltimore: Johns Hopkins Press, 1962.)

A sizable number of dyslexic children may be so not because of any specific brain damage, personality problems, or immaturity, but rather because they have not been properly taught. Reading may be primarily a visual skill for some children, but for some may involve integration of many skills. Factors underlying the development of cognition are intensely interrelated, and the differential rate of development both of sensory modalities and eventual level of conceptualization may be genetically determined. A child primarily audile may speak well and early but

have delays in reading, while a primarily visile individual may be slower to speak but have little trouble reading. Therefore, reading should not be taught by a single method, but be directed towards the individual's capacity since methods are now available to identify maximal learning modality during preschool years.

Whipple, Clifford I. and Kodman, Frank, Jr. "A Study of Discrimination and Perceptual Learning with Retarded Readers," Journal of Educational Psychology, 60 (February 1969) 1-5.

The visual discrimination and perceptual learning of retarded readers were compared to normals. The two groups had IQ's on the Wechsler Intelligence Scale for Children ranging from 90 to 115 and were matched on other variables except that mean reading grade for the retarded group was 3.12 and 4.40 for the normal group. The first experiment required either simultaneous or successive presentations; half of each group was assigned to each treatment. Two cue cards, two identical paper cups, and a toy cat were exposed so that each subject had to associate the cue card with the paper cup under which the cat was hidden. The simultaneous discrimination learning used both positive and negative cue cards, while the successive used one then another. Analysis of covariance revealed significant group and method differences as well as an interaction. The retarded readers learned more slowly in all situations but even more slowly in the complex task. The second experiment used a series of non-sense scribbles to be differentiated from a standard stimulus. The normal readers had significantly fewer errors in total, fewer errors on the first trial, and faster discrimination than did retarded readers on this perceptual learning task. References are included.

Section 6: Environment Factors

Blanton, William E. "The Culturally Disadvantaged Reader's Concept of Reading," Professional Focus on Reading, C. A. Ketcham, Ed. Proceedings of College Reading Association, 9 (1968) 88-96.

Efforts were made to define the culturally deprived reader's concept of reading. The 53 third-, fourth-, fifth-, and sixth-grade Negro subjects enrolled in remedial reading classes were given a three-item multiple-choice inventory of 20 items. Results indicated that 77 percent of the students felt that reading was done for the teachers; 49 percent felt that the reader's objective was to make the teacher happy. More than half of the subjects felt that good readers moved their lips, and the majority felt that everyone should learn to read because of the practical consequences of doing so. Tables and references are included.

Bloomer, Richard H. "Reading Patterns of the Rejected Child," The Reading Teacher, 22 (January 1969) 320-24, 340.

Nine reading skills subtests were given to 450 first- through sixth-grade subjects who, according to peer reaction, had been divided into sociometric groups of accepted children, rejected children, isolates, and children of high ambivalent impact. Tests revealed that the rejected children had significantly lower IQ's than two of the other groups, were older, and demonstrated lower reading achievement than any of the other groups. The Reading Skills Diagnostic Test revealed that on all subtests requiring analysis and synthesis and on isolated subtests, excluding those requiring memorization, the rejected children were significantly inferior to the accepted children. Tables and references are included.

Bollenbacher, Joan. "A Study of the Effect of Mobility on Reading Achievement," The Reading Teacher, 15 (March 1962) 356-60, 365.

The effect of mobility on reading achievement was studied. The sixth grades of the Cincinnati public schools were chosen as the sample. The study reported the data in terms of the number of moves made by individual pupils. The Stanford Intermediate Reading and Arithmetic Tests were given to all sixth graders as part of the annual testing program. Results of this and the Lorge-Thorndike Verbal IQ's were recorded. Each student was asked to fill out a card providing information on the number and location of schools he had attended from first to sixth and any grades he had repeated. A total of 5,578 cards were coded and prepared for electronic data processing. A detailed statistical analysis was made of the data using covariance techniques. Results indicated that although achievement was not affected negatively by the mobility of the sixth grade group, mobility does present many problems. Tables are included.

Buckley, Geoffrey John. Reading Achievement in Grade Five and Its Relationship to Parental Occupation, Verbal Intelligence, and Certain Environmental Factors. (Ed.D., The University of British Columbia, 1967) Dissertation Abstracts, 29, No. 3, 757-58-A. Microfilm copy available from the National Library of Canada at Ottawa.

The relationship of certain environmental factors, parental occupation, and verbal intelligence to reading achievement was investigated. Fifty-grade children were randomly chosen from one high, one middle, and one low social class area in the city of Vancouver, British Columbia. The Henmon-Nelson Test of Mental Ability and the Iowa Tests of Basic Skills were administered to all subjects. Environmental factor data, such as availability of reading materials in the home, TV-radio habits, visits and trips made, and participation in various activities were gathered through interviews. From simple and multiple correlations it was found that reading achievement was related to verbal intelligence and, to a

lesser extent, to parental occupation and visits. Only verbal intelligence and visits seemed to contribute significantly at the .05 level to the multivariate prediction of reading achievement. TV-radio did not relate to the other variables.

Chandler, Theodore A. "Reading Disability and Socio-Economic Status," Journal of Reading Disability, 10 (October 1966) 5-21.

Research relating specifically to reading failure and socioeconomic influences is reviewed. Among significant topics researched are occupational aspirations, books in the home, and good-reader parents as influential agents for normal achievement. Inadequate measurement of IQ through tests demanding reading skill is cited as specific handicap for adequate recognition of ability to accomplish in reading for disadvantaged children. The question of the relation between delinquency and reading disability is raised and related studies are cited. Experiential background as an important factor in reading readiness is pointed out. Also, the contrast of intellectual stimulation in upper and lower class home is examined as a deterrent for academic accomplishment. Further investigation is urged. A bibliography is included.

Craig, Jimmie Merle. Relationship between Change in Attitudes of Disadvantaged Pupils toward Reading and the Involvement of Their Parents in a Reading Program. 264 p. (Ph.D., United States International University, 1968) Dissertation Abstracts, 29, No. 6, 1777-A. Order No. 68-14,755, microfilm \$3.40, xerography \$11.95 from University Microfilms.

Changes in attitudes toward reading of a group of 184 disadvantaged junior high school students in the San Diego Unified School District were studied in relationship to parent participation in reading improvement classes and in a series of counseling conferences. The attitude changes were also related to reading achievement growth rate. The Attitude Toward Reading Q-Sort Test and the Nelson Reading Test were administered as pretests and post-tests, the differences in the results between the earlier and later tests being the main source of data for the conclusions of this study. It was found that the group of students whose parents were not involved in the reading program showed a positive change in attitudes toward reading that was significantly greater than the change shown by the students whose parents were involved. Moreover, students whose parents were involved in counseling conferences tended to change more toward positive attitudes than did those whose parents attended reading improvement class.

Della-Piana, Gabriel and Martin, Helen. "Reading Achievement and Maternal Behavior," The Reading Teacher, 20 (December 1966) 225-30.

The behavior of mothers of overachieving and of underachieving sixth-grade girls in two semistructured interaction situations was compared. A Vocabulary Review Session and an Opinion Difference Discussion were used as tools of analysis. Scores derived from the data revealed more disagreement between underachieving girls and their mothers than between the overachieving girls and their mothers. However, no significant differences were attained. One unusual finding showed that mothers of high verbal fifth-grade girls exhibited significantly more disapproval and more often withheld help than did mothers of low verbal ability daughters. References are listed.

Della-Piana, Gabriel; Stahmann, Robert F.; and Allen, John E. "Parents and Reading Achievement: A Review of Research," Elementary English, 65 (February 1968) 190-200.

Research findings relating to the parents' role in children's reading achievement are reviewed. Areas of study discussed included cultural significance of parental involvement, parent education programs, parental environmental influence, mother-child interaction, and reading readiness. Implications of the research are varied, indicating several similarly effective treatments and the conditions under which each might be successful. A 67-item bibliography is included.

Della-Piana, Gabriel, et al. The Influence of Parental Attitudes and Children-Parent Interaction upon Remedial Reading Progress. 114 p. (CRP-S-266-1, Utah University, Salt Lake City, 1966) ED 012 689, microfiche \$0.65, hard copy \$3.29 from EDRS.

Two pilot studies of the relationship between parent characteristics and the reading achievement of their children are reported. The first study compared the behavior of mothers of high and low verbal girls in two semistructured interaction situations. Ten high verbal and 10 low verbal girls were selected for study on the basis of scores on the Gates Reading Survey and on the Lorge-Thorndike Intelligence Test. One-tailed t tests were used to analyze the data. Mothers of high verbal girls exhibited more positive scores on social-emotional reactions and total warmth. The purposes of the second study were to show the effect of a parent training program on silent and oral reading and to correlate mothers' attitudes with silent and oral reading. Subjects were 13 experimental and 16 control students in grades 3 to 6. Pupil premeasures and post-measures were the California Test and the Gilmore Oral Reading Test. The parent measure was the parental attitude research instrument. Fourteen weekly sessions were held with experimental parents. Mean scores, difference scores, and t tests were used to analyze the data. The treatment had a greater effect on oral than on silent reading. Positive attitudes toward child rearing correlated significantly with silent reading comprehension. A description of the parent training program, three appendixes, and a bibliography are included.

Della-Piana, Gabriel, et al. Parent Training and Reading Gains of Elementary School Children. 23 p. (CRP-S-266, 1967) ED 011 818, microfiche \$0.65, hard copy \$3.29 from EDRS.

A small sample pilot project which demonstrated a treatment effectiveness and suggested future lines for research and development of parent training programs is described. The major hypothesis tested was that pupils whose parents were involved in a training program would show greater regressed gains in reading skills than pupils with parents not in training. In late spring, an invitational letter was sent to parents of children who would be in the third to sixth grades in two elementary schools and whose reading ability was 1 or more years below grade level. There were 13 experimentals and 16 controls in the final group. The California Reading Test and the Gilmore Oral Reading Test were administered to the pupils as the pretests and post-tests. The experimental parent group was taken through the parent-training program. After the post-testing of all pupils in reading, the control group parents participated in the training program. In reading comprehension, the control group gains were greater than experimental group gains. The parent-training program accounted for 16 percent of variance in oral reading accuracy and for 25 percent of the variance in oral reading comprehension. Tables and scatter plots are included. The training program is described in the final report.

Durkin, Dolores. "Children Who Read before Grade 1: A Second Study," Elementary School Journal, 44 (December 1963) 143-48.

Characteristics of 49 California children (26 Caucasian, 12 Negro, and 11 Oriental) who were reading at grade levels ranging from 1.5 to 4.6 when they entered first grade are described. Emerging from this longitudinal study are the hypotheses that the identification of children who could profit from reading instruction before first grade might be made by a study of particular personality characteristics, attitudes, and perception of what it means to "read;" and that current intelligence tests are seriously inadequate in measuring "what it takes" to learn to read. References are given.

Evans, John W., Jr. "The Effect of Pupil Mobility upon Academic Achievement," The National Elementary Principal, 45 (April 1966) 18-22.

An investigation was made to determine whether pupil mobility has an adverse effect upon pupils' academic achievement. Related research is reviewed. The cumulative record cards of 97 pupils in the fifth and sixth grades, 1963-64, of Nead School, Bunker Hill, Indiana, which has a high rate of pupil turnover because of its proximity to Bunker Hill Air Force Base, were studied. Pupils were separated into mobile and nonmobile groups. The IQ records of the two groups were essentially the same. Four subject areas were studied: reading, social studies, arithmetic, and science. Median, mean, standard deviation, and correlation coefficient scores were

obtained for both mobile and nonmobile groups. It was shown by the median and mean scores that the mobile youngsters had better records in reading and science than nonmobile youngsters, and that they were somewhat superior in social studies and arithmetic. However, a slight inferiority was shown by the mobile group in the correlation study. It was concluded that mobility does not have an adverse effect upon academic achievement. References and figures are included.

Feldhusen, John F.; Thurston, John R.; and Benning, James J. "Classroom Behavior, Intelligence, and Achievement," The Journal of Experimental Education, 36 (Winter 1967) 82-87.

The following three questions were asked about children who exhibit socially disapproved, disruptive behavior and children who display socially approved behavior: Are there differences in achievement in reading and arithmetic? Is there a difference in intelligence? Are there differences in reading and arithmetic which exceed the differences which could be attributed to differences in intelligence? The intelligence and achievement test scores for 200 third and sixth graders were used to compute grade level deviation values, and a three-way analysis of variance and covariance was performed, using grade, behavior, and sex as variables. The reading and arithmetic achievement of the approved children was higher than that of the disapproved children. The second question was also answered affirmatively, but the differences in achievement were greater than intelligence alone would account for, particularly in the differences in the sixth-grade groups. A need for further research into the relationship of classroom aggression and failure in learning the basic skills is indicated. References are included.

Hall, Nason E. and Waldo, Gordon P. "Remedial Reading for the Disadvantaged," Journal of Reading, 11 (November 1967) 81-92.

A systematic remedial reading program was contained in The Youth Development Project for delinquency-prone boys in eight Columbus, Ohio, junior high schools. One hundred and eighty-six delinquency-prone disadvantaged boys in eight experimental classes were compared with 73 boys in regular curriculum control classes. Instruction utilized (1) two paperback texts--The Time Machine by H. G. Wells and The Red Car by Don K. Stanford, (2) the Turner-Livingston Workbook Series, (3) Reader's Digest Reading Skill Builder Series, (4) reading consultant-developed exercise skill sheets, and (5) newspapers. Stanford Reading Achievement Test Scores for grades 6 and 7 were compared to show improvement when various factors were controlled. Both the treatment and the control groups improved their reading achievement level during the seventh grades; however, the treatment group improved more than twice as much as the control group. When measured-intelligence was controlled, the treatment group improved more than the control group in every IQ category, with the greatest

difference in the two highest categories. When sixth-grade reading achievement was controlled, the treatment group improved more than the control group in every reading achievement category, with the greatest difference in the two highest achievement-level categories. References are included.

Hanson, Earl and Robinson, H. Alan. "Reading Readiness and Achievement of Primary Grade Children of Different Socio-Economic Strata," The Reading Teacher, 21 (October 1967) 52-56, 79.

Differences in reading readiness and reading achievement which were found among a small number of advantaged, average, and disadvantaged kindergarten, first, second and third graders in or near Chicago are described. The Goodenough Draw-a-Man Scale, Metropolitan Readiness Tests, and Metropolitan Achievement Tests were the measuring instruments used. A probability of .05 was considered an acceptable level of confidence in variate analysis. The intelligence, reading readiness, and reading achievement scores attained by the advantaged subjects were significantly higher in each grade than those attained by the disadvantaged. Differences between the performance of advantaged and average subjects and of average and disadvantaged subjects were generally smaller and less uniform. However, on the Metropolitan Readiness Test there were significant differences between all three groups for both kindergarten and grade 1. The average subjects performed significantly higher than the disadvantaged subjects on the Goodenough Draw-a-Man Test for grades 2 and 3, but not for kindergarten and grade 1. Only at the second grade level were significant sex differences found, favoring the girls. References and tables are included.

Harris, Albert J. How to Increase Reading Ability. 4th edition revised. (New York: McKay Company, 1966) 624 p.

The broad scope of this textbook on reading makes it suitable for use in survey courses, graduate courses in corrective and remedial reading, and as a desk reference for clinicians. It balances viewpoints in such controversial topics as the best method for remedial instruction, brings out strengths and weaknesses in each approach, and offers practical, specific recommendations. Materials are arranged in three main parts, beginning with a general discussion of classroom reading, developing readiness, starting to read, and continuing reading growth. Chapters on how to meet individual and group instructional needs have been enlarged for the third edition. The second part presents expanded chapters on methods for evaluating and diagnosing group and individual reading needs. The last part starts with basic remedial principles, and continues with developmental and remedial teaching of specific reading skills through word recognition--a central, expanded section--comprehension, interests, and taste, and rate. Four case histories conclude the work, and an index is included. Lists of tests, graded remedial readers, and publishers' addresses appear in the appendices.

Hess, Robert D. "Maternal Behavior and the Development of Reading Readiness in Urban Negro Children," Self and Society, M. P. Douglass, Ed. Yearbook of the Claremont Reading Conference, 32 (1968) 83-99.

The influences of maternal behavior and cultural background upon the child's academic achievement were investigated. One hundred and sixty Negro mothers of 4-year-old children from four social status levels were interviewed twice at home and then brought to a clinic for testing and an interaction session between mother and child. The measures of the cognitive environment considered relevant were (1) circumstances of the home and community environment, (2) maternal orientation toward the nonfamily world, (3) strategies of maternal control, (4) mother's teaching techniques, (5) maternal language, and (6) mother's affective interaction with her child. Two years later, when the children were in first grade, the Lee-Clark Reading Readiness Test and the Metropolitan Readiness Tests were administered. When these test scores and grades in reading were compared for the various social status levels represented, it was found that middle-class Negro children performed at a higher level than did Negro children from the working-class backgrounds. Correlations between the readiness test scores and grade scores and the above-mentioned environmental measures indicated that maternal behavior and cultural background appeared to be influential in the child's early cognitive development and thereby influenced the abilities involved in learning to read. A bibliography and tables are included.

Hicks, Leo B. "A Cross-Sectional Look at Academic Achievement for Culturally Disadvantaged and Non-Disadvantaged Students," Illinois School Research, 4 (November 1967) 16-22.

Intelligence and reading achievement test scores for approximately 25,000 East St. Louis, Illinois, students in grades 1 through 11 were compared for predominantly disadvantaged children from 23 schools and non-disadvantaged children from 17 schools. Class medians, percentiles, and averages were obtained for the following standardized tests: Gates Primary Reading for grades 1 and 2; Science Research Associates Reading, grade 3; California Achievement Battery, grades 4, 5, and 6; California Test of Mental Maturity, grade 6; Iowa Every Pupil Reading, grades 6.9 and 9.7; Differential Aptitude, grade 8; and Illinois State-wide Testing Program, grade 11. Nondisadvantaged students exhibited higher measured ability throughout all grades. For grades 1 and 2 both disadvantaged and nondisadvantaged scored at about the same rate of reading which was well above the norms for that test. In third grade a drastic decline in both groups was noted. From this point on through high school the nonculturally disadvantaged groups scored much higher in each case, while the disadvantaged students became more retarded with each year. Tables and references are included.

Hill, Edwin H. and Giammatteo, Michael C. "Socio-Economic Status and Its Relationship to School Achievement in the Elementary School," Elementary English, 40 (March 1963) 265-70.

An investigation of socioeconomic status and its relationship to vocabulary achievement, reading comprehension, various reading sub-tests, arithmetic skill, problem solving, and a composite of these variables was conducted. Two hundred and twenty-three third grade children in Western Pennsylvania were subjects. An interview sheet to measure socioeconomic status was constructed and tested, using the concept developed by Likert to calculate the discriminative power. Published tests used in the study were Otis Quick-Scoring Mental Ability test, Iowa Tests of Basic Skills, and the Scott-Foresman Basic Reading Tests (1², 2², 3²). Intercorrelations were computed between these measures: sex, socioeconomic status, reading comprehension, vocabulary, arithmetic skills, and problem solving. These correlations suggest that to a great extent, socioeconomic status was a factor in school achievement. Specific differences in the areas examined are given in tables. A survey of other investigations in this area is presented. References are given.

Jones, Harry J. An Investigation of the Relationship between Reading Achievement Scores, the Child's Style of Categorization, Achievement Responsibility and Parental Attitude. 163 p. (Ed.D., Wayne State University, 1968) Dissertation Abstracts, 29, No. 10, 3327-A. Order No. 69-6071, microfilm \$3.00, xerography \$7.60 from University Microfilms.

The possibility of predicting reading achievement scores from Intellectual Achievement Responsibility Scores, Style of Categorization Scores, and Parental Attitudes was studied. A random selection of 101 fourth- and sixth-grade students of the Birmingham Public Schools and the Port Huron Area Schools served as subjects. The T.S.A.R. Program was utilized to process the data according to the Wherry-Doolittle method of test selection. It was found that no single variable other than intelligence was predictive of reading achievement at the grade levels under investigation. An inverse relation between parent attitude and reading achievement, which had not been expected on the basis of previous research, was found.

Justman, Joseph. "Academic Aptitude and Reading Test Scores of Disadvantaged Children Showing Various Degrees of Mobility," Journal of Educational Measurement, 2 (December 1965) 151-55.

The academic aptitude and reading test scores of disadvantaged children showing varying degrees of mobility were studied. Subjects included 934 sixth-grade pupils attending 16 schools in disadvantaged areas of New York City. Each pupil showed a pattern of uninterrupted attendance in regular school grades since enrollment in kindergarten. A measure of pupil

mobility was based upon the total number of times each pupil was admitted to a different school. A subinvestigation of the socioeconomic level for parents of the 42.3 percent of pupils attending a single school during the 6 years was included in the study. Four subgroups were established for the remaining subjects classified as mobile pupils, and for whom a comparison was made of the mean reading grades obtained on a standardized reading test. Also, mean IQ's and the significance of differences in mean IQ's were computed for these disadvantaged pupils of varying degrees of mobility at the third-grade and the sixth-grade levels. Results are shown in tabular form. Some generalizations concerning changes in accomplishment at the two periods of analysis are reported with a degree of caution in light of the need for an uninterrupted program during the first 6 years in school. Selected references are included.

Justman, Joseph. "Reading and Class Homogeneity," The Reading Teacher, 21 (January 1968) 314-16, 334.

The relationship of class growth in reading, as measured by the Metropolitan Reading Test, to both the homogeneity of the class and its initial reading achievement level was investigated. Parallel forms of the reading test were administered in May of two successive years to all third- and fourth-grade classes in over 75 New York City schools. Restrictions imposed upon the data left a total of 4,705 pupils, enrolled in 181 classes, drawn from 42 schools. The findings indicated that mean gains in achievement tended to be positively associated with initial reading level. Classes with high initial achievement showed greater mean growth than those with average initial achievement, who in turn showed greater mean growth than those with low initial achievement. This trend was noted on the two subsections of the test. Lack of a consistent growth pattern was evident when various combinations of initial achievement level and class variability were considered and when the reading subsections of the test were considered. It was concluded that reduced range of ability was not associated with increased achievement in reading. Grouping by itself, without curricular modification as a concomitant, will not give rise to the desired outcome of improved pupil performance. One reference is noted.

Katz, Phyllis A. "Verbal Discrimination Performance of Disadvantaged Children: Stimulus and Subject Variables," Child Development, 38 (March 1967) 233-42.

The verbal discrimination performances of disadvantaged children were compared on visual and auditory tasks presented in both Hebrew and English. A total of 72 Negro males of differing reading achievement levels in grades 2, 4, and 6 were studied to obtain information regarding the variables which might affect the relation between discrimination and reading performance. Each subject was tested individually and received visual English, visual Hebrew, auditory English, and auditory Hebrew discrimination

tasks. The results indicated that the discrimination performances of disadvantaged children were influenced by a wide variety of factors, including chronological age, reading level, modality of stimulus presentation, and the degree of familiarity of the stimuli. It appeared that both perceptual skill and familiarity factors played a role in children's discrimination performance. Additional research is suggested in order to determine what background variables might be involved in the development of modality-specific behavior. A figure, tables, and references are included.

Kelly, Francis J.; North, Joseph; and Zingle, Harvey. "The Relation of the Broken Homes to Subsequent School Behaviors," Alberta Journal of Educational Research, 11 (December 1965) 215-19.

The influence of broken homes upon three school-related behaviors was studied. The behaviors were school attendance, reading achievement, and reported behavior problems. Subjects were 131 children from broken homes as determined from a questionnaire administered to 886 seventh- and eighth-grade students attending five junior high schools in Canada. A control group from intact homes was also established. The following scores were obtained for each child: reading achievement, teacher rating of behavior, and school attendance. The predictor variables were parent sex, subject sex, status of home, nature of breakup, and year in school at the time of breakup. The covariable was socioeconomic status. A series of multiple linear regression models were used to analyze the data. Subjects from broken homes attended fewer days; this was statistically but not practically significant. There was no difference in the rated behavior of the groups. When homes were broken when children were in grades 1 to 3, the children did poorer on the reading achievement test. There was no difference in reading achievement between the groups. A discussion and references are included.

Ketcham, Clay Adams. "Factors in the Home Background and Reader Self Concept Which Related to Reading Achievement," Proceedings of the College Reading Association, 7 (1966) 66-68.

A study was conducted to determine which of selected factors in home background and reader self-concept were significantly related to the reading achievement of tenth-grade students. The sample included 582 students, 303 boys and 279 girls. Following a pilot study, a final form of a questionnaire with 39 questions on home background and 40 questions on reader self-concept was administered. A Chi square analysis was made of each item on the questionnaire. Twenty-six of the selected home background factors were found significantly related (beyond .05) to reading achievement. Twenty-seven of the selected reader self-concept factors were found to be significantly related to reading achievement beyond the .05 level.

Kramer, David P. "Interparental Differences of Opinion and Children's Academic Achievement," The Journal of Educational Research, 60 (November 1966) 136-38.

The subjects used in this investigation were 290 pairs of Cleveland suburban parents and their 460 children in grades 4, 5, and 6. Three offspring groups, the Low, Medium, and High Parental Differences of Opinion Groups, were formed to explore the relationship between interparental differences of opinion and children's academic achievement. Significant differences were obtained between children in the Low and High, and Medium and High Parental Differences of Opinion Groups in IQ and in reading. Significant differences were also found between boys in the Low and High, and Medium and High groups in IQ, and between boys in the Low and High Parental Groups in reading. No significant differences were found between girls on either of the criteria of achievement, and no significant differences in arithmetic were found for any groups compared in the study. It was suggested that parental differences of opinion may provide a fruitful strategy for exploring differences in child behavior. Eight references are given.

Labov, William and Robins, Clarence. A Note on the Relation of Reading Failure to Peer-Group Status in Urban Ghettos. 18 p. (OEC-6-10-059, CRP-3288, Columbia University, New York, 1967) ED 018 343, microfiche \$0.65, hard copy \$3.29 from EDRS.

A progress report of the cooperative research project concerning the effects of value systems upon school learning among ghetto club members is presented. Street group members considered school learning irrelevant to prestige within the group. They were concerned with toughness, smartness, trouble, excitement, autonomy, and fate. Full participation meant complete involvement with the values and activities of the group. The academic records of 75 preadolescent and adolescent boys who were nonmembers of street groups indicated that some were below, some were within, and others were beyond grade level in accomplishment. Learning was taking place. Reading among 43 street group members showed a regular distribution around a single mode, 3 years behind grade. There were many dropouts. Overall findings indicated that cultural conflict was responsible for reading failure. Suggestions for continuing study include the introduction of a cultural intermediary classroom to develop techniques for cross cultural cooperation.

Lamb, George S. "Teacher Verbal Cues and Pupil Performance On A Group Reading Test," Journal of Educational Psychology, 58 (December 1967) 332-36.

Verbal cues encouraging rapid work, accurate work, or no specified cues were administered by 36 female teachers to their second- and third-grade classes during a group reading test in Minneapolis and St. Paul. Effects of the cues were evaluated in terms of the class performances on the tests. Data were treated by analysis of variance and Scheffe confidence intervals at the .01 and .05 levels of significance, respectively.

Independent sources of variation were treatments, grade levels, sex, and reading achievement levels. Results indicated that girls were more responsive to teachers' verbal cues than were boys. Tables and references are included.

Loughlin, Emma C. and Loughlin, Leo J. "A Study of the Relationship of Time Spent Viewing Television to Children's Reading Achievement," Illinois School Research, 4 (May 1968) 18-21.

The relationship between hours spent viewing television and reading achievement among 53 third-grade and 45 fifth-grade students was investigated. The sample was divided into good and poor readers by taking into consideration each student's mental age, chronological age, and actual reading achievement. Television viewing time for each student was determined for a period of 1 week. The hours of televiewing for male and female good readers and poor readers in both grades are reported. The study revealed that third-grade students viewed significantly more hours of television than fifth-grade students, but that in neither grade were significant differences in televiewing time found between good and poor readers. Television was seen as perhaps helping both good and poor readers fulfill certain developmental needs. Tables and references are included.

Lovell, K. and Woolsey, M. E. "Reading Disability, Non-Verbal Reasoning and Social Class," Educational Research, 6 (June 1964) 226-29.

Three English surveys investigating reading disability, nonverbal reasoning, and social class are reported. Two surveys were made using 2,100 third-year junior school children as subjects. Additional data were obtained from 1,800 fourth-year pupils in Secondary Modern Schools. The following tests were administered: N.F.E.R. Sentence Reading Test; N.F.E.R. Non-verbal Reasoning Tests No. 5 and No. 3; and the Watts-Vernon Reading Test. The social class of the parents was obtained by reference to the Registrar General's "Classification of Occupations, 1960." It was found that roughly half of all backward readers have standardized non-verbal reasoning test scores > 90 , and roughly half of backward readers came from social classes 2 and 3. Tables and references are given.

MacDonald, Dorothy P. "An Investigation of the Attitudes of Parents of Unsuccessful and Successful Readers," Journal of Educational Research, 56 (April 1963) 437-38.

The attitudes toward child-rearing practices of the parents of unsuccessful and successful readers (UR's and SR's) were examined for differences. Three groups of parents were studied--parents of UR's at the University Children's Clinic, of parents of UR's in a public school and

parents of SR's in a public school. All the UR's selected were males. Parents were given the Parental Attitude Research Instrument and children were given the Wechsler Intelligence Scale for Children and Wide Range. A chi-square test was computed as a means of testing the significance of parental agreement. Differences were found mainly between mothers of UR's in the child guidance clinic and mothers of both UR's and SR's in the public school, and between fathers of UR's in the clinic and fathers of UR's in the public school. It is suggested that further work be done in examining the relationship between the UR and his father. References are included.

McGinnis, Dorothy J. "A Comparative Study of the Attitudes of Parents of Superior and Inferior Readers Toward Certain Child Rearing Practices," The Philosophical and Sociological Bases of Reading, Eric L. Thurston and Lawrence E. Hafner, Eds. National Reading Conference Yearbook, 14 (1965) 99-105.

The correlation between superior and inferior readers and parental attitudes toward child rearing was investigated. Parents of 50 superior and 50 inferior sixth-grade readers from Kalamazoo Public Schools completed 23 5-item scales about child rearing and family life. Data from the 10 scales judged most relevant were utilized in the final report. Results showed that the parents of superior readers had democratic attitudes which produced independent children. These attitudes admitted outside influences, placed little emphasis on parent deification, emphasized group participation, and encouraged communication and language skill development. The parents appreciated the importance of readiness in their children's ability to perform. A resultant suggestion was that attention be given to parental attitudes as well as to the mental ability of the child in programs for developing effective reading achievement. References are listed.

Miller, Wilma H. "An Examination of Children's Daily Schedules in Three Social Classes and Their Relation to First Grade Reading Achievement," Wisconsin State Reading Association News, 12 (March 1969) 2-10.

Two aspects of a dissertation related to social class differences and reading readiness used the daily schedules of 51 pupils. Kindergarten children's daily schedules, as obtained from their mothers, were presented, and the differences found among middle-class, upper-lower-class, and lower-lower-class socioeconomic levels were noted. Although there was much overlap, middle-class children were reported as having more interaction with their parents and more opportunity to engage in varied activities. Each child's daily schedule was rated on criteria derived from the literature in the field of child development. Coefficients of correlation were then computed between the ratings and performance on reading and readiness tests. The two reading tests were administered in late February and early March of grade 1. In middle-class and upper-lower-

class children, daily schedules were not found to be significantly correlated with any of these tests. However, in the lower-lower class, coefficients of correlation of .57 and .50 were found between daily schedule and performance on the readiness and reading tests. Tables and references are included.

Miller, Wilma H. "Home Prereading Experiences and First-Grade Reading Achievement," The Reading Teacher, 22 (April 1969) 641-45.

Interview data collected from a structured parent schedule of prereading was summarized. Coefficients of correlation were then computed between home prereading activities and performance on the Metropolitan Readiness Tests (MRT), administered in kindergarten, and performance on the Gilmore Oral Reading Test and Four subtests of the Stanford Achievement Test, administered in late February and early March of first grade. Middle-class children had often heard stories or books and had dramatized stories read or told to them more frequently than had children in the other two groups. They had also gone on family trips and used manipulative materials. Many of the middle-class children could recognize most of the letters in the alphabet and some simple words. Fewer of the upper-class children would perform these tasks, and many of the lower-lower-class children could not. Prereading activities and MRT scores correlated .39, .48, and .57 for middle, upper-lower, and lower-lower-class children respectively. The coefficient of correlation between middle-class children's prereading experiences and SAT scores was .54. No significant correlations were found for the SAT scores of the lower groups. Tables and references are included.

Morris, John L.; Pestaner, Mariana; and Nelson, Albert. "Mobility and Achievement," The Journal of Experimental Education, 35 (Summer 1967) 74-80.

A study of the effect of mobility on reading and arithmetic achievement involved 410 Caucasian fifth graders in northern Alameda County, California. Information on IQ, reading and arithmetic achievement scores, the number of schools attended, and the socioeconomic status of the family was obtained for each child. The subjects were divided into three groups according to the number of schools attended. The distribution of scores in reading and arithmetic was also divided into thirds, and the frequency of occurrence of scores for students differing in mobility was calculated. Results presented in four tables indicate that variation in the reading scores, but not in the arithmetic scores of mobile children was greater than the variation for nonmobile children. However, when the mean reading and arithmetic scores of both groups were compared, no statistically significant difference was observed. This study showed that mobility has an effect on reading achievement but not on arithmetic achievement. However, personality variables were not considered.

Morrison, Coleman and Harris, Albert J. "Effect of Kindergarten on the Reading of Disadvantaged," The Reading Teacher, 22 (October 1968) 4-9.

Kindergarten and nonkindergarten attendees were compared on achievement data gathered at the end of grades 1, 2, and 3. Children were taught to read either a Skills Centered or a Language Experience approach. The Skills Centered approach used either a basal reader or a combination reader-phonetic system. The Language Experience (LE) approach followed either a regular LE program or a LE-Audio-Visual program. At the end of grade 1, the Stanford Achievement Test was administered. Fourteen of 21 comparisons of raw scores were statistically significant in favor of kindergarten children. At the end of grade 2, the Metropolitan Achievement Tests (MAT) were given, and nine comparisons were significant in favor of the kindergarten children. When the MAT was administered again at the end of grade 3, there were only four significant differences. All favored LE kindergarten children over LE nonkindergarten children. Comparisons between approaches revealed a significant difference favoring LE kindergarten children over Skills Centered kindergarten children. Differences for nonkindergarten children were not significant. Tables and references are included.

Mutimer, Dorothy; Loughlin, Leo; and Powell, Marvin. "Some Differences in the Family Relationships of Achieving and Underachieving Reading," The Journal of Genetic Psychology, 109 (September 1966) 67-74.

The Two Houses Technique test was administered to 22 girls and 22 boys who were underachieving readers from Rockford College Reading Clinic and to 22 girls and 22 boys who were average achieving readers from Marsh School to ascertain the differences in the family relationships of the two groups. The Two Houses Technique is an unpublished test developed by Victor Szyrynski to show, among other things, the amount of emancipation from the home, the amount of sibling interaction and rivalry, and some indication of the child's identification with parents based on the sex of the child. The null hypothesis that there is no significant difference between the family relationships of the average achieving and underachieving readers was tested. Comparison of the groups in five different combinations indicated many significant differences at the .05 level and a few significant differences at the .01 level. The Two Houses Technique test indicates that there are significant differences between the family relationships of the achieving readers and those of the underachieving readers, and it is concluded that further investigation with this test is desirable. Two references are given.

Napoli, Joseph. "Environmental Factors and Reading Ability," The Reading Teacher, 21 (March 1968) 552-57, 607.

Results of a survey of 40 eighth- and ninth-grade pupils supported the idea that the home environment influences a child's reading habits

and ability. Available reading matter and emphasis on education at home correlated with a keener interest in reading among 20 eighth-grade honors pupils; 20 pupils from regular ninth-grade classes indicated a more limited interest in reading and little motivation for the activity in their homes. Most of the ninth graders were low achievers who fell below their grade level in reading; all 40 pupils were from middle- or upper-middle-class families. A questionnaire was used to determine (1) the number and types of reference materials in the homes; (2) the amount of reading each parent did, the frequency with which parents selected reading material for their child, and the frequency of book discussions in the home; (3) the pleasure reading habits of the pupil; (4) the study habits of the pupil, the study conditions in the home, and the kind of assistance parents gave, if any; (5) the attitude of the pupil toward both the public and school libraries; and (6) the frequency and types of the pupil's periodical reading. In all of these areas a greater percentage of the honors pupils--or good readers--reported more material available and influence, conditions, and attitudes more conducive to reading in their homes.

Plessas, Gus P. and Oakes, Clifton R. "Prereading Experiences of Selected Early Readers," The Reading Teacher, 17 (January 1964) 241-45.

An investigation to identify the nature of prereading experiences associated with early success in reading is described. Twenty early readers (7 boys, 13 girls) in the San Juan Unified School District, near Sacramento, California, were identified on the basis of teacher observation and scores on the California Reading Test. A comparison of chronological age, intelligence (Wechsler Intelligence Scale for Children), and other characteristics was made according to sex. Questionnaires reporting the subjects' prefirst grade reading activities and pertinent information about the subjects' interests in reading, homelife and family background, and early exposure to teaching of reading were completed by the parents. A summary of the findings indicates that, in general, early readers are bright children who have frequent associations with a variety of prereading experiences, and who receive some beginning reading instruction prior to first grade. Tables and references are included.

Ponder, Virginia Breazeale. An Investigation of the Effects of Bibliotherapy and Teachers' Self-Others Acceptance on Pupils' Self-Acceptance and Reading Achievement Scores. 142 p. (Ed.D., University of Southern Mississippi, 1968) Dissertation Abstracts, 29, No. 9, 2900-A. Order No. 69-4704, microfilm \$3.00, xerography \$6.80 from University Microfilms.

In a 5-month bibliotherapy program for economically disadvantaged fifth graders, teachers read orally selected stories whose characters experienced difficulties due to insufficient financial resources and then conducted class discussions about the actions and feelings of the characters. Control classes had similar reading and discussion periods using

stories which were not concerned with children from economically disadvantaged homes. Participating teachers were classified according to the self-others acceptance levels of the Bills Index of Adjustment and Values. Sixty economically disadvantaged pupils were randomly selected for statistical analysis. The difference scores between the initial and final testing on the California Test of Personality and the California Reading Test indicated that the bibliotherapy used in this study did not produce a statistically significant increase in either self acceptance scores or reading achievement scores. No interaction between the use of bibliotherapy and the self-others acceptance category of the teacher was found, either in affecting pupil reading achievement or pupil self-acceptance. However, pupils having a teacher in the plus-plus self-others acceptance category experienced greater reading achievement gains than did those pupils having a teacher whose reported self-other acceptance score was plus-minus.

Power, Delcenia Abney. A Comparison of Some Environmental Factors and Characteristics of High-Achievers and Average-Achievers in Reading among First-Grade Pupils of Low Socio-Economic Status. 142 p. (Ed. D., State University of New York at Buffalo, 1968) Dissertation Abstracts, 29, No. 12, 4196-A. Order No. 69-3882, microfilm \$3.00, xerography \$6.80 from University Microfilms.

Certain environmental factors and characteristics of some disadvantaged first-grade children who experienced success with beginning reading were compared with those of similar disadvantaged children who had not succeeded in performing at par. The predominantly Negro inner city area of Buffalo, New York, was the site of the experiment. A series of tests, including the word recognition section of the Gates-MacGinitie Reading Test, the Peabody Picture Vocabulary Test, and the Primary Mental Abilities Test were administered to 687 first graders. The higher and lower achievers were thus determined, and seven hypotheses were formulated regarding environmental factors. It was found that the disadvantaged first grader performed better when there were no more than two siblings in the home. Reading achievement was positively correlated to the presence of a daily newspaper in the home. Greater ability to concentrate was indicated by teachers as characteristic of successful readers among the disadvantaged when they were compared to similar children with comparable capabilities and background who were not successful in reading.

Ramsey, Wallace. "A Study of Salient Characteristics of Pupils of High and Low Reading Ability," Journal of Developmental Reading, 5 (Winter 1962) 87-94.

A study investigating differences between good and poor readers in the intermediate grades is described. Sixty-one poor readers (25 girls, 36 boys reading at least one grade level below expected level) and 81

good readers (47 girls, 34 boys reading one or more grades above expected level) in grades 4, 5, and 6 in two Indiana schools were compared. Subjects were given the Stanford Reading Test and a 20-item questionnaire designed to reveal their reading interests, habits, and self-concepts. No great differences were found between the good and poor readers in preferred school-subject, preferred leisure-time activities, preferred type of book read, or preferred reading topics. Group differences in sex predominance group, level of intelligence, length of attendance at their present school, number of books owned, adequacy of time to read, reading self-concepts, and felt reading needs were reported. Implications of this study for both elementary and high school teachers involved in teaching reading both in laboratories and in the classroom are discussed. Tables are included.

Rhodes, William C. "The Disturbing Child: A Problem of Ecological Management," Exceptional Children, 33 (March 1967) 449-55.

The problems of a critically disturbed child originate not only from within, but also from the interaction between him and his environment. The responses of others to his behavior vary in intensity with the recognition by the responder of similar potential within himself. As a short term goal, teachers can change the disturbed situation by following the child into his environment and teaching the family as a whole how to alter the quality and flow of culture transmitted to the child. As a long term goal, schools can alter the present haphazard method of cultural transmission by transforming themselves into instruments for teaching methods of living in a complex society as well as for transmitting knowledge.

Sheldon, William D. and Carrillo, Lawrence. "Relation of Parents, Home, and Certain Developmental Characteristics to Children's Reading Ability," Elementary School Journal, 52 (January 1952) 262-70.

Relationships found between developmental characteristics reported on a parent questionnaire and the reading ability of the children reported upon are described. Subjects were 868 pupils who represented 10 percent of the eight participating schools. Selection was based upon achievement test scores, teacher rating of reading status, and intelligence test scores. Subjects' intelligence, personal and emotional adjustment, reading ability, developmental characteristics, and environment were studied. Definite relationships were found between reading ability and size and position of the family, the educational level of parents, books in the home, and likes and dislikes of school. Some overlapping was shown in the relationships between reading ability and the following factors: age of speaking the first word and speaking in sentences, the occupational status of father, and a change of residence between the ages of 6 and 8 years. No relationships were found between reading ability and the following factors: the number of neighborhood associates, the number of

changes of residence after age 8, and fears or frequency of daydreaming as noticed by parents. References are given.

Smith, Loren Walter. A Study of Retarded Readers in Special Reading Classes Compared with Retarded Readers in Regular Classes. 103 p. (Ed.D., Oklahoma State University, 1967) Dissertation Abstracts, 29, No. 1, 188-89-A. Order No. 68-8499, microfilm \$3.00, xerography \$5.20 from University Microfilms.

The possibility of increasing the reading skills of retarded readers through special instruction in classes of 15 to 20 was investigated. An attempt to determine whether there would be significant changes in personality adjustment as a result of the special reading classes was also made. Two groups of junior high school students, matched by sex and mental ability, were administered the Gates Reading Survey, Form 1, as a pretest. The experimental group received special instruction for 27 weeks. Then both groups were administered Form 2 of the Gates Reading Survey. Analysis of variance was used to measure significant differences in speed, accuracy, vocabulary, comprehension level, and overall average grade level. No significant differences in these aspects were found when the groups were compared. However, the study indicated a significant, favorable difference in personality adjustment as a result of the special reading instruction in small classes.

Snipes, Walter T. "The Effect of Moving on Reading Achievement," The Reading Teacher, 20 (December 1966) 242-46.

The effects of mobility on vocabulary and reading comprehension were investigated in six schools in a county in Central Georgia. A personal data form yielded data for 483 sixth-grade pupils on age, sex, and variables of mobility such as number of moves made, duration of residence, and prior place of residence. The California Short Test of Mental Maturity measured IQ, and reading achievement was measured by the California Achievement Test, Complete Battery. The Hollingshead Two-Factor Index of Social Position determined each pupil's social status. Analysis of variance and the t-test of significance were applied on test results grouped according to the categories of mobility of the subjects. Results presented in three tables indicated that the movers scored higher on reading comprehension and vocabulary than the nonmovers or those who moved once or twice. No significant differences were noted on reading vocabulary when groups were compared on duration of residence. While significant differences were noted in reading comprehension, no set patterns of differences were evident. Comparisons as to prior place of residence showed that those moving to the present school from another county, state, or country, seemed favored over the nonmovers on both vocabulary and reading comprehension.

Speasi, Dorothy and Herrington, Jewell. "A Study of Socio-Economic Level and Reading Success in A School With A Changing Population," Illinois School Research, 2 (October 1965) 27-31.

The differences of socioeconomic level between first- and sixth-grade pupils of a central city school and the effect of socioeconomic differences on reading achievement and readiness were investigated. Various problems brought on by the changing population of many central city schools and characteristics of culturally deprived children are discussed. The socioeconomic status of 65 sixth graders and 93 first graders was determined by the Warner index of status characteristics, based on dwelling area, house type, occupation, and parents' source of income. The families of the two groups were divided into high, medium, and low socioeconomic groups. Reading scores for the students were recorded. Students in grades 1 and 6 were compared on the basis of socioeconomic level and reading achievement. No significant differences were found between first- and sixth-grade socioeconomic distribution. A positive relationship was found between reading readiness of first graders and socioeconomic level; no relationship was shown at sixth grade level. References and a table are included.

Stanchfield, Jo M. "The Effect of High-Interest Materials on Reading Achievement in the First Grade," Junior College and Adult Reading Programs: Expanding Fields, National Reading Conference Yearbook, 16 (1967) 58-61.

Experimental beginning reading materials were used in the first grades of 10 Los Angeles City schools, and end-of-first-grade achievement was compared with that of control groups using the regular state texts. The new materials included a reading readiness teacher's manual, a series of textbooks containing original stories about Alaska and Hawaii, and a set of listening tapes to accompany the readers. The Harsch and Soberg Survey Test of Primary Reading Development was given in June to both experimental and control groups. Significant differences were shown for three main effects: (1) the girls read significantly better than the boys in the study; (2) the Mexican-American children read significantly worse than the Caucasian or Negro; and (3) the experimental groups read significantly better than the control groups. Tables are given.

Sutton, Marjorie Hunt. "Readiness for Reading at the Kindergarten Level," The Reading Teacher, 17 (January 1964) 234-40.

In order to gain more information about early reading readiness, 134 Indiana kindergarteners were given the opportunity to learn to read if they wished. Various preprimers were placed on a table, and those who wished were given such help as required for about 15 minutes a day. After 4 months, the Gates Primary Reading Achievement Tests revealed that

46 had reached at least the level of the third month of the first grade and that two had achieved the level of the ninth month of the second grade. Four others had begun to read, but their scores fell below the test measurement scale. Questionnaires sent to families of readers and nonreaders revealed a typical profile of the reader as generally a female from a relatively high socioeconomic level family with several children, who had been read to from an early age; parents were interested in the child's schooling. Findings indicated such things as the need for review of previous concepts and attitudes about reading readiness and minimum age laws for entering school. References are included.

Trione, Verdun. "The School Psychologist, Teacher Change and Fourth Grade Reading Achievement," California Journal of Educational Research, 18 (September 1967) 194-200.

A switch in emphasis of the role of the school psychologist from a psychologist-pupil relationship to a psychologist-teacher team effort utilized the psychologist as an inservice teacher-centered consultant and resulted in greater pupil improvement in reading than the pupils' progress was directed by teacher efforts alone. An equally important result was greater teacher awareness of guidance and reading principles, an increase in her knowledge of and confidence with new reading techniques, and a resulting increase in her effectiveness as a classroom reading teacher. From five elementary schools in one California district, three were randomly selected as experimental and the other two used as a control group. Grade 4 pupils were pretested and post-tested, and their teachers were post-tested to determine the pupils' intelligence and reading ability and the teachers' knowledge of guidance and reading techniques. Partial replications of the study tested out such nuisance variables as teacher experience. The pupils in the experimental schools showed a significantly greater improvement in reading ability than was recorded in the control classes, and their teachers scored higher than those of any of the control classes in both knowledge of guidance and reading instruction techniques. Tables and references are included.

Van Zandt, Wayne. A Study of Some Home-Family-Community Factors Related to Children's Achievement in Reading in an Elementary School. 194 p. (Ph.D., Wayne State University, 1963) Dissertation Abstracts, 25, No. 3, 1703-4. Order No. 64-9546, microfilm \$2.75, xerography \$8.80 from University Microfilms.

The effect of certain factors on the reading achievement of 126 children in the fifth and sixth grades was investigated. Tests administered to the study population included the Science Research Associates Primary Mental Abilities Test, the Achievement Test battery, and the Wechsler Intelligence Scale for Children. Also included in the study procedures were planned interviews with pupils and their parents. During the interview,

a guide and record form developed for the study was used. The total population was divided into quartile groups and the first and fourth quartile children were selected as the sample for this study in order to give contrasting groups. The author states that, compared with quartile children, the children of Quartile Four (1) scored much higher than Quartile One children in all subtests of the Wechsler Test; (2) had more realistic educational and vocational aspirations in line with their intellectual capabilities and scholastic achievements; (3) had superior parental interest and guidance in educational pursuits and related activities, had a good setting and guidance for study and homework, developed good work-study habits, participated in many cultural educational activities, and did many things together as a family group; (4) enjoyed more educational visitations and family vacations, engaged in more hobby and interest activities, were participants in more club and group activities, did four times as much reading and spent more than twice as much time on homework and study; (5) lived in homes with more settled conditions, had parents who cooperated with them in a democratic manner, and had good identifications and a realistic self concept.

Volk, William Andrew. An Analysis of Selected Factors as Sources of Variance in Reading Achievement. 127 p. (Ed.D., University of Virginia, 1968) Dissertation Abstracts, 29, No. 11, 3786-A. Order No. 69-3987, microfilm \$3.00, xerography \$6.20 from University Microfilms.

The factors of sex, race, mental ability, socioeconomic status, and personality as sources of reading achievement variations in 544 subjects, divided into an experimental group using programmed instructional materials and a control group using the basal program, were studied. Children in the first, second, and third grades of a rural county in Virginia were the subjects. Hollingshead's Two Factor Index of Social Position was used along with the California Reading Achievement Test, the California Test of Mental Maturity, and the California Test of Personality. Differences between pretest and post-test grade equivalent scores were analyzed by categories of the above-listed factors. The category of socioeconomic status yielded the widest range of variation, while sex yielded the narrowest range. The gains made by the experimental group were, in general, statistically significant when compared to those made by the control group.

Weintraub, Samuel. "What Research Says to the Reading Teacher: Sex Differences in Reading Achievement," The Reading Teacher, 20 (November 1966) 155-65.

A review of the research suggests that while there may not be sex differences on certain measures of reading readiness, sex differences tend to favor girls in reading achievement. The factors influencing differential achievement in reading probably include cultural and environmental as well as maturational factors. To alleviate this problem, it is

frequently suggested that boys enter school at a later chronological age. It is pointed out that such recommendations are based on group averages and fail to recognize the wide variability in readiness and achievement among boys and girls. The advantages and disadvantages of several other suggestions for inservice training, employment of male teachers, varied materials, selective placement, and organizational plans are given. The need is to deal with individual boys and girls rather than with groups of boys and girls. References are included.

Wickstrom, Rod A. "Pupil Mobility and School Achievement," Alberta Journal of Educational Research, 13 (December 1967) 311-18.

The nature and degree of pupil mobility and its relationship to school achievement was examined in this study of eighth-grade students in the Saskatoon, Saskatchewan public schools. The 77 pupils were divided into seven groups according to their past mobility, if any. Data were gathered on intelligence and reading, language, and arithmetic levels as well as on grade 8 year-end averages and occupations of pupils' parents. Null hypotheses were proposed that the seven groups did not differ significantly on intelligence or achievement scores, on proportions of pupils who had repeated grades or received conditional promotions, and on proportions of pupils whose parents fell into each of five occupational areas. Almost no significant differences in school achievement were found between nonmobile and mobile students. The author suggested that the individualization of instruction was probably the best way to counter problems of pupil mobility. References are included.

Section 7: Neurological Factors

Ayres, A. Jean. "Deficits in Sensory Integration in Educationally Handicapped Children," Journal of Learning Disabilities, 2 (March 1969) 160-68.

An endeavor was made to discover and define clusters of neurobehavioral parameters in educationally handicapped children. Thirty-six children with an age range of 6.0 to 9.10 were used in an indepth study. A factor analysis was based on 64 scores reflecting reading, spelling, arithmetic, neuromuscular, perceptual and cognitive measures. These scores were standardized normatively across and within subjects. A between-subjects correlation was then computed. Six factors were yielded by a Q-technique factor analysis. The first factor was identified as involving auditory-language functions, sequencing, reading achievement, and possibly a hemisphere-hand dominance discrepancy. A recurrence of test scores on several factors suggested a syndrome of disorders in postural and bilateral integration. Tables and references are included.

Bakker, Dirk J. "Sensory Dominance and Reading Ability," Journal of Communication Disorders, 1 (n. m. 1967) 316-18.

The relation between visual and tactile-kinaesthetic modality and reading competency was tested with 100 7- to 11-year-old Dutch boys and girls matched on age. The subjects were asked to place a slide in the center of a 24 cm bar. They were each given 50 trials, 25 visual and 25 blindfolded. The mean deviation of tactile placement was subtracted from the mean deviation of visual placement (VSD). The correlations between the VSD and age and sex were not significant. Within the low IQ group, the VSD-reading score relationship was significant. The VSD-reading relationship was not significant within the high IQ group. References are included.

Balow, Irving H. "Lateral Dominance Characteristics and Reading Achievement in the First Grade," Journal of Psychology, 55 (April 1963) 323-28.

A study to determine whether hand or eye dominance, lack of dominance, crossed dominance or directional confusion are significantly associated with reading achievement in the first grade was conducted in an upper-middle class suburb of St. Paul, Minnesota. Thirteen first-grade classrooms were randomly selected and the children in these classes constituted the sample. At the beginning of the school year the children were individually tested with the Harris Tests of Lateral Dominance by the investigator. The Gates Reading Readiness Tests were administered during the second and third weeks of school by the investigator and the classroom teacher. In December the Lorge-Thorndike Intelligence Test was administered, and in the last week of February the Gates Primary Reading Tests, PWR-Word Recognition and PPR-Paragraph Reading. To test the influence of dominance, subjects were classified according to hand and eye preference of mixed dominance. To test the influence of directional confusion the subjects were classified as normal, hesitant or confused as to knowledge of right and left. Among the classifications imposed on the 302 children used in this study, no combination of lateral dominance characteristics associated significantly with reading achievement. Conclusions are listed. Tables and references are provided.

Bateman, Barbara. "Learning Disorders," Review of Educational Research, 36 (February 1966) 93-119.

A review of the literature dealing with learning disorders is presented. Overviews and classifications are given. Areas considered are the etiology of learning disorders, characteristics of children with learning disorders, diagnostic testing, remediation of learning disorders, and issues and needed research. The review does not cover the literature dealing with emotional disturbance as a primary etiological factor in learning disorders. Coverage of the area of learning disorders involving reception and expression of the spoken word is limited. A bibliography is included.

Belmont, Lillian and Birch, Herbert G. "Lateral Dominance, Lateral Awareness, and Reading Disability," Child Development, 36 (March 1965) 57-71.

The relationship between lateralization of function, lateral awareness, and reading disability was studied in a sample of 200 boys selected from the total population of 9- and 10-year-old boys attending school in Aberdeen, Scotland. It was found, in the representative sample used in this analysis, that lateral dominance bears no relation to reading dysfunction, but that right-left awareness does. The specific tests used to determine hand and eye preference and awareness of right-left relations are described, as are the rating criteria for lateral dominance. Comparisons between the two groups are made in table form. Findings are compared with those of other investigators who used samples which might have contained selection bias. References are included.

Boshes, Benjamin, and Myklebust, Helmer R. "A Neurological and Behavioral Study of Children With Learning Disorders," Neurology, 14 (January 1964) 7-12.

In order to analyze possible relationships between minimal brain disorders and specific learning deficiencies, 85 children or normal IQ, aged 7 through 18, who were failing in school, underwent neurological and electroencephalographical studies. The children were divided into Negative, Suspect, and Positive Groups on the basis of neurological findings, and compared on 21 behavioral characteristics, including 11 subtests of the Wechsler Intelligence Scale for Children, age, social maturity, silent and oral reading, syllabication, auditory blending, and spelling. Comparisons on each of the 21 criteria revealed no significant differences, suggesting no quantitative relationship between neurology and behavior. However, qualitative computer analysis revealed several correlation trends which varied among the three groups. For example, the negative correlation between age and object assembly, digit span, and oral reading increased with age and poor neurological status, suggesting decreased ability to show expected maturation. Therefore, neurological integrity is apparently more closely related to behavior than previously assumed, and further investigations along this line are called for. Tables, charts, and bibliography are included.

Capobianco, R. J. "Ocular-manual Laterality and Reading in Adolescent Mental Retardates," American Journal of Mental Deficiency, 70 (March 1966) 781-85.

Mentally retarded subjects offer a fertile field for the investigation of the effects of laterality on reading performance. On a series of reading tasks which included mirror-image and traditional words as well as the Wide Range Achievement Test, a group of 24 subjects with nonestablished ocular-manual laterality surpassed the performance of 38 subjects with established laterality preference. These results substantiate the findings of

recent research with normal subjects which indicate no significant difference in reading achievement between these groups and questions the need for laterality testing of clinical cases. References are listed.

Cawley, John F. and Goodman, John O. "Interrelationships among Mental Abilities, Reading, Language Arts, and Arithmetic with the Mentally Handicapped." The Arithmetic Teacher, 15 (November 1968) 631-36.

All the children in primary through junior high special classes in one eastern city were administered the Science Research Associates Primary Mental Abilities Tests (PMA) and the SRA Achievement Series. Intercorrelation coefficients were calculated. Significant correlations were obtained between reading scores and all PMA subtests for intermediate grade children and for all PMA subtests except space for primary grade children. Reading and arithmetic subscores correlated significantly, except for computation, at the primary grades. For the middle grades, higher coefficients among all subtests were obtained than for the primary grades. Implications for arithmetic instruction for the mentally handicapped are discussed at length. Tables are given.

Chakrabarti, Jayanti and Barker, Donald G. "Lateral Dominance and Reading Ability," Perceptual and Motor Skills, 22 (June 1966) 881-82.

A correlational analysis of reading and laterality variables of 41 left-handed and 311 right-handed male freshman students is reported. The Nelson-Denney reading test scores on vocabulary, comprehension, and rate of reading for each student was obtained and each variable was correlated with handedness. Results indicated--(1) no significant correlation between left-handedness and reading achievement scores, (2) no significant difference between mixed-correlations and reading ability, and that (3) mixed laterality exhibited a significant relationship with left-handedness. Further research with females and children of all ages is suggested.

Cohen, Alice and Glass, Gerald G. "Lateral Dominance and Reading Ability," The Reading Teacher, 21 (January 1968) 343-48.

A study investigated the existence and extent of a relationship between lateral dominance and reading ability. The Alpha Otis Test, Form As, was given to the 120 subjects, 30 good readers and 30 poor readers in the first and fourth grades, chosen randomly from four schools. IQ range was 91 to 109, and reading category was good or poor as determined by teacher evaluation on report cards. IQ scores were rank ordered and the Mann Whitney U Test used to determine placement of good and poor readers within the IQ range. Significant relationships were found to exist in first graders between knowledge of left and right and reading ability, and between hand dominance and reading ability. Fourth-grade children were

found to be significantly less confused in their knowledge of left and right than first graders. Right-handed children were more likely than left-handed children to know left from right. At the first-grade level IQ and reading were not related. At the fourth-grade level this relationship was significant. The study suggests that a relationship between lateral dominance and reading ability exists at the first-grade level but later is replaced by a relationship between intelligence and reading ability. It was concluded that further study of these relationships is warranted. References are included.

Cohn, Robert. "The Neurological Study of Children with Learning Disabilities," Exceptional Children, 31 (December 1964) 179-85.

Equating minimal neurological signs with minimal brain damage is untenable in the present state of knowledge, for people with apparently great neurological damage have been known to function well with only minimal neurological symptoms while some with few or no signs have exhibited gross neurological dysfunction. For the neurological examination to be valid, it must encompass complex behavioral phenomena, as well as classical motor and sensory functions. The basic treatment of neurological language disturbances in school age children appears to require almost complete individualization because so little is known about precise causes due to lack of chemical-pathological correlation of data or ignorance of chemical determinants. Thus the accent must be away from correction and towards growth through the available, intact systems. References are included.

Coleman, Richard I. and Deutsch, Cynthia P. "Lateral Dominance and Right-Left Discrimination: A Comparison of Normal and Retarded Readers," Perceptual and Motor Skills, 19 (August 1964) 43-50.

A study examining relationships among lateral dominance, right-left discrimination, and reading retardation in lower socioeconomic background public school children is described. Subjects were divided into three groups: Group 1--56 male retarded readers, 9.5 to 12.3 years old; Group 2--28 boys, 7 girls, 10.3 to 12.0-year-old normal readers; Group 3--26 boys, 4 girls, retarded readers, same age as Group 2. Testing instruments were the Wechsler Intelligence Scale for Children, Gates Advanced Primary Reading (Paragraph Reading), Gates-McKillop Reading Diagnostic Tests (Oral Reading), Roswell Word Parts Tests (Sounds, Words, Syllables), Harris Tests of Lateral Dominance, and Benton Right-Left Discrimination Test. No significant differences between normal and retarded groups on the Harris and Benton tests were found. Results indicating that laterality difficulties do not always accompany reading retardation in children 10 years and older are reported. Tables and references are given.

De Hirsch, Katrina. "Concepts Related to Normal Reading Processes and Their Application to Reading Pathology," Journal of Genetic Psychology, 102 (June 1963) 277-85.

Some aspects of normal reading processes pertinent to children suffering from severe reading disturbances are presented. The interrelationship of physical and mental functions in reading are described. Conflicting views on whole-part learning as applied to the reading process, with particular emphasis on the Gestalt approach, are examined. Whole-part disabilities of dyslexic children are discussed. It is concluded that skilled reading requires a high degree of integration and differentiation; these skills are generally found deficient or lagging in dyslexic children. Implications for remediation of severely disabled readers are given. A bibliography is included.

Denomme, Sister M. Yvonne, IHM. Relationship of an Ocularmotor Variable to Reading Achievement and Feelings of Inadequacy. 69 p. (Ed.D., Wayne State University, 1967) Dissertation Abstracts, 29, No. 1, 144-A. Order No. 68-9956, microfilm \$3.00, xerography \$3.80 from University Microfilms.

The relationship of reading achievement to the ocularmotor skills of left-to-right motion and pursuit was investigated. Secondary purposes of the investigation were to determine the degree to which training in these skills would improve the results of the usual remedial reading procedures and to study the possibility of increasing adequacy feelings with the same training procedures. Thirty-six subjects, ranging from 6½ to 9 years of age, were selected on the basis of good health, average or better intelligence, middle-class socioeconomic status, and the presence of both parents in the home. They were paired-matched by age and sex and randomly distributed between the experimental and control groups. Both groups were pretested and post-tested and received regularly planned remedial reading instruction. In addition, the experimental group had 10 minutes of daily practice on the Manoculator, a training device for the above-specified ocularmotor skills. After 6 weeks, it was concluded that a remedial reading program with training in ocularmotor skills produced greater reading improvement than a remedial reading program without such training.

Doehring, Donald G. Patterns of Impairment in Specific Reading Disability. A Neuropsychological Investigation. (Bloomington, Indiana: Indiana University Press, 1968) 193 p.

Scores on 109 measures of sensory, motor, perceptual, and verbal abilities were statistically interrelated and compared to reading scores, neurological examinations, and case histories of 39 retarded readers. These retarded readers, 10 to 14 years old, were compared with 39 normal boys matched on age and performance IQ. All subjects had Wechsler-Bellevue

Performance IQ's of 90 or above. The normal readers were found to be superior in 62 of the 109 measures and analyzed. The deficit pattern was characterized by an interaction of visual and verbal impairment, involving both verbal (visual and auditory) and nonverbal skills. The retarded readers significantly surpassed the normal readers on several tasks requiring somesthetic input, a finding that suggested immature perception. For retarded readers, visual and verbal sequencing were highly correlated with reading; for normal readers, oral vocabulary test scores correlated highly with the reading factor. The multiple stepwise regression analysis identified four tests other than those requiring reading or spelling that discriminated the two groups: word rhyming, oral vocabulary, discrimination of reversed figures, and visual perceptual speed. Neuropsychology tests adjudged a significantly larger number of retarded readers to have probable cerebral dysfunction. Tables and a bibliography are given.

Douglas, J. W. B.; Ross, J. M.; and Cooper, J. E. "The Relationship Between Handedness, Attainment and Adjustment in a National Sample of School Children," Educational Research, 9 (June 1967) 223-32.

A national random sampling of children 8, 11, and 15 years of age served as subjects in this assessment of the extent of association between lateral preferences and learning and behavior problems. Tests of verbal and nonverbal intelligence, reading, and arithmetic, as well as laterality tests served as measures of ability and accomplishment. For pupils of normal intelligence range there was no evidence that laterality of hand or eye related to performance in tests of ability and attainment, emotional development, or to speech disorders. Minor differences were accounted for by social class differences in hand usage. References are listed.

Eames, Thomas H. "Some Neural and Glandular Bases of Learning," Journal of Education, 142 (April 1960) 1-36.

Information concerning neural and glandular processes and how they are related to learning is summarized to help the teacher develop a practical understanding of his pupils. Teaching approaches for students with various learning problems are suggested. The article is divided into three chapters. Chapter 1, entitled "Some Neurological Bases of Learning" discusses memory and attention, the brain, word blindness, specific reading disability, oral and silent reading, the pupil with brain damage, laterality, laterality in speech and reading difficulties, transfer, intelligence, and emotion in the classroom. Chapter 2 is devoted to a discussion of some glandular bases of learning, and describes the functions and dysfunctions of the endocrine system, the pituitary, the thyroid, parathyroid, adrenal, pancreas, thymus, and sex glands. Chapter 3 reviews recent studies with implications for learning. A bibliography is included.

Farnham-Diggory, Sylvia, "Symbol and Synthesis in Experimental 'Reading'," Child Development, 38 (March 1967) 221-31.

Fifty normal boys and girls from the Los Angeles Public Schools System and 30 brain-damaged boys and girls from the Kennedy Child Study Center of Santa Monica, California, participated in a study to compare their ability on tasks of learning pictographs and logographs for eight words and then reading logograph sentences. All 80 of the children tested demonstrated perfect comprehension of the eight words. The results strongly suggest that children must achieve a state or stage of neurological readiness for conceptual synthesis. Skill in associating a graphic symbol with a word may be demonstrated by very young children two or three years before they can demonstrate skill in integrating the ideas the words represent. Further research into the development of integrative processes should utilize experimental reading codes that are not only less pictorial but also include signals for integrative operations. References are given.

Forness, Steven Robert. Lateral Dominance in Retarded Readers with Signs of Brain Dysfunction. 96 p. (Ed.D., University of California, Los Angeles, 1968) Dissertation Abstracts, 29, No. 6, 1779-A. Order No. 68-16,531, microfilm \$3.00, xerography \$5.00 from University Microfilms.

Lateral dominance of retarded readers having signs of brain dysfunction was studied. It was hypothesized, on the basis of past research, that such readers would show more anomalies in lateral dominance than would unselected retarded readers. Subjects were selected 8½- to 10-year-old students enrolled in a perceptual-motor training program at UCLA. They had normal verbal intelligence but were retarded more than 2 years in reading and were diagnosed as having signs of brain dysfunction. The Harris Tests of Lateral Dominance were used to compare them to a group of unselected retarded readers. Results did not indicate a significant trend of anomalies in lateral dominance among retarded readers having signs of brain dysfunction. There appeared to be no connection between brain dysfunction and anomalies of dominance.

Fox, Kathleen. The Relationship between Balancing and Reading Achievement in Children. 138 p. (Ph.D., University of Southern California, 1968) Dissertation Abstracts, 29, No. 1, 136-37-A. Order No. 68-10,229, microfilm \$3.00, xerography \$6.60 from University Microfilms.

According to recent investigations, there appears to be an important relationship between the development of perceptual-motor skills and the ability to read. This study was designed to ascertain whether normal children who perform well in balancing tasks are also good readers. Fifty-seven second and third graders were selected as subjects on the basis of their recorded school data regarding IQ, reading achievement, general good health, and normal visual and audio acuity. Fourteen balance tasks were performed by the children. A strong relationship between balance skill and reading skill was found.

Glass, Gene V. and Robbins, Melvyn P. "A Critique of Experiments on the Role of Neurological Organization in Reading Performance," Reading Research Quarterly, 3 (Fall 1967) 5-51.

A review is presented of 15 empirical studies of the effect of therapy to improve neurological organization--as defined and prescribed by Delacato--on reading performance. The studies are reviewed and evaluated in the light of the controls and reported statistical analyses. Possible invalidating influences in the experiments are identified. References are included.

Groff, Catherine Ann. An Investigation of the Relationship between Neurological Dysfunction and Reading Achievement. 113 p. (Ed.D., Indiana University, 1968) Dissertation Abstracts, 29, No. 7, 2035-A. Order No. 68-17,266, microfilm \$3.00, xerography \$5.60 from University Microfilms.

A possible relationship between manifest neurological dysfunctioning and reading achievement was investigated. It was hypothesized that abnormal reading rates correlate positively with neurological dysfunctioning, that socioeconomic level might mask a significant relationship of reading achievement and dysfunctioning, and that sex might mask a significant relationship between reading achievement and dysfunctioning. Three hundred third-grade pupils were selected from the low, middle, and high socioeconomic levels. All the subjects were administered a test for foot position while creeping, a Schilder Arm Extension Test, a dominance test, an intelligence test, and a reading test. Sixty of the children tested were found to be a year below reading level while having an IQ score of 80 or more. Of these, four from each of the socioeconomic levels were randomly selected for examination by the neuropsychiatrist and the nurse. The causes of reading retardation hypothesized by the investigator were not borne out by the experimental results. However, a higher incidence of neurological dysfunctioning was encountered in the low socioeconomic level.

Hafner, Margaret Smith. Motor Control and First Grade Reading Difficulties. 159 p. (Ph.D., Syracuse University, 1968) Dissertation Abstracts, 29, No. 11, 3913-A. Order No. 69-7743, microfilm \$3.00, xerography \$7.40 from University Microfilms.

A group test of motor control, which would be suitable to beginning first-grade children, was developed. The use of pencil, crayon, and scissors in activities resembling requirements for first-grade writing, coloring, and cutting were central to the test design. The Hafner Evaluation Motor Control Abilities test was administered to 98 first graders, and comparisons with the Lincoln-Oseretsky Motor Development Scale, the California Achievement Tests, and the New York State Reading Readiness test were made. Of the measures used, only reading readiness correlated

higher with reading achievement than did the Hafner Motor Control tests, but such correlations were not sufficiently powerful to recommend use of the motor control test.

Hillerich, Robert L. "An Interpretation of Research in Reading Readiness," Elementary English, 43 (April 1966) 359-64, 372.

The results of 17 studies on reading readiness are summarized and interpreted. All but one of the studies were completed since 1957. Reading readiness is defined, and the differences between traditional and current theory are discussed. Studies of formal readiness instruction in kindergarten are described. Conclusions about kinds of readiness experiences, readiness tests, readiness studies, and the age when children begin readiness and reading instruction are drawn from the reported research. Implications for further research are included. References are given.

Isom, John B. "Neurological Research Relevant to Reading," Perception and Reading, Helen K. Smith, Ed. International Reading Association Conference Proceedings, 12, Part 4 (1967) 67-72.

Twenty-three studies of neurological development as it relates to reading are summarized. Cerebral dominance as it relates to vision, speech, and motor laterality preference; the "split-brain" syndrome; and sequencing are discussed as possible implements to the understanding of reading and reading disability. The author suggests that the assessment of neurological development must not fail to consider the variation in rate and degree of development of functions necessary to reading and that presumably abnormal neurological signs in children with reading disability must be compared with the frequency of their occurrence in a normal population of age peers. References are included.

Kingsley, Ronald F. "Associative Learning Ability in Educable Mentally Retarded Children," American Journal of Mental Deficiency, 73 (July 1968) 5-8.

The Gates Associative Learning Test was used to determine characteristics unique to mental retardates. Fifty-three subjects, ages 10 to 15 with IQ's from 53 to 76 in special classes in three randomly selected public schools in Syracuse, New York, were used. Analysis of variance showed the main effects of both figure and mode (auditory or visual) of presentation. Within-study comparisons with studies of higher grade mental defectives, retarded readers, and achieving readers were made using the t-test. In all four studies the largest number of correct associations resulted when the geometric figures were presented by the auditory

mode, and the lowest number when the word-like figures were presented by the visual mode. Tables and references are given.

Cluever, Raymond Clarence. A Study of Guilford's Memory Factors in Normal and Reading Disabilities Children. 146 p. (Ph.D., Northwestern University, 1968) Dissertation Abstracts, 29, No. 11, 3875-A. Order No. 69-6952, microfilm \$3.00, xerography \$7.00 from University Microfilms.

The mnemonic abilities of normal and disabled readers were compared on the basis of Guilford's 24-factor memory model. Measuring instruments for 14 of these factors have been developed. Since the sample consisted of 60 fourth-grade boys, the measuring instruments were adapted to that particular age group. Testing data were subjected to statistical analyses producing means, standard deviations, correlations, F-ratios, and t-scores. The findings indicated that disabled readers had lower mean scores in almost every instance than did normal readers. The Digit Span Test was the only exception. The researcher concluded that memory, as proposed in the Guilford model, is different in normal and disabled readers. This conclusion seems to be borne out by an analysis of the Contents of Memory and the Products of Memory and by the sensory input and output channels used to measure memory.

MacLean, George R. and Kean, Edward B. "Evaluation of Quantitative Data for Hand-Eye Coordination with Respect to Determining Its Correlation with Reading Disability," Multidisciplinary Aspects of College-Adult Reading, G. B. Schiek and M. M. May, Eds. National Reading Conference Yearbook, 17 (1968) 96-102.

A hand-eye coordination test was administered by machine to 2,000 subjects in the even-numbered grades 2 through 12, plus grades 7 and 9 and correlated with reading achievement test scores. The test included six subtests in which the right and left hands were used with both eyes and with right eye and left eye. The coefficient of correlation between scores on this test and reading level at sixth grade was .198, and the authors commented that coefficients were similar at the other grades tested. References and tables are given.

McDonald, Arthur S. "What Current Research Says About Poor Readers in High School and College," Journal of Developmental Reading, 4 (Spring 1961) 184-96.

Current research about deficient readers in high school and college is analyzed. Studies that describe physical factors, intellectual factors, deficiency symptoms, home influences, educational factors, emotional factors and use of leisure time are summarized. It was concluded

that reading disability in high school and college students originates from multicausal factors and psychological functions. It is suggested that reading instruction should include personal and social adjustment. A bibliography is included.

Reed, James C. "Lateralized Finger Agnosia and Reading Achievement at Ages 6 and 10," Child Development, 38 (March 1967) 213-20.

The relationship between lateralized errors in finger localization and reading achievement at two developmental levels was determined. The levels were grades 1 and 5. Subjects were selected according to their performance on a finger localization test. At each grade level two groups evolved--those with more errors on their right hand (RLG) and those with more errors on their left hand (LLG). The Wechsler Intelligence Scale for Children (WISC) and a reading achievement test were administered. At neither level were differences in intelligence scores significant. By using a multiple covariance analysis, it was found that there was no statistical difference between unadjusted or adjusted reading achievement means of the two groups. At the fifth-grade level, the reading achievement scores of the LLG were higher than those of the RLG. Conclusions and references are included.

Rutter, M., et al. "Severe Reading Retardation: Its Relationship to Maladjustment, Epilepsy and Neurological Disorders," What Is Special Education? Proceedings of the First International Congress of the Association for Special Education, 1 (1966) 25-28.

A total population study, involving approximately 2,300 children born on the Isle of Wight from September 1953 to August 1955 was designed to provide information for use in planning educational services and for identifying conditions associated with reading backwardness. First the total population was screened, and then 9- to 12-year-old children who might be expected to have conditions of interest to the researchers were studied. On the basis of test results, it was found that 86 children were severely retarded in reading, 126 children were maladjusted or possessed some psychiatric disorder, and 62 children were afflicted with epilepsy or some neurological disorder. A total of 10.3 percent of the children studied had at least one of the conditions stated. Of these, only 22 of the 86 were receiving reading instruction; 17 of the 92 were receiving needed psychiatric treatment. It is suggested that further research be done to follow the course of reading disability and to investigate responses to various remedial treatments. A bibliography and tables of results are included.

Silver, Archie A. and Hagin, Rosa. "Specific Reading Disability: Delineation of the Syndrome and Relationship to Cerebral Dominance," Comprehensive Psychiatry, 1 (April 1960) 126-34.

A neurological and perceptual study of 150 children between 8 and 14 years of age suffering from word blindness, stepho-symbolia, specific dyslexia, and developmental alexia revealed that 92 percent exhibited a marked syndrome. Characteristic of this syndrome were defects in right-left discrimination; discrepancy between writing hand and elevated extremity in extension testing; postural, visual, and motor responses less mature than the chronological age or IQ of the child; marked difficulty in figure-background perception; inability to grasp temporal relationships of sounds; and body image distortion. Electroencephalograms done in 15 cases were disrhythmic and suggested immaturity. Eight percent of the children tested revealed none of these symptoms and were classified "emotional," while 22 percent of the total group revealed organic signs of structural damage. A followup study revealed that maturation in specific areas of difficulty occurs, but that diagnosis of defects aids in selecting appropriate therapy for all but those with structural damage, for whom treatment is difficult. A bibliography is included.

Stephens, Wyatt E.; Cunningham, Ernest S.; and Stigler, B. J. "Reading Readiness and Eye Hand Preference Patterns in First Grade Children," Exceptional Children, 33 (March 1967) 481-88.

To assess the idea that mild neurological dysfunction as evidenced by crossed eye-hand preference patterns interferes with the learning of reading skills, comparisons were made of reading readiness test results for 89 first-grade children, 44 boys and 45 girls. Comparisons on the basis of sex and of eye-hand preference patterns yielded no significant differences in levels of reading readiness. Findings suggest that minimal brain dysfunction theories may be unsuitable for explaining reading disability. Further Research is recommended. References are listed.

Tinker, Karen J. "The Role of Laterality in Reading Disability," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 300-03.

The relationship between scores on tests of laterality and scores of a test of reversals was studied. Subjects were 67 disabled readers who were chosen from 591 elementary school children in grades 2, 4, and 6. Children were considered disabled if their reading age was significantly lower than their mental age. The disabled readers were matched with normal readers on sex, grade, mental age, chronological age, and intelligence. Tests administered were the Gates Primary Reading Tests of Gates Survey, Ammons Full Range Picture Vocabulary Test, three tests of laterality, "Recognition of Reversible Words in Context" section of the Bond-Clymer-Hoyt,

a devised reversibility test, and the Keystone Visual Survey. The Pearson product-moment correlation was used to analyze the data. The scores of disabled readers on the laterality tests correlated positively to scores on the reversal tests. Subjects making normal progress in reading showed no significant relationship between reversal errors and laterality. Tables and references are included.

Wold, Robert M. "Dominance--Fact or Fantasy: Significance in Learning Disabilities," American Optometric Association Journal, 39 (October 1968) 908-15.

Studies pertaining to the Orton theory of cerebral dominance and reading, writing, and speech problems are examined. Further, a specific test battery was used to determine the relationship between learning disabilities and cerebral dominance. The author concludes that a relationship between crossed hand and eye dominance may exist. Truly sound results will only be obtained by comprehensive research analyzing above-average and normal reading groups, as well as reading disability cases. An appendix and a bibliography are included.

Zeman, Samuel Steve. "A Summary of Research Concerning Laterality and Reading," Journal of the Reading Specialist, 6 (March 1967) 116-23.

Fourteen summary research abstracts of studies concerned with the relationship between laterality and reading achievement are presented. Twelve studies showed no significant relationship between these variables. The findings of one of these 12 studies indicated that mixed dominant children had slightly greater difficulty identifying right and left. Another study found that slight differences in reading achievement favored left-handed children. Other results indicated no differences in general reading achievement, but a slight difference in reading rate favoring a right-handed group of high school seniors. Results obtained from a group of 52 children in second grade indicated that left-eyedness and left-handedness were associated with preference for the right visual field as well as with low scores on standardized reading and intelligence tests. A wide variety of subjects and techniques were used in these studies which were reported in various professional journals from 1934 to 1964.

Section 8: Intelligence

Blake, Kathryn A., et al. Learning of Basal Reading Skills by Mentally Handicapped and Non-Mentally Handicapped Pupils. 745 p. (OEG-32-20-0450-1032, Georgia University, Athens, 1967) ED 014 406, microfiche \$0.65, hard copy \$19.74 from EDRS.

An investigation of the achievement in basal reading skills by mentally handicapped, intellectually normal, and superior pupils taught with the Scott, Foresman new basic readers program at reading instructional levels 2, 3, 4, and 5 is reported. Specific research objectives were: (1) to identify sequences among basal reading skills in five categories (phonetic analysis, structural analysis, dictionary, word functions, and comprehension); (2) to examine intellectual processes related to achievement in selected basal reading skills (associative memory, conceptualization, verbal meaning, and reasoning); (3) to describe trends in achievement in basal reading skills over the instructional levels studied; (4) to compare retarded and normal groups' beginning levels and achievement in the basal skills for a 7-month instructional period; and (5) to compare normal and superior groups' beginning levels and achievement in the basal skills for a 7-month period. Subjects were 947 pupils from three Georgia school systems. A test-retest design was used. Investigation procedures and methods of data analysis are described. Over 150 tables and figures are presented. Specimen tests and basic statistical data are appended.

Bliesmer, Emery P. "A Comparison of Results of Various Capacity Tests Used with Retarded Readers," Elementary School Journal, 56 (May 1956) 400-02.

The degree of similarity among estimates of reading capacity yielded by each of four capacity tests and the extent to which results obtained with the group tests sufficiently approximate results obtained with an individual test were investigated in a Texas city school system in the fall of 1954. The Revised Stanford-Binet Scale, Form L, Kuhlmann-Anderson Tests (sixth edition), the California Short Form Test of Mental Maturity, and the Durrell-Sullivan Reading Capacity Test were given to approximately 80 retarded readers in grades 4 through 7 who were enrolled in a reading clinic. Complete data were available for 68 children. Seven sets of scores, including the three scores yielded by the California test and the median value of the California, Durrell-Sullivan, and Kuhlmann-Anderson tests, were computed and correlated. Three conclusions were reached: (1) the Durrell-Sullivan test gives the highest estimate of reading capacity, followed by the Stanford-Binet; (2) the utilization of median values of Kuhlmann-Anderson, Durrell-Sullivan, and California total scores does not aid greatly in approximating Stanford-Binet estimates; and (3) none of the group tests yields estimates which are adequate approximations of Stanford-Binet estimates. A table is included.

Bowers, Joan E. "A Study of Children with Unusual Difficulty in Reading and Arithmetic," Canadian Education and Research Digest, 4 (March 1964) 273-78.

The age, sex, and intelligence of the members of a random sample of 40 children making less than average progress in their first year of formal education were studied. Each principal concerned was interviewed and

requested to suggest the causes of the retarded progress and to inform the writers of sensory defects. The group of children containing twice as many boys as girls was average in respect of Wechsler intelligence quotients. Causes of slow progress are discussed. Future study plans are given.

Cellura, A. Raymond and Butterfield, Earl C. "Intelligence, the Bender-Gestalt Test, and Reading Achievement," American Journal of Mental Deficiency, 71 (July 1966) 60-63.

An attempt to clarify relationships between Bender-Gestalt performance and academic achievement is reported. Two groups of mentally retarded institutionalized children were matched on chronological age (CA), mental age (MA), and IQ. The children differed in reading achievement. The Pascal and Suttell and the Koppitz techniques were used as criterion measures. Bartlett's test of homogeneity of variance revealed no significant differences between the two groups. Results indicated no relationship between Bender-Gestalt scores after the effects of CA, MA, and IQ had been eliminated. Findings cast doubt upon the conclusion that Bender-Gestalt performance per se is related to general achievement. References are listed.

Chansky, Norman M. "Age, IQ, and Improvement of Reading," Journal of Educational Research, 56 (April 1963) 439.

A study of the relationship of age and IQ to the improvement of reading was made. Forty-one elementary students registered in the Remedial Reading class of Central School, Highland, New York, were administered alternate forms of the Gates Reading Survey in pre-sessions and post-sessions. The California Short Form Test of Mental Maturity was administered to the children at the beginning of the school year. Age or some correlate of it, perhaps history of failure or responsiveness to small-group instruction was found to be related to improvement in reading. A criterion other than mental ability could be needed in making selections for classes in Remedial Reading. A reference is included.

Coleman, James C. and Rasof, Beatrice. "Intellectual Factors in Learning Disorders," Perceptual and Motor Skills, 16 (February 1963) 139-52.

A study of the intellectual factors in learning disorders are given. Questions were raised as to whether or not the learning disorder population shows a distinctive pattern of intellectual abilities of intellectual abilities, and, if so, what this pattern means in relation to diagnosis and treatment. One hundred and twenty-six underachievers and 20 over-achievers referred to the Psychology Clinic School at the University of

California were studied. All underachievers were one or more years retarded in achievement in relation to their age and grade placement as reflected on the California Achievement Test (CAT) or the Stanford Achievement Test (SAT). The chronological age range was from 7.5 to 16 with a mean of approximately 11. The overachievers were one or more years advanced in relation to age-grade expectancy as reflected by scores on the CAT or SAT. The chronological age range was from 10 years to 15 years with a mean of slightly over 12. Analysis of variance was utilized in the treatment of data. Underachievers scored significantly low on Wechsler Intelligence Scale for Children (WISC) subtests heavily loaded with school-type learning, sustained concentration and memory factors. Conversely, they made significantly high scores on the WISC subtests heavily loaded with perceptual organization and informal learning. Overachievers experiencing serious academic difficulties showed a characteristic WISC pattern having high scores on subtests heavily loaded with school type learning and a significantly lower mean score on the Performance as contrasted with the Verbal Scale. Other results are discussed. Tables, figures, and references are included.

DeBruler, Ralph Miles. An Investigation of Relationships between Subtest Scores on the Wechsler Intelligence Scale for Children and Reading Ability. 119 p. (Ed.D., University of Oregon, 1967) Dissertation Abstracts, 29, No. 1, 143-44-A. Order No. 68-9986, microfilm \$3.00, xerography \$5.80 from University Microfilms.

Children who are retarded readers but of average intelligence were studied in order to determine whether their intellectual abilities differed in any systematic way from children of average IQ and average reading ability. The Wechsler Intelligence Scale for Children was given to two groups of 70 seventh-grade children who were matched in IQ, age, sex, school grade, socioeconomic level, and educational background, but who differed in reading ability. It was concluded that Arithmetic and Coding are consistently low and Picture Completion consistently high among reading disability cases. It was also found that girls in both the average and retarded reading groups differed from boys more in Verbal Scale scores and less in Performance Scale scores.

Dunn, James A. "Inter- and Intra-Rater Reliability of the New Harris-Goodenough Draw-A-Man Test," Perceptual and Motor Skills, 24 (February 1967) 269-70.

The new Harris-Goodenough Draw-A-Man test was administered to 36 boys and 36 girls in grades 1 through 6 in order to estimate interrater and intrarater reliabilities of the Harris scoring system. The Harris revisions of the Goodenough test included a more extensive scoring system, using deviation rather than mental age and IQ, and added a Draw-A-Woman form. The Pearsonian coefficients were .88 and .93, respectively.

Comparisons with the literature suggested that the test scores produced by the revised scoring procedure did not have greater reliability than those produced by the Goodenough method. References are included.

Dunn, James A. "Validity Coefficients for the New Harris-Goodenough Draw-A-Man Test," Perceptual and Motor Skills, 24 (February 1967) 299-301.

Goodenough Draw-A-Man scores were correlated with Wechsler Intelligence Scale for Children (WISC); Stanford-Binet Form L-M; California Mental Maturity; and Iowa Achievement Test scores, obtaining three validity estimates. In the first study, Stanford-Binet and Draw-A-Man tests were administered to 32 children, aged 6 to 10, selected at random from suburban schools. Ninety-three randomly selected suburban children, aged 6 to 15, took the WISC and Draw-A-Man tests for the second study. In the third study the Draw-A-Man, the California Test of Mental Maturity, and the Iowa Test of Basic Skills were given to 90 similarly selected children. Moderate to good correlation resulted for individual IQ scores, but correlation with group test IQ's was poorer. There was no correlation between Draw-A-Man IQ's and academic achievement test scores, indicating that other factors than academic ones were being measured.

Ekwall, Eldon Edward. The Use of WISC Subtest Profiles in the Diagnosis of Reading Difficulties. 335 p. (Ed.D., University of Arizona, 1966) Dissertation Abstracts, 27, No. 4, 950-51-A. Order No. 66-10,207, microfilm \$4.30, xerography \$15.10 from University Microfilms.

In order to ascertain characteristic subtest profiles as well as to compare profiles of bilingual and monolingual retarded readers and to correlate test data with reading and other abilities, 43 fourth-, fifth-, and sixth-grade retarded readers of normal IQ, 21 of whom were bilingual and 22 monolingual, took the Wechsler Intelligence Test for Children (WISC) as well as five other tests. Resulting WISC scores indicated such things as: (1) significantly low scores in information, comprehension, arithmetic, and digit span, and significantly high scores on picture arrangement and completion, object assembly, and coding; (2) significantly higher scores for bilinguals in arithmetic and coding and for unilinguals in information and vocabulary; and (3) variance of WISC profiles according to the degree of retardation. Knowledge of these and the other conclusions can assist reading teachers to use WISC profiles to diagnose specific areas of individual difficulty in order to devise better methods of corrective instruction.

Fransella, Fay and Gerver, David. "Multiple Regression Equations for Predicting Reading Age from Chronological Age and WISC Verbal I.Q.," British Journal of Educational Psychology, 35 (February 1965) 86-89.

To assist clinical and educational psychologists in comparing a child's reading attainment on the Schonell Graded Word Reading Test with that expected from one of his age and IQ, three multiple regression equations are presented. These enable the psychologist to predict Reading Age on Schonell's test from a given chronological age and Wechsler Intelligence Scale for Children Verbal IQ. The greatest use for these equations is that they allow a fairly accurate assessment as to what the reading age of a child should be in relation to his age and IQ. The equations were calculated from data relating to 500 children tested at the Children's Department of the Mandsley Hospital, with the Schonell Graded Word Reading Test and Wechsler Intelligence Scale for Children. Separate predictor equations are presented for age groups 6.2 to 9 years, 10 to 12 years, 13 to 15 years, because of the differing correlations between reading age and IQ, which are found with increase in chronological age. The fact that the present sample is drawn from an abnormal population means that no generalization about this finding can be made. References are given.

Frost, Barry P. "The Role of Intelligence 'C' in the Selection of Children for Remedial Teaching of Reading," Alberta Journal of Educational Research, 9 (June 1963) 73-78.

The relationship between intelligence and reading improvement was investigated. The Schonell Silent B test was administered to all students who entered a secondary school in England. Those who scored below 10 years on this test were given the Raven Progressive Matrices, the Mill Hill Vocabulary Scale, and the Holborn Reading Scale, and put into remedial classes. Children were retested with the Holborn Scale 10 months later. Scores for 70 boys and 30 girls were available for analysis. The increase in reading age was correlated with the Raven P.M. scores, the Mill Hill Vocabulary scores, and the combined Raven and Mill Hill scores. Thirty-five pupils left the remedial groups after 5 months and their scores were correlated the same as the 10-month group. The Pearson product moment coefficient of correlation was used to analyze the data. The relationship between gain in reading age and intelligence was significant. The use of the combined intelligence test as a selective procedure for remedial classes is discussed. References are included.

Graham, E. E. and Kamano, D. "Reading Failure as a Factor in the WAIS Subtest Patterns of Youthful Offenders," Journal of Clinical Psychology, 14 (July 1958) 302-05.

The hypothesis that the criminal unsuccessful reader (UR) would produce a psychopathic profile on the Wechsler Adult Intelligence Scale (WAIS) although the criminal successful reader (SR) would not was studied. Randomly selected inmates of a federal correctional institution were administered the reading section of the Jastak Wide Range Achievement Test and divided into groups of UR's and SR's. None of the subjects was less than

16 years or more than 17 years 11 months of age; all were white. Both groups were administered the WAIS. The 33 UR's were found to be inferior to Wechsler's standardization group and to the 35 SR's in verbal subtests and Digit Symbol and their psychogram was similar to that typical of the youthful psychopath. The SR's did equally well on verbal and on performance subtests; their psychogram did not resemble that considered typical of the youthful psychopath. References and tables are included.

Hage, Dean S. and Stroud, James B. "Reading Proficiency and Intelligence Scores, Verbal and Nonverbal," Journal of Educational Research, 52 (March 1959) 258-62.

An investigation, the purpose of which was to determine for a particular set of conditions some relationships among reading proficiency, verbal, and nonverbal intelligence scores, is described. The Lorge-Thorndike Intelligence Tests, the Pressey Reading Rate and Comprehension tests, and the Iowa Tests of Basic Skills were used in the analyses. The tests were administered to all subjects, 800 ninth-grade pupils, comprising the entire ninth-grade enrollment in 10 public schools in Northeastern Iowa. The intercorrelations among the scores on the tests were computed and are presented in tabular form. Correlations between each of the Iowa Tests of Basic Skills subtests and (1) verbal raw score and (2) nonverbal raw scores with reading comprehension and in turn reading rate partialled out were also computed. The assumptions underlying the statistical procedures are explained. Reading comprehension and reading rate correlated significantly both with the verbal and nonverbal intelligence scores, but more highly with verbal scores. Partial and multiple correlation analyses suggested that verbal scores are affected more than nonverbal scores by reading proficiency. Further, the data suggested that at all levels of reading proficiency verbal intelligence scores give a somewhat better prediction of academic achievement than do nonverbal scores, although in the case of arithmetic the difference is so slight as to have no practical significance. Tables and footnotes are given.

Hartoonian, Berj. "Intellectual Abilities and Reading Achievement," Elementary School Journal, 66 (April 1966) 386-92.

The relationship between reading and measures of various intellectual processes included in Guilford's theoretical model was studied. Subjects were 513 seventh and eighth graders in two suburban Philadelphia schools. Abilities of the subjects were identified by the California Test of Mental Maturity, Long Form, (average IQ 114) and either the California Achievement Tests or the Iowa Every-Pupil Tests of Basic Skills. In addition, 15 predictor tests isolating such factors as word-fluency, ideational fluency, conceptual foresight, closure (visual cognition and figural redefinition), and judgment or evaluation were administered. Coefficients of correlation between reading achievement and the 15 predictor tests and

beta coefficients for the multiple-regression equation were determined. The results of each correlation are discussed. It is concluded that the most important factors relevant to reading are thinking abilities such as judgment, evaluation, and conceptual foresight. Tables and references are given.

Hirst, Lynne Schellberg, "The Usefulness of a Two-Way Analysis of WISC Sub-Tests in the Diagnosis of Remedial Reading Problems," Journal of Experimental Education, 29 (December 1960) 153-60.

The usefulness of a two-way method of analyzing the scatter of subtest scaled scores on the Wechsler Intelligence Scale for Children to improve the diagnosis of reading disability was investigated. The two most common methods of analysing the scatter of the subtest scores are to relate the scores to a scaled score mean of ten and to relate the scores to the individual's own scaled score mean. Both methods are used in the two-way analysis developed by Miss Ella Bullis of the University of Wisconsin Reading Clinic and described here. The subjects were 30 children in the summer reading clinic at the University of Wisconsin. They were divided into two groups--severely and mildly retarded readers. When the two-way analysis was used, the differences between the severely retarded and the mildly retarded reading groups were striking in regard to certain subtests. The two-way approach to the analysis of subtest scatter appeared to present a more precise and meaningful analysis of intellectual functioning than did the unidimensional analysis of scatter. Figures, tables, implications for further research and references are included.

Krippner, Stanley. "Etiological Factors in Reading Disability of the Academically Talented in Comparison to Pupils of Average and Slow-Learning Ability," The Journal of Educational Research, 61 (February 1968) 275-79.

Etiological factors in reading disability for a high intelligence group were compared to those for average and low intelligence groups. All subjects were elementary and secondary pupils ranging from 7 years 1 month to 15 years 10 months in age. The 26 high intelligence subjects ranged from 113 to 128 in WISC IQ. The 146 subjects of average intelligence ranged from 88 to 112 in IQ. The 34 low intelligence subjects ranged from 70 to 87 in IQ. The subjects were administered several diagnostic tests to determine the etiology of their reading disabilities. When the etiological factors were divided into organic and functional categories, it was noted that the high intelligence group's disabilities were significantly more often functional in origin than were those of the other two groups. References and tables are included.

McLeod, J. "A Comparison of WISC Sub-Test Scores of Pre-Adolescent Successful and Unsuccessful Reading," Australian Journal of Psychology, 17 (December 1965) 220-28.

The scores on 11 Wechsler Intelligence Scale for Children subtests for 177 successful readers and 116 backward readers were compared. Analysis of covariance was used, with an adjustment of scores on the verbal, performance, and full intelligence scales respectively. Results indicated that the retarded reading group scored significantly lower than the successful group on information, vocabulary, arithmetic, digit span, coding, and on all verbal subtests. The retarded reading group scored higher on the picture completion subtest. Information, vocabulary, and arithmetic subtests correlated significantly with full scale and verbal scale IQ for both groups. Digit span and coding had no significant correlation with any IQ for either group. References are listed.

Neville, Donald. "The Relationship between Reading Skills and Intelligence Test Scores," The Reading Teacher, 18 (January 1965) 257-62.

This study has set out to answer three questions: (1) Does lack of reading ability negatively influence scores on verbally oriented group intelligence tests for fifth graders? (2) If there is such an influence, at what level does lack of reading ability affect the intelligence test results to a degree which would invalidate them? (3) Could a short, easily administered test of intelligence, the Peabody Picture Vocabulary Test (PPVT), neutralize the influence of poor reading ability to approximately the same degree as a longer, more difficult to administer test, the Wechsler Intelligence Scale for Children (WISC)? All of the 148 fifth graders in two upper-lower and middle class urban school were included in the study. Scores on the Metropolitan Achievement Test and the Lorge-Thorndike Verbal Battery, Form A, Level 3, IQ test were obtained from school records for each pupil. Students were then divided into three groups on the basis of reading achievement. Further grouping and testing were done. Careful answers to the initial three questions are offered in the results and conclusions. A table, a list of references, and comments are also included.

Neville, Donald. "Learning Characteristics of Poor Readers as Revealed by the Results of Individually Administered Intelligence Tests," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 554-59.

The performance of poor readers on individually administered intelligence tests was studied to relate training approaches to the deficits most frequently exhibited. The research used the Wechsler Intelligence Scale for Children (WISC) or another of the Wechsler scales, though, where possible, the Stanford-Binet and ITPA were also used. The PPVT was employed

only once. Data were collected by comparing the poor reader's total score with the subscores of the same test, by matching poor and good reader groups on their total and subscores, and by comparing good and poor reader groups selected on the criterion of IQ range. Twelve previous studies using WISC were also considered. It was found that poor readers were weak in verbal skills mainly related to school learning, in auditory and visual memory of nonmeaningful material, in organizing separate auditory or visual stimuli into meaningful wholes, and in visual discrimination and association. It was hypothesized that the deficiencies fall into two categories, those predating the reading disability and those resulting from it. Training approaches should stress those activities which would improve the predating group--auditory memory, visual memory association, organizing parts into wholes and deductive learning. A bibliography is given.

Nicholls, J. G. "Anxiety, Defensiveness, Self-esteem, and Responsibility for Intellectual Achievement: Their Relations to Intelligence and Reading Achievement Test Score," New Zealand Journal of Educational Studies, 2 (November 1967) 125-35.

The Test and General Anxiety Scales, the Defensiveness Scale for Children, the Lie Scale for Children, the Self-Esteem Inventory, the Intellectual Achievement Responsibility Questionnaire, and an intelligence and a reading achievement test were administered to 153 13-year-old children. Separate factor analyses for boys and girls revealed important sex differences: admission of anxiety by boys appeared indicative of adjustment difficulties; defensiveness was a more stable characteristic of boys than girls; girls had a less unified self-concept than boys. There was evidence of acquiescence in response style. Test anxiety and some aspects of self-esteem were related to intelligence and reading test scores. The possibility that the relation between self-esteem and scores on intelligence and reading tests can be explained in terms of test anxiety was noted. Tables and references are included.

Ravenette, A. T. "An Empirical Approach to the Assessment of Reading Retardation: Vocabulary Level and Reading Attainment," British Journal of Educational Psychology, 31 (February 1961) 96-103.

The procedure for selection of children for remedial reading in the authority of the County Borough of West Ham, England, an urban and highly industrialized area, is described. A vocabulary scale was used for predicting reading attainment from intelligence. Two basic tests were selected for the investigation: the Crichton Vocabulary Scale, because of its British standardization, and the Schonell Graded Word Reading Test, because of simplicity of administration and scoring. Intelligence was defined as the ability to define words presented orally, and reading ability as the ability to recognize words presented visually. The degree

of reading retardation was determined by the magnitude of the discrepancy between predicted and observed reading attainment, and was selected as one factor in deciding which children should be selected for remedial reading classes. First, second, and third year children, at the end of the school year, were used as subjects. Raw scores were used for the analysis of the results. Product-moment correlations were calculated for the three-year groups separately and for the overall data. Comparison of the separate regression coefficients for each year by analysis of variance, however, showed that the differences were not significant. Other findings are discussed. A description of the application of the test results and discussion of reliability, validity, and theoretical implications of the selection technique are included. References are listed.

Reed, James C. "Reading Achievement as Related to Differences between WISC Verbal and Performance IQ's," Child Development, 38 (September 1967) 835-40.

The relationships between differences in WISC verbal and performance IQ values and reading achievement at chronological ages 6 and 10 were investigated. Three groups were formed at each age level. Members of group 1 had a verbal IQ several points higher than performance IQ. Those in group 2 were the opposite. Members of group 3 were approximately equal in verbal IQ and performance IQ. Significant differences in reading achievement among the groups were found at chronological age 10, but not at chronological age 6. The results supported the hypothesis that the significance for reading achievement of differences between verbal and performance abilities is dependent upon stage of development. Tables and references are included.

Riley, Conal Stuart. "The Relationship Between Reading Ability and Verbal Intelligence Test Performance," British Journal of Educational Psychology, 36 (February 1966) 117.

The relationship between reading ability and verbal intelligence test performance was investigated. The investigation was carried out with 83 children in the 8 and 9 age group who comprised the second year of the junior school section of a Liverpool primary school. The Graded Reading Vocabulary Test R, the Essential Intelligence Test, and the Wechsler Intelligence Scale for Children (WISC) were used. The subjects were divided into above the median and below the median readers, and the correlation between the Essential Intelligence and the WISC was calculated for each group. A Chi-square test was carried out to find the relation between the IQ values given by the two tests. Discrepancies were observed to be in opposite directions for the two groups. Other results are given. References are included.

Robinson, Helen M.; Weintraub, Samuel; and Smith, Helen K. "Summary of Investigations Relating to Reading, July 1, 1965 to June 30, 1966," Reading Research Quarterly, 2 (Winter 1966-67) 1-141.

The findings of 306 reading studies reported from July 1, 1965, to June 30, 1966, are discussed. These studies are divided into six major categories: summaries of specific topics, teacher preparation, the sociology of reading, the psychology of reading, the teaching of reading, and reading of atypical learners. Studies cited within the psychology of reading category show an increased interest in intellectual abilities and creativity, personality and reading, and readability with emphasis on the cloze procedure. Those cited within the teaching of reading category show expanding research at the primary level. The need for additional research in the field of reading sociology is evident. Entries include journal articles, books, and conference proceedings. An annotated bibliography of the 306 titles is included.

Sawyer, Rita I. "Does the Wechsler Intelligence Scale for Children Discriminate between Mildly Disabled and Severely Disabled Readers?" Elementary School Journal, 66 (November 1965) 97-103.

Five questions relating to the discriminatory powers of the Wechsler Intelligence Scale for Children were investigated in a study made by the Syracuse University Reading Center. Subjects were 90 mildly disabled and 90 severely disabled readers (boys predominated in this group) from the Center. Ages of the subjects ranged from 8 years to 15 years, 5 months, Children whose primary difficulty was emotional were not included in the sample. Results showed that the test did discriminate between the two groups. The different subtests played different roles in the discrimination when only boys were considered. As chronological age increased, the ability of the subtests to discriminate declined. When fewer subtests than originally planned were used, discrimination was still effective. A pupil outside a given sample could be assigned with reasonable assurance to either group by using the discriminating equations developed in the study. Two main implications for education derived from the study are discussed. Tables and references are given.

Schonell, F. J. The Psychology and Teaching of Reading. Fourth Edition. (London, England: Oliver & Boyd, 1961) 295 p.

Based on the conviction that the word whole sentence approach to reading instruction is best for beginners, this methods handbook for teachers and parents supports the thesis in discussing such topics as: psychological factors in word recognition, factors in reading ability, preparatory periods in learning to read, and a psychological analysis of reading methods. With the theoretical groundwork laid, practical methods are offered for organizing reading in infant and junior classes, teaching

understanding and interpretation, and using story telling and reading books to develop and provide for interests and personal needs. A final chapter deals with the causes of and specific remedies for the handicaps suffered by the older backward readers. Each chapter is well illustrated with examples, pictures, or suggested materials. In addition, the appendixes offer a graded word reading test with instructions for using, scoring, and reading it; suggestions for compiling exercises, work cards, and workbooks; and additional book lists. An index is included.

Sheldon, M. Stephen and Garton, Jeanette. "A Note on A WISC Profile for Retarded Readers'," Alberta Journal of Educational Research, 5 (December 1959) 264-67.

Scores on the subtests of the Wechsler Intelligence Scale for Children (WISC) made by children with known reading difficulties were compared with scores of a matched group of children without reading handicaps. Subjects in the experimental group were 11 children, 7 boys and 4 girls, with known reading difficulties. They ranged in age from 7 years to 14 years 8 months, with Mead WISC IQ's of 95.9, 104.7, and 100.3 on Verbal, Performance, and Full Scale responses. A matched group of 25 subjects was selected from children without known reading difficulties. The WISC was administered to all cases. Deviations were computed; analyses of variance were performed, using the mean deviation scores for both groups and on the mean scaled scores of the experimental group. Results substantiate the hypotheses that children with known reading difficulty will score significantly different on the subtests of the WISC than a matched group of children not so classified. One discrepancy between previous and current findings was evident on the Vocabulary subtest, on which the mean deviation was one of the lowest in the present investigation. More comprehensive research is urged for the promotion of better techniques and understanding of procedures in remedial reading programs. Two references are listed.

Shipp, Donald E. and Loudon, Mary Lou. "The Draw-a-Man Test and Achievement in the First Grade," Journal of Educational Research, 57 (July-August 1964) 518-21.

An examination of the Goodenough Draw-a-Man Test (DAMT) as a predictor of general achievement in first grade is described. Sex differences in DAMT performance and achievement scores and in degree of prediction on subtests of the achievement battery are also investigated. Subjects were 56 boys and 59 girls in first grade in a large Bossier City, Louisiana, school. Almost 50 percent of the pupils were children of Air Force personnel. The DAMT was administered the first week of school; the Gray-Votaw-Rogers Primary Achievement Tests were given near the end of the school year. Correlations were computed for boys and girls together and separately between all possible pairs of these nine measures: DAMT

raw scores, DAMT IQ's, chronological age, reading comprehension, reading vocabulary, spelling, arithmetic reasoning, arithmetic computation, and total achievement. It is concluded that the DAMT has some value as a predictor of general achievement in grade 1, that the DAMT predicts equally well for boys and girls, and that chronological age is a poor predictor of achievement. Findings showed that girls had a substantially higher DAMT IQ and mean total achievement than boys. References are given; four tables are included.

Strang, Ruth. "Relationships between Certain Aspects of Intelligence and Certain Aspects of Reading," Educational and Psychological Measurement, 3 (Winter 1943) 355-59.

The relationships between intelligence and reading differ according to the aspect studied, and a verbal IQ test can be misleading about the IQ of a retarded reader. The correlation between total IQ and silent reading group test scores is between 0.50 and 0.70, since the IQ test is largely a verbal test, but correlations are lower with Binet and performance tests. In subtest scores, reading rate shows lower correlation with IQ than does vocabulary or comprehension, and there is great discrepancy between language and nonlanguage sections of IQ tests although language type tests appear to be better indicators of IQ. There is a definite relationship between individual IQ's and reading growth curves, for the reading curve of a child with a high IQ is higher than, but runs parallel to, the curve of a child with a lower IQ. Reading growth is also closely linked with total health and development. For guidance, low reading and group test IQ scores should be presented to parents as reading problems, but miracles of IQ improvement should not be expected with reading improvements due to the link between reading, IQ, and total growth curves.

Traxler, Arthur E. "Problems of Group Remedial Reading in the Secondary School," Education Digest, 4 (January 1939) 25-28.

The steps necessary for setting up a remedial reading program are outlined broadly. The first step is to state clearly the purposes, such as building vocabulary or good reading habits. The second step is to identify the problem readers by testing. The third step is diagnosis, which includes physical and psychological studies. A variety of diagnostic devices are suggested. The fourth step is group organization, and several possible combinations are cited. Objectives of the program determine the method of instruction, which is the fifth step. Methods could include eye-movement exercises, skills in work-reading, or discussion of controversial material. Several methods can be used for evaluation, the final step.

Vernon, Philip E. "Education and the Psychology of Individual Differences," Harvard Educational Review, 28 (Spring 1958) 91-104.

Although British and American educators generally agree on the need for some form of grouping to allow for differences among students and to reduce the teacher's load, the basis of division is subject to debate. Age, physical handicap, and ability have received greatest acceptance, although each has shortcomings. For instance, in ability grouping, IQ scores change and, since they cannot measure the deciding factor of interest, their correlation with college achievement is only about 60 percent. Nevertheless, after the fourth grade some form of ability grouping seems desirable, especially for brighter students, while the social and intellectual dangers of being misplaced, stereotyped, or falling further behind for average and below average students could be mitigated by flexible transfer and overlapping groups. The only basis for ability grouping below age 9 should be severe mental or physical handicap. Between ages 9 and 13, the curriculum should develop essential skills, stimulate general mental development, and provide experiences from which interests can develop. The American type school organization seems to meet this prescription more nearly than the British.

Winkley, Carol K. "Building Staff Competence in Identifying Underachievers," The Underachiever in Reading, H. Alan Robinson, Ed. Supplementary Educational Monographs, No. 92, 155-62. (Chicago: University of Chicago Press, 1962.)

Because teacher training institutions do not give adequate training in the use and interpretation of tests and measurements, it is imperative that school administrators provide materials, training, and incentives necessary for identifying and diagnosing the problems of underachievers. With this in mind, data collected on 500 fifth graders by the California Tests of Mental Maturity, Iowa Tests of Basic Skills, and Gates Reading Survey was obtained and checked against seven common methods of identifying underachievers. These methods were the (1) Mental Age Discrepancy, (2) Expected Achievement Grade Placement Tables, (3) Anticipated Achievement Calculator, (4) Bond and Tinker Formula, (5) Stanine Comparison, (6) Deviation from Regression Line, and (7) Monroe Index methods. Percentages of the 500 pupils identified as underachievers ranged from six to 17 percent. The study concludes that all measurement methods have advantages and disadvantages, but that one or more objective measures can be used satisfactorily together with the subjective judgment of the classroom teacher to identify most underachievers.

Woodbury, Charles A. "The Identification of Underachieving Readers," Reading Teacher, 16 (January 1963) 218-23.

A study was conducted to identify the comparative frequencies of underachievement by pupils whose performances on a reading achievement

test and a scholastic aptitude test were compared by the traditional age-ratio procedure and by a technique which endeavored to control some of the errors which are present in age-to-age comparisons. One hundred and thirty-four fourth-grade pupils in seven schools of a New England community were subjects. The pupils were administered the Pinter General Ability Tests, Verbal Series and the Paragraph Meaning Subtest of the Stanford Achievement Battery, Intermediate Form in the seventh month of the school year to obtain mental ages and reading ages. Fifty-six pupils from the population of 134 were identified as underachieving readers through the traditional age-ratio procedure. Eighteen pupils were identified as underachieving readers according to their differential indices. The findings of this study suggest, then, that many of the differences between reading ages and mental ages of pupils are really differences which are attributable to error and not to the phenomenon of reading achievement varying significantly below expected achievement. Other possible, but more complex, solutions for the identification of underachieving students are listed. Statistical findings are presented in tabular form.

Section 9: Personality and Emotional Factors in Reading Disability

Allen, Elizabeth Godwin. An Investigation of Change in Reading Achievement, Self-Concept, and Creativity of Disadvantaged Elementary School Children Experiencing Three Methods of Training. 89 p. (Ph.D., University of Southern Mississippi, 1968) Dissertation Abstracts, 29, No. 9, 3032-A. Order No. 69-4683, microfilm \$3.00, xerography \$4.60 from University Microfilms.

The relative merits of remedial reading instruction, training in creative dramatics, and a combination of the two approaches for disadvantaged Negro fifth-grade children were studied. There were three experimental groups for the three treatments and two control groups. The Gordon How I See Myself Inventory, the Figural Tests of the Torrance Tests of Creative Thinking, and the Stanford Reading Test were administered to all groups at the pretest and post-test stage. On the reading test all groups increased significantly on the Paragraph Meaning Section, but no significant difference between groups was found. Nor was there any significant difference between groups on the How I See Myself Inventory. The groups receiving creative dramatics instruction increased more on the creative measure than did the others. All the instruction methods used were effective in maintaining reading growth for the children.

Applebee, Bernice. "Friendship Fluctuations: A Clue to the First and Third Grader's Ultimate Reading Achievement," Illinois School Research, 4 (May 1968) 27-31.

The intelligence, friendship patterns, reading readiness, and ultimate reading achievement scores of 128 first graders and 119 third graders

were compared using the Pearson product-moment correlation formula. Subjects came from culturally disadvantaged homes and attended neighborhood public schools in New York, Indiana, and Illinois. Sociometric scores were derived by having the children select their two best friends within their classrooms in February and May. The California Reading Test was administered in each classroom in May. A significant correlation was noted between peer acceptance and intelligence and between peer acceptance and ultimate reading achievement for grade 1, but no significant correlations for these two comparisons were found for grade 3. Recommendations are made for classroom-teacher use of the findings. References are included.

Athey, Irene. "Personality Factors and the Development of Successful Readers," New Frontiers in College-Adult Reading, National Reading Conference Yearbook, 15 (1966) 133-39.

Each of 300 items comprising the University of California Inventory for Personality was analyzed to determine which ones differentiated students who ranked in the top and bottom quartiles of the reading subtest of the Stanford Achievement Test in an attempt to integrate Erickson's theory of personality with Holmes' substrata-factor theory of reading. Two samples of 130 and 160 grade-9 subjects were used to cross validate. New personality scores were secured by rescoring each test, using only the 60 differentiating items. The pool of 60 items correlated .53 with the total sample. Using Hotelling's component factor technique, four factors were identified: autonomy, self-concept, school dislikes, and family orientation. Compared to good readers, poor readers were more docile and dependent, had a pervasive sense of inferiority, disliked social aspects of the school, and were closer to and more dependent on parents than peers. Good readers were characterized as having successfully completed Erickson's first four stages, while the poor readers had not. References are included.

Bannatyne, Alex. "Psychological Bases of Reading in the United Kingdom," Reading Instruction: an International Forum, Marion D. Jenkinson, Ed. International Reading Association World Congress on Reading Conference Proceedings, 1 (1967) 327-35.

Fifteen sources are synthesized to suggest evolutionary-psychological differences in the abilities of boys and girls to handle the arbitrary symbolic sequencing found in language. The references are selectively examined for their findings. The author suggests and substantiates the idea that at extremes of the population distribution exist genetic dyslexic boys with low verbal but high spatial abilities. The author further suggests that these individuals should not be scorned but developed along the lines of their abilities and that in some instances, insistence upon verbal ability channels an otherwise capable individual away from higher education. References are included.

Bender, Laretta. "Problems in Conceptualization and Communication in Children with Developmental Alexia," Psychopathology of Communication, Paul H. Hoch and Joseph Zubin, Eds., Chapter 11, 155-76. (New York: Grune & Stratton, 1958.)

Observations of children at Belevue Hospital and reviews of literature in the field lead to the conclusion that developmental language lags can be compared to childhood schizophrenia, since both are maturational lags, and since mechanisms, reactions, and compensations or defenses are similar. Language lags are characteristic of the slowly maturing personality and long retention of primitive plastic characteristics, but are more strongly localized in the areas of language, dominant cerebral control, and mentation. They are therefore not as all-embracing or as severe as schizophrenia. Furthermore, language lags tends to be self-correcting and are never as malignant as childhood schizophrenia may be. Nevertheless, the two are comparable because there is evidence of familiar etiology, similar lags in maturation with primitiveness in organizing behavior, and a basic abstractiveness as opposed to secondary concreteness. Likewise capacity to respond to treatment which avoids over-rigid training, severe discipline and excessive motivation is similar. The difficulty of distinguishing the two is illustrated by a case history. A bibliography is included.

Blanchard, Phyllis. "Reading Disabilities in Relation to Maladjustment," Mental Hygiene, 12 (October 1928) 772-88.

A survey of the case histories of four boys, aged 12 to 15, revealed that reading disabilities can be due to any of a number of causes. The histories cited reveal, among other things, that: (1) teachers and parents still confuse reading disability with mental retardation; (2) long term disability leads to failure and inferiority feelings, daydreaming, sensitiveness, and inattention; (3) behavior problems arise unless adequate, acceptable compensatory activities are developed, and continuing maladjustment leads to more serious difficulty; (4) group teaching is not apt to be successful; (5) common factors seem to be inadequate early school experience and vision defects; and (6) correction of reading and substituting success for failure ordinarily results in educational success and behavioral improvement.

Bower, Eli M. Early Identification of Emotionally Handicapped Children in School. Second Edition. (Springfield, Illinois: Charles C. Thomas, Publisher, 1969) 261 p.

That the public school is the proper place for early identification and treatment of emotionally handicapped children in order to prevent large numbers from growing into misfits and failures is a contention supported by results of an experiment in which 200 teachers identified 207 emotionally disturbed students from 5,500 fourth, fifth, and sixth graders. They used eight criteria, such as IQ, socioeconomic status, or

peer ratings. A comparison of teacher evaluation and earlier evaluations by school clinicians of the same children showed teacher ratings as equal or superior to the clinicians'. Discussions of such things as the need for early identification, the magnitude of the task, the origins of the concept "emotionally handicapped," and past research precede the experiment. Followup research is also noted, and three final chapters summarize the discussion, describe the teacher's role, and note the necessary relationship of teacher and school clinician. A 128-page appendix contains parts of the kit, "A Process for In-School Screening of Children With Emotional Handicaps," selected to illustrate the rationale, procedures, and instruments for screening. Two bibliographies and an index are included.

Burkholder, Rachel Brent. The Improvement in Reading Ability through the Development of Specific Underlying or Associated Mental Abilities. 199 p. (Ph.D., University of Arizona, 1968) Dissertation Abstracts, 29, No. 4, 1157-58-A. Order No. 68-14,508, microfilm \$3.00, xerography \$9.00 from University Microfilms.

Certain underlying mental abilities of selected retarded readers were identified so that training in these areas could be undertaken in keeping with the hypothesis that improving abilities which seem to have a high relation to reading skills will contribute to reading improvement. Ten second- and third-grade deficient readers were selected as subjects. A group matched in age, grade level, IQ, socioeconomic background, reading level, and underlying abilities was set up as the control group. The experimental group received 3 months' training in perception, memory, closure, and classification. Pretests and post-tests were administered to both groups. The experimental children showed significantly greater gains than the control group in oral reading, study skills, word meaning, auditory and visual memory skills, psycholinguistic skills of closure and automatic language, and classification skills. Five matched pairs were still available after 6 months, and significant improvement in both underlying skills and reading was evident in the experimental children.

Carlton, Lessie and Moore, Robert H. "The Effects of Self-Directive Dramatization on Reading Achievement and Self-Concept of Culturally Disadvantaged Children," The Reading Teacher, 20 (November 1966) 125-30.

The use of self-directive dramatization in assisting disadvantaged children to make more rapid progress in reading was studied. The technique used in grades 1 through 4 was compared with the traditional textbook plan for improving self-concept and achievement. The results of the 3½-month training period yielded significant gains both in reading and self-concept in favor of the experimental groups as measured by pretests and post-tests. Results point to a possible breakthrough in professional effort to stimulate disadvantaged children to make rapid progress in reading. References are listed.

Carrithers, Lura M. "Beginning Reading Patterns and Preschool Emotional Problems," Educational Horizons, 44 (Fall 1965) 3-9.

Four hypotheses were investigated in a study designed to discover whether reading patterns and success during children's primary years could be anticipated from emotional classifications determined during their preschool years. It was hypothesized that children with emotional difficulties during preschool years would have more difficulty learning to read, follow different reading patterns, and have more negative attitudes. Also, it was hypothesized that assessment of emotional classifications during preschool would provide clues to later reading difficulties. The subjects were 61 children enrolled in the Campus Elementary School at the University of Wisconsin-Milwaukee. All were given an emotional classification at the preschool level by a qualified school psychologist, by a social worker who visited the mother at home, and by the children's teachers. Certain reading patterns were outlined, and the children were tested three times each year with the Gray Oral Reading Paragraphs for evidence of following these patterns. Reading achievement was determined by the Metropolitan Achievement Test given each spring. Reading attitudes were rated by a trained research assistant. In general, all hypotheses were accepted. Implications for education and references are provided.

Carroll, Anne Welch. "The Effects of Segregated and Partially Integrated School Programs on Self Concept and Academic Achievement of Educable Mental Retardates," Exceptional Children, 34 (October 1967) 93-99.

The effects of two types of school programs upon the self-concept and academic achievement of educable mentally retarded (EMR) children were compared by means of a pretest--post-test battery over an 8-month interval. Both groups were administered the Illinois Index of Self Derogation and the Wide Range Achievement Test. One group (13 boys, 7 girls) attended a segregated class fulltime. A second group (12 boys, 7 girls) attended a special segregated class one-half of the day and a normal classroom the remainder of the day. The 39 subjects had no previous experience in special education. IQ scores ranged between 60 and 80. Results supported the hypothesis that EMR children in a segregated setting would show less improvement in self-concept than EMR children in a partially integrated setting. The hypothesis that academic achievement would improve more in a partially segregated setting was only partially supported. Tables and references are included.

Challman, Robert C. "Personality Maladjustments and Remedial Reading," Journal of Exceptional Children, 6 (October 1939) 7-11, 35.

There are three possible ways to account for maladjustments and accompanying reading difficulties. Either (1) emotional factors cause maladjustment which, in turn, causes reading difficulties, or (2) reading

difficulties lead to emotional maladjustment or (3) reading difficulties and maladjustment exist independently. In the first instance, it is necessary to discover the causes of emotional disturbance before learning can proceed. In the second case, the difficulty is in making the child desire to read; and, in the third case, remedial reading can theoretically proceed without working on maladjustment. Symptoms of maladjustment include nervousness, withdrawal, aggression, worry, or defeatism. Remedial reading techniques for emotionally disturbed children should be as pleasant as possible and individually administered. Success should be emphasized, but measured only in terms of the child's past performance, not on the performance of others.

Cowen, Emory L., et al. "The Relation of Anxiety in School Children to School Record, Achievement, and Behavioral Measures," Child Development, 36 (September 1965) 685-95.

The relationship of anxiety in school children to school record, achievement, and behavioral measures was studied. Two samples of 178 and 216 9-year olds (third graders) from three public elementary schools in Rochester, New York, were used. The children of all three schools were primarily from the upper-lower socioeconomic bracket with IQ's slightly above 100. The first sample consisted of 87 boys and 91 girls; the second was composed of 122 boys and 94 girls. A total of 22 criterion measures were studied in relation to Children's Manifest Anxiety Scale scores (CMAS). Behavioral measures including referrals to the school nurse, number of days absent, intelligence estimates, achievement measures, and adjustment measures were obtained from school records. An Over-all Adjustment Score was based on a summary rating of the child by the teacher. The remaining seven self-concept and sociometric scores were based on two tests, "Thinking About Yourself" and "Class Play." A very high proportion of significant Pearson product-moment correlations, low in magnitude but consistent across the samples, emerged. High anxiety was found to correlate negatively to IQ and achievement scores and positively to teachers' ratings of maladjustment, discrepancy between self and desired self, tendency to nominate oneself or be nominated by peers for negative roles in a sociometric situation, and manifestation of physical complaints in the school setting. A table and bibliography are included.

Dowd, Gerald John. Sex and Race Differences in the Effectiveness of Various Composite Predictors of Initial Reading Success and the Relationship of Children's Self-Perceptions to Initial Reading Success. 151 p. (Ph.D., St. John's University, 1968) Dissertation Abstracts, 29, No. 9, 2999-A. Order No. 69-4135, microfilm \$3.00, xerography \$7.20 from University Microfilms.

An effective combination of predictors of initial reading success for different groups of children was sought. Among the variables dealt with were sex, race, and various aspects of readiness, including self-concept. Self-concept was particularly studied as playing an important role in initial reading success. The original experimental population consisted of 366 kindergarten children attending a large suburban school district. The second population consisted of 309 first graders. The Metropolitan Readiness Tests, the New York State Readiness Tests, the U-Scale (a nonverbal instrument), and the Van Alstyne Picture Vocabulary Test were administered at the outset. The results indicated that the most effective combination of predictors varied for the different groups in the study. The New York Readiness Test was the most successful single predictor, with the exception of the Negro group for whom none of the traditional readiness tests proved to be adequate predictors. Self-concept was found to stand in a casual relationship to achievement and not vice versa. The U-Scale, which measured self-concept, appeared to be of functional utility as a predictor of initial reading success.

Ephron, Beulah Kentor. Emotional Difficulties in Reading. (New York: The Julian Press, 1953) 289 p.

In order to clarify the role of psychotherapy in adolescent and adult remedial reading, and in order to sensitize reading specialists and teachers to the kinds of problems below the surface of reading difficulties, two complete case studies and the initial interviews from four others are presented. All studies are verbatim interviews, each followed by a discussion intended to supply some nonverbal materials, such as voice or manner, and to offer criticisms of interview techniques as well as tentative interpretations. The method of presentation stems from the belief that factual summarizations lose their value due to distortions and oversimplifications. Although the interviewer is a trained psychotherapist, this book is meant only to stimulate and supplement the reader's own thinking about reading problems rather than to encourage the use of psychotherapy without training. Other chapters further elaborate on the way in which the cases presented illustrate the need to be aware of the linkages between reading difficulties and personality problems. A bibliography is included.

Fennimore, Flora. "Reading and the Self-Concept," Journal of Reading, 11 (March 1968) 447-51, 481-83.

A study of the relationship between self-concept and reading improvement was made for 107 Washington State University students enrolled in an 8-week reading clinic program. The measuring instruments used were the Self Concept Scale by Urdal, Metcalf, and Gradel; the Nelson Denny Reading Test; the Washington Pre-College Testing Program; and college grade-point averages. Although the students improved significantly in all areas

of reading, they significantly lowered their picture of ideal self, and they did not significantly raise their picture of real self. No one of the measures of self-concept correlated highly with reading scores or with grade-point average. When groups of students were identified according to seven self-concept designations, there were slightly, though not significantly, larger gains in the areas of vocabulary and comprehension by the group with the lower self-concept; more gain in rate was made by the high self-concept group. Questions for discussion are raised. A table and references are included.

Frost, Barry P. "Intelligence, Manifest Anxiety and Scholastic Achievement," Alberta Journal of Educational Research, 11 (September 1965) 167-75.

Two studies were made to determine the relationship between general and test anxiety and scholastic achievement in Canadian children. The first study was made with 55 fourth-grade children at a Calgary, Alberta, elementary school in a middle-class area. The second concerned 113 sixth-grade children from two elementary schools in Calgary, one in a middle-class area and one in a lower-middle and working-class area. Both studies showed a negative relationship between manifest anxiety as measured by the Children's Manifest Anxiety Scale (CMAS) and scholastic achievement as measured by either standardized tests or by teachers' marks. The value of the CMAS other than as a first screening device is questioned. The results which differ with earlier findings on the question are discussed. References and tables are included.

Cifford, Edith M. and Marston, Albert R. "Test Anxiety, Reading Rate, and Task Experience," The Journal of Educational Research, 59 (March 1966) 303-06.

Using the Test Anxiety Scale for Children, 31 fourth-grade boys were divided into high and low scorers and given an experimental reading rate test in a study designed to evaluate the effects of high or low anxiety on reading for main ideas and sequence of ideas and brief or extensive pretest experience. The subjects were placed randomly into four experimental groups. There were two levels of pretest experience with half of the subjects receiving minimal exposure to test instructions and half receiving a complete practice test. The subjects were divided by assigned reading purpose into those reading for sequence of ideas and those reading to find the main idea. Analysis of variance for reading time showed that test anxiety level was significant as main effect and in interaction with pretest experience. High test anxious subjects receiving least practice had significantly slower reading rates. High anxious subjects reading for the main idea had significantly less comprehension. Differing assigned purposes did not yield significantly different reading speeds. Two tables and references are included.

Griffin, Donald Cassatt. Constricted-Flexible Control of Attention in Pupils with and without Reading Disability. 133 p. (Ph.D., University of California, Los Angeles, 1968) Dissertation Abstracts, 29, No. 11, 3873-A. Order No. 69-7245, microfilm \$3.00, xerography \$6.40 from University Microfilms.

The development of constricted-flexible control, the ability to withhold attention from distraction or irrelevant aspects of a stimulus, was investigated in pupils with and without reading disability. Experimental subjects were 42 male pupils in grades 1 through 6, of average or higher intelligence, and of middle or upper-middle socioeconomic level. Two control groups of 42 normal reading pupils each were matched on IQ and chronological age, and IQ and reading level, respectively. The Stroop Test and the Fruit Distraction Test were administered individually to measure constricted-flexible control. It was found that disabled readers were more constricted than normal readers of similar chronological age, and this difference increased with age. Both normal and disabled readers tended, in general, to be more flexible at older age levels. When reading levels were matched, disabled readers were similar to younger normal readers on all measures of constricted-flexible control. However, while no interactions were significant, separate analysis of disabled and normal readers suggested that there were different developmental patterns depending on the nature and difficulty of the task. When speed and error scores were analyzed, normal readers were consistently faster on all responses, and older pupils of both groups were consistently faster than younger pupils.

Hake, James M. "Covert Motivations of Good and Poor Readers," The Reading Teacher, 22 (May 1969) 731-38, 741.

The Reading Apperception Test, consisting of 10 ambiguous pictures relating to reading situations, was developed by the author to compare covert responses of good and poor readers. Also, a Pupil Behavior by Teacher Rating Scale was developed to determine overt behavior. Reading scores on the California Achievement Tests were used to identify two groups of 40 students (80 sixth-grade pupils, 36 boys and 44 girls) each having average intelligence but reading above and below average. No significant relations (r equals .06) were found between scores for overt and covert tests. Comparison of groups revealed that the poor readers were significantly less well-adjusted than the good readers. Likewise, the teachers' ratings of poor readers were significantly negative compared with good readers. Sex differences on the two types of tests approached significance (.06), with girls less well-adjusted. Comparisons on the Reading Apperception Test of good and poor readers revealed significant differences at the .01 level in the following factors: (1) attitudes toward home and parents, (2) attitudes toward reading-teacher-school, (3) defense mechanisms, (4) self-concept, and (5) aggression. No differences in anxiety were found. References and tables are given.

Haywood, H. Carl. "Motivational Orientation of Overachieving and Underachieving Elementary School Children," American Journal of Mental Deficiency, 72 (March 1968) 662-67.

Overachieving and underachieving 10-year-old urban Canadian children at three IQ levels were compared with respect to intrinsic-extrinsic motivational orientation. The choice motivator scale was administered in which reasons for forced choices among 20 pairs of vocational titles were analyzed. Overachievers were found to be relatively more intrinsically motivated than underachievers in all three academic areas (reading, spelling, and arithmetic). The differences in motivational orientation between overachievers and underachievers were largest in the educable-mentally retarded range (IQ 65-80) and smallest in the superior range (IQ 120 and above). Overachievers tended to be motivated to a greater extent by factors inherent in the performance of tasks, while underachievers tended to be motivated by factors extrinsic to the task, i.e., by the ease, safety, comfort, and security aspects of the environment. References are included.

Henderson, Edmund H.; Long, Barbara H.; and Ziller, Robert C. "Self-Social Constructs of Achieving and Nonachieving Readers," The Reading Teacher, 19 (November 1965) 114-18.

The relationships of three personality self-concepts, differentiation, esteem, and individualism, to reading achievement and disability were explored. Thirty-two boys and 16 girls, age 7 to 14 with 1 to 6 years reading retardation at the University of Delaware Reading Study Center were matched with successful readers of the same age and sex. The School and College Ability Tests (SCAT) and the Sequential Tests of Educational Progress (STEP) were used to match the groups. All subjects were tested individually with a nonverbal test involving four tasks to determine the extent of differentiation, esteem, and individualism in their self-concepts. Achievement on each task by the two groups is reported and discussed. Retarded readers were characterized by a relatively high degree of dependency. Suggestions are made for remedial treatment emphasizing individual effort. References are given.

Henderson, Edmund H. and Long, Barbara H. "Self-Social Concepts in Relation to Reading and Arithmetic," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 576-81.

A nonverbal method for investigating self-social concepts of high achieving readers selected on the basis of high and low reading achievement in arithmetic was studied. Attention was focused on esteem, identification, dependency, and complexity--all were assumed to be part of an integrated system. Statistical findings characterized the high reader in arithmetic as one who was socially oriented and saw himself as different

and complex. For boys this was a relatively low esteem role, and they related more closely to the teacher. For girls the verbal role appeared more compatible. References are listed.

Hogenson, Dennis Larry. An Investigation of the Relationships among Aggressive Behavior, Reading, and Dogmatism in Delinquent Boys, 189 p. (Ed.D., Michigan State University, 1968) Dissertation Abstracts, 29, No. 7, 2118-A. Order No. 68-17,094, microfilm \$3.00, xerography \$8.60 from University Microfilms.

Correlational relationships among aggressive behavior, reading, Rokeache's construct dogmatism, school attitudes, and intelligence in juvenile delinquents were sought by the investigator. Two groups of 48 subjects each from a Michigan and a Minnesota boys' training school were administered the Wechsler Intelligence Scales, the reading section of the intermediate level Stanford Achievement Test, the Dogmatism Scale, and the Minnesota Student Attitude Inventory. Measures of aggressive behavior based on data from court reports, training school staff reports, and self reports were utilized. Among the findings, reading correlated significantly with both aggression and IQ in the two groups, and a further significant correlation with school attitudes was found in one of the groups. Dogmatism did not correlate with any of the three measures of aggression, and, for one group, it did not correlate significantly with school attitudes or intelligence.

Holmes, Jack A. "Personality Characteristics of the Disabled Reader," Journal of Developmental Reading, 4 (Winter 1961) 111-22.

A comprehensive examination of the relationship of personality development to reading ability was conducted through documentary analysis. Studies of personality traits and success in reading or spelling from grade school through college level are reported, and the literature is reviewed. Experimental attempts to establish a relationship between certain personality traits and success in reading or spelling have yielded inconsistent results--positive at the lower grade levels, negative at the high school and college levels. These inconsistencies are explained by the offered gradient shift hypothesis, and further credence is gained if these developmental changes are pictured as a gradual process of internalizing into deep-seated value systems what was initially, in the child, merely a superficial role-mask or persona guide for behavior. Out of such childhood notions of what one's self-image ought to be, deep-seated value-convictions called mobilizers are developed. Mobilizers are defined and their roles are discussed. References are appended.

Krippner, Stanley. "Reading Improvement and Scores on the Holtzman Inkblot Technique," The Reading Teacher, 19 (April 1966) 519-22.

The Relationship between reading improvement and emotional stability was studied in a summer reading clinic in 1963, utilizing the Holtzman Inkblot Technique (HIT). Twenty-four school children, from second through sixth grade, including 23 boys and one girl, were given the HIT at a summer reading clinic. All subjects were also administered Form W of the California Reading Test (CRT) at the beginning of the clinic and Form X of the CRT at the end of the clinic. Reading improvement scores were correlated with the 22 HIT variables; four HIT variables were found to be significant at the .01 level: 1) Location, 2) Shading, 3) Pathognomic Verbalization, and 4) Hostility. It is noted that children with disordered thought processes, bizarre perceptions, and emotionally disturbing fantasies might not be expected to do well in remedial reading until a personality change has been effected. References are included.

Lipsitt, Lewis P. "A Self-Concept Scale for Children and Its Relationship to the Children's Form of the Manifest Anxiety Scale," Child Development, 29 (December 1958) 463-72.

Approximately 300 urban fourth, fifth, and sixth graders took the Children's Manifest Anxiety Scale (CMAS), the self-concept scale, and the ideal-self scale in order to determine possible correlations. The tests were administered on the same day in the classrooms and again 2 weeks later in order to determine means, standard deviations, and reliability. Significant correlations were obtained for all grades and sex combinations between CMAS and self-concept scores, with the high anxious subjects producing low self-concept ratings. The 2-week reliability of the CMAS was essentially the same as that for the original population. References are included.

McDonald, Arthur S.; Zolik, Edwin S.; and Byrne, James A. "Reading Deficiencies and Personality Factors," Starting and Improving College Reading Programs, National Reading Conference Yearbook, 8 (Fort Worth: Texas Christian University, 1959) 89-98.

A pilot study initiated to assess the contribution of psychotherapy to a college reading improvement program at Marquette University is reported. The subjects were students who were randomly selected from all students who had voluntarily enrolled in sections of the reading improvement program. In addition to the regular program, students in the experimental group participated in 10 group therapy sessions conducted by a clinical psychologist who also administered diagnostic and post-treatment interviews. A second group was given an additional hour of individual reading work in lieu of group psychotherapy sessions. A pretreatment and a post-treatment battery of tests were administered. Gains were indicated

by the test results, academic records, and marked behavioral changes, such as the ability to make friends more easily. The experimental group made better progress on the basis of scores on the entire Diagnostic Reading Test Battery, Form B, and the McDonald-Byrne Reading Versatility Test, Form B, than did the group given an extra hour's reading work in lieu of therapy (the control group). Comparison of pretherapy and post-therapy results indicated that improvement in reading speed was beyond the .001 level of significance. Additional test data and results are summarized. The results of the objective tests and the behavioral observation of the subjects indicated that group psychotherapy contributed significantly to a college reading improvement program. References are given.

Neal, Carolyn Mae. A Study of the Relationship of Personality Variables to Reading Ability Utilizing Tests Administered College Freshmen. 171 p. (Ed.D., University of Illinois, 1964) Dissertation Abstracts, 25, No. 8, 4480-1. Order No. 65-870, microfilm \$2.75, xerography \$8.00 from University Microfilms.

The relationship of personality variables to reading ability was studied. A population of 348 college sophomores was given the Minnesota Multiphasic Personality Inventory (MMPI), the Kuder Preference Record, the Cooperative English Examination, and the Cooperative School and College Ability Tests. Linear and curvilinear correlations were computed. In addition, a canonical analysis was employed to discover a maximal correlational measure for the two sets of variables--personality and reading performance. Following an analysis of the findings, the author concluded that an affiliation between personality and reading ability has been supported in the present study. Thus, the interrelationship of emotional and interest factors to the cognitive variable of reading tends to support the thesis that there is an interrelatedness of the human organism with regard to learning and personality. The association indicated in this study is that the neurotic aspects of personality tend to be negatively correlated to reading performance - that is, the poorer reader is apt to have more neurotic tendencies even in a highly able population - although the neurotic tendencies are different for different subgroups within the major sample. Moreover, the personality complex reveals an interesting syndrome of characteristics which describe or relate to the able reader. The complex of personality traits which relates to reading ability within this highly able population tends to reveal that cognition is related to neurosis or the lack of it.

Neal, Carolyn M. "Sex Differences in Personality and Reading Ability," Journal of Reading, 11 (May 1968) 109-14, 633.

An attempt to find a relationship between personality traits and reading ability and to establish any differences between men and women indicated that the "quiet, thoughtful, feminine, and agreeable" woman is

the best female reader; and, using different variables as a basis of description, that the "quiet, thoughtful, cultured man (with nonpathological feminine qualities)" is the best reader among men. In both sexes it was the more positive character traits rather than neurosis that related positively to reading ability. Freshmen in the Education Department at the University of Illinois were given the Kuder Preference Record, the English Cooperative Examination, the Minnesota Multiphasic Personality Inventory, and the SCAT ability test to obtain personality and reading measure variables. The 514 subjects used included 435 women and 79 men. In women, variables negatively related to reading ability were L scale, depression, psychopathic deviate, pathological sexuality, hypomania, dominance, artistic, and clerical. Positively correlated were paranoia, theoretical, agreeable, outdoor, computational, scientific, and literary. Negative for men were outdoor, musical, and social service; and positive were pathological sexuality, introversion, theoretical, artistic, and literary. Tables are included.

Norman, Ralph D. and Daley, Marvin F. "The Comparative Personality Adjustment of Superior and Inferior Readers," Journal of Educational Psychology, 50 (February 1959) 31-36.

The literature on the comparative personality adjustment of good and poor readers is summarized. An investigation was undertaken to contrast the personality adjustment of superior and inferior readers as measured by a multivariable objective test aimed at uncovering any discriminating psychometric patterns of adjustment. The test also was designed to provide a description of perceptions of good and poor readers and their environment by means of an item analysis. Two groups of sixth-grade boys from middle class schools, one group composed of 42 superior readers and one of 41 inferior readers, were selected. There was a mean reading achievement of 4.2 grades difference between the groups. Both groups were given the California Test of Personality to determine differential patterns of personality adjustment. No differences in pattern was shown by an analysis of variance, although significantly higher adjustment scores on all parts of the test were shown by superior readers. Sixty-seven significant items were inspected and several clusters of "needs" and "presses" which differentiated between the two groups were suggested. References and tables are included.

Raygor, Alton L. and Wark, David M. "Personality Patterns of Poor Readers Compared with College Freshmen," Journal of Reading, 8 (October 1964) 40-46.

A study comparing the personality patterns of poor readers with the personality patterns of a random sample of "normal" college freshmen at the University of Minnesota is presented. The poor reading sample was composed of 161 male and 67 female undergraduate students who were

voluntarily participating in the Reading and Study Skills Center program. The normal sample was a random sample of 608 males and 508 females drawn from entering freshmen in liberal arts. All subjects were given the Minnesota Multiphasic Personality Inventory (MMPI). A comparison of the MMPI profiles of both groups by means of high point codes and individual scales was made. Results indicated that male reading center volunteers tended to be less well-adjusted, especially in social skills, than typical freshmen; and that female reading center volunteers tended to be somewhat better adjusted than typical female freshmen. Tables and references are included.

Reger, Roger. "Reading Ability and CMAS Scores in Educable Mentally Retarded Boys," American Journal of Mental Deficiency, 68 (March 1964) 652-55.

The relationship between the anxiety and academic achievement level of 52 institutionalized boys diagnosed as educable mentally retarded is studied. Two groups each containing 26 educable mentally retarded boys matched on age and intelligence but differing in reading ability were given the children's form of the Manifest Anxiety Scale (CMAS). Boys lower in reading ability had higher CMAS scores than boys higher in reading ability. The rank-order correlation between reading and CMAS scores was negligible for the group of better readers, but was significantly inverse for the group of poorer readers. Related studies are cited. Discussion and tables are provided. References are included.

Robeck, Mildred C. "Effects of Prolonged Reading Disability: A Preliminary Study," Perceptual and Motor Skills, 19 (August 1964) 7-12.

The effects of prolonged reading disability were studied by comparing certain personality aspects of the 16 youngest children with those of the 16 oldest children attending a reading clinic. In the youngest group were two girls and 14 boys whose mean age was 7 years 10 months. In the oldest group were three girls and 13 boys whose mean age was 13 years 7 months. Oral reading samples for each student were taped and analyzed for error patterns. The California Test of Personality and the Wechsler Intelligence Scale for Children were administered. The present study was concerned with those aspects of personality which are thought to relate directly to success, or lack of it, in reading: attitudes toward reading, intellectual functioning, personal and social adjustment, and probable sources of reading difficulties. Clinical observations and the analyses enabled the investigator to classify each reader into one of seven types of disability: extreme tension associated with reading, lack of word-attack skills, absence of word-analysis skills, extreme lack of motivation for reading, extreme avoidance of reading situations, limited capacity for reading, and over-use of context. The frequencies with which each type of reading disability was discovered are shown. Tables and references are given.

Robeck, Mildred C. "Children Who Show Undue Tension When Reading: A Group Diagnosis," Challenge and Experiment in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 7 (1962) 133-38.

The characteristics of tense readers are described. Non-tense readers were compared to tense readers on four factors: oral reading, intellectual strengths, reading age and potential, and background items. Twenty tense and 20 non-tense readers from a reading clinic served as subjects. In the experimental group, there were 16 boys and four girls who ranged in age from 7 years 1 month to 14 years 8 months. The range in grade was from 2.1 to 9.7. The tests administered were oral reading, which was taped, Wechsler Intelligence Scale for Children (WISC), and either the Gates Advanced Primary Reading Test, the Durrell-Sullivan Reading Test, or the California Reading Test, depending on the grade level of the child. The cumulative folder for each subject was scrutinized for background items. Means and standard deviations were used to analyze the data. The oral reading for both groups was similar, but tense readers substituted more words not known rather than have them supplied. Tense readers were weak in the Picture Arrangement subtest of the WISC. The items which ranked highest in frequency from the cumulative folders were poor visual memory, family pressure to succeed, and poor auditory memory. References are included.

Sampson, Olive C. "Reading and Adjustment: A Review of the Literature," Educational Research (England), 8 (June 1966) 184-90.

The literature concerning the relationship between personality and adjustment and the relevance of this to reading is reviewed. The evidence suggesting an association between reading achievement and personality adjustment is summarized. Whether reading failure causes maladjustment or not is analyzed on the basis of relevant research. The kinds of maladjustment involved in reading failure and the problems of terminology and measurement in this area are considered. Evidently, many severely retarded readers also evidence emotional and personality maladjustment, although the causal relation operating between adjustment and reading is interpreted in different ways. A list of publications of the National Foundation for Educational Research is appended.

Sampson, Olive C. "A Study of Incentives in Remedial Reading," Reading, 3 (March 1969) 6-10.

Six hundred and seventy-five teachers engaged in remedial education in England were asked in a survey study to name the incentive they found most effective with their pupils. The response rate to the questionnaire was 91 percent. The following six categories were used to analyze the responses: (1) relationship and atmosphere, (2) the experience of success,

(3) praise and encouragement, (4) the child's interests, (5) rewards and privileges, and (6) competitiveness and ambition. The second category was mentioned most frequently, 31 percent of the time, followed by the third category. Also presented were differences between response patterns of respondents who worked full or part time, who were borough or county teachers, and who lived in the North of the South. References are included.

Schell, Donna Mitchell; Veroff, Joseph; and Schell, Robert E. "Achievement Motivation and Performance Among Second-Grade Boys and Girls," The Journal of Experimental Education, 35 (Summer 1967) 66-73.

Two reading tasks designed to elicit two types of achievement motivation were used to investigate the relationship between achievement motivation and performance, the effect of two types of achievement motivation on performance, and sex differences in the achievement motivation of children. About 128 second graders at Erickson Elementary School in Ypsilanti, Michigan, participated. One reading task elicited achievement motivation based on a comparison of the child's present and past performances, while another reading task elicited achievement motivation based on a comparison of his performance with those of others. Each of these reading tasks is discussed in detail. Results showed that a relationship between achievement motivation and performance depends on the performance task selected and the test of achievement motivation used. The two types of achievement motivation elicited by an internal and external reference are quite distinct from each other. No sex differences were found in the achievement motivation of children on school-like tasks. References are given.

Schwyhart, Frederick Keith. Exploration of the Self Concept of Retarded Readers in Relation to Reading Achievement. 397 p. (Ed.D., University of Arizona, 1967) Dissertation Abstracts, 28, No. 4, 1218-A. Order No. 67-12,212, microfilm \$5.10, xerography \$18.00 from University Microfilms.

Thirty-five ninth-grade retarded readers of normal IQ, 23 of whom spoke Spanish at home, participated in a reading improvement program and took a series of five tests, plus interviews, all designed to explore any changes from a negative to a more positive self-concept during the program. Only 21 subjects achieved improved reading scores, yet almost all reported that they felt improvement, and the researcher suggests that scores actually may not have been reliable for this type of student. The conclusion strongly indicates that poor self-concept contributes to further retardation, showing the need for individualized instruction.

Shaw, Merville C.; Edson, Kenneth; and Bell, Hugh M. "The Self-Concept of Bright Underachieving High School Students as Revealed by an Adjective Check List," Personnel and Guidance Journal, 39 (November 1960), 193-96.

The Sarbin Adjective Check-List was administered to 87 bright high school juniors and seniors to determine whether there was a significant difference in self-concept between underachievers and achievers. The group consisted of 20 male and 21 female achievers and 19 male and 27 female underachievers. Results were not clear cut. Though male underachievers had more negative feelings about themselves and male achievers, the female underachievers seemed ambivalent. Moreover, the data did not reveal whether the negative self-concept resulted from or was caused by underachievement. Findings indicated the need for further studies of self-concept in order to understand the problem of academic motivation. References are included.

Shimota, Helen E. "Reading Skills in Emotionally Disturbed, Institutionalized Adolescents," Journal of Educational Research, 58 (November 1964) 106-11.

This study attempted to cross-validate the results of several previous studies on: (1) reading problems among adolescents institutionalized for emotional disturbances or delinquency, (2) psychometric test patterns and differentiations between good and poor readers, (3) the three etiological types of reading disability, and (4) factors of etiological importance in reading problems. Data available for some 360 Caucasian children and adolescents, aged 13 years to 15 years 11 months, admitted to Western State Hospital during the period 1956-59 was collected. Students with at least dull intellectual ability, measured by the Wechsler Intelligence Tests to be at least 80, and who had taken both reading and intelligence tests at the Mental Health Research Institute were selected. Certain other variables were checked and recorded. Case studies were consulted and are cited. It was concluded that neither brain damage nor mixed dominance, neither emotional problems nor physical handicaps loom as the important causal agents that some have claimed them to be. Tables, footnotes, and a list of references are included.

Silverman, Jerome; Fite, Margaretta W.; and Mosher, Margaret M. "Clinical Findings in Reading Disability Children--Special Cases of Intellectual Inhibition," American Journal of Orthopsychiatry, 29 (April 1959) 298-314.

Since there appeared to be no specific situation resulting in reading disability, but rather, a constellation of factors, including conflicts around curiosity and aggression involving oral and anal ambivalence, the present study was launched by a clinical team to gather more data. A psychiatrist, a psychiatric case worker, a psychologist, a teacher-administrator, and a group of reading counselors surveyed reading disability

occurring in 35 fourth-grade children. They analyzed data from individual psychiatric examinations, family relationships, early school experiences, and physical and developmental factors. Forty-three percent of the group showed general intellectual learning inhibition. The researchers concluded that an understanding teacher is necessary and that educators should promptly refer serious cases to social workers, psychiatrists, or psychologists. Two typical case histories are reviewed. A survey of the literature and references are included.

Solomon, Marilyn. The Relation of Reading Achievement to One Aspect of "Realism" among 7- to 12-Year-Old Boys. 60 p. (CRP-S-616-65, New York University, School of Education, 1966) ED 010 251, microfiche \$0.65, hard copy \$3.29 from EDRS.

This investigation studied the relationship between reading achievement and moral realism in 7- to 12-year-old boys. Intragroup trends and intergroup differences in moral realism among retarded and successful readers were compared and evaluated. A horizontal analysis and a vertical analysis were performed in order to determine the presence of a certain developmental trend in moral thinking (structuring) in successful readers that may not be present in retarded readers. From the data obtained by interviews it was found that children who are retarded in reading achievement are also somewhat retarded in moral-conceptual development as measured in Piaget's terms. The study showed that there is evidence of a lag in moral realism in retarded readers when they are compared to successful readers.

Staiger, Ralph C. "Medicine for Reading Improvement," Journal of Developmental Reading, 5 (Autumn 1961) 48-51.

A controlled study of the effects of deanol in retarded readers in regular school situations was conducted. Sixty pairs of retarded readers, matched for age, reading test score and intelligence level participated. Twenty-five pairs were in the fourth and fifth grades, 13 pairs were in junior high school and 22 pairs were college sophomores. Reading retardation and gain were measured by the Gates Reading Survey. Perceptual speed was measured by the Clerical speed and accuracy subtest of the Differential Aptitude test Battery. Subjects were classified as slightly retarded and considerably retarded readers on the basis of the total reading test scores. The deanol used was administered under supervision of the family physician in two 75 miligram dosage per day for 8 weeks with parents of school age children accepting responsibility for administration, and the College Clinic providing dosage for college students. Test scores before and after medication were compared by an analysis of variance technique. No significant differences in reading performance between the deanol and the placebo groups were noted in any category of students. Conclusions are discussed. References are given.

Starr, Kathleen and Huelsman, Charles B., Jr. "Research Guidelines," Ohio Reading Teacher, 2 (May 1968) 16-17.

Seven sources dealing with the development of problem personalities in disabled readers are examined, and their findings are synthesized. One study found frustration to be the main characteristic of the disabled reader, while another named extreme tension. In a personality correlate study, high dependency was found to characterize retarded readers. One experimenter concluded that there is no single trait which is invariably associated with success or failure in reading. Four implications for classroom teachers and remedial reading teachers are presented. References are included.

Strang, Ruth; McCullough, Constance M.; and Traxler, Arthur E. The Improvement of Reading, Fourth Ed. (New York: McGraw-Hill, 1967) 564 p.

Besides giving an up-to-date, comprehensive view of the reading field, the fourth edition is designed as a basic text for graduate students or for reading teachers regardless of the level they teach and as a reference handbook for particular problems. Unique features are sections on the analysis of reading for content in English, science, math, social studies, and other fields, and on the reading problems of special groups, such as the gifted, able retarded, slow learners, disadvantaged, bilingual, emotionally disturbed, or neurologically disorganized. Other chapters describe the nature of reading, reading programs, and sequential aspects of reading development, as well as methods and materials for appraisal and instruction. The concluding chapter synthesizes controversial issues. Appendixes suggest general references for teachers, films, and books for all grades through high school, including materials for minority groups or for the severely retarded. Name and subject indexes are included, and a bibliography follows each chapter.

Vehar, Mary Ann. "Extraversion, Introversion, and Reading Ability," The Reading Teacher, 21 (January 1968) 357-60.

Personality attributes have been assumed to be in some way related to reading, but no clear statement of the relationship has been available. The purpose of this study was to show the influence of extraversion and introversion on reading ability. Third-grade students from Evergreen Elementary School, Monroeville, Pennsylvania, were tested on Cattell's Fourteen Factor Children's Personality Questionnaire (Form A). Students whose scores fell from 46 to 54 were designated as ambiverts and were dropped, leaving 44 girls and 42 boys in the study. The Elementary Reading Test for grades 3 and 4 from The Metropolitan Reading Test was used to test vocabulary and comprehension. Computation of the Pearson product-moment coefficients of correlation showed extraversion and introversion to be of negligible value as a predictor of reading

ability. However, the implication was that as introversion increased, there was a tendency toward an increase in reading ability. Thorough investigation on a larger scale is recommended. References are included.

Vorhaus, Pauline G. "Rorschach Configurations Associated With Reading Disability," Journal of Projective Techniques, 16 (March 1952) 3-19.

Rorschach tests were administered to 309 reading disability cases, aged 6 to 21, for 2 years at New York University Reading Institute. Findings confirmed an earlier hypothesis that marked reading retardation in people of normal intelligence indicates indirect, often unconscious, resistance to environmental pressure. All but 52 of the 309 cases fell under four Rorschach configurations, indicating types of adaptation to environmental pressure. The particular adaptation of each type was believed related to the degree of ego strength available at the time pressure was experienced. Children who fell into all four types were submissive, unresponsive individuals from high socioeconomic backgrounds; therefore, the study suggests that further Rorschach research be done on children with marked behavior or emotional problems and on those from a poorer or more indifferent home environment. Detailed descriptions of the four configurations are given; references and a survey of related literature are included.

Weitzner, Martin; Stallone, Frank; and Smith, Gene M. "Personality Profiles of High, Middle, and Low MAS Subjects," The Journal of Psychology, 65 (March 1967) 163-68.

The Taylor Manifest Anxiety Scale (MAS) for determining drive level was administered to 96 male college students along with the Cattell 16 Personality Factor Questionnaire (16PF), the Edwards Personal Preference Schedule (PPS), and the self-concept discrepancy scale in order to better understand the differences in performance between high and low MAS scorers. The students were divided equally into high, middle, and low MAS groups. Correlations of the scores revealed that low MAS subjects, in comparison with the higher groups, were more self-confident, had higher self-opinions, were more sophisticated and more emotionally stable, as well as less tense and confused in a new situation. The conclusion was that MAS scores can be better understood by consideration of personality profiles. References are included.

Wilderson, Frank B., Jr. "An Exploratory Study of Reading Skill Deficiencies and Psychiatric Symptoms in Emotionally Disturbed Children," Reading Research Quarterly, 2 (Spring 1967) 47-73.

Clinical and experimental evidence suggesting a general hypothesis that specific reading disabilities are related to symptomatic expressions

of more central emotional disorders is presented. Factors of reading dysfunction appear as characteristic phenomena associated with factors of other behavioral-emotional symptoms in children. Intercorrelation matrices of reading-related skills and psychiatric symptoms were factor analyzed separately and yielded four psychiatric and seven reading deficiency factors. Analysis of the correlations between sets of factors suggested that there is significant commonality across symptom domains to confirm predictions made in this area. Factor sets showing significant correlations were interpreted and discussed.

Woolf, Maurice D. "The TAT and Reading Disability," Problems, Programs and Projects in College-Adult Reading. National Reading Conference Yearbook, 11 (1962) 180-88.

A study was conducted to determine whether or not certain personality traits as identified by the Thematic Apperception Test (TAT) are associated with reading disability. Two groups of students, 48 good readers and 53 poor readers, were matched in intelligence and given the TAT. The results were compared. Students reading up to their abilities were able to adjust to their surroundings, expressed realism in their aspirations, and could use aggression to rid themselves of tensions. This aggression was suitable for the occasion and usually not passive. The poor readers were less well-adjusted to their surroundings, felt a definite lack of affection both from their families and from their peers and members of the opposite sex. They felt they were inadequate and might fail at whatever they attempted. They expressed their aggression passively, and when overt action was taken, it was completely unsuited to the situation. They were on the whole more inhibited, gloomy, and stereotyped than those who had little difficulty in reading.

Woolf, Maurice D. "Ego Strength and Reading Disability," The Philosophical and Sociological Bases of Reading, Eric L. Thurston and Lawrence E. Hafner, Eds. National Reading Conference Yearbook, 14 (1965) 73-80.

The scores on personality inventory scales were compared for 20 male college freshmen designated poor readers and 19 designated good readers. The mean scores of the two groups were not significantly different on the English and Mathematics sections of the A.C.T. On the social studies (.02 level) and natural science (.05 level) sections the poor readers ranked significantly lower than the good readers. The Minnesota Multiphasic Personality Inventory was administered to both groups, and Barron's scale was used to assess ego strength (Es). The means of all scales were compared by a critical ratio technique using t scores as a test of significance. The poor reading group mean profile showed elevations on scales Pt and Sc. The Pt scale was significantly higher in the direction of pathology than the profile produced by good readers. The two groups also differed on scales F, K, Hs, D, and Es. With the exception

of K and Es, the differences just reached the .05 level of confidence. Anxiety, K, manifested itself in lack of self-confidence, worry, and inability to concentrate. A lack of ego strength manifested itself in intellectual inefficiency, narrow interests, lack of confidence, and reduced energy level. Seventeen references are included.

Zimmerman, Irla Lee and Allebrand, George N. "Personality Characteristics and Attitudes Toward Achievement of Good and Poor Readers," The Journal of Educational Research, 59 (September 1965) 28-30.

The California Test of Personality and Card I of the Thematic Apperception Test (TAT) were used to study the relationship between personal adjustment, attitudes toward achievement, and reading skills. Seventy-one poor readers and 82 good readers were matched as nearly as possible for age, sex, ethnic composition, and intelligence. The children were predominantly of middle to lower socioeconomic status; they were drawn equally from the fourth- and fifth-grade classes of the urban school district. Subjects in the remedial group had average or better intellectual ability and read at least 2 years below grade level. Both the California Achievement Test and the Wide Range Achievement Test were used as screening devices. The good readers presented themselves as better adjusted in every area, and were rated as average or above on all the subscales except Anti-social Tendencies. The remedial group was below average on all subscales. Only on Anti-social Tendencies and Family Relations was there any tendency for scores to approach each other. Analyses were made of scores achieved by the groups for all specific areas measured in the test. Typical responses to the TAT test are quoted. Two tables and references are included.

PART III--SEVERE READING DISABILITIES (DYSLEXIA)

In this part may be found studies done in the area of severe reading disabilities. The reports concern the classification and terminology of disabilities and their prevalence, correlates or causes, behavioral manifestations, identification of severe cases, treatment, and follow up treatment.

Flower, Richard M.; Viehweg, Richard; and Ruzicka, William R. "The Communicative Disorders of Children with Kernicteric Athetosis: II. Problems in Language Comprehension and Use," Journal of Speech and Hearing Disorders, 31 (February 1966) 60-68.

A study to identify any differences in language function that would be peculiar to a group of kernicteric-athetoid children was conducted. Tests measuring various aspects of verbal functions were administered to three groups of children: those with kernicteric athetosis and hearing impairments, those with athetosis and normal hearing, and a group with hearing impairments but no other evidence of central nervous system disorders. All children were between 8 and 18 years of age. A checklist completed by parents supplied information about language understanding and communication. The slowest development of intelligible speech was ascribed to the normal-hearing athetoid children; the kernicteric-athetoid children were probably somewhat slower in speech development than children of the other hearing-impaired group. The children were tested in the following areas: vocabulary, verbal reasoning, verbal learning, and reading. Variability in the children's test scores was studied. The tests used and the findings are presented. With the tests used, no differences in language function peculiar to a group of kernicteric-athetoid children could be observed consistently. The report includes a brief review of other pertinent literature, a discussion, and references.

Hermann, Knud. "Congenital Word-Blindness (Poor Readers in the Light of Gerstmann's Syndrome)," Acta Psychiatrica et Neurologica Scandinavica, Supplement 108, 177-84. (Copenhagen, Denmark: Munksgaard, 1956.)

A survey is presented of the neurological data pointing to the probability that poor readers very often suffer from congenital word-blindness as described by Kerr and Morgan. The survey is based on a monograph on congenital word-blindness published by the author in 1955, and on a series of investigations, not yet published (1956), concerning right-left discrimination and finger discrimination. Medical research into the importance of hereditary factors and environment, respectively, in congenital word-blindness were considered. Errors found in the written works of word-blind persons were compared to those written errors of patients with Gerstmann's syndrome, and research in this area was discussed. It was

concluded that the fundamental disturbance in congenital word-blindness is the same as that in Gerstmann's syndrome; and in word-blindness there must be an inherited impairment of the function: direction in space. Tables, figures, and references are included.

Kawi, Ali A. and Pasamanick, Benjamin. Prenatal and Paranatal Factors in the Development of Childhood Reading Disorders. Monographs of the Society for Research in Child Development. No. 73, Vol. 24, No. 4 (Lafayette, Indiana: Society for Research in Child Development, 1959) 80 p.

The relationship between certain reading disorders as a symptom of cerebral insult produced by complications of pregnancy, delivery, and the neonatal period was studied. The prenatal and paranatal records of 372 white male children with reading disorders born in Baltimore between 1935 and 1945 were compared with the records of a similar number of matched controls. Results indicate that a relationship existed between certain abnormal conditions associated with childbearing and the subsequent development of reading disorders in the offspring. The cases had a significantly larger proportion of premature births than did controls; abnormalities of the prenatal and paranatal periods occurred with significantly greater frequency among cases than among controls. It was suggested that some of the reading disorders of childhood constitute a component of a continuum. Forms used to collect data and tabulated findings are provided. A bibliography of 128 items is included.

Solan, Harold A. "Some Physiological Correlates of Dyslexia," American Journal of Optometry and Archives of the American Academy of Optometry, 43 (January 1966) 3-9.

Some neurological, physiological, and functional correlates of dyslexia are discussed. Recent theory and related research in the areas of ill-defined laterality; prenatal, paranatal, and postnatal anomalies; glandular deficiencies; and visual deficiencies are summarized. Research on other factors contributing to dyslexia, such as incomplete neurological organization, inferior visual motor skills and perceptual deficits, poor body image concept, and behavioral disorders is briefly described. References are given.

Zedler, Empress Y. Research Conference on the Problem of Dyslexia and Related Disorders in Public Schools of the United States. Final Report. 96 p. (OEG-4-7-078270-2684, 1967) ED 015 834, microfiche \$0.65, hard copy \$3.29 from EDRS.

A closed conference on dyslexia and related learning disorders was held at Southwest Texas State College on May 15 and 16, 1967. Twenty-five participants represented key professions and relevant interest groups,

and 10 observers represented federal agencies. With respect to dyslexia and related learning disabilities, the conferees addressed their attentions to the areas of research, diagnosis and evaluation, teacher preparation, and corrective education. The executive committee endorsed the reports of the four working groups and recommended that a commission be appointed at the highest possible national level to (a) examine the problem area in detail (b) make recommendations concerning the need for a continuing national program to deal with the problem, and (c) develop guidelines for establishing a program. A mail survey of the 50 chief state school officers concerning an inventory of activity in the field is included.

Section 1: Classification and Terminology

Penn, Julia M. "Reading Disability: A Neurological Deficit?" Exceptional Children, 33 (December 1966) 243-48.

Published medical studies of dyslexia as reading disability are reviewed and discussed under the following headings--(1) specific dyslexia in medical literature, (2) genetic studies of reading disability, (3) evidence implicating neurological injury, (4) further supporting evidence (of prenatal trauma), and (5) other theories of causation. It is concluded that in a majority of cases (approaching 75 percent) of nonreading children, the primary cause is neurological impairment or neurological maturational delay resulting from minimal neurological injury. Fifty-five references are included.

Rabinovitch, Ralph D. "Reading and Learning Disabilities," American Handbook of Psychiatry, Silvano Arieti, Ed., Vol. 1, Chapter 43, 857-69. (New York: Basic Books, 1959.)

Neuropsychiatric considerations of learning processes in children are approached through a consideration of some of the most important areas involved in academic learning and the problems involved in each. These include: (1) general intelligence; (2) specific capacities, such as sight of developmental readiness; (3) emotional freedom to learn, an area for which several clinical examples are cited; (4) motivation; and (5) opportunity. The commonest area of learning difficulty is in reading, with most cases falling into three categories: (1) learning capacity intact but blocked by external factors such as anxiety, (2) learning capacity impaired by obvious brain damage; these two are called secondary retardation or primary retardation, (3) impaired capacity to learn without obvious damage and marked by inability to deal in symbols. Approaches which have been remarkably fruitful in differentiating primary and secondary cases are psychometric evaluation, achievement testing, psychiatric evaluation, neurological appraisals, and specific remedial reading therapy. A bibliography is included.

Rawson, Margaret B. "After a Generation's Time: A Follow-Up Study of Fifty-Six Boys," Bulletin of the Orton Society, 16 (1966) 24-37.

A followup study of 56 elementary school dyslexic and nondyslexic boys was made. The sample had attended at least 3 school years in Rose Valley School, Moylan, Pennsylvania, between 1930 and 1947. The boys were ranked according to language learning facility and were studied sociologically and educationally. The present status of each boy was ascertained. On the average, it was found that dyslexic boys had completed a fraction of a year more college education and had obtained a slightly higher vocational status. Figures and references are included.

Robeck, Mildred C. "Types of Reading Disability," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 298-300.

The hypothesis that independent observers could identify five types of reading disability by analysis of oral reading error patterns was tested. A 50 percent accuracy of classification between observers was deemed necessary. Clinic descriptions of oral reading and tape recordings of oral reading were prepared. Twenty clinic cases served as subjects. Each of 53 adult college students in reading-laboratory training analyzed two taped oral reading samples. The characteristic error patterns revealed lack of word attack skill, extreme tension while reading, lack of motivation for reading, overuse of context, absence of word attack skills, and nonreading. Thirteen percent of the sample showed symptoms inconsistent with any classification. Eighty-five percent of the cases were readily classified into one of the categories. Most of the students who showed complex patterns were superior in intelligence. Tables and references are included.

Section 2: Correlates or Causes

Benton, Arthur L. "Dyslexia in Relation to Form Perception and Directional Sense," Reading Disability: Progress in Research Needs in Dyslexia, John Money, Ed., Chapter 6, 81-102. (Baltimore: Johns Hopkins Press, 1962.)

A discussion of key literature on acquired dyslexia and the role of form perception and directional sense in developmental dyslexia reveals inconsistent research methods and conclusions. The hypothesis is therefore put forth that many inconsistencies in perceptual and directional factors are more important in the early learning of reading than in persistent dyslexia, which is the main interest of a clinician. Perceptual and directional factors also tend to be self-correcting. The small proportion of cases showing older children with these impairments typically show other factors as well. However, the fact that some dyslexics perform

defectively on higher level right-left orientation suggests the need for further investigation on the possibility that disturbed form perception and directional sense does appear in the older dyslexic when a task requires implicit verbal mediation for optimal performance. A possible test of the hypothesis would be a longitudinal study extending over 5 or 10 years.

Kass, Corrine E. "Psycholinguistic Disabilities of Children with Reading Problems," Exceptional Children, 32 (April 1966) 533-39.

The psycholinguistic correlates of reading disability were examined. Twenty-one elementary school children between the chronological ages of 7 years and 9 years 11 months served as subjects. Factors which were controlled were IQ, grade, reading retardation, and auditory and visual defects. An expanded version of the Illinois Test of Psycholinguistic Ability (ITPA) was administered. Standard scores for the sample subjects were compared with the population norms for each subtest. The data were analyzed by z and t tests. Children with reading disabilities were not deficient in the visual motor subtests at the representational level. Reading disability subjects were deficient in the Auditory and Visual Sequencing, Visual Automatic, Sound Blending, Mazes, Memory-for-Designs and Perceptual Speed subtests. This sample tended to have certain psycholinguistic disabilities at the integrational level. Theoretical implications, practical implications, figures and tables, and references are included.

Section 3: Behavioral Manifestations

Benton, Arthur L. and Bird, Joseph W. "The EEG and Reading Disability," American Journal of Orthopsychiatry, 33 (April 1963) 529-31.

A summary of studies dealing with the incidence of abnormal EEG patterns in dyslexic children's reading is presented. A higher-than-expected incidence of EEG abnormality was indicated in dyslexic children. Typically, other neurological, motor, visuoperceptive, visuomotor, and speech disturbances are seen in dyslexic children with EEG abnormality. A specific association between EEG and reading disability is not clearly demonstrated. The need for more critically designed, longitudinal studies of dyslexic children is voiced. References are included.

Krippner, Stanley and Herald, Clare. "Reading Disabilities among the Academically Talented," Gifted Child Quarterly, 8 (Spring 1964) 12-20.

In accordance with Conant's definition of the "academically talented," 21 elementary and secondary pupils were enrolled in the Kent State University Child Study Center for a study of the factors related to their

reading disability. The Bond-Tinker formula was used to describe "disabled" in reading. Diagnostic test data were used to arrive at the major contributing causes of disability. Chi square analysis was used to compare the etiological factors of the academically talented and the average groups. A modification of the Rabinovitch system was used in organizing the data. Individual case studies reflected the results of this study in terms of the many-faceted causal factors and the need for further investigation. Tabular description is presented for the etiological factors contributing to the reading disabilities of the two clinical groups. References are included.

Malmquist, Eve. Factors Related to Reading Disabilities in the First Grade of the Elementary School. ACTA Universitatis Stockholmiensis, Stockholm Studies in Educational Psychology 2. (Stockholm: Almquist and Wiksell, 1960) 428 p.

A comparative study of different groups of readers at the end of their first year in the primary schools was conducted in Sweden to clarify the relationship of certain factors with reading disabilities. The main investigations took place in Kristianstad in 1951-52 and involved 399 children from 56 classes. Different kinds of instruments, such as reading tests, rating scales for the assessment of personality traits, etc., were designed and standardized. Multi-factorial analysis of variance of high order was used to analyze the data. A list of the types of various errors in reading and spelling made by different groups of readers was made and analyzed. To investigate the degree of consistency of the reading disabilities, a followup study in grade 4 of the reading ability of those children who took part in the investigations in grade 1 was made. The methods, results, conclusions, and implications of the entire investigation are described in detail. Tables and a bibliography are included.

Money, John. The Disabled Reader: Education of the Dyslexic Child. (Baltimore: The Johns Hopkins Press, 1966) 421 p.

Various approaches to the diagnosis and treatment of the dyslexic child are presented by authorities in the field. The volume was assembled by inviting original chapters from 13 contributors and by asking four others for permission to reprint already published material. In Part 1: Phenomenology and Theory, neuropsychological, epidemiological, developmental, operant behavioral, and linguistic aspects of dyslexia are described. In Part 2, a chapter for each of the following teaching methods and program organizations is included: the Orton-Gillingham approach, tracing and kinesthetic techniques, the initial teaching alphabet, the Words in Color system, the Color Phonics system, the Progressive Choice Reading Method, methods of providing mature content for immature skills, and program administration providing for remedial and corrective

instruction within a school system. Six case studies comprise Part 3. A glossary and bibliography are included.

Myklebust, Helmer R. and Johnson, Doris. "Dyslexia in Children," Exceptional Children, 29 (September 1962) 14-25.

Reading is an integral stage in the hierarchy of language development, the stages of which are: (1) acquisition of meaning, (2) comprehension of the spoken word, (3) expression of the spoken word (speech), (4) comprehension of the written word (reading), and (5) expression of the written word (writing). Dyslexia is a language disorder characterized by inability to read and write normally as a result of acquired or genetic dysfunction of the brain. A childhood dyslexia syndrome could include disturbance of orientation, topographic disorder, dyschronometria, inability to write, inability to spell, dyscalculia, foreign language disability, memory disorders, inability to auditorize or to visualize, deviate motor pattern, or neurological disturbances. When a diagnosis is made of the precise major and minor disorders experienced by the individual and therapy is based on the diagnosis, the outlook is favorable. References and three case histories are included.

Silver, Archie A. and Hagin, Rosa A. "Maturation of Perceptual Functions in Children with Specific Reading Disability," The Reading Teacher, 19 (January 1966) 253-59.

A followup study of children with specific reading disabilities studied and treated at the Bellevue Hospital Mental Hygiene Clinic since 1949 is reported. The study was undertaken to determine the nature and extent of perceptual maturation in the patients with reading disability studied and treated from 1949 to 1951. Eighteen subjects, aged 16 to 24, were called back for study during 1962. The group was divided into two subgroups--Organic and Developmental--and administered a battery of tests to measure: 1) visual perception; 2) auditory perception; 3) tactual perception; 4) laterality; 5) body image; and 6) educational achievement. It was found that the Organic Group was limited to improve reproduction of visually presented stimuli and some aspects of laterality. The Developmental Group showed improvement in areas of perceptual deficit but failed to establish clear-cut laterality. The group as a whole had learned to use word attack skills in oral reading. Poorer reading comprehension was found in the Organic Group than in the Developmental Group. The implications of the results are discussed; questions raised by the study are listed. References and tables are included.

Silver, Archie A. and Hagin, Rosa. "Specific Reading Disability: Delineation of the Syndrome and Relationship to Cerebral Dominance," Comprehensive Psychiatry, 1 (April 1960) 126-34.

A neurological and perceptual study of 150 children between 8 and 14 years of age suffering from word blindness, strepho-symbolia, specific dyslexia, and developmental alexia revealed that 92 percent exhibited a marked syndrome. Characteristic of this syndrome were defects in right-left discrimination; discrepancy between writing hand and elevated extremity in extension testing; postural, visual, and motor responses less mature than the chronological age or IQ of the child; marked difficulty in figure-background perception; inability to grasp temporal relationships of sounds; and body image distortion. Electroencephalograms done in 15 cases were disrhythmic and suggested immaturity. Eight percent of the children tested revealed none of these symptoms and were classified "emotional," while 22 percent of the total group revealed organic signs of structural damage. A followup study revealed that maturation in specific areas of difficulty occurs, but that diagnosis of defects aids in selecting appropriate therapy for all but those with structural damage, for whom treatment is difficult. A bibliography is included.

Wolf, Clifton W. "An Experimental Investigation of Specific Language Disability (Dyslexia)," Bulletin of the Orton Society, 17 (n.m. 1967) 32-39.

An intensive and extensive study of children previously diagnosed as dyslexic was made. The project investigated three major areas related to dyslexia: (1) the quantitative ways in which children with dyslexia differ from normal children, (2) the statistical characteristics of children with dyslexia, and (3) the subpatterns or clinical syndromes within the category of dyslexia. Thirty-two boys who were diagnosed as dyslexic and who met certain criteria were matched with 23 normal readers who met the same criteria, except that they were not dyslexic and were at grade level or above in reading and spelling. One hundred and ninety-eight variables or measurement procedures were selected for investigation. Among the findings noted were various differences and degrees of difference between the two groups in oral and silent reading abilities, spelling ability, auditory perception, intellectual abilities, and visual retention. A great need for researchers and diagnosticians who are trained in language therapy in order that they can better learn about dyslexia was emphasized. References are included.

Section 4: Identification of Severe Cases

Krippner, Stanley. "Diagnostic and Remedial Use of the Minnesota Percepto-Diagnostic Test in a Reading Clinic," Psychology in the Schools, 3 (April 1966) 171-75.

The Minnesota Percepto-Diagnostic Test (MPD) was evaluated at Kent State University Child Study Center. It was considered for possible inclusion in the test battery given to clients exhibiting reading disability.

Twenty-four clients, aged 7 to 16, with a mean IQ of 101, were administered the MPD by the investigator. Other tests were administered separately by graduate clinicians who were unaware of the MPD results. Diagnostic statements were prepared by the clinicians; agreement between these and the MPD results was found to be 100 percent except in two cases. The major etiological factor behind the reading disability was described as organic, primary, or secondary, and a case study of each type is given. A bibliography is included.

Kucera, Otakar; Matejcek, Zdenek; and Langmeier, Josef. "Some Observations on Dyslexia in Children in Czechoslovakia," American Journal of Orthopsychiatry, 33 (April 1963) 448-56.

The characteristics of dyslexic children in Czechoslovakia are reported. This was supplemented with an epidemiologic survey to ascertain the average development of reading ability, the frequency of diminished abilities, and their distribution in normal children. Dyslexic subjects were 81 boys and 10 girls between the ages of 7 years 2 months and 13 years 6 months treated in a sanatorium with analytico-synthetic reading methods. Nearly all children were more than 3 years retarded in reading. A team of specialists diagnosed and constantly worked with the subjects under the direction of a psychologist. Children were divided into four groups: mild encephalopathy, hereditary, cerebral lesion with preexisting hereditary predisposition, and neurotic. This provided a basic orientation to treatment. Characteristics of each group were discussed. Chi-square was used to analyze the data. Findings concerning the characteristics of the group were similar to those of other studies. There were more left-handed children in the groups. As to laterality, the hypothesis of Orton was not confirmed. Cases of "pure" dyslexia were distinguished from degrees of dyslexia clinically. References are included.

Leton, Donald A. "Visual-Motor Capacities and Ocular Efficiency in Reading," Perceptual and Motor Skills, 15 (October 1962) 407-32.

This study attempts to evaluate psychometric tests of visual-motor capacities and to develop clinical procedures for electrical recording of ocular-motor patterns. Prefacing the study is a review of literature in the areas of ocular-motor coordination, sex differences in reading disability, and visual perception and discrimination. Twenty-one subjects for the study were selected from the intermediate grades of three elementary schools in California. Thirteen boys in the experimental group were selected from remedial classes, and the eight boys in the control group were chosen from regular classes. Aside from the usual group tests, background and developmental information was obtained and a psychometric battery of six tests was used. Visual screening was included and electro-oculogram recordings were made for three series of tracings. Measurement

of results are graphically depicted through a series of graphs, tables, and descriptive observations. An extensive annotated bibliography is included.

Section 5: Treatment

Radaker, Leon D. "Imagery and Academic Performance," Elementary School Journal, 63 (November 1962) 91-95.

Results of an experiment to determine the effect of training on students' ability to form visual images are reported; the beneficial effects of visual imagery upon academic subjects are discussed. When the study was extended to retarded children, parallel results were achieved. Apparently training in imagery was effective for children at all levels of intelligence. The instruments used were four author-made tests: the Visual Imagery Index, the Memory for Designs Test, the Memory for Objects Test, and the Memory for Word Forms Test. The purposes and methods for developing these tests are described. Subjects were a random sample of 29 boys and 31 girls, all fourth-grade pupils in the public schools of Butler, Pennsylvania. The IQ range was from 79 to 132; chronological ages ranged from 8 to 16 years. Socioeconomic factors were considered. The subjects were randomly assigned to three experimental groups. The control group had six sessions of free play and social conversation. One experimental group had two 45-minute sessions wherein they were given training in the creation of images for selected assorted words, and the second group had six similar sessions. The experimental groups showed significant gains in performance over the control group. Six sessions were no more effective than two sessions. A table showing initial and final gains on tests of visual imagery is provided. References are included.

Schiffman, Gilbert. "Dyslexia As An Educational Phenomenon: Its Recognition and Treatment," Reading Disability: Progress and Research Needs in Dyslexia, John Money, Ed., Chapter 3, 45-60. (Baltimore: Johns Hopkins Press, 1962.)

Although few schools have either the money or the trained personnel to run remedial programs for clinically retarded readers, the Baltimore County Public Schools developed one for primary and high school pupils with slightly below average to above average IQ's who could do good work if they were read to. Acceptance came on referral by corrective reading teachers or psychologists and diagnosis by a battery of 11 tests. Parents were required to attend all PTA and Family Life Meetings as well as to provide transportation. Pupils attended clinic half-days and their regular schools the rest of the day. Individually constructed programs employed a wide variety of methods and materials for remediation, though two basic principles kept in mind were: (1) to start with the simple and

proceed to the complex in an orderly way, and (2) to use all sensory pathways to reinforce weak memory patterns. Attempts at psychotherapy were of doubtful benefit. Clinic results indicated most success in the early grades and reinforced the hypothesis that no one discipline or method can solve the problem of dyslexia by itself.

Willson, Margaret F. "Clinical Teaching and Dyslexia," The Reading Teacher, 21 (May 1968) 730-33.

Three groups of young male dyslexics were studied in this investigation of the relative effectiveness of three clinical techniques applied to children having association learning difficulty. The most probable of three possible causes of this difficulty (educational, psychological, and neurological factors) had been identified. The three hypotheses tested stated (1) that the traditional basal reader approach was more successful than the linguistic approach or the experience approach when the educational factor was identified, (2) that the linguistic approach was more successful than the other two approaches when the psychological factor was identified, and (3) that the experience approach was the most successful when the neurological factor was identified. Each child was exposed to all three techniques, and his responsiveness to each was ranked. All three groups proved the second and third hypotheses. No conclusion could be drawn for the first as no educational factors were identified. References are included.

Section 6: Follow-Up Treatment

Balow, Bruce and Blomquist, Marlys. "Young Adults Ten to Fifteen Years After Severe Reading Disability," Elementary School Journal, 66 (October 1965) 44-48.

The present study was designed to obtain an overview of the social and psychological status of young adults who had been diagnosed as severely disabled readers in their elementary school years. Occupational position, level of education, level of reading skill, educational status, attitudes toward reading and remedial help, and marital status were assessed by telephone interview and a testing session. The sample, 32 males between the ages 20 and 26, were studied initially at the University of Minnesota Psycho-Educational Clinic during the years 1948 to 1953. Selection of the sample was based on sex, age, clinical diagnostic classification, intelligence, and amount of retardation in reading. Only those pupils in a 50-mile radius, with no primary emotional disturbances or other handicapping conditions, and with IQ's in the average range were included in the study. The telephone interview was completed with 23 subjects, and the tests of current reading and emotional status were given to nine of these subjects. Three groups of subjects were described:

Group 1, those who completed the telephone interview and who agreed to come in for testing; Group 2, those who completed the telephone interview but refused to come in for testing; and Group 3, those who were unavailable for interview. Results of the study are discussed and additional research is suggested. Tables and references are given.

Gallagher, James J. The Tutoring of Brain-Injured Mentally Retarded Children. (Springfield, Illinois: Charles C. Thomas, Publisher, 1960) 194 p.

The procedures and results of a 3-year experiment in the clinical tutoring of 42 brain-injured, mentally retarded children, aged 7 to 13, are outlined in detail and with many tables and charts in this report. The children were divided into two groups matched by age, IQ, and mental age. One group received special tutoring for 21 months while the second did not, and then the second group received 12 months of training while the first group did not. A comparison of the gains indicate, among other things, that: (1) significant improvement took place with special tutoring, but that cessation of tutoring resulted in regression or arrested development; (2) more improvement took place in verbal skills, but all subjects had difficulty with abstractions; (3) those aged 8 to 10 showed greater gains than older children; (4) some favorable behavior changes occurred; and (5) there were great individual differences in response. Implications and recommendations for education, psychology, neurology, and physiology, as well as a research program are outlined. A bibliography and an introductory survey of the literature are included.

PART IV--DIAGNOSTIC TECHNIQUES

Attention is directed within this part to the importance and use of various methods of obtaining diagnostic information. Reference is also made in several studies to certain techniques that have recently been developed and recommended.

Cawley, John F. "Reading Performance Among the Mentally Handicapped: A Problem in Assessment," Training School Bulletin, 63 (May 1966) 11-16.

The effect of tight circularity between level of performance on a standardized test and the administration, scoring, and statistical evaluation of various diagnostic and developmental tests was investigated. It was pointed out that the characteristics assigned to a good reader or poor reader group are frequently so highly related to the measure by which the subjects were labeled good or poor readers that the contribution of the diagnostic battery is limited. The Developmental Reading Test (DRT), the Silent Reading Diagnostic Test (SRDT), and the Phonics Mastery Test (PMT) were administered to 67 mentally handicapped children, mental age 107 months, between the IQ range of 50 to 80, who were enrolled in special education classes. The upper-third were designated as good readers and the lower-third as poor readers. The t test was applied to the mean scores of the groups on the subtest for the DRT, SRDT, and PMT. Significant differences between almost all subtests were reported. It was suggested that the scores on the various subtests were subject to influences which did not permit them to be measured independently. It was recommended that treatment procedures based on knowledge of the psychological correlates of reading disability rather than on simply the measurement of educational performance be developed. Tables and references are included.

McLeod, John. "Some Psycholinguistic Correlates of Reading Disability in Young Children," Reading Research Quarterly, 2 (Spring 1967) 5-31.

Three psycholinguistic experiments dealing with automatic-sequential, nonmeaningful skills were carried out to determine the relationship of such skills to communication disorders in general and to reading disabilities in particular. G. A. Miller's experimental methods were adapted to the requirements of these experiments using an experimental group of 23 disabled readers in the second grade and a comparable control group of normal readers. The ability of both groups to reproduce printed letter sequences was tested by projecting first single letters, then two letters, three, and so forth, from an automatic Paximat S with tachistoscopic shutter at 1-second intervals until the child failed all 5-letter sequences of a given length. The reading disability group was significantly inferior to the control group, and the deficiency was not dependent on the approximation to familiar English. The capacity to reproduce words presented

auditorily was tested by presenting the test words at the end of seven words of varying degrees of approximation to spoken English. The disabled group needed a higher sound intensity for 50 percent successful reproduction, and performance improved when the seven preceding words more closely approximated English. Vocal reproduction of isolated monosyllables was tested. Again, the disabled group required a higher sound intensity, though their ability was comparable to the control group. The techniques employed were practical and yielded valid results.

Section 1: Observation

De Hirsch, Katrina; Jansky, Jeannette Jefferson; and Langford, William S. Predicting Reading Failure: A Preliminary Study. (New York: Harper and Row, 1966) 144 p.

Specific contributions to the field of language disorders are reported. A predictive index is presented for diagnostic use in schools. Through its use teachers may be able to identify at the kindergarten level those children who are high risks of academic failure. Also, clinical findings concerning full-term and prematurely born children are discussed in terms of maturational delays related to factors affecting lags in learning. A bibliography, glossary, and background sources are listed.

Haring, Norris G. and Ridgway, Robert W. "Early Identification of Children with Learning Disabilities," Exceptional Children, 33 (February 1967) 387-95.

The study sought to discover whether the child with potential learning disabilities can be identified during kindergarten by a series of tests believed to predict such difficulties. Forty-eight kindergarten classes including over 1,200 children were screened for potential learning disorders. Kindergarten teachers used objective observations of the children's performance on gross muscle coordination, verbal fluency, speech development, auditory memory, auditory discrimination, visual memory, visual discrimination, visual motor performance, directionality, and laterality. Final selection of 106 children included in the study was by psychological and psycholinguistic group and individual tests. Correlation analysis and 3 principle components analysis of the data were made. Test profiles indicated that teachers' observations were useful in selecting children with developmental retardation. Performance scores treated as a group masked differences in rate and accuracy of performance. The identifiable commonality among 31 variables was general language. A bibliographical essay appears in the text, and there is a bibliography.

Lytton, H. "An Experiment in Selection for Remedial Education," British Journal of Educational Psychology, 31 (February 1961) 79-94.

A method of selecting students for a remedial program in Scotland, based on the discrepancy between mental age and reading age in comparison to teacher judgment, is reported. In three adjustment centers, one-half of the students to be used were selected by each method. A minimum IQ score of 80, and a minimum retardation of 15 percent were the conditions for admission. The children were ranked by the teachers in order of those they considered most likely to benefit from the adjustment group. These children were tested and priority lists based on the tests were drawn up. Children were chosen alternately from the top of the test lists and from the top of the teachers' lists until the adjustment groups were completed. The Sleight Picture Group Intelligence Test, Burt Word Recognition Test, and the Staffordshire Arithmetic Test were administered. Scores received on the previously administered Terman-Merrill IQ Test were compared to scores on the picture test. Gains of children selected by tests were compared to gains of those selected by teachers. Gain scores, t-test, and partial and multiple correlations were used to analyze the data. The results are discussed. Conclusions, interpretations, and suggestions for further research are offered. A bibliography, tables, and appendices are included.

Schab, Fred. "The Effects of Two Different Approaches to Remedial Reading on the Permanence of the Resulting Achievement," Childhood Education, 44 (October 1967) 140-41.

The performance of remedial reading gains made by 84 fifth graders was indicated by the results of a followup study done 4 months after the completion of the original study. The experiment had tested the difference between gains made in a teacher-pupil-planned activities program and in a teacher-planned activities program. In all but one of the cases (boys in teacher-planned activities) the gains made in the January-May program were held or improved upon by the October followup testing with the teacher-pupil-planned students doing better than the teacher-planned students. References and tables of results are included.

Section 2: Diagnosis through Tests

Arnold, Bettie B. and Arnold, Richard D. "Professional Judgment Indicated: Measures and Judgments of Reading Level for Disabled Readers," Minnesota Reading Quarterly, 11 (October 1966) 9-15, 29.

The reading grade levels from standardized test scores, informal test data, and the reading level judgments of clinicians and tutors on their population of disabled readers (46 boys and seven girls) were compared. The students ranged in age from 8 to 18 years. Binet, Wechsler

Intelligence Scale for Children, and Wechsler Adult Intelligence Scale scores on the sample ranged from 70 to 133. The Gates Primary Reading Test, the Gates Advanced Primary Reading Test, and the Gates Reading Survey were the standardized instruments used. Informal inventories from a basal reader series and the reading test of the Wide Range Achievement Test (WRAT) were used as measures of pronunciation of words in isolation. Comparisons were made between professional judgments of independent and instructional reading levels and (1) the Gates scores, (2) informal inventory levels, (3) the WRAT score, (4) the highest score of all three tests, (5) the lowest test score, and (6) the mean score of the three tests. Correlations for both clinician and tutor judgment tended to be highest with the WRAT (.63 to .80), followed by the Gates Tests (.47 to .81), and ranged from .22 to .69 with informal inventories. Tables and references are included.

Buros, Oscar Krisen, Ed. The Sixth Mental Measurement Yearbook. (Highland Park, New Jersey: The Gryphon Press, 1965) 1714 p.

This basic reference is the tenth in a series of publications since 1933 designed to assist test users in education, industry, psychiatry, and psychology to locate, choose, and use tests with greater ease and discrimination. It aims to improve the quality of tests and to aid in their use by means of the critical reviews which accompany its up-to-date listing of recent tests and books on measurement published in English-speaking countries. A greatly expanded Tests and Reviews Section, arranged by subject, comprises the bulk of the volume, with lists of 1,219 tests and 795 reviews. The Books and Reviews Section contains an expanded list of 527 books. Since this volume is designed to supplement rather than to supersede the previous Mental Measurement Yearbooks (MMY), it is most effectively used in conjunction with them and with Tests in Print, a comprehensive listing of tests up to 1961 and a master index to the first five MMY's. Five Indexes guide the reader to Periodicals, Publishers, Titles, Names, and Tests. An important addition to the Title and Test Indexes is the listing of 952 other tests known to be in print by mid-1964 as well as those for which full entries are made.

Chansky, Norman M. "Measuring the Intelligence and Achievement of School Dropouts with the Benton Visual Retention Test," American Journal of Mental Deficiency, 71 (1966) 191-95.

Studies of 160 culturally deprived Appalachian and Tidewater North Carolina school dropouts indicate that the Wechsler Adult Intelligence Scale (WAIS) and the Benton Visual Retention Test (BVRT) measure similar intellectual attributes. This finding is of interest to researchers since the BVRT, which requires a 10-second examination of each of 10 sets of geometric designs and then a reproduction from memory of the designs, has been used primarily in the past with brain-damaged and educationally

retarded children. Correlations of the two tests were .64 in the Appalachian sample, and .68 in the Coastal sample. Scholastic achievement was found to be related to scores on both tests. Correlations of the BVRT with achievement scores on the Wide Range Achievement Test (WRAT) ranged from .40 to .58 as compared to WAIS-WRAT correlations which ranged from .14 to .26. Evidence is presented which suggests that the BVRT may predict the achievement of some culturally disadvantaged samples to a greater degree than the WAIS. References are included.

Coates, Leslie F. "The Enigma of the Survey Section of the Diagnostic Reading Test," Multidisciplinary Aspects of College-Adult Reading, G. B. Schick and M. M. May, Eds. National Reading Conference Yearbook, 17, (1968) 70-78.

When it was noted that changes in test results appeared with the use of different forms of the Diagnostic Reading Test (DRT) and different sequencing of these forms, a 2-year study of DRT results was begun. Form C was given at the beginning, and Form B at the end of the term for the school year 1964-65; the order of administration for the two forms was reversed for the following year. In addition, Form D was given to one class after Form C was given at the end of the school year 1965-66. Analysis of the test results indicated significant differences with different forms of the DRT. Of the 63 subjects who took Form C at the end of the term, 65 percent showed some loss in total comprehension score. Of the 63 subjects who took Form D after Form C, 38 percent showed a loss in total score. Pearson product-moment coefficients of correlation computed between Forms B, C, and D given on a test-retest basis with instruction intervening showed a range of from .64 to .87. On a test-retest check with no instruction, coefficients of correlation ranged from .53 to .84. It was concluded that the range of correlations was too wide to warrant the assumption that the tests give equivalent values. It was suggested that a corrective factor be used or that the results should be converted to standard scores.

Curr, W. and Gourlay, N. "The Effect of Practice on Performance in Scholastic Tests," The British Journal of Educational Psychology, 30 (June 1960) 155-67.

The practice effect for standardized tests in word reading, reading comprehension, and mechanical arithmetic when tests are given at varying time intervals to subjects at the average level of accomplishment and to those testing 2 years below was measured. Subjects were chosen randomly from pupils between 9 and 10 years of age attending four primary schools in Birmingham. Pupils at the average level of ability were at the 9 years 5 months year level; pupils 2 years below average were at the 7 years 5 months year level. Four groups, each composed of six boys and six girls, and two groups of 12 boys and 12 girls each were used in the

study, initial, mean, and final scores and gains in months were tabulated for each group for each interval of practice. Practice effect was greatest for reading comprehension. Pupils tested on both forms of the reading comprehension test at an interval of 1 month registered gains of 7 years 2 months and 4 years 2 months at the 9 years 5 months and 7 years 5 months levels, respectively. Practice effect was only slight for the arithmetic test. It was noted that gains made by the controls could be explained in terms of maturation and practice effect. Evidence of a coaching effect was demonstrated when retests were given to both remedial and control groups a year after the close of the experiment. Gains varied with the type of test used and disappeared in 3 to 12 months. It appeared that remedial education produced no permanent results. References are given.

Davis, William Quinby. A Study of Test Score Comparability among Five Widely Used Reading Survey Tests. 112 p. (Ph.D., Southern Illinois University, 1968) Dissertation Abstracts, 29, No. 12, 4370-A. Order No. 69-6261, microfilm \$3.00, xerography \$5.60 from University Microfilms.

The purpose of this study was to develop equivalency tables equating reading grade level scores among the following five reading tests: the California Reading Test (Upper Primary and Elementary), the Gates-MacGinitie Reading Tests (Primary C and Survey D), the Metropolitan Achievement Tests (Elementary and Intermediate Reading Tests), the SRA Achievement Series: Reading, and the Stanford Achievement Test (Primary II and Intermediate II Reading Tests). Ten third-grade classes and nine fifth-grade classes comprised the sample population. The tests were administered in a randomized sequence and were scored manually by the investigator and trained personnel. Ogive curves were used to make the equivalency tables. The Gates-MacGinitie tests were adopted as a base of comparison for each table and as a base against which the other four tests were statistically aligned. All five tests were highly correlated at both the third- and fifth-grade levels.

Elder, William and Attea, Mary. "Three Diagnostic Reading Tests: Some Comparisons," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceeding, 11, Part 1 (1966) 562-66.

A comparative exploration of the Durrell, Gates-MacKillop, and Spache diagnostic reading tests is reported. Between-test and within-test discrepancies were checked, using scores from a random sample of 101 third-grade pupils. Statistical analyses for the subtests for oral reading and word analysis showed high correlation for function and skill. The t-test for equivalency of scores showed consistently higher grade level values on the Spache test. Unequal item difficulties were noted for listening comprehension and silent reading on the Durrell and Spache subtests. Since the tests are designed for observing faulty habits and weaknesses, the

sophisticated diagnostician must evaluate pupils' reading abilities as they succeed or fail on the various test obstacles. References are listed.

Graubard, Paul S. "The Use of the Peabody Picture Vocabulary Test in the Prediction and Assessment of Reading Disability in Disturbed Children," The Journal of Educational Research, 61 (September 1967) 3-5.

Twenty-three institutionalized emotionally disturbed boys with reading disability were tested with the Metropolitan Achievement Test, the Peabody Picture Vocabulary Test, the Illinois Test of Psycholinguistic Abilities, and the Wechsler Intelligence Scale for Children. The purposes of the study were to obtain congruent and concurrent measures of validity in the Peabody and to examine the Peabody for unique contributions to the assessment of intelligence. It was found that the Peabody did not significantly correlate with academic achievement measures or with the Illinois measures of auditory and visual decoding. However, the Peabody did correlate significantly with the combined Auditory-Vocal and Visual-Motor Association Scores. It appears that the Peabody is tapping global rather than receptive measures of intelligence. The Peabody correlated with the Wechsler Verbal, Full Scale, and Vocabulary sections but not with the Performance section. The question is raised as to how helpful this information will be to an intervention program. References and tables are included.

Hackney, Ben H., Jr. "Reading Achievement and Word Recognition Skills," The Reading Teacher, 21 (March 1968) 515-18.

One thousand seven hundred and eleven fourth-grade students were divided into three differential reading achievement level groups to determine whether there was a basic pattern of word recognition skills taught in a basal reading series program acquired by each group. The California Reading Test was used to differentiate the three groups, and the Doren Diagnostic Reading Test of Word Recognition Skills measured the word recognition skills of each group. Eleven null hypotheses were stated concerning each of the 11 measured skills. Students high in reading achievement scored higher on each of the 11 skills tests. The study concluded that good readers possess better word recognition skills than do poor readers. References are included.

Holmes, Jack A. "Personality Characteristics of the Disabled Reader," Journal of Developmental Reading, 4 (Winter, 1961) 111-22.

A comprehensive examination of the relationship of personality development to reading ability was conducted through documentary analysis. Studies of personality traits and success in reading or spelling from

grade school through college level are reported, and the literature is reviewed. Experimental attempts to establish a relationship between certain personality traits and success in reading or spelling have yielded inconsistent results--positive at the lower grade levels, negative at the high school and college levels. These inconsistencies are explained by the offered gradient shift hypothesis, and further credence is gained if these developmental changes are pictured as a gradual process of internalizing into deep-seated value systems what was initially, in the child, merely a superficial role-mask of persona guide for behavior. Out of such childhood notions of what one's self-image ought to be, deep-seated value-convictions called mobilizers are developed. Mobilizers are defined and their roles are discussed. References are appended.

Krippner, Stanley. "Diagnostic and Remedial Use of the Minnesota Percepto-Diagnostic Test in a Reading Clinic," Psychology in the Schools, 3 (April 1966) 171-75.

The Minnesota Percepto-Diagnostic Test (MPD) was evaluated at the Kent State University Child Study Center. It was considered for possible inclusion in the test battery given to clients exhibiting reading disability. Twenty-four clients, aged 7 to 16, with a mean IQ of 101, were administered the MPD by the investigator. Other tests were administered separately by graduate clinicians who were unaware of the MPD results. Diagnostic statements were prepared by the clinicians. Agreement between these and the MPD results was found to be 100 percent except in two cases. The major etiological factor behind the reading disability was described as organic, primary or secondary, and a case study of each type is given. A bibliography is included.

Leibert, Robert E. An Investigation of the Differences in Reading Performance on Two Tests of Reading. 184 p. (Ed.D., Syracuse University, 1965) Dissertation Abstracts, 26, No. 10, 5919. Order No. 66-1012, microfilm \$3.00, xerography \$8.40 from University Microfilms.

The Gates Advanced Primary Reading Tests (GAPRT) and an Informal Reading Inventory (IRI) were studied to identify differences in reading measurement. Attention was focused on dissimilarities in the criteria used in scoring and on test composition affecting the type of reading performance measured and the interpretation of this performance. In May, the GAPRT and IRI were administered to 70 second-grade children attending schools in West Babylon, New York. A second form of the Gates test was administered to these children in October. Sections of the GAPRT were administered using several different instructions. To demonstrate the differences in interpreting test results because of dissimilarities in test composition, responses on the Gates test were analyzed according to their difficulty, error patterns and children's expectations for choosing an answer. The general findings indicated that there was sufficient differences between these two tests to conclude that the grade-placement score

of the Gates test reflects a more global measure of reading performance than does the instructional level of the Informal Reading Inventory. It was concluded that the range of test difficulty and the variety of skills employed on the Gates test should not be expected to result in a score equivalent to the instructional reading level as determined by the more narrowly conceived performance measured by the IRI. Additional results are included.

Lennon, Roger T. "What Can Be Measured?" Reading Teacher, 15 (March 1962) 326-37.

A review of the outstanding research carried out since 1941 on problems related to the measurement of reading ability is presented. These four components of reading ability are considered reliably measurable: a general verbal factor (word knowledge), comprehension of explicitly stated material, comprehension of implicit or latent meaning, and an element that might be termed "appreciation." Special problems related to the measurement of speed are discussed. Important values related to reading which cannot be measured, such as the quality or richness of a person's interpretation of a given selection, the wisdom with which persons make their choices of reading matter, and the extent to which they profit from their reading, are considered. References are included.

Lyle, J. G. "Errors of Retarded Readers on Block Designs," Perceptual and Motor Skills, 26 (n.m. 1968) 1222.

When 54 retarded readers performed the Memory-for-Designs Tests (MFD) significantly less well than 54 normal readers, it was hypothesized that scores on the Wechsler Intelligence Scale for Children (WISC) Block Designs, another measure of perceptual and perceptual-motor skills, would also show a significant discrimination. However, a comparison of the WISC Block Design scores for the same subjects showed no between-group difference in scale scores. A qualitative analysis of reversals and primitivizations as a percentage of the total errors of each child comprised part of the data. Visual feedback as a performance check in the WISC but not in the MFD is suggested as a possible factor favoring the retarded subjects. References are included.

Lyle, J. G. "Performance of Retarded Readers on the Memory-for-Designs Test," Perceptual and Motor Skills, 26 (n.m. 1968) 851-54.

Fifty-four retarded readers of at least average IQ and 54 adequate readers aged 6.5 to 12.5 years were administered the Memory-for-Designs Test. This was scored first according to the standard Graham and Kendall system and, secondly, according to a new system which took into account

all errors of displacement, omission, and addition. Both methods discriminated significantly between the groups, the standard scoring system being somewhat better than the new system. Discrimination was maintained after adjustments for IQ differences were made. The results suggested that reading retardation may be a symptom of minimal cerebral dysfunction. Tables and references are included.

Lyle, J. G. and Goyen, Judith. "Visual Recognition, Developmental Lag, and Strophosymbolia in Reading Retardation," Journal of Abnormal Psychology, 73 (n.m. 1968) 25-29.

Three sets of tachistoscopically projected stimuli (letters of the alphabet, lines, and the word shapes) were each presented under three conditions of visual recognition (immediate, delayed, and sequential) to a group of retarded readers and a control group of adequate readers. Controls and experimental subjects were screened for visual and auditory acuity, matched for grade placement, and were within the average range of intelligence. Experimental subjects performed less well than controls on all nine tasks, with differences in perceptual speed suggested as a reason. Differences were greater at the younger age levels, supporting the developmental lag theory. The data were also analyzed for reversal errors. Tables and references are included.

McCall, Rozanne A. and McCall, Robert B. "Comparative Validity of Five Reading Diagnostic Tests," Journal of Educational Research, 62 (March 1969) 329-33.

Five diagnostic reading tests were administered to 27 fourth-grade children in order to study their validity and the interrelationships among them. The following instruments were administered: (1) Bond, Clymer, Hoyt Silent Diagnostic Reading Test, (2) Doren Diagnostic Reading Test, (3) McKee Inventory of Phonetic Skills, (4) McCullough Word Analysis Test (Experimental Edition), and (5) Roswell-Chall Diagnostic Reading Test of Word Analysis Skills. Criterion measures included (1) teacher rankings on reading comprehension, word recognition, and arithmetic ability; (2) third-grade reading and arithmetic school grades; (3) comprehension, reading, and arithmetic grade-placement scores on the Iowa Test of Basic Skills; and (4) the IQ scores of the California Test of Mental Maturity. The tests were found to correlate higher with teacher rankings than with other criteria. When intercorrelations were computed, it was found that the Bond, McCullough, and Doren tests shared considerable common variance (64 percent) and correlated higher with the Roswell than with the McKee. The highest correlations for the reading tests were with measures of arithmetic ability rather than reading. It was concluded that the five measures have acceptable validity coefficients. Tables and references are given.

McCracken, Robert A. "Standardized Reading Tests and Informal Reading Inventories," Education, 82 (February 1962) 366-69.

A comparison of the grade level ratings achieved by a group of sixth-grade children on the Iowa Test of Basic Skills, Form I, with ratings obtained on an informal reading inventory was made. The subjects were 37 girls and 19 boys in the same elementary school in a small city system. The tests were administered within a period of 3 weeks. Scores from the reading comprehension and vocabulary sections of the Iowa test were used. The informal inventory was divided into three reading level readings - immediate instructional level, maximum instructional level, and word recognition instructional level. The standardized test grade levels were approximately 2 years higher than the instructional book level scores as measured by the informal reading inventory. A discussion of the implications of the results is included. Two tables are given.

McDonald, Arthur S. "Factors Affecting Reading Test Performance," Research and Evaluation in College Reading. Ninth Yearbook of the National Reading Conference for College and Adults, 28-35 (Fort Worth: Texas Christian University, 1960).

The effect of varied length and difficulty of selections under different timing conditions on rate and comprehension, and the influence of certain personality characteristics on reading test performance was studied. Subjects were 117 freshmen and sophomores enrolled in Reading Improvement classes at Marquette University. Three articles of equal difficulty, varying in length from 800 to 3,000 words were used, followed by 10 questions checking main ideas, details, conclusions, and generalizations. Passages were read under self-timed conditions with no interruptions by Group 1, while subjects in Group 2 were interrupted at the end of 2 minutes, then finished without interruption. Groups 3 and 4 read the same passages under periodic interruptions with time recorded for total reading. Analysis of variance indicates the four groups did not differ significantly in rate, but differed in comprehension both statistically and educationally. Length of passage did not seem to affect reading performance. However, periodic interruption showed a significantly detrimental effect on reading performance of individual students who rated high anxious on the SA-S Scales. A summary of conclusion, implications for teaching, and related references suited for further investigation are included.

Merritt, J. E. "Assessment of Reading Ability: A New Range of Diagnostic Tests?" Reading, 2 (June 1968) 8-16.

Intermediate reading skills, defined as being above the level of single word recognition but below the level of meaning, were assessed by having subjects read passages that were approximations to English. Subjects were 19 8-year-old children and 19 9- and 10-year-old children. To

reduce the influence of the word recognition factor, 37 very high frequency words from the McNally and Murray list of key words were used. Four tests, each 111 words in length, were administered in systematically varying order: (A1) each word appearing three times in random sequence, (A2) words printed in random sequence appearing in proportion to their frequency of occurrence in B2, (B1) words equally represented as in A1 but rearranged in accordance with the probability of their following the immediately preceding word in normal text, (B2) words chosen any number of times but arranged as in B1. The Neale Analysis of Reading Ability was also given. Data from experimental tests were examined in terms of accuracy and speed. B tests were read with greater speed and with fewer errors than were A tests. A marked increase in fluency with age was noted. Tables and references are included.

Mitchell, Blythe C. "Predictive Validity of the Metropolitan Readiness Tests and the Murphy-Durrell Reading Readiness Analysis for White and for Negro Pupils," Educational and Psychological Measurement, 27 (Winter 1967) 1047-54.

The predictive usefulness of reading readiness tests with Negro children was examined as part of a series studying the various aspects of reading. The Murphy-Durrell Reading Readiness Analysis and the Metropolitan Readiness Tests, Form A, were administered to a racially diverse sample including 7,310 white first-grade children from 13 area projects and 518 Negro first-grade children from 11 of these 13 projects. Correlations of subtests and total scores with raw scores on the Stanford Achievement Test, Primary I, Form X, showed that there were some significant differences in both directions for both white and Negro children. Comparisons of standard deviations showed similarly mixed relationships. It was concluded that no evidence existed in the results to support the hypothesis that the Metropolitan or the Murphy-Durrell test has lower predictive validity for Negro than for white children. Tables and one reference are included.

Money, John, Ed. The Disabled Readers: Education of the Dyslexic Child. (Baltimore: The Johns Hopkins Press, 1966) 421 p.

Various approaches to the diagnosis and treatment of the dyslexic child are presented by authorities in the field. The volume was assembled by inviting original chapters from 13 contributors and by asking four others for permission to reprint already published material. In Part 1: Phenomenology and Theory, neuro-psychological, epidemiological, developmental, operant behavioral, and linguistic aspects of dyslexia are described. In Part 2, a chapter for each of the following teaching methods and program organizations is included: the Orton-Gillingham approach, tracing and kinesthetic techniques, the initial teaching alphabet, the Words in Color system, the Color Phonics system, the Progressive Choice

Reading Method, methods of providing mature content for immature skills, and program administration providing for remedial and corrective instruction within a school system. Six case studies comprise Part 3. A glossary and bibliography are included.

Otto, Wayne and McMenemy, Richard A. "An Appraisal of the Ammons Quick Test in a Remedial Reading Program," Journal of Educational Measurement, 2 (December 1965) 193-98.

The validity of the Ammons Quick Test (QT) as a screening test of intelligence for use by remedial teachers with poor readers in a naturalistic setting was appraised. A brief description of the test is included. Subjects were 110 fourth through ninth graders from a large metropolitan school district. Each child was a certified participant in a remedial reading program and had taken a Wechsler Intelligence Scale for Children (WISC) test within 2 years. Boys outnumbered girls. QT's were administered by regular remedial reading teachers. Scores were converted to mental age, and IQ's were computed. Scores obtained on the WISC were compared to QT scores. Means, standard deviations, correlations, and percentages were used to analyze the data. Mean QT scores were consistently higher than mean WISC scores. There was a decrease in QT scores with an increase in grade level. Boys' QT mean scores tended to be higher than QT means for all subjects. There was greater variability in QT scores. Conclusions and references are included.

Rankin, Earl F., Jr. "Reading Test Reliability and Validity as Function of Introversiion-Extroversiion," Journal of Developmental Reading, 6 (Winter 1963) 106-17.

Three studies attempting to determine the relationship between introversion-extroversion and reading test reliability and validity are reported. The series of three investigations included a cloze-test using 161 college students which was conducted under two testing conditions, namely a pre-reading cloze test and a post-reading cloze test. Validity coefficients were computed separately for subjects falling above and below the median on the SA scale of the Smith SA-S Senior Scales. A second investigation reviewed was an attempt to determine the reliability of the Cooperative English Test C-2, Reading Comprehension, as a function of introversion-extroversion. Here, a group of 84 high school students took both the Cooperative English Test and the SA-S Senior Scales. Separate split-half reliability coefficients were computed on the same basis as for those subjects using the cloze test study. Total scores were correlated with grades in a course in Educational Psychology for a group of 49 college students. The third investigation studied was designed to determine the test-retest reliability of the Diagnostic Reading Test: Survey Section, using a group of 100 college students. Separate reliability coefficients were computed for three subgroups of extroverts, ambiverts, and introverts. Specific conclusions are expressed; tables depict findings. References are listed.

Reed, James C. "The Ability Deficits of Good and Poor Readers," Journal of Learning Disabilities, 1 (February 1968) 44-49.

High and low readers in grades 1 and 5 were compared on the following tests: the Wechsler Intelligence Scale for Children, the Category Test (Reitan Children's Forms), the Tactual Performance Test, the Finger Localization test, the Finger-tip Symbol Writing test, the Reitan Color-form Test, and the Speed of Tapping test. Subjects were 57 good and 55 poor readers in grade 1 and 76 good and 75 poor readers in grade 5. The mean differences between groups were transformed to standard scores so that the tests could be ranked according to their ability to differentiate between good and poor readers at both grade 1 and grade 5. It was found that 13 of the 20 tests statistically differentiated first graders, and 16 differentiated fifth graders. The majority of those of highest differentiation at grade 1 were performance tests, while at grade 5 they were largely verbal. The relatively pure motor skills seemed unrelated to reading. Tables and references are included.

Rexroad, Wallace Warren. Correlational Analysis of First-Grade Reading Achievement, with Objective and Projective Measures. 78 p. (Ph.D., The University of Oklahoma, 1968) Dissertation Abstracts, 29, No. 7, 2126-A. Order No. 68-17,596, microfilm \$3.00, xerography \$4.20 from University Microfilms.

Five selected predictors utilized in reading readiness evaluations were compared to year-end reading achievement. Among the predictors were the Row-Peterson Readiness Test, mental age scores, alphabet knowledge, House-Tree-Person Test (H-T-P) rankings, and teacher judgment. Twelve first-grade classes and their teachers were involved in the study, and during the early weeks of the school year, scores were collected on the five predictors. The Gates Primary Reading Test was administered at the end of the school year. Results indicated that the coefficients of mental age, H-T-P, and teacher judgment were significantly smaller than the coefficient between the readiness test and the scores of the reading achievement test. The three-variable combination correlating most highly with reading achievement was the readiness test, alphabet knowledge, and teacher judgment. It would seem that alphabet knowledge is as good a predictor of reading achievement as the Row-Peterson Readiness Test.

Robinson, H. Alan and Hanson, Earl. "Reliability of Measures of Reading Achievement," The Reading Teacher, 21 (January 1968) 307-13, 323.

The reliabilities of six standardized and three experimental tests related to reading readiness and reading achievement were determined for disadvantaged, average, and advantaged first to third graders in nine classrooms. The test-retest technique and the Kuder-Richardson Formula 20 were used. The Metropolitan Readiness Test was found to be reliable

for all three groups at first grade (.85 to .95). Reliabilities for the Goodenough Draw-A-Man Scale ranged in the three grade levels from .72 to .92. The audiometric reliability was perfect for all groups. The Wepman Auditory Discrimination Test was fairly reliable with all groups at first grade (.75 to .78), but at second and third grades the reliability decreased except for disadvantaged children. The Ortho-Rater visual efficiency test was reliable at the .01 level only with disadvantaged and advantaged second and third graders. Generally high reliabilities were obtained with Metropolitan Achievement Tests at the first- and second-grade levels in each socioeconomic strata and with advantaged third graders. In grade 3, the reading section of this test was reliable for advantaged subjects; the word knowledge and word discrimination sections were reliable with the disadvantaged subjects. The experimental tests showed reliability with disadvantaged pupils, but the numbers of subjects who took some tests were as small as nine. Tables and references are included.

Schiffman, Gilbert B. "Diagnosing Cases of Reading Disability with Suggested Neurological Impairment," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 513-21.

A comparison study of 240 elementary and secondary students with severe reading problems but with near average or higher intelligence was conducted by the Central Evaluation Clinic for Children at the University of Maryland Hospital. For the 1961-62 school year, subjects were grouped into a developmental, corrective, or a remedial reading program according to a descending ability scale. Instruction was an individualized method or a combination of methods based on diagnostic testing. Reading evaluations were made in September 1961, June 1962, and June 1963. June 1962 results showed the greatest reading improvement at both elementary and secondary levels for remedial students. Corrective students showed more improvement than did developmental students. June 1963 results showed greater elementary reading improvement for remedial students than for corrective or developmental. There was no significant between corrective and developmental students. No significant difference was found among the three secondary groups. All differences were statistically significant at the 1 percent level, and all growth was limited--elementary .5, secondary .69. No really satisfactory permanent growth was evidenced by students in any of the three groups. Standardized tests of achievement and capacity cannot yield accurate results for children with severe reading problems, and reading instruction must be individualized. Programs for remedial reading instruction should be introduced prior to grade 3. Data tables are included.

Schlanger, Bernard B. and Galanowsky, Gloria I. "Auditory Discrimination Tasks Performed by Mentally Retarded and Normal Children," Journal of Speech and Hearing Research, 9 (September 1966) 434-40.

Eighty-five institutionalized, mentally retarded children and 86 normal children were compared on a battery of auditory discrimination tests. Subjects were matched for mental age over the range from 4 years 6 months to 10 years 6 months. All had normal hearing and were judged to have intelligible speech. Normal children scored significantly better on all tests given, as a total group and in mental age groups. References are listed.

Shearer, E. "Physical Skills and Reading Backwardness," Educational Research, 10 (June 1968) 197-206.

Physical skills related to symptoms of specific dyslexia were studied in an unselected population of British school children. The aim of the study was to establish norms for these skills and to compare incidences of these skill deficiencies with incidences of reading retardation. A total of 225 children, aged 7 to 10, were given tests for handedness, right-left discrimination, and finger localization. Results indicated that nonretarded readers did better than retarded readers on all tests and that muscular skills were positively correlated with IQ and with age. Although no clear-cut correlation could be found to exist between specific physical skills and reading difficulty, there were more retarded readers in specific and combined skill deficiency categories than nonretarded readers. No conclusions were reached as to whether or not these physical skill deficiency combinations constituted what is called specific dyslexia. A bibliography and tables of results are included.

Smith, Helen K. "The Responses of Good and Poor Readers when Asked to Read for Different Purposes," Reading Research Quarterly, 3 (Fall 1967) 53-83.

Both the product and process of reading comprehension were explored when high school seniors were asked to read for two different purposes: for details and for general impressions. A case-study method involving structured individual interviews and retrospection was used to secure evidence of the success of 15 good reader subjects and 15 poor reader subjects in understanding the materials read and to gain insight into the processes they used when they read for the two purposes. All subjects answered the same series of questions on each part, explained how they arrived at each answer, and responded to questions about past experiences in reading for different purposes. Responses made by the subjects were categorized and analyzed either statistically or qualitatively. The data revealed that good readers read for both purposes with equal success. The results for the poor reader group were similar. Good readers, however, were more successful in reading for details. Good readers adjusted their procedures to the two purposes, but poor readers varied their reading approach only slightly. A conceptual framework of readers' and writers' purposes was developed for this study and included. Tables and references are given.

Section 3: Tests of Prerequisites to Reading

Alsham, Leonard M. "Reading Readiness and Reading Achievement," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 312-13.

Two purposes were stated in this study: 1) the development of a minimal set of simple diagnostic measures for predicting reading readiness, and 2) a study of the relationships among the predictive measures with first grade reading achievement. The following predictive measures were selected for study: visual discrimination, visual-motor coordination, oral language proficiency, auditory discrimination, and auditory blending. Experimental instruments were constructed for the first three of the readiness components, and the Wepman Test of Auditory Discrimination (1958) and the Roswell-Chall Auditory Blending Test (1963) were used for the last two. Most of the children used in the study were Negro; a smaller percentage were of Puerto Rican origin; all from a school in a relatively impoverished area of New York City. All tests and rating scales were intercorrelated, and a principal components analysis followed by varimax rotations was carried out. Other results and implications are discussed. References are included.

Bloomer, Richard H. "The Cloze Procedure as a Remedial Reading Exercise," Journal of Developmental Reading, 5 (Spring 1962) 172-81.

The use of the cloze procedure as a remedial reading teaching technique for college students was investigated. Two groups of 44 students each were randomly selected from students volunteering for a noncredit college remedial course. The experimental group was given a series of cloze procedure exercises. Members of Control Group 1 used Gilbert's Power and Speed in Reading. The instructor variable was largely reduced by keeping instruction at a minimum and as neutral as possible. Control Group 2 consisted of 39 randomly selected freshman education students, pursuing a regular program of courses, who were given Form A of the Diagnostic Reading Test at the beginning of the fall semester and Form B of the Diagnostic Reading Test Survey Section at the end of the semester. No significant difference was found between the rate on the initial test and on the final test for the experiment or control groups, and no significant difference between the pretest rates of the three groups or their post-test rates. The pretest and post-test comparisons for the experimental group showed a significant increase in comprehension, while a significant decrease in comprehension was shown by the same comparisons for Control Group 2. Tables and references are included.

Bormuth, John R. "Mean Word Depth as a Predictor of Comprehension Difficulty," California Journal of Educational Research, 15 (November 1964) 226-31.

The purpose of this study was to test a new method of measuring the grammatical complexity of sentences to see if it could be used to predict the difficulty children have in comprehending written verbal materials. Word depth analysis was developed by Yngve for use in programing computers to translate language. Three hypotheses were tested: (1) Over the set of passages as a whole, there is a correlation between mean word depth and comprehension difficulty. (2) There is a correlation between comprehension difficulty and mean word depth when the subject matters of the passages are held constant and their Dale-Chall readabilities are systematically varied. (3) There is a correlation between mean word depth and comprehension difficulty when the Dale-Chall predicted difficulties of the passages are held constant and the subject matters of the passages are varied. Nine passages divided equally among literature, science, and social studies were used. A 50-item cloze comprehension test was made over each passage. These were administered without time limits to 150 children enrolled in grades 4, 5, and 6 in a single school. The apparent ability of mean word depth to predict differences in comprehension difficulty among passages that also differed in subject matter content is a finding in this study. References are given.

Bormuth, John R. "Comparable Cloze and Multiple-Choice Comprehension Test Scores," Journal of Reading, 10 (February 1967) 291-99.

A frame of reference for interpreting scores on cloze tests used for measuring an acceptable level of comprehension was determined. Cloze tests and multiple choice tests were developed for nine passages and given to 100 fourth graders. A cloze score of 50 percent was comparable to a multiple choice raw score of 90 percent and a corrected score of 87 percent. The standard error of this regression on the multiple choice scores was 6 percentage points. The comparable scores should apply only when dependent scores are based upon tests and test instructions similar to those used in this study, and item difficulties vary from one test to another. Also, the selection of the cloze test length should involve both the reliabilities of individual test scores and the reliability of test difficulty. References are listed.

Cromer, Ward and Wiener, Morton. "Idiosyncratic Response Patterns among Good and Poor Readers," Journal of Consulting Psychology, 30 (February 1966) 1-10.

The reading response pattern of poor readers was studied. It was hypothesized that poor readers respond less consensually than good readers and that both groups make more errors on material which is designed to evoke idiosyncratic patterns of responding. Subjects were 40 male and 8 female fifth graders in New England. Twenty-four of the children were considered remedial readers. They were matched with other students on grade, sex, age, and IQ. Stimulus materials were four stories equated on all but tense and content, a cloze task, an association task, and an

identification task. Time and procedures of administration were controlled. Analysis of variance was used to analyze the data. Poor readers made significantly more errors on the stories, Tense was a significant factor; content was not. On the cloze task, good readers made significantly more correct word associations. On the association task, the good readers did better. There was no difference between groups on the identification task. References are included.

Frostig, Marianne; Lefever, D. Welty; and Whittlesey, John R. B. "A Developmental Test for Visual Perception for Evaluating Normal and Neurologically Handicapped Children," Perceptual and Motor Skills, 12 (June 1961) 383-94.

A developmental test in five areas of visual perception was standardized on a sample of 434 normal children, ages 3½ to 8 years. It was also given to a sample of 71 children, diagnosed as neurologically handicapped or suspected of neurological handicaps, all of whom had learning difficulties. Perceptual disturbances were found in nearly all the clinical sample. Analysis of the scatter between the five subtests showed that the perceptual difficulties were not uniform. For a given child the test might show that in some perceptual areas, he functioned well while in others there was disturbance. Moreover, disturbance was likely to occur in different degrees in the different areas. Specific training based on the test results produced clinically observed changes in perceptual ability and subsequent improvement in academic performance. The test used was revised and used on both normal and abnormal children throughout the country in order to learn more about the differences revealed. References are included.

Iversen, Iver and Silberberg, Margaret. "The Predictive Efficiency of the Gates Reading Readiness Tests," The Elementary School Journal, 68 (January 1968) 213-18.

Two administrations of the Gates Reading Readiness Tests, one in April of the Kindergarten year and one in October of Grade 1 with 170 boys and 166 girls, were compared in an effort to discern the predictive ability of the tests. Variables used to assess this predictive ability included the two test scores, age, and Stanford-Binet scores. Results of statistical analysis using stepwise linear regression techniques showed that the Letters and Numbers subtest was the best predictor of reading achievement, that readiness training helped very little, and that the loss of information from not testing reading readiness at all is minimal. Tables and references are included.

Jacobs, James N.; Wirthlin, Lenore D.; and Miller, Charles B. "A Follow-Up Evaluation of the Frostig Visual-Perceptual Training Program," Educational Leadership, 26 (November 1968) 169-75.

The predictive validity of a visual-perceptual test (Frostig) and the cumulative effect of the Frostig program on reading achievement was investigated. Also, it was sought whether 181 children in prekindergarten, kindergarten, and first grade who took the Frostig program achieved any better than did the 162 control children on the Frostig Test of Visual Perception (FTVP) and on the Metropolitan Readiness Tests (MRT). The FTVP and MRT were administered to children in May of the kindergarten year. First-grade groups were given the Gates-MacGinitie test in May and the Stanford Primary I test at the end of grade 2. Results showed that the Frostig program did produce higher scores on the FTVP. With kindergarten pupils a statistically significant difference was observed in favor of experimental pupils on the MRT. The MRT appeared to be a better predictor of reading achievement for control group pupils, while little relationship was found between the Frostig program and reading achievement. On the Stanford test, scores of control pupils exceeded those of experimental pupils who had the Frostig program for 1 year; at grade-1 level, no significant differences were noted in reading achievement. Tables are given.

Johnson, Roger E. "The Validity of the Clymer-Barrett Prereading Battery," The Reading Teacher, 22 (April 1969) 609-14.

The predictability of the Clymer-Barrett Prereading Battery (CBP) and its subtests was compared with the Metropolitan Readiness Tests (MRT). In addition, the ability of the CBP subtests to predict reading success was analyzed, with sex and age as factors for consideration. The MRT were administered to 402 boys and 414 girls in the spring of the kindergarten year, and the CBP was administered during the sixth week of their first-grade year. The Gates-MacGinitie Reading Tests, the criterion measure, were given in April of grade 1. Pearson product-moment correlation coefficients were used to compare the two tests, and multiple regression analysis was used to analyze CBP subtests. It was concluded that the CBP was a more accurate predictor of success than were the MRT, with the Letter Recognition, Vocabulary, and Comprehension subtests of the CBP the most accurate. No difference was found on the basis of sex, but older children did better than young children. References are included.

Kass, Corrine E. "Psycholinguistic Disabilities of Children with Reading Problems," Exceptional Children, 32 (April 1966) 533-39.

The psycholinguistic correlates of reading disability were examined. Twenty-one elementary school children between the chronological ages of 7 years and 9 years 11 months served as subjects. Factors which were controlled were IQ, grade, reading retardation, and auditory and visual

defects. An expanded version of the Illinois Test of Psycholinguistic Ability (ITPA) was administered. Standard scores for the sample subjects were compared with the population norms for each subtest. The data were analyzed by z and t tests. Children with reading disabilities were not deficient in the visual motor subtests at the representational level. Reading disability subjects were deficient in the Auditory and Visual Sequencing, Visual Automatic, Sound Blending, Mazes, Memory-for-Designs and Perceptual Speed subtests. This sample tended to have certain psycholinguistic disabilities at the integrational level. Theoretical implications, practical implications, figures and tables, and references are included.

Keogh, Barbara K. "The Bender Gestalt as a Predictive and Diagnostic Test of Reading Performance," Journal of Consulting Psychology, 29 (February 1965) 83-84.

The Bender Gestalt Test, given at the kindergarten level, is investigated in this study as a predictive measure of third-grade reading achievement and, given at third-grade level to the same students, as a diagnostic test of reading performance. Subjects were drawn from a predominately Caucasian, middle-class community in Southern California. Data on 127 pupils are presented. Testing instruments used in addition to the Bender Gestalt at grade three level were the California Test of Mental Maturity and subtests of the California Reading Test. Teacher ratings and teacher interviews were included. A significant improvement in Bender performance is shown by the subjects. However, correlations between the Bender and major reading criteria are statistically significant only when the effects of intelligence are held constant. From the data it was determined that only good performance on the Bender is predictive of reading performance at kindergarten level and identifies successful readers at third-grade level; poor Bender scores are judged not predictive. A suggestion for use of the Bender as a screening technique for early identification of successful students is made. The Bender's use as a diagnostic instrument in reading is not recommended. Tables and references are included in the study.

Koppitz, Elizabeth M.; Mardis, Verdena; and Stephens, Thomas. "A Note on Screening School Beginners with the Bender Gestalt Test," Journal of Educational Psychology, 52 (April 1961) 80-81.

The usefulness of the Bender Gestalt test (Bender, 1938) as a screening tool for beginning first-grade students was explored. Two hundred and seventy-two beginning first-grade students from 11 classes in seven schools representing a socioeconomic cross-section were subjects. The Bender Gestalt test and the Lee-Clark Reading Readiness Test or the Metropolitan Readiness Test, respectively, were administered to the pupils. Test scores were correlated with each other and with actual achievement at the end of

the school year. It was found that the Bender correlates well with the readiness tests and can predict actual achievement as well as they can. Tables and references are given.

Leton, Donald A. "Visual-Motor Capacities and Ocular Efficiency in Reading," Perceptual and Motor Skills, 15 (October 1962) 407-32.

This study attempts to evaluate psychometric tests of visual-motor capacities and to develop clinical procedures for electrical recording of ocular-motor patterns. Prefacing the study is a review of literature in the areas of ocular-motor coordination, sex differences in reading disability, and visual perception and discrimination. Twenty-one subjects for the study were selected from the intermediate grades of three elementary schools in California. Thirteen boys in the experimental group were selected from remedial classes, and the eight boys in the control group were chosen from regular classes. Aside from the usual group tests, background and developmental information was obtained and a psychometric battery of six tests was used. Visual screening was included and electro-oculogram recordings were made for three series of tracings. Measurement of results are graphically depicted through a series of graphs, tables, and descriptive observations. An extensive annotated bibliography is included.

MacGinitie, Walter H. "Evaluating Readiness for Learning to Read: a Critical Review and Evaluation of Research," Reading Research Quarterly, 4 (Spring 1969) 396-410.

Fifteen studies of reading readiness are critically reviewed and evaluated. The author discusses the purposes for readiness research and evaluates past research, including that on the predictive validity of tasks resembling reading. A need for research in more basic prediction tasks is indicated. Shortcomings of data analysis and interpretation and the problem of mislabeled tests are discussed. The author suggests that (1) it is hazardous to interpret readiness studies when teaching method and materials are unspecified, (2) that retrospective inferences about readiness can be misleading, especially inferences of no relationship, and (3) faulty interpretations of correlational relationships are to be avoided. References are included.

Mertens, Marjorie K. A Visual Perception Test for the Prediction and Diagnosis of Reading Ability. 124 p. (Ed.D., University of Arizona, 1968) Dissertation Abstracts, 29, No. 4, 1133-A. Order No. 68-13,671, microfilm \$3.00, xerography \$6.00 from University Microfilms.

A visual perception test was designed to identify those first-grade children who might develop reading disabilities because of some visual perceptual deficit. The test incorporated seven subtests: (1) Design Copying, (2) Reversals, (3) Design Reproduction, (4) Framed Pictures, (5) Design Completion, (6) Spatial Recognition, and (7) Visual Memory. At the beginning of the school year, both the newly conceived Visual Perception Test and the Metropolitan Readiness Test were given to 139 subjects. Near the end of the school year, the Stanford Achievement Test was administered to the same subjects. A correlational analysis of concurrent validity and predictive validity was made along with subtest inter-correlations. The most important result of the score analysis indicated that the Visual Perception Test predicted reading ability in the areas of word meaning and paragraph meaning, as measured by the Stanford Achievement Test, better than the Metropolitan Reading Readiness Test did. Vocabulary ability was equally well predicted. Administration and readministration of the Visual Perception Test to another group of 69 subjects within a period of 3 weeks showed a high (.982) test-retest reliability.

Meyen, Edward Lee. An Investigation of Age-Placement, Difficulty, and Importance of Basic Skills in the Curriculum for Educable Mentally Retarded Students. 362 p. (Ph.D., The University of Iowa, 1968) Dissertation Abstracts, 29, No. 1787-A. Order No. 68-16,836, microfilm \$4.65, xerography \$16.45 from University Microfilms.

The importance of certain skills and their age placement in instructional programs for retarded children were studied. A special instrument for determining academic importance was designed. Five experts and 60 special-class teachers were asked to rate the importance and the best teaching age for a list of skills, among which were vocabulary, reading, language usage, punctuation, capitalization, spelling, arithmetic problem solving, arithmetic concepts, and work-study skills. The instrument specified the behavior required of the pupil and the difficulty level. The judges were in considerable agreement with regard to skill importance and to the teaching age level. However, when 1,405 educable mentally retarded children participated in an experiment, the curriculum of which was based on these expert opinions, it was found that while the judges placed most of the skills in the 11 to 14 age group, success on most items was attained within the 12 to 15 age range. The selections of the judges are identified in the report of the study.

Olson, Arthur V. "The Frostig Developmental Test of Visual Perception as a Predictor of Specific Reading Abilities with Second-Grade Children," Elementary English, 43 (December 1966) 869-72.

A sample of 29 second-grade girls and 42 second-grade boys was tested to determine if the Frostig Test of Visual Perception was able to predict specific reading difficulties. During the first 2 weeks of November, the children were tested with the Frostig Test, the 1963 revision of the

California Short-Form Test of Mental Maturity, the Gates Advanced Primary Reading Test type AWR-Form 1 and APR-Forms 2, and the Durrell Analysis of Reading Difficulty--Hearing Sounds in Words Test (Primary), and Visual Memory of Words Test (Primary). Other tests used were a recognition of reversible words in context test and a word synthesis test devised by the investigator. Intercorrelations of the measures for the 71 subjects are presented. The subtests of the Frostig Test of Visual Perception showed only a small degree of relationship with the measures of specific reading abilities (.09 to .39) and had little relationship to either mental age or chronological age (.10 to .37). Hence, the Frostig Test of Visual Perception was of little value in predicting the specific reading abilities of the students included in this study. Five references are included.

Sakamoto, T. and Takagi, K. "A Study of Disabled Readers," The Science of Reading, 11 (January 1968) 1-15.

Disabled and able readers were identified from a group of 664 fourth, fifth, and sixth graders by comparing each pupil's reading expectancy score with his reading performance score. The Gakken Intelligence Test and the Sakamoto Diagnostic Reading Ability Test were administered. Regression formulas for each grade which would predict reading ability from intelligence were calculated by obtaining the coefficient of correlation between the T-score of the intelligence test and the reading achievement value of each grade. These regression formulas were used to obtain a new reading achievement value for each pupil. The reading expectancy score was given by substituting the intelligence test T-score for the X in the regression formula. The difference between the reading expectancy score and the real reading T-score was the new reading achievement value. Pupils above plus 1 standard deviation were designated able readers, and those below minus 1, as disabled readers. For this population, 83 students were able readers, 92 were disabled readers, and the remaining 489 were average readers. For disabled readers there was an equal distribution over all three grades, with more boys in this group. The average intelligence test scores of the able and disabled reader groups were almost the same, but the profiles varied. Tables and references are included.

Schneyer, J. Wesley. "Use of the Cloze Procedure for Improving Reading Comprehension," The Reading Teacher, 19 (December 1965) 174-79.

The effects of the cloze procedure upon the reading comprehension of sixth-grade pupils were studied. Two null hypotheses stating that (1) practice on cloze exercises will not produce significant differences in performance on a final test in reading comprehension over pupils who did not use the exercises, and (2) there are no significant relationships between performance on cloze exercises and verbal intelligence, vocabulary, speed, comprehension, and word recognition were tested. The subjects were

children in two sixth-grade classes in an elementary school near Philadelphia. Thirty-two pupils in the experimental class used a series of 200-word cloze exercises prepared by the investigator and described in the report. Thirty-four pupils in the control class did not use the exercises. All subjects participated in the regular reading program and took the California Test of Mental Maturity, Elementary Level-Short Form (1957) and the Gates Reading Survey. When the final comprehension test scores were analyzed by covariance with control of initial scores, the difference between the means of the two groups was not significant and the first null hypothesis was accepted. Reasons for this are considered in the discussion. To test the second null hypothesis, total cloze scores were obtained for each pupil in the experimental group and correlated with factors of intelligence and reading. The performance of the experimental class on the tenth-word deletion cloze exercises was found to be significantly related to verbal ability, vocabulary, speed of comprehension, reading comprehension, and word recognition. The second null hypothesis was rejected. Tables and references are included.

Smith, Carol E. and Keogh, Barbara K. "The Group Bender-Gestalt as a Reading Readiness Screening Instrument," Perceptual and Motor Skills, 15 (December 1962) 639-45.

A study designed to develop a Bender-Gesualt technique usable as a practical reading readiness screening device for kindergarten children and to evaluate the effectiveness of the Bender-Gestalt Test as a screening instrument with kindergarten children and as a predictive measure of later reading achievement was conducted. Development of an adequate group administrative technique and an objective scoring system which could be quickly and easily applied is described in Phase 1 of the study. In Phase 2, 221 kindergarten children from a Southern California public school district (predominantly middle-class Caucasians) were given the Bender-Gestalt and the Lee-Clark Reading Readiness Test. One year later 149 of the original children were given the Lee-Clark Reading Test, First Reader-Form A. Each child was rated by his teacher for readiness the first year and for reading achievement the second year. Correlations computed among the various tests and teacher ratings are reported. The group Bender-Gestalt was judged an effective and useful screening instrument for evaluating the readiness level of kindergarten children comparable to the sample. Tables and references are included.

Wilhelm, Rowena. "Diagnostic Value of Test Score Differentials Found Between Measurés of Visual and Auditory Memory in Severely Disabled Readers," Academic Therapy Quarterly, 2 (Fall 1966) 42-44, 58.

In order to test the hypothesis that a difference of more than seven-tenths of a standard score between scores on the Knox Cube Test (Arthur Point Scale) and the Digit Span Test (WISC) favoring the former test is a reliable diagnostic sign of muscular tension symptoms, the case reports of 75 subjects were selected randomly from the files of the Reading

Improvement Service, University of Michigan. The files were divided into four groups--(1) three or more symptoms of muscular tension and the given difference in standard scores present, (2) less than three symptoms and the given difference in standard scores present, (3) three or more symptoms and the given difference in standard scores absent, and (4) less than three symptoms and the given difference absent. Of the 75 cases, 22 exhibited muscular tension. The seven-tenths of a standard score difference was found in 15 (68 percent) of those cases. Among other cases, the incidence of the given difference in standard scores was 10 to 53 (19 percent). The chi square test indicated that this difference in incidence was significant at the .001 level. Some educational implications of muscular tension and suggestions for teaching are given. Four references are included.

Section 4: Notes on Tests of Certain Aspects of Reading Achievement

Benton, Arthur L. and Bird, Joseph W. "The EEG and Reading Disability," American Journal of Orthopsychiatry, 33 (April 1963) 529-31.

A summary of studies dealing with the incidence of abnormal EEG patterns in dyslexic children's reading is presented. A higher-than-expected incidence of EEG abnormality was indicated in dyslexic children. Typically, other neurological, motor, visuoperceptive, visuomotor, and speech disturbances are seen in dyslexic children with EEG abnormality. A specific association between EEG and reading disability is not clearly demonstrated. The need for more critically designed, longitudinal studies of dyslexic children is voiced. References are included.

Geake, R. Robert. "Predictors of Reading Rate Improvement," The Inter-Institutional Seminar in Child Development, Collected Papers, 1962, 86-93. (Dearborn, Michigan: Edison Institute, 1963).

The relationship of intelligence, initial reading rate, perceptual speed, and perceptual closure to changes in reading rate during a reading improvement course is reported. Sixty junior and senior high school students were found who met criteria for four experimental groups: (1) fast readers, above-average intelligence, (2) fast readers, average intelligence, (3) slow readers, above-average intelligence, (4) slow readers, average intelligence. Students were given a training course in rapid reading which met twice a week for 50 minutes for sixteen sessions. The Triggs Diagnostic Reading Tests were administered before training, immediately after training, and again 15 weeks later. All groups showed significant increases in rate but significant losses in comprehension during the training period. Testing 15 weeks after the end of the training period revealed that comprehension scores had returned to pretraining levels and that reading rates had dropped. The students of above-average

ability who were initially rapid readers were reading significantly faster at the time of final testing. The most reliable measure of rate improvement was secured from the tests administered 15 weeks after training had ended. No relationship appeared between perceptual speed scores and perceptual closure scores. A significant relationship was found between perceptual closure scores and improvement in reading rate. References are included.

Malmquist, Eve. Factors Related to Reading Disabilities in the First Grade of the Elementary School. ACTA Universitatis Stockholmiensis, Stockholm Studies in Educational Psychology 2. (Stockholm: Almquist and Wiksell, 1960) 428 p.

A comparative study of different groups of readers at the end of their first year in the primary schools was conducted in Sweden to clarify the relationship of certain factors with reading disabilities. The main investigations took place in Kristianstad in 1951-52 and involved 399 children from 56 classes. Different kinds of instruments, such as reading tests, rating scales for the assessment of personality traits, etc., were designed and standardized. Multi-factorial analysis of variance of high order was used to analyze the data. A list of the types of various errors in reading and spelling made by different groups of readers was made and analyzed. To investigate the degree of consistency of the reading disabilities, a followup study in grade 4 of the reading ability of those children who took part in the investigations in grade 1 was made. The methods, results, conclusions, and implications of the entire investigation are described in detail. Tables and a bibliography are included.

Tuller, Dorothy and Eames, Thomas H. "Electroencephalograms of Children Who Fail in Reading," Exceptional Children, 32 (May 1966) 637.

A study of electroencephalograms (EEG) of children who fail in reading is reported. Seven children who were failing in reading were studied. Six were in the third grade and one was in grade 4. All rated at or below the twenty-fifth percentile on the Detroit Reading Test II, Form B, as compared with local school norms. Disc electrodes were used in making the EEG tracings. Both bipolar and monopolar norms were available. Abnormal tracings in all of the reading failures were revealed when their tracings were compared with those of normal children. All exhibited deviations in the parietal-post temporal regions, but there was no single deviation that could be considered characteristic of all of them. There appeared to be some parallel between the extent of the deviations and the degree of reading trouble. References are given.

Section 5: Ratings, Questionnaires, and Interviews

Preston, Ralph C. and Yarrington, David J. "Status of Fifty Retarded Readers Eight Years After Reading Clinic Diagnosis," Journal of Reading, 11 (November 1967) 122-29.

The followup study of 50 retarded readers who had been at the Reading Clinic of the University of Pennsylvania was accomplished by questionnaires and telephone interviews to determine the educational and occupational levels achieved by these subjects. These were compared with national averages, and it was determined that retarded readers, after a span of 8 years, fulfilled educational and vocational roles comparable to those fulfilled by their age peers in the general population. The subjects' rate of enrollment in high school, graduation from high school, and ability to obtain white-collar employment was not significantly different from that of their peers, and almost as high a proportion gained admission to college. However, most of the subjects had repeated one or more grades, and none had pursued graduate study. Retardation in reading seemed to slacken academic pace and limit aspirations, but these readers could learn with sufficient competence to graduate from high school. References are included.

Section 6: The Case Study

Heckelman, R. G. "A Neurological-Impress Method of Remedial-Reading Instruction," Academic Therapy, 4 (Summer 1969) 277-82.

The effectiveness of a neurological-impress method on remedial reading instruction was reported. The 24 subjects in grades 7 through 10 had reading abilities at least 3 or more years below grade placement and expectancy. Their IQ scores were 90 or above on the performance or verbal section of the Wechsler Intelligence Scale for Children (WISC). The method required unison oral reading by pupil and teacher with the pupil placed slightly to the front of the teacher while the book was jointly held. A number of tests including the WISC, the Bender Visual Motor Gestalt, the California Personality Test, and the Gilmore Oral Reading Test were administered. Instruction was given for 15 minutes daily on an individual basis for 6 weeks. At the end of 7 hours and 15 minutes of instruction, results were evaluated by readministration of the Gilmore and a silent reading assessment on the California Achievement Tests. The mean gain in reading comprehension was 1.9 grade levels, a gain found to be statistically significant (.001 level).

PART V--PROBLEM OF DIAGNOSIS IN SPECIAL GROUPS

Studies to aid in the diagnosing of reading problems in specific groups are included in Part V. The reports are divided into the following categories: diagnosis in preschool and kindergarten, diagnosis of potential dropouts, and diagnosis of reading disorders in exceptional children. The latter category includes studies of the mentally retarded, emotionally disturbed, the bilingual and the disadvantaged, and the gifted.

Section 1: Diagnosis in Preschool and Kindergarten

Bateman, Barbara. "Learning Disorders," Review of Educational Research, 36 (February 1966) 93-119.

A review of the literature dealing with learning disorders is presented. Overviews and classifications are given. Areas considered are the etiology of learning disorders, characteristics of children with learning disorders, diagnostic testing, remediation of learning disorders, and issues and needed research. The review does not cover the literature dealing with emotional disturbance as a primary etiological factor in learning disorders. Coverage of the area of learning disorders involving reception and expression of the spoken word is limited. A bibliography is included.

Brzeinski, Joseph E. "Beginning Reading in Denver," The Reading Teacher, 18 (October 1964) 16-21.

Two studies concerning beginning reading are discussed. A longitudinal research study to determine the effectiveness of beginning the teaching of reading in kindergarten was conducted. Four thousand Denver, Colorado, kindergarten pupils were divided into control and research groups. The research group was divided again when in the first grade to examine regular first grade instruction and continued research instruction. Kindergarten and first grade research groups were tested and shown to be superior. Following results from the research kindergarten groups a parallel study to determine how effectively parents could prepare their preschool children for reading was designed. A group with normal family activities, a group with guidebooks and educational television and a group with guidebooks and experienced teacher guidance were established. The teachable mental age of the preschool child, the relation of amount learned to the amount of time taught, the importance of parents reading to the child and parent attitude toward the reading program are indicated. A reference is given.

DeHirsch, Katrina; Jansky, Jeannette Jefferson; and Langford, William S. Predicting Reading Failure: A Preliminary Study. (New York: Harper and Row, 1966) 144 p.

Specific contributions to the field of language disorders are reported. A predictive index is presented for diagnostic use in schools. Through its use teachers may be able to identify at the kindergarten level those children who are high risks of academic failure. Also, clinical findings concerning full-term and prematurely born children are discussed in terms of maturational delays related to factors affecting lags in learning. A bibliography, glossary, and background sources are listed.

Fowler, William. "A Study of Process and Method in Three-Year-Old Twins and Triplets Learning to Read," Genetic Psychology Monographs, 72 (August 1965) 3-89.

Reading instruction was presented to preschool children as part of an extended investigation of cognitive learning. The program was undertaken to acquire data on the problems of teaching preschoolers to read, to study the structure of the reading process to devise appropriate stimulus conditions, and to observe the influence of long-term cognitive stimulation upon psychosocial development. The experimental group consisted of five 3-year-old children, one member of each pair of three pairs of identical Negro twins and two members of a set of Caucasian triplets. The control group consisted of the other members of the set of twins and triplets. Three to five months of reading stimulation was furnished for 15 to 30 minutes, 4 to 5 days per week to the experimental group. The program was conducted in a nursery school setting. The program was in two phases: analytic-synthesing presentation of stimulus, and commercial material. The two members of the triplet set and the daughter of the experimenter became achievement oriented and made rapid progress. The other children made some progress. None of the control group subjects showed indications of ability to read before or after the program. Detailed procedures, methods, and a bibliography are included.

Haring, Norris G. and Ridgway, Robert W. "Early Identification of Children with Learning Disabilities," Exceptional Children, 33 (February 1967) 387-95.

The study ought to discover whether the child with potential learning disabilities can be identified during kindergarten by a series of tests believed to predict such difficulties. Forty-eight kindergarten classes including over 1,200 children were screened for potential learning disorders. Kindergarten teachers used objective observations of the children's performance on gross muscle coordination, verbal fluency, speech development, auditory memory, auditory discrimination, visual memory, visual discrimination, visual motor performance, directionality,

and laterality. Final selection of 106 children included in the study was by psychological and psycholinguistic group and individual tests. Correlation analysis and a principle components analysis of the data were made. Test profiles indicated that teachers' observations were useful in selecting children with developmental retardation. Performance scores treated as a group masked differences in rate and accuracy of performance. The identifiable commonality among 31 variables was general language. A bibliographical essay appears in the text, and there is a bibliography.

Kelley, Marjorie L. and Chen, Martin K. "An Experimental Study of Formal Reading Instruction at the Kindergarten Level," Journal of Educational Research, 60 (January 1967) 224-29.

The effects of formal reading instruction on kindergarteners with respect to reading achievement, attitude toward reading, and attitude toward school were studied. Children enrolled in kindergarten classes in two schools in California served as subjects. One-half of the 221 pupils were randomly selected and given an intelligence test. The other half was given a reading readiness test. On the basis of these scores they were divided into high and low categories on intelligence and reading readiness. Subjects were assigned randomly to a readiness program or formal reading instruction. Two reading tests, a teacher rating scale, and an attitude inventory were administered at the end of the spring semester. Analysis of variance and t tests were used to analyze the data. The reading achievement of the formal instruction group was significantly higher than that of the readiness group. The achievement of the high readiness and high intelligence groups was superior to that of the low groups in both programs. Neither readiness nor intelligence interacted with the type of instructional program. Children in the high groups had better attitudes toward school than those in the low groups. A discussion of the findings, tables, figures, and references are included.

Malmquist, Eve. Factors Related to Reading Disabilities in the First Grade of the Elementary School. ACTA Universitatis Stockholmiensis, Stockholm Studies in Educational Psychology 2. (Stockholm: Almquist and Wiksell, 1960) 428 p.

A comparative study of different groups of readers at the end of their first year in the primary schools was conducted in Sweden to clarify the relationship of certain factors with reading disabilities. The main investigations took place in Kristianstad in 1951-52 and involved 399 children from 56 classes. Different kinds of instruments, such as reading tests, rating scales for the assessment of personality traits, etc., were designed and standardized. Multi-factorial analysis of variance of high order was used to analyze the data. A list of the types of various errors in reading and spelling made by different groups of readers

was made and analyzed. To investigate the degree of consistency of the reading disabilities, a followup study in grade 4 of the reading ability of those children who took part in the investigations in grade 1 was made. The methods, results, conclusions, and implications of the entire investigation are described in detail. Tables and a bibliography are included.

Section 2: Diagnosis of Potential Dropouts

Penty, Ruth C. Reading Ability and High School Drop-Outs. (New York: Bureau of Publications, Teachers College, Columbia University, 1956) 93 p.

The relationship between reading ability and the high school drop-out problem was investigated at Battle Creek (Michigan) High School in a study of 593 tenth graders from 1947 to 1950 who were in the lowest quarter of their class (296 eventually dropped out, 270 graduated, 27 transferred) and 593 tenth graders in the highest quarter of their class (86 dropped out, 481 graduated, and 27 transferred). Data from the Otis Tests of Mental Ability, the Iowa Silent Reading Tests (or the California Reading Test), "exit" interview sheets, and special interview sheets for dropouts and graduates were gathered (1) to determine reading achievement, proportion of dropouts and graduates among good and poor readers, percentages of dropouts and graduates among poor readers, time of drop-out, and reasons for leaving or remaining in school, and (2) to compare intelligence, reading growth potential, and the attitudes toward self, school subjects, reading, teachers, and other students of poor readers who dropped out of school and poor readers who graduated. Methods, materials, and tests used in a developmental reading program for grades 10 and 12 are described. A summary, conclusions, and implications of the study for education are given. A bibliography, tables, and copies of the interview sheets are included.

Watson, Richard Lee. An Analysis of Nine Selected Factors Relating Good and Poor Readers in the Sixth Grade to Dropping Out Before The Completion of High School. 130 p. (Ed.D., Indiana University, 1964) Dissertation Abstracts, 26, No. 12, Part I, 7033. Order No. 65-2404, microfilm \$2.75, xerography \$6.20 from University Microfilms.

An analysis of nine selected factors relating good and poor readers in the sixth grade to dropping out before the completion of high school was completed. The selected factors were socioeconomic status, school absence, family mobility, starting school age, home stability, number of siblings, academic success, sex, and intelligence. The population was the two most recent classes to complete high school at North High School in Evansville, Indiana. The classes were reassembled as they were in the sixth grade and divided into four operational groups: (1) good

reading graduates, (2) good reading dropouts, (3) poor reading graduates, and (4) poor reading dropouts. Data were collected on the nine variables and analyzed using the chi-square technique. In his conclusions, the author states that dropout and graduate comparisons are more definitive when reading grade level is accounted for. Identification of potential dropouts is possible in the elementary school on the basis of the nine selected factors. The most difficult factors to analyze are family stability; academic success, and intelligence, because they are related to many other factors. School absence and school starting age may be valuable in the early identification of good readers who are potential dropouts.

Section 3: Diagnosis of Reading Disorders in Exceptional Children

Arnold, Richard D. "Reliability of Test Scores for the Young 'Bilingual' Disadvantaged," The Reading Teacher, 22 (January 1969) 341-45.

The internal consistency of two reading tests and one intelligence test administered to approximately 200 Mexican-American children in September of grade 3 was reported. The subjects were administered the Word Knowledge, Word Discrimination, and Reading subtests of the Metropolitan Achievement Tests, Primary II; the Comprehension, Vocabulary, and Speed of Comprehension subtests of the Inter-American Reading Tests, given both in English and Spanish; and the IPAT Culture-Fair Intelligence Tests. Alpha coefficients (Cronbach) were computed for each test. For the Metropolitan tests, the Alpha coefficients ranged from .87 to .95; for the Inter-American, from .68 to .91 in English and .51 to .72 in Spanish; and from .21 to .77 for the various scores on the IPAT. The need to interpret the findings in the light of the fact that subjects had been exposed to 2 years of intensive oral language instruction was pointed out. References and tables are included.

Barclay, Gordon L. "i/t/a with Emotionally Disturbed Children," Modern Educational Developments: Another Look, Frederick B. Davis, Ed. Thirtieth Educational Conference of the Educational Records Bureau, 1965. (New York: the Bureau, 1966) 135-46.

The procedure and results obtained from the use of the Initial Teaching Alphabet (i/t/a) with emotionally disturbed children at the Rockland State Hospital are described. Three pairs of matched groups composed of 64 boys were established. Groups 1 and 2 were schizophrenic cases, groups 3 and 4 were behavior problems, and groups 5 and 6 were psychotic cases. The paired groups were matched for chronological age and IQ's. Assignment to experimental groups (1,3,5) was made on a random basis as opposed to those in the control groups (2,4,6). An in-service 3-day training period was set up to familiarize the participating

teachers with the i/t/a system preliminary to the 12-week program. Comparison of progress for groups in the i/t/a program with that of groups of normal children was based upon standardized test results. Individual reading improvement was compared with mental age to determine an improvement index as a measure of relative advancement. Both individual and group progress is discussed. Teacher observations of changes in attitude and individual adjustment are described. A substudy carried out with eight boys aged 10 to 14 years is also reported; results are evaluated in terms of pupil satisfaction which led to the establishment of other classes and the setting up of a library of reading materials in the dormitory area. References are given.

Beck, Frances. "Performance of Retarded Readers on Parts of the Wechsler Intelligence Scale for Children," Clinical Studies in Reading III, Helen M. Robinson and Helen K. Smith, Eds. Supplementary Educational Monographs, No. 97, 91-103. (Chicago, Illinois: University of Chicago Press, 1968.)

The retarded reading performance on intelligence tests were investigated. Seventy-one subjects 9.0 to 11.0 years old had their performances on the Wechsler Intelligence Scale for Children analyzed according to sex and age. No significant differences between Full Scale IQ's or between Performance and Verbal IQ's were distinguished among the age or sex groups. The highest subtest ranks were scored on Comprehension and Vocabulary. The lowest scores were found on Coding, Arithmetic, and Digit Span. The conclusion was that these retarded readers were not deficient in general language ability. Comparisons were made with the findings of previous investigators. Tables and references are included.

Cawley, John F. "Reading Performance Among the Mentally Handicapped: A Problem in Assessment," Training School Bulletin, 63 (May 1966) 11-16.

The effect of tight circularity between level of performance on a standardized test and the administration, scoring, and statistical evaluation of various diagnostic and developmental tests was investigated. It was pointed out that the characteristics assigned to a good reader or poor reader group are frequently so highly related to the measure by which the subjects were labeled good or poor readers that the contribution of the diagnostic battery is limited. The Developmental Reading Test (DRT), the Silent Reading Diagnostic Test (SRDT), and the Phonics Mastery Test (PMT) were administered to 67 mentally handicapped children, mental age 107 months, between the IQ range of 50 to 80, who were enrolled in special education classes. The upper-third were designated as good readers and the lower-third as poor readers. The t test was applied to the mean scores of the groups on the subtest for the DRT, SRDT, and PMT. Significant differences between almost all subjects were reported. The scores of the SRDT and the Basic Vocabulary of the DRT were intercorrelated. The large array of variables did not appear as

discrete variables but as a few which were repeated over and over. It was suggested that the scores on the various subtests were subject to influences which did not permit them to be measured independently. It was recommended that treatment procedures based on knowledge of the psychological correlates of reading disability rather than on simply the measurement of educational performance be developed. Tables and references are included.

Daly, William C. and Lee, Richard H. "Reading Disabilities in a Group of M-R Children: Incidence and Treatment," Training School Bulletin, 57 (November 1960) 85-93.

Two studies are reported which deal with the incidence and treatment of reading disabilities in a group of institutionalized mentally retarded children at the Orient State Institute, Orient, Ohio. The incidence of reading disability in a group of 77 mentally retarded male and female children between ages of 10 years 2 months and 18 years 6 months and with mental ages ranging from 6 years 1 month to 12 years 7 months was explored in the first study. Speed reading grade level based on results of the Durrell Analysis of Reading Difficulty was compared with mental age reading grade level based on administration of the Wechsler Intelligence Scale for Children and the Wechsler Bellevue Intelligence Scale, Form I, depending on life age. A reading disability was found to exist in 38 percent of the total number examined. In the second study, a reading experiment to determine the efficacy of homogeneity of reading groups, approaching the problem from the aspect of reading speed changes, was conducted. Sixty hours of special concentrated reading were included in the regular academic program. Two groups, one mixed and one homogeneous, were evaluated before and after with the Durrell Analysis of Reading Difficulty to determine reading speed changes. No significant differences were found. References and tables are included. Suggestions are made for further study.

Flower, Richard M.; Viehweg, Richard; and Ruzicka, William R. "The Communicative Disorders of Children with Kernicteric Athetosis: II Problems in Language Comprehension and Use," Journal of Speech and Hearing Disorders, 31 (February 1966) 60-68.

A study to identify any differences in language function that would be peculiar to a group of kernicteric-athetoid children was conducted. Tests measuring various aspects of verbal functions were administered to three groups of children: those with kernicteric athetosis and hearing impairments, those with athetosis and normal hearing, and a group with hearing impairments but no other evidence of Central Nervous System disorders. All children were between 8 and 18 years of age. A checklist completed by parents supplied information about language understanding and communication. The slowest development of intelligible speech was

ascribed to the normal-hearing athetoid children; the kernicteric-athetoid children were probably somewhat slower in speech development than children of the other hearing-impaired group. The children were tested in the following areas: vocabulary, verbal reasoning, verbal learning, and reading. Variability in the children's test scores was studied. The tests used and the findings are presented. With the tests used, no differences in language function peculiar to a group of kernicteric-athetoid children could be observed consistently. The report includes a brief review of other pertinent literature, a discussion, and references.

Hewett, Frank M.; Mayhew, Donald; and Rabb, Ethel. "An Experimental Reading Program for Neurologically Impaired, Mentally Retarded, and Severely Emotionally Disturbed Children," American Journal of Orthopsychiatry, 37 (January 1967) 35-48.

An experimental reading program for nonreading neuropsychiatric patients is described. The program was a modification of the Rainer School Project. A basic vocabulary of 155 words was presented in programmed lessons using a teaching machine and a supervising teacher. Twenty-six subjects were divided into four disability groups. Ages ranged from 7 years 8 months to 9 years 11 months. All had had previous unsuccessful reading training. One normal nonreading girl 4 years 11 months was included in order to obtain comparative training. All children eventually made steady progress. The factor most responsible for the success of the programmed approach to reading instruction were structure and reinforcement. A most obvious variable for steady progress was the use of candy and other extrinsic motivators. Further research is suggested. References are listed.

Hobbs, Nicholas. "Helping Disturbed Children: Psychological and Ecological Strategies," American Psychologist, 21 (December 1966) 1105-15.

The mental health departments of Tennessee and North Carolina joined Peabody College in developing residential schools for the reeducation of emotionally disturbed children (Re-Ed). The children, aged 6 to 12, lived at four schools, each with the capacity for 40 children. Children were divided into groups of eight under the guidance of two teacher-counselors, who were trained at Peabody College and who were backed by teams of psychiatrists, psychologists, pediatricians, social workers and educators. The program was based on the belief that existing over emphasis on individual psychotherapy, drugs, and removal from the normal environment were too expensive and underproductive in restoring disturbed children. Re-Ed schools aimed to fit each child back into his environment as quickly as possible by teaching methods of adaptation, such as self-control and recognition of asocial symptoms, and by imparting self-confidence through acquiring new skills. Improvement resulted in about 80 percent of the cases. References are included.

Kappelman; Murray M.; Kaplan, Eugene; and Ganter, Robert L. "A Study of Learning Disorders among Disadvantaged Children," Journal of Learning Disabilities, 2 (May 1969) 262-68.

Assessment of 306 disadvantaged children with learning disorders was made by a multidisciplinary team of medical, psychological, hearing, language, and educational specialists. The evaluation done by this school health team was based on school records, child and parent interviews, physical and mental examinations, and psychological and achievement testing. Data from the evaluations revealed the following categories of handicaps found alone and in combinations: mental retardation, perceptual dysfunction, neurological dysfunctions, emotional disturbances, cultural deprivation, and emotional and educational immaturity. Of the children tested, 56 percent had organic handicaps, 6 percent were judged culturally deprived, 14 percent were educationally immature, and 25 percent showed emotional disturbance. Descriptions of testing methods and procedures, four case studies, and references are included.

Kaufman, Harvey I. and Ivanoff, John M. "Evaluating the Mentally Retarded with the Peabody Picture Vocabulary Test," American Journal of Mental Deficiency, 73 (November 1968) 396-98.

The practicality of using the Peabody Picture Vocabulary Test (PPVT) with mentally retarded rehabilitation center clients was investigated by comparing the PPVT with the Wechsler Adult Intelligence Scale (WAIS) and the reading section of the Wide Range Achievement Tests (WRAT). All three tests were administered to 51 mentally retarded adults involved in work adjustment programs. On the basis of correlation coefficients calculated between all measures, it was concluded that although the PPVT may provide an adequate screening instrument with some populations, the reading section of the WRAT may more nearly measure functional ability comparable to WAIS IQ scores. Tables and references are included.

Lawson, John R. and Avila, Donald. "Comparison of Wide Range Achievement Test and Gray Oral Reading Paragraphs Reading Scores of Mentally Retarded Adults," Perceptual and Motor Skills, 14 (June 1962) 474.

The Wide Range Achievement Test (WRAT) scores and the Gray Oral Reading Paragraphs reading scores of mentally retarded adults were compared. The two tests were administered to 30 mentally retarded adults (19 males and 11 females). The IQ's attained for the subjects with the full scale Wechsler Adult Intelligence Scale ranged from 47 to 81. The age range was 16 to 45. The median age for males was 24 and 23.2 for females. A Pearson Product-Moment Correlation of .94 at the .01 level of significance was obtained between the scores for the subjects on the two tests. In this situation, apparently, the use of the WRAT was preferable for indicating subjects' reading ability and was somewhat less time consuming. Also the WRAT provided additional achievement data about the subjects. A table and references are given.

Livengood, Dorothy Kroft. The Effect of Bibliotherapy Upon Peer Relations and Democratic Practices in a Sixth Grade Classroom. 239 p. (Ed.D., The University of Florida, 1961) Dissertation Abstracts, 25, No. 6, 3437-8. Order No. 64-11, 553, microfilm \$3.10, xerography \$10.80 from University Microfilms.

The effect of bibliotherapy on the improvement in individual personality traits and interpersonal relations was studied. Bibliotherapy in this instance was in the form of 36 literary selections read orally to a group of sixth-grade children. The instruments used included the Kuhlman-Anderson Intelligence Test, Scattergrams, Ohio Social Acceptance Scale, Rosenzweig Personality-Frustration Study, Self-Rating Personality Scale, and Who's Who in My Group? Following an analysis of the results, the author concluded: (1) Reading gains by both groups were not significant. (2) Although the class as a whole seemed to lose in good relations and democratic practices, at least one-fifth of the rejected children seemed to gain socially, and seven-tenths of the group showed gains in personality traits. (3) Children from lower cultural groups may know as much good literature as more privileged children. (4) Children low in intelligence and social acceptance seem more likely to profit from bibliotherapy.

Minuchin, Salvatore; Chamberlain, Pamela; and Graubard, Paul. "A Project to Teach Learning Skills to Disturbed, Delinquent Children," American Journal of Orthopsychiatry, 37 (April 1967) 558-67.

A pilot project, designed to teach learning skills to disturbed delinquents by cooperation of teacher and clinician was conducted with six 10-year-old boys at Floyd Patterson House in Pittsburg. Methods of treatment were based on the theory that peculiarities of low socio-economic family life have produced such communication patterns as shouting to be heard or paying attention to persons rather than to what they are saying. Disturbance results from a clash between these behavior patterns and the very different behavior demanded by a classroom situation. Utilizing an experimental "game" curriculum and discussions, 10 treatment sessions concentrated on teaching the boys how to discern and use classroom skills and concepts. Skills included taking turns, listening, logic, categorizing and role playing. The program resulted in marked improvement, indicating future possibilities of the method. However, skills were not thoroughly internalized due to the short exposure and most boys regressed to previous patterns when field conditions changed.

Moran, R. E. "Levels of Attainment of Educable Subnormal Adolescents," British Journal of Educational Psychology, 30 (November 1960) 201-10.

The academic achievement of educationally subnormal adolescents in 15 London secondary schools was evaluated. The experimental group included

300 subnormal adolescents, ages 14 to 16, consisting of 160 boys and 140 girls. These subjects were from the top classes of eight E.S.N. boys' senior schools and seven E.S.N. girls' senior schools. The mean Terman-Merrill mental age of the experimental group was 9 years 5 months. Fifty children from one junior and one secondary school, ages 7 to 11, with mental ages similar to those in the experimental group served as controls. All cases came from working class and lower middle class residential districts. All tests, except reading and intelligence, were specially adapted so that they required no reading ability. Tests were administered as untimed group tests in the following order: mental arithmetic, craft, language, spelling, reading, general information, intelligence. A questionnaire was distributed to Heads and teachers to elicit their opinions and attitudes on the present E.S.N. curriculum, organization, etc. Norms were based upon the averages for normal children with similar mental ages in a junior school. Results indicated a wide range of variability in attainment level among subjects in the experimental group. Some of the children were potentially capable of working at a higher level. Recommendations are made for directing the E.S.N. school curriculum towards vocational guidance and social maturity rather than towards a dependence on verbal facility. Television is suggested as supplementary medium of instruction to take advantage of the E.S.N. children's relatively superior visuo-perceptual ability. Tables and references are included.

Motto, Joseph J. and Lathan, Levi. "An Analysis of Children's Educational Achievement and Related Variables in a State Psychiatric Hospital," Exceptional Children, 32 (May 1966) 619-23.

The school population of Ypsilanti State Hospital, a major mental hospital in Michigan, was analyzed to determine the extent of academic achievement among the students during the 1962-63 academic year. The following information concerning a population of 47 children in seven class groups is presented and discussed: (1) the sex ratio of 34 boys and 13 girls; (2) chronological age range from 9 years 3 months to 16 years 9 months; (3) intelligence, measured by the Wechsler Intelligence Scale for Children or, for older children, the Wechsler Adult Intelligence Scale or the Stanford-Binet, Form L; (4) psychiatric diagnoses of the children; and (5) reading and arithmetic achievement, measured by the California Achievement Tests. Some longitudinal measurements of achievement are reported for children who remained in the hospital school program 10 months or longer. Implications of the findings are discussed. Tables are included.

Motto, Joseph J. and Wilkins, Gayle S. "Educational Achievement of Institutionalized Emotionally Disturbed Children," The Journal of Educational Research, 61 (January 1968) 218-21.

An analysis of the measured educational achievements of the 48 children comprising the school population of a state mental hospital is presented. Academic achievement was measured with the California Achievement Test, and results were interpreted in terms of chronological and mental ages. Some serial measurement achievement data are presented for children who had been in the educational program for periods varying from less than 1 year to more than 20 months. The results indicated that even when mental age was used as a base for determining achievement expectations, the achievement retardation for all subjects ranged from 7 to 19 months. Tables and references are included.

Roman, Melvin. Reaching Delinquents Through Reading. (Springfield, Illinois: Charles C. Thomas, 1957) 125 p.

An investigation of the effectiveness of tutorial group therapy in facilitating psycho-social adjustment and correcting some aspects of reading retardation in adolescent delinquent boys is reported in book form. Subjects were 21 boys ranging in age from 13 to 16, whose reading achievement was at least 2 years below expectancy, and whose IQ's ranged between 65 and 95. All had been adjudged delinquent and were on active status with the Treatment Clinic of Manhattan Children's Court. The subjects were divided into three groups: remedial group reading, tutorial group therapy, and interview group therapy. Pre-post materials and tests used were case histories, Wechsler Intelligence Scale for Children (WISC) short form, Gray Oral Reading Paragraphs, Rorschach, Human Figure Drawing Test, Szondi Test, and adjustment ratings. Ranking, analysis of variance, difference scores, gain in percent, and t tests were used to analyze the data. Tutorial group therapy affected greater improvement in psycho-social adjustment than either group remedial reading or interview group therapy. The tutorial group showed a greater tendency toward improvement in reading ability. Tables, figures, and an extensive bibliography are included.

Talmadge, Max; Davids, Anthony; and Laufer, Maurice W. "A Study of Experimental Methods for Teaching Emotionally Disturbed, Brain Damaged, Retarded Readers," *Journal of Educational Research*, 56 (February 1963) 311-16.

A report on the kinesthetic and auditory aids useful in teaching children who have minimal cerebral dysfunction is given. Subjects were children at the Emma Pendleton Bradley Hospital, a residential treatment center for emotionally disturbed children who have the potential of at least normal intelligence. Twenty-four severely retarded readers were evaluated by a neuro-psychiatrist for evidence of brain damage. Of these, eight children were thought to have cortical dysfunction, six fell into the questionable category where cortical impairment was suspected but not definitely indicated, and 10 revealed no indication of cortical dysfunction. These children were divided into an experimental and control group so that an equal number of each category were in both groups. The results

revealed that children with Central Nervous System dysfunction taught by this method, for a 3-month period, gained over a year in reading skills. This is in comparison with another group of children who were taught by traditional methods. Their gain was 4 months. A description of the method and techniques used is given so that other teachers can practice the same methods in their own settings. A case illustration is given, and references and footnotes are included.

Vernon, Philip E. "Dullness and Its Causes--In Answer to Dr. Pringle," from: London Times Educational Supplement, (Friday, October 26, 1956) 1277.

If teachers accept and act on the "hoary fallacy" that psychological tests can measure innate intelligence and therefore discriminate the irremediably dull child from the merely backward child of normal or higher IQ, then they stand in danger of neglecting their duty to those obtaining low IQ scores and of spending too much time on those with higher scores. Because reading tests and nonverbal IQ tests are imperfectly reliable and measure different abilities, the correlation coefficients rarely exceed 0.70, and calculations aimed at obtaining retardation relative to IQ based on these coefficients result in absurd skewing. Moreover, all children vary in different areas, resulting in discrepancies. Thus test results should be treated cautiously. IQ tests measure such things as reasoning, learning, conceptual level, or comprehension. It is true that improved teaching or home environment can raise scores and that ultimate attainments are fixed genetically, but what these limits are is immeasurable and ultimately unobservable.

Weiner, Bluma B. "Assessment: Beyond Psychometry," Exceptional Children, 33 (February 1967) 367-70.

Traditional methods of evaluating mentally retarded children are deficient, especially in determining educability based on clinical labeling, IQ scores, or grade equivalents. A more useful concept of educability is one that identifies a continuum of important behavior characteristics which extend into adulthood and which can be modified. This entails careful observation of the child and some self-awareness on the part of the observer. Characteristics selected for observation should be--(1) level: total level of development and achievement; (2) rate: time required to achieve a particular level; (3) range: the range of learning from opportunities provided; (4) efficiency: accuracy, economy, and speed of performance; and (5) autonomy: the degree of independent behavior.

Whipple, Gertrude and Black, Millard H. Reading for Children Without--
Our Disadvantaged Youth. (Newark, Delaware: International Reading Association, 1966) 53 p.

In order to produce a brief pamphlet for practical use by teachers and school officials working to improve their reading program for culturally disadvantaged youth, the International Reading Association compiled a series of articles on the successful experiences of teachers, principals, and researchers from different parts of the country. The first chapter tells who the culturally disadvantaged are and why they must have special programs, and outlines the type of program needed. The classroom activities of these children, from grades 1 through 12, are described in the next three chapters. Each section reports methods and materials used, and makes suggestions for fresh approaches. The last unit presents 10 reading programs, some school-wide and some school system-wide. Six sources are suggested for further reference.

PART VI--REMEDICATION OF READING DISABILITIES

This part includes a variety of studies giving specific information on remedial procedures as opposed to reading problems themselves. Various reading programs and individual techniques are described in the studies.

Arnold, Richard D. "Four Methods of Teaching Word Recognition to Disabled Readers," The Elementary School Journal, 68 (February 1968) 269-74.

Twelve boys, ages 11 to 16, all living in a metropolitan county institution for delinquents, were taught to recognize words by the visual, auditory, kinesthetic, and combination teaching methods. IQ's as measured by the Peabody Picture Vocabulary Test ranged from 80 to 105; reading scores ranged from 1.2 to 4.1 on the Wide Range Achievement Test. The Mills Learning Methods Test, in which the teaching period was followed by a test of immediate recall and a test of delayed recall administered the following day, was used as the instructional model. Each child was taught 10 different words by the four teaching methods, and his four test scores were compared to determine which method of learning was most suitable for him. Subjects were taught in groups of three each day, but each subject had only one instructional period with each of the other subjects. For purposes of analysis, subjects were separated into three groups of four, with each group as homogenous as possible on relevant dimensions. An analysis of variance showed a significant difference in which the kinesthetic method was the least effective of the four teaching methods for immediate recall, but a nonsignificant difference for delayed recall data. The initial reading scores were a much better predictor of amount learned than was IQ. Tables and references are included.

Bateman, Barbara. "Learning Disorders," Review of Educational Research, 36 (February 1966) 93-119.

A review of the literature dealing with learning disorders is presented. Overviews and classifications are given. Areas considered are the etiology of learning disorders, characteristics of children with learning disorders, diagnostic testing, remediation of learning disorders, and issues and needed research. The review does not cover the literature dealing with emotional disturbance as a primary etiological factor in learning disorders. Coverage of the area of learning disorders involving reception and expression of the spoken word is limited. A bibliography is included.

Cromer, Ward and Wiener, Morton. "Idiosyncratic Response Patterns among Good and Poor Readers," Journal of Consulting Psychology, 30 (February 1966) 1-10.

The reading response pattern of poor readers was studied. It was hypothesized that poor readers respond less consensually than good readers and that both groups make more errors on material which is designed to evoke idiosyncratic patterns of responding. Subjects were 40 male and 8 female fifth graders in New England. Twenty-four of the children were considered remedial readers. They were matched with other students on grade, sex, age, and IQ. Stimulus materials were four stories equated on all but tense and content, a cloze task, an association task, and an identification task. Time and procedures of administration were controlled. Analysis of variance was used to analyze the data. Poor readers made significantly more errors on the stories. Tense was a significant factor; content was not. On the cloze task, good readers made significantly more correct word associations. On the association task, the good readers did better. There was no difference between groups on the identification task. References are included.

Gallagher, James J. "Educational Methods with Brain-Damaged Children," Current Psychiatric Therapies, Jules H. Masserman, Ed., Vol. 2, 48-55. (New York: Grune & Stratton, 1962.)

Educational planning for brain-damaged children must be based on their intellectual skills and behavioral traits rather than on the particular organic injury. Diagnostic tests such as the Werner-Strauss Marble Board, Graham-Kendall Designs, or the Illinois Test of Psycholinguistics help to identify specific sensory area disabilities and assist in structuring remedial programs. Specific suggestions for correcting problems in six sensory areas are given. These problems involve attention; motivation; poor figure-ground differentiation; rotation and orientation difficulty; impoverished, distorted and inaccurate use of language; motor and speech problems; perseveration; and inaccurate evaluation of one's own performance. References are included.

Hagin, Rosa A.; Silver, Archie A.; and Hersh, Marilyn F. "Specific Reading Disability: Teaching by Stimulation of Deficit Perceptual Areas," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 368-70.

The principles and techniques utilized in an investigation of stimulation of areas of perceptual deficit in the teaching of children with specific reading disability are described. Subjects were 40 boys, 8 to 11 years old, who were referred to the Bellevue Hospital Mental Hygiene Clinic because of behavior and school learning problems. The subjects were divided into two groups and paired on the basis of age, IQ, psychiatric diagnosis, and neurological status. Group 1 was given 6 months of training for two 45-minute periods per week in various perceptual stimulation techniques. Group 2 was given conventional teaching from a basal reading series for the same amount of time. Tests used for evaluation were the Bender-Gestalt, Marble Board Test, Tactile Figure Group Test,

Extension Test, Right-Left Discrimination Test, Wepman's Test of Auditory Discrimination, Goodenough Drawing, and Finger Schema Test. Significant improvement is reported for Group 1 on all areas of perceptual measurement; Group 2 did not improve significantly. Other results are discussed and evaluated. It is concluded that perception is modifiable by training and that improved perception is reflected in increased reading achievement. References are given.

Koelsch, George J., III. "Readability and Interests of Five Basal Reading Series with Retarded Students," Exceptional Children, 35 (February 1969) 487-88.

Five sets of basal readers were examined for interest and readability levels to be used with educable mentally retarded children. Each book was at grade 3.1, and application of the Spache readability formula resulted in equal scores for the five. The chi square was applied to each category of story in the basal readers. Results showed significant differences (.01) among the five series. The California State College interest inventory was given to a group of 18 mentally retarded children (13 boys and 5 girls) with a mean chronological age of 13.11 and a mean reading level of 3.6. Stories in the basal readers were assigned to the same categories as appeared on the reading interest part of the inventory. Linquist's method for analysis of dichotomous responses revealed that differences were significant. References are included.

Lindeman, Barbara and Kling, Martin. "Bibliotherapy: Definitions, Uses and Studies," Journal of School Psychology, 7, No. 2 (1968-69) 36-41.

Bibliotherapy is defined in this article as an interaction between the reader and certain literature which is useful in aiding personal adjustment. A review of the literature includes a discussion of bibliotherapy's uses in mental hospitals, with maladjusted individuals, and in the classroom with retarded, gifted, and average students. Booklists for bibliotherapeutic purposes from the primary grades through college are described, and some studies are offered which support these uses. It is concluded that bibliotherapy can help meet the developmental needs not only of young people in the classroom but also of some maladjusted individuals. A bibliography is included.

Lovell, K.; Johnson, E.; and Platts, D. "A Summary of a Study of the Reading Ages of Children Who Had Been Given Remedial Teaching," British Journal of Educational Psychology, 32 (February 1962) 66-71.

Two hundred and ten children who had received remedial reading instruction from the staff of a Child Guidance Centre in England between

January, 1955, and March, 1960, were traced and their reading ages assessed. Some pupils were given individual instruction and others instruction in small groups. Intelligence quotients were determined by the Binet, the WISC, the Otis Quick Scoring, the N.F.E.R. NonVerbal Test 5, or the Sleight NonVerbal Test. Reading age change was measured by the Schonnel Graded Vocabulary R1 and the Vernon Graded Word Reading Test. Relationships between relevant variables were established by the use of Randall's tau coefficient. Data was shown in tabular form. Little difference was found between the results of individual and small group instruction. Other findings are discussed. References are given.

Malmquist, Eve. Factors Related to Reading Disabilities in the First Grade of the Elementary School. ACTA Universitatis Stockholmiensis, Stockholm Studies in Educational Psychology 2. (Stockholm: Almqvist and Wiksell, 1960) 428 p.

A comparative study of different groups of readers at the end of their first year in the primary schools was conducted in Sweden to clarify the relationship of certain factors with reading disabilities. The main investigations took place in Kristianstad in 1951-52 and involved 399 children from 56 classes. Different kinds of instruments, such as reading tests, rating scales for the assessment of personality traits, etc., were designed and standardized. Multi-factorial analysis of variance of high order was used to analyze the data. A list of the types of various errors in reading and spelling made by different groups of readers was made and analyzed. To investigate the degree of consistency of the reading disabilities, a followup study in grade 4 of the reading ability of those children who took part in the investigations in grade 1 was made. The methods, results, conclusions, and implications of the entire investigation was described in detail. Tables and a bibliography are included.

Ramsey, Wallace. "A Pilot Study of the Use of Videotaping in Reading Remediation," Journal of Reading, 12 (March 1969) 479-82.

Education of teachers and/or feedback from teachers relative to remedial techniques was the orientation of three studies. In the first, a pilot study was conducted in which videotapes were made of teachers working with children who were receiving remedial instruction over a 6-week period. Eight teachers viewed tapes of themselves in an attempt to gain insight into means of improving their own instruction. Four children viewed tapes of themselves with the teacher, and the teacher tried to help each child to gain insight into his own behavior. Children from both instruction groups were tested on the Dolch List of Basic Vocabulary and on the Burnett Reading Survey. The differences in gains between the two groups were not significant.

Rider, Gerald S. and Martinez, Gilbert. "Title I and Remedial Reading for Disadvantaged Students," California Journal of Educational Research, 20 (January 1969) 31-39.

Twenty-one Title I remedial reading projects from districts in California reporting substantial or moderate progress in instruction were identified and analyzed, using data from evaluation reports and on-site observation. Among the findings reported were the following: (1) almost 70 percent of the students enrolled in the programs were boys, with the percentage in individual districts ranging from 60 to 90 percent; (2) slightly over one-third of the students enrolled had a language background other than English; (3) a negative attitude toward reading was ranked as the primary problem in reading achievement at all grade levels; (4) instruction was conducted by specialists, with paraprofessional assistance in almost half the districts; (5) no one method or approach to remedial instruction was used by all districts; and (6) communication systems between the reading specialists and the classroom teachers had been established at all grade levels. Tables are included.

Russell, David H. and Fea, Henry R. "Research on Teaching Reading," Handbook of Research on Teaching, N. L. Gate, Ed., Chapter 16, 865-928. (Chicago: Rand McNally, 1963.)

Out of available research on reading instruction a broad sampling has been selected for discussion in order to suggest the variety of studies that have been made and their implications for teachers and researchers. After a brief historical discussion comes a survey of the visual, auditory, and kinesthetic processes involved in teaching word recognition, and a summary of the problems of teaching comprehension. Teaching comprehension involves: (a) building from percepts, the sensations and images associated with a word, to concepts, which emerge from percepts, to awareness of standard usage and relationships of verbalized concepts; (b) reading with purpose, whether it be to gain main ideas, sequences, directions, and conclusions or to discern the author's purpose, which involves critical and creative reading; (c) varying the approach according to subject matter; and (d) interpretation. The merits of different purposes and types of classroom groups, experimental groups, and individualized instruction are considered, and problems for further research suggested, such as the impact of the mass media, especially television, audiovisual devices, individualization of instruction, reading readiness, and the parental role. A bibliography is included.

Smith, Carl B., et al. Treating Reading Disabilities--The Specialist's Role. Final Report. Interpretive Manuscript No. 3. 120 p. (OEC-1-7-070981-3731, Indiana University, Bloomington, School of Education, 1969) ED 024 850, microfiche \$0.65, hard copy not available from EDRS.

The role of the reading specialist as a remedial reading teacher or as a reading consultant helping to overcome reading problems in a single school is presented. Various levels of diagnosing the extent of reading problems within the school are discussed, including the use of tests, informal inventories and environmental factor assessment. Reading disability treatment is discussed in terms of demonstrating the need for the program, selecting the children, organizing remedial classes, and using special equipment and materials. Model programs operating in 11 school districts throughout the United States are described. They include programmed tutoring, use of the coordinator as a teacher consultant, small group remedial work, use of student tutors, use of physical education to develop reading skills, teacher-parent interaction, use of special equipment and materials, a compensatory program for the disadvantaged, a junior high special class, and preventive programs. Nine steps for remedial reading program organization are listed, and common pitfalls are noted. Sample exercises for diagnostic and correctional procedures are given for perception, word identification, comprehension, reading rate, and oral reading skills. Various procedures for individualizing classroom instruction are recommended. A bibliography is included.

Van Gilder, Lester L. "Improving the Comprehension of the Emotionally Disturbed," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 205-07.

Summaries of selected studies on different factors related to reading disability at the high school and college level indicate that no single cause or factor is responsible for reading difficulties. Although the results of these studies often conflict, pertinent research suggests that physical, intellectual, and emotional factors, as well as associative learning, affect reading ability. They may act at different times either as predisposing factors or as precipitating factors. A single factor will become functional only in connection with other factors as part of a psychopsychological matrix. Because of the complexity of underlying causes of reading disability, the ultimate goal of reading instruction must be the modification of the student's personal and social adjustment whenever it impedes his reading ability.

Vergason, Glenn A. "Retention in Educable Retarded Subjects for Two Methods of Instruction," American Journal of Mental Deficiency, 70 (March 1966) 683-88.

In an attempt to discover whether the retarded individual's problem is one of inadequate learning or rapid forgetting, two methods of presentation of a selected sight vocabulary were investigated. On the basis of results of an inventory of 100 words on the Peabody Picture Vocabulary Test, two methods were used for presentation of 20 words unknown to 16 subjects. One-half the words were randomly assigned to the traditional method of presentation and the other half to teaching with an automatic slide projector, using the paired-associate technique on 30 slides.

Projection included 10 blank slides, 10 with only the stimulus element, and 10 with both the stimulus and response elements. Maximum training time was restricted for both the traditional and the automatic methods of teaching. Means and standard deviation for retention are presented for each method, and analysis of variance is shown for the subjects on four retention intervals for the two methods of presentation. A sub-analysis was made comparing the methods of instruction at each retention interval. Significant differences were shown in retention rates at 1, 2, 4, and 14 months in favor of auto-instruction. Five tables are used to clarify and support the stated results. References are listed.

Winkler, Ronald C., et al. "The Effects of Selected Counseling and Remedial Techniques on Underachieving Elementary School Students," Journal of Counseling Psychology, 12 (Winter 1965) 384-87.

The effects of selected counseling and remedial teaching in altering grade point average and measured personality variables of underachievers were studied. Subjects were 121 fourth-grade underachievers with IQ's ranging from 84 to 144 and a median score of 108 who were selected from 700 testees. Treatment for 79 males and 29 females was based upon the Wechsler Intelligence Scale-Verbal Scale and the California Test of Personality-Elementary Form AA. Six pupils acted as a control group. Treatments consisted of individual counseling, group counseling, use of the Science Research Laboratory Power Builders, and the use of records and/or stories read to the subjects. The control group was not exposed to the treatment which was given during 14 one-half hour sessions over a period of 11 weeks. Results of the group-within-treatment analysis of variance for changes in grade point average and the test of personality are presented graphically. An evaluation of the study is given along with suggestions for future investigation. References are listed.

Section 1: Results of Remedial Instruction

Curr, W. and Gourlay, N. "The Effect of Practice on Performance in Scholastic Tests," The British Journal of Educational Psychology, 30 (June 1960) 155-67.

The practice effect for standardized tests in word reading, reading comprehension, and mechanical arithmetic when tests are given at varying time intervals to subjects at the average level of accomplishment and to those testing 2 years below was measured. Subjects were chosen randomly from pupils between 9 and 10 years of age attending four primary schools in Birmingham. Pupils at the average level of ability were at the 9 years 5 months year level; pupils 2 years below average were at the 7 years 5 months year level. Four groups, each composed of six boys and six girls, and two groups of 12 boys and 12 girls each were used in the study.

Initial, mean, and final scores and gains in months were tabulated for each group for each interval of practice. Practice effect was greatest for reading comprehension. Pupils tested on both forms of the reading comprehension test at an interval of 1 month registered gains of 7 years 2 months and 4 years 2 months at the 9 years 5 months and 7 years 5 months levels, respectively. Practice effect was only slight for the arithmetic test. It was noted that gains made by the controls could be explained in terms of maturation and practice effect. Evidence of a coaching effect was demonstrated when retests were given to both remedial and control groups a year after the close of the experiment. Gains varied with the type of test used and disappeared in 3 to 12 months. It appeared that remedial education produced no permanent results. References are given.

Durham, J. "The Effects of Remedial Education of Young Children's Reading Ability and Attitude to Reading," The British Journal of Educational Psychology, 30 (June 1960) 173-75.

An experiment to obtain evidence about the effectiveness of remedial education is summarized. A remedial group consisting of 20 severely retarded 9-year-old children of about average intelligence took part in remedial reading lessons once or twice weekly for 6 months. They were paired with a control group of children on the waiting list for remedial education according to age, intelligence, reading ability, and the socio-economic area of the school. The remedial children worked in small groups of not more than six as part of the normal work of an L.E.A. Remedial Education Service. Reading ability was measured on the Burt (rearranged) Word Recognition Test. Retardation was measured by the reading test, the N.F.E.R. Non-Verbal Test 5 and the Verbal Scale of the WISC (U.K. version). Attitude to reading was measured on a Thurstone-type attitude scale. The real gain of the experimental group was the difference between the mean gains of the experimental and control groups. There was evidence that remedial education was effective in improving the reading ability of severely retarded 9-year-old children of about average intelligence and that the favorable effect of remedial education on the attitudes to reading of the same children was much less than the effect on reading ability. In the control groups some children made very little progress in reading and some even lost ground. The test scores of the children of the remedial group were significantly higher when tested on the F.F.E.R. Non-Verbal Test 5 than on the Verbal Scale of the WISC. Evidence suggested that a Thurstone-type attitude scale, when administered individually and orally, could be used successfully to measure the attitude to reading of 9-year-old pupils retarded in reading. Further research into selection procedures was recommended. Tables are included.

Reid, Hale C., et al. Preventive Measures to Reduce Reading Retardation in the Primary Grades. 253 p. (CRP-3157, Cedar Rapids Community School District, Iowa, 1966) ED 012 690, microfiche \$0.65, hard copy \$9.87 from EDRS.

Cooperative Research Project-2698 was extended to the second-grade level in order to develop and measure the effects of individual or small-group instruction for low-scoring second graders in reading, of lessons adaption to the needs of the low group, and of inservice training of teachers. Second graders who received total Metropolitan Achievement raw scores of 65 or below and who had a Lorge-Thorndike intelligence score of 80 or higher participated. Data were collected on 203 pupils. Three methods were compared. These were (1) a basal approach using both text and manual (BR); (2) basal approach using text, manual, and inservice training (BRIT); and (3) basal approach using special lessons, basal text, and inservice training (SBRIT). The latter was subdivided into two groups. The experimental group received additional training from special reading teachers while the control group did not. There were 16 dependent variables. Subjective data were obtained from teachers. Statistical analyses included f and t tests. The SBRIT-E group had higher reading achievement scores than any other group. No method was significantly superior to SBRIT-C group. The achievement of low pupils whose teachers had inservice training was not superior to that of pupils whose teachers did not. Other results, conclusions, a bibliography, and five appendixes are included.

Section 2: Modes of Learning

Birch, Herbert G. and Belmont, Lillian. "Auditory-Visual Integration, Intelligence and Reading Ability in School Children," Perceptual and Motor Skills, 20 (February 1965) 295-305.

The developmental course of auditory-visual equivalence was studied in 220 elementary school children. It was found that improvement in auditory-visual integration was most rapid in the earliest school years and reached an asymptote by the fifth grade. The correlations obtained between IQ and auditory-visual integration suggested that the two features of functioning were associated but not synonymous. In contrast, the correlations between IQ and reading ability rose with age. These opposing age trends in correlations found between reading ability and auditory-visual equivalence and between reading ability and IQ are interpreted in terms of the possible attenuating effect introduced by the low age ceiling of the auditory-visual test. The possibility that in acquiring reading skill primary perceptual factors are most important for initial acquisition, but more general intellectual factors for later elaboration is also considered when interpreting age trends. Pertinent tables, graphs, and a reference list are included.

Budoff, Milton and Quinlan, Donald. "Reading Progress as Related to Efficiency of Visual and Aural Learning in the Primary Grades," Journal of Educational Psychology, 55 (October 1964) 247-52.

The learning efficiency of 28 average and 28 retarded second-grade readers was compared when meaningful words were presented aurally and visually in a paired-associates paradigm. It was hypothesized that retarded readers would display a more discrepant rate of learning on the two modality-based presentations. Aural reading was more rapid for both the average and the retarded readers. Retarded readers were more rapid aural learners and slightly slower visual readers than average readers. This discrepancy was most evident in the early phase of learning the lists of word pairs and in the total trials required to attain criterion. References are included.

Cohen, Ruth Isenberg. "Remedial Training of First Grade Children with Visual Perceptual Retardation," Educational Horizons, 45 (Winter 1966-67) 60-63.

Data on pre and post-experimental scores on several measures were gathered and studied to determine the relevancy of the problems of visual perceptual training and reading progress of 155 first-grade children. The experimental students received 10 weeks of training on The Teacher's Guide to the Frostig Program. The control students did not receive special treatment. Motor training exercises were given to the experimental groups. All groups made gains from pretest to post-test, but the experimental groups made more and larger gains than the control groups. The data did not support the hypothesis that a significant correlation existed between improvement in visual perception and reading achievement. The following conclusions were drawn--intelligence appeared to be the single most discriminating factor in identifying children with good visual perception and good reading ability; there were significant relationships between motor development, intelligence, visual perception, and reading achievement for the total sample; visual perceptual training effected positive, lasting gains in performance on a test of ability to copy geometric figures; and there was no significant relationship between gains in visual perception and gains in reading achievement.

De Hirsch, Katrina. "Concepts Related to Normal Reading Processes and Their Application to Reading Pathology," Journal of Genetic Psychology, 102 (June 1963) 277-85.

Some aspects of normal reading processes pertinent to children suffering from severe reading disturbances are presented. The interrelationship of physical and mental functions in reading are described. Conflicting views on whole-part learning as applied to the readings process, with particular emphasis on the Gestalt approach, are examined. Whole-part disabilities of dyslexic children are discussed. It is concluded that skilled reading requires a high degree of integration and differentiation; these skills are generally found deficient or lagging in dyslexic children. Implications for remediation of severely disabled readers are given. A bibliography is included.

Feldmann, Shirley and Deutsch, Cynthia P. A Study of the Effectiveness of Training for Retarded Readers in the Auditory Perceptual Skills Underlying Reading. 180 p. (OEG-7-42-0920-220, New York Medical College, New York) ED 013 749, microfiche \$0.65, hard copy \$6.58 from EDRS.

Two studies were conducted to explore the relationship between the auditory skills of socially disadvantaged students and reading achievement. The effect of a developmental auditory training program on reading achievement and the effectiveness of different evaluative procedures for auditory perceptual skills were also tested. Sixty-four third-grade Negro and Puerto Rican children who were retarded readers were chosen as subjects. Three treatment groups and one control group were set up. The three treatment groups received varying combinations of auditory and reading training. There were 50 treatment sessions. Tests were administered prior to the treatment, immediately following the treatment, after 6 months, and after a year. Reliability coefficients, analysis of covariance, intercorrelations, and t tests were used to analyze the data. No treatment group facilitated reading achievement. There were no group differences. None of the various combinations of reading and auditory programs seemed to affect improvement in reading. It was suggested that there might be interrelationships of teacher and pupil variables important in reading learning. Staff evaluations, references, additional results, tables, descriptions of tests and appendixes are included.

Katz, Phyllis A. and Deutsch, Martin. "Modality of Stimulus Presentation in Serial Learning for Retarded and Normal Readers," Perceptual and Motor Skills, 19 (October 1964) 627-33.

The relation of auditory and visual learning efficiency to age and reading level was studied. Forty-eight Negro males in first, third, and fifth grade in New York City were classified according to reading ability. Reading ability was ascertained by administration of the Gates Advanced Primary Reading Test (grades 3 and 5) and the Reading Prognosis Test of the Institute for Developmental Studies (grade 1). The upper and lower 30 percent of the frequency distribution comprised the normal and retarded reader sample. Three serial learning tasks consisting of eight items each were presented to the learner: auditory, visual, and a combination. The visual presentation consisted of drawings. The learning tasks were presented individually; time was controlled. A mixed analysis of variance was used to analyze the data. Good readers remembered more items. The memory for auditory stimulus was the poorest for all subjects. Older children performed more efficiently, and retarded readers learned more slowly than good readers. Poor readers had difficulty with auditory stimuli. References are included.

King, Ethel M. and Muehl, Siegmund. "Different Sensory Cues as Aids in Beginning Reading," The Reading Teacher, 19 (December 1965) 163-68.

The relative effectiveness of different sensory cues and combinations of cues for kindergarten children learning to associate printed and spoken words were compared systematically. Two hundred and ten children from eight kindergartens in Calgary, Canada, were assigned in rotating order to each of 10 groups. The mean age of the subjects was 70.9 months. Different methods were used for training five groups of subjects to read a common list of four similar words. The same methods were used for training five other groups to read a common list of four dissimilar words. In all five training methods used, the presented word appeared as a visual cue. The methods differed with respect to the additional cues appearing with the printed word. These included picture, auditory, picture and auditory, auditory and echoic response cues. A three-factor analysis of variance was used to analyze the data. The picture method of training provided the most efficient learning with similar words; the auditory method of training provided the most efficient learning with dissimilar words. No significant differences among methods were associated with IQ or sex. Tables and references are included.

Kress, Roy A. and Johnson, Marjorie S. Providing Clinical Services in Reading: An Annotated Bibliography. (Newark, Delaware: International Reading Association, 1966) 9 p.

Eighty-eight items ranging in date from 1932 to 1966 are cited in this annotated bibliography on providing clinical services in reading. The listing is designed to aid those interested in setting up a reading clinic and is divided into two sections: an annotated review of the articles selected and a list of publications which deal primarily with a clinical approach to the diagnosis and treatment of reading problems. Entries include journal articles, books, and monographs and are arranged alphabetically according to author in each of the divisions. Articles which are reports of instructional approaches, specific case studies, or nonclinical material are not included.

Roach, Eugene G. "Evaluation of an Experimental Program of Perceptual-Motor Training with Slow Readers," Vistas in Reading, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 11, Part 1 (1966) 446-50.

The effects of perceptual motor training on a group of slow readers were studied. The techniques used were modifications and amplifications of Kephart's ideas. The program was conducted in Indiana during a summer remedial reading program. Eight children, ranging in age from 95 to 160 months, were divided into experimental and control groups, and were matched according to sex, age, grade placement, reading level, and intelligence. The experimental group was divided into small groups and received 30 minutes of perceptual motor training each day. The control group was given

a 30-minute recess. The Oral Reading portion of the Gates-McKillop Test served as the pre-post measure. The test was administered again 6 months following the completion of the program. The difference in scores between the pretest and 6-month test was used in the analysis of the data by t ratio. No statistical difference was shown between the measures. The age factor was considered critical. Conclusions, implications, and references are included.

Stuart, Irving R. "Perceptual Style and Reading Ability: Implications for an Instructional Approach," Perceptual and Motor Skills, 24 (February 1967) 135-38.

The relationships between reading grade levels and scores on the Wittin's Embedded Figures Test, Short Form, for 40 male and 43 female seventh and eighth graders identified as good or poor readers are reported. Test results indicate a strong positive correlation between field independence and reading grade achievement. On the basis of these findings, identification of individual perceptual styles before initiating reading instruction is recommended. Study limitations are noted. References and data tables are included.

Section 3: Visual and Perceptual Training

Anapolle, Louis. "Visual Training and Reading Performance," Journal of Reading, 10 (March 1967) 372-82.

Visual Training, called Orthoptics, is the science of teaching individuals to use their eyes more efficiently in order to achieve the highest degree of comfort and performance. Good reading involves more than 20-20 vision, for several other processes come into play as the eyes move across a page. Through specific training exercises to correct or improve faulty processes, orthoptics is able to: (1) develop efficient, smooth eye coordination; (2) eliminate any tendency to suppress the vision of a weaker eye; (3) build fusion, the stereoscopic blending of images from the two eyes, which includes the necessity of a sharply defined image on the retinas, equal size of images, and intact nerve pathways from the retinas to the cortex; (4) train for clear focusing as eyes adapt from distance to reading vision; (5) improve convergence flexibility, the ability to hold fixation closer than four inches from the bridge of the nose; (6) train for efficient hand and eye coordination; and (7) increase speed and accuracy of visual perception. References are included.

Chansky, Norman M. "Perceptual Training with Elementary School Under-achievers," Journal of School Psychology, 1 (January 1963) 33-41.

An exploration of the effects of perceptual training on scholastic achievement was made. The effects of practice in left-to-right orientation through perceptual training, discrimination between visual stimuli and organization of visual and nonverbal stimuli on achievement in reading and spelling were studied. Subjects were 34 third- and fourth-grade children from four schools in New York State who had been referred to the school psychologist on the basis of suspected underachievement. Formal tests for mental ability and achievement were administered to determine those in need of training and those selected as controls with no perceptual training. Pupils in the training group received 10 weekly sessions using commercial materials designed for perceptual training, with exercises ranging from easy to difficult. Tabular expression of findings combined with narrative discussion of values are reported. References are listed.

Gibson, Eleanor J., et al. "Comparison of Meaningfulness and Pronunciability as Grouping Principles in the Perception and Retention of Verbal Material," Journal of Experimental Psychology, 67 (February 1964) 173-82.

Two characteristics of verbal units--pronunciability and meaning--are compared to determine whether there are differences in their effect on recognition and learning of verbal units. Thresholds of visual perception and two measures of retention were obtained for control and experimental trigrams varying in pronunciability and meaningfulness. The three types of trigrams contained the same letters rearranged anagram-wise (e.g., OKR, KOR, RKO). Construction of test items, methods of determining perceptual thresholds, and methods of testing recognition and recall are described in detail. Three tachistoscopic experiments using 42, 182, and 110 college students were made. Analysis of the results shows that perceptual thresholds are lowest for pronounceable items, next lowest for meaningful ones. Retention, measured by both recognition and free recall, is best for the meaningful items, second best for pronounceable ones. The implication that pronunciability is the better grouping principle for reading or coding speech units while meaningfulness facilitates retention by providing a better category for grouping the initial items is discussed. Tables and references are included in the study.

Goins, Jean Turner. Visual Perceptual Abilities and Early Reading Progress. Supplementary Educational Monographs, No. 87. (Chicago: University of Chicago Press, 1958) 108 p.

The visual perception competence of first graders was assessed and correlated with reading achievement. The effects of visual form training on learning to read was also studied. Subjects were 120 first graders from Chicago. The Thurstone tests of visual perception, the Chicago Reading Tests, and intelligence tests were administered. Training in

visual form lasted 10 weeks. Correlations, intercorrelations, and critical ratios were used to analyze the data. Scores on Pattern Copying, Reversals and the combined perceptual score correlated most highly with reading achievement. Two factors of visual perception were revealed-- one related to speed of perception and the other to strength of closure. No positive effect was produced by the training. Conclusions, implications, references, and tables are included.

Hagin, Rosa A.; Silver, Archie A.; and Hersh, Marilyn F. "Specific Reading Disability: Teaching by Stimulation of Deficit Perceptual Areas," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 368-70.

The principles and techniques utilized in an investigation of stimulation of areas of perceptual deficit in the teaching of children with specific reading disability are described. Subjects were 40 boys, 8 to 11 years old, who were referred to the Bellevue Hospital Mental Hygiene Clinic because of behavior and school learning problems. The subjects were divided into two groups and paired on the basis of age, IQ, psychiatric diagnosis, and neurological status. Group 1 was given 6 months of training for two 45-minute periods per week in various perceptual stimulation techniques. Group 2 was given conventional teaching from a basal reading series for the same amount of time. Tests used for evaluation were the Bender-Gestalt, Marble Board Test, Tactile Figure Group Test, Extension Test, Right-Left Discrimination Test, Wepman's Test of Auditory Discrimination, Goodenough Drawing, and Finger Schema Test. Significant improvement is reported for Group 1 on all areas of perceptual measurement; Group 2 did not improve significantly. Other results are discussed and evaluated. It is concluded that perception is modifiable by training and that improved perception is reflected in increased reading achievement. References are given.

Marchbanks, Gabrielle and Levin, Harry. "Cues by Which Children Recognize Words," Journal of Educational Psychology, 56 (April 1965) 57-61.

Findings are presented from a study to discover which cues children use to recognize words. The following questions were considered. (1) What are the cues by which beginning readers and nonreaders remember a word? (2) Are the same cues utilized in a long and a short word? (3) Do nonreaders and beginning readers use the same cues? (4) Do boys and girls utilize the same cues? Fifty kindergarten children (25 boys and 25 girls) with a mean age of 5.16 years and 50 first graders (25 boys and 25 girls) with a mean age of 6.54 years were randomly selected as subjects from the Dryden Central School in Dryden, New York. They were required to select from a group of pseudowords the one similar to a word that had just been exposed to them. Each word in the response group contained one cue that was the same as the stimulus word, with the stimulus held constant.

Specific letters and not overall word shapes formed the basis for recognition. The first letter was the most important cue; the final letter, the second most important. In three-letter words the last letter was a more salient cue. Explanations of methods and statistical data used, tables, and references are given.

Morton, John. "The Effects of Context on the Visual Duration Threshold for Words," British Journal of Psychology, 55 (May 1965) 165-80.

A study to determine how context affects the perception of words as measured by their visual duration thresholds is described. Subjects were 24 female British university students divided into three equal groups. A test including 18 incomplete sentences and a list of words which could complete the ideas in the sentences was devised. The words were presented to the subjects by a tachistoscope under three conditions: (1) with a highly predictive context, (2) with a lesser predictive context, and (3) with no context. Each subject was asked to report immediately the words she had perceived; after the test, with no previous warning, the subject was asked to recall all the words she had seen during the test. Results showed that the visual duration threshold for a word was reduced by the presence of a context in relation to the transitional probability of the stimulus word. Detailed analysis is given of the subjects' errors on the test. Factors determining the perception of words are discussed. A model for the recognition of words which accounts for the findings of the study is outlined. Tables and a bibliography are included.

Rutherford, William Lewis. The Effects of a Perceptual-Motor Training Program on the Performance of Kindergarten Pupils on Metropolitan Readiness Tests. 108 p. (Ed.D., North Texas State University, 1964) Dissertation Abstracts, 25, No. 8, 4583-4. Order No. 65-1150, microfilm \$2.75, xerography \$5.40 from University Microfilms.

The effect of perceptual-motor training on reading readiness as measured by the Metropolitan Reading Tests was studied. The population included 64 children enrolled in four kindergarten classes. A 2x2x2 factorial design was used as the experimental design for the study, with treatment, sex, and age being the three variables. The author concluded: (1) The experimental group made greater mean gains than the control group. (2) No significant differences occurred when comparing boys with girls or younger and older subjects. (3) There were no significant interactions. These findings indicate that the perceptual-motor training program used in this study was highly effective in promoting total readiness as measured by Metropolitan Readiness Tests.

Section 4: Training in Auditory Perception

Deutsch, Cynthia P. "Auditory Discrimination and Learning: Social Factors," Merrill-Palmer Quarterly of Behavior and Development, 10 (July 1964) 277-96.

The slum child's inability to discriminate and recognize speech sounds and his difficulty in skills which are dependent on good auditory discrimination are discussed. The environment and the developmental level of the child are hypothesized as important factors in the development of auditory discrimination. Several studies relating to the development of auditory discrimination skills are presented. Data from a number of projects using the Wepman Auditory Discrimination Test are given. The apparent importance of auditory discrimination and general auditory responsiveness for verbal performance and reading ability is noted. Tables and references are included.

Section 5: A Few Specific Remedial Programs

Ausubel, David P. and Fitzgerald, Donald. "The Role of Discriminability in Meaningful Verbal Learning and Retention," Journal of Educational Psychology, 52 (October 1961) 266-74.

An experiment to test the hypothesis that the learning and retention of unfamiliar verbal material varies positively with its discriminability from related, previous learned concepts established in cognitive structure was conducted at the University of Illinois. Subjects were 94 women and 61 men, predominately senior undergraduate students. The learning task consisted of a 2,500-word passage on the principles of Buddhism. Two days before studying this learning passage, one experimental group studied a 500 word comparative organizer explicitly comparing the major ideas of Buddhism and Christianity. Another experimental group studied an expository organizer which made no reference to Christianity. A control group studied a historical introduction dealing with the history rather than with the ideas of Buddhism. Retention of the Buddhism material was tested 3 and 10 days after the learning session by means of equivalent forms of a multiple-choice test. For purposes of analysis, subjects were divided into above- and below-median subgroups in terms of their scores on an objective test of Christianity. Subjects with greater knowledge of Christianity made significantly higher scores on the Buddhism retention test than did subjects with less knowledge of Christianity. Hence the hypothesis was supported. On a 3-day basis only the comparative organizer was significantly effective in facilitating the retention of the Buddhism material. Over a 10-day interval, however, both comparative and expository organizers were significantly effective. References are given.

Baumgarner, Dora Jean. A Comparison of the Multimedia and Corrective Approaches to Teaching Remedial Reading. 128 p. (Ed.D., West Virginia University, 1968) Dissertation Abstracts, 29, No. 10, 3317-A. Order No. 69-6701, microfilm \$3.00, xerography \$6.20 from University Microfilms.

The effectiveness of the regular classroom program of corrective reading instruction was compared with that of the multimedia approach in a remedial reading center. Subjects were 60 Marietta, Ohio sixth graders who had IQ's of 90 to 115 and who were reading 1 or more years below expectancy, or who had IQ's of 70 to 89 and who were reading 1 or more years below expectancy. These subjects were divided so that two groups of average and below-average intelligence received one-half hour of daily reading instruction for 8 months in a remedial reading center, and two groups of similar composition received one-half hour of daily reading instruction for 8 months by the classroom teacher, using the basal reader approach in the regular classroom corrective reading program. Analysis of the post-tests, which included the Stanford Reading Achievement Test and the California Test of Personality, led to four conclusions, among which were the statements that there was no significant relation between intelligence and student achievement whether students were taught by the corrective or multimedia approach and that there was no significant relation between reading achievement gains and either of the two methods used.

Burmeister, Lou E. An Evaluation of the Inductive and Deductive Group Approaches to Teaching Selected Word Analysis Generalizations to Disabled Readers in Eighth and Ninth Grades. 51 p. (OEC-5-10-154, Wisconsin University, Madison, 1966) ED 010 514, microfiche \$0.65, hard copy \$3.29 from EDRS.

The relative effectiveness of inductive and deductive approaches to the instruction of word analysis tasks was studied. A number of phonic and structural analysis generalizations, applied to the pronunciation of words above the primary level in difficulty, were presented to eighth- and ninth-graders of average mental ability but who were weak in word analysis. Results indicated that both experimental groups, inductive and deductive, differed on total mean scores from a control group. The experimental groups were superior in oral reading but not in silent reading.

Burmeister, Lou E. "Word Analysis--Corrective Reading in the Secondary School," Journal of the Reading Specialist, 7 (March 1968) 100-04.

This study proposed to identify a number of phonics, phonic syllabication, and structural syllabication generalizations which apply with high frequency and high validity to words above the primary level. A 14-level stratified (by frequency) random sample of the Thorndike and Lorge "Teacher's Word Book of 30,000 Words" was examined to determine

validity levels of selected phonics and structural analysis generalizations. The generalizations were taught to junior and senior high teachers with little or no experience teaching phonics. They in turn taught the generalizations to a group of eight- and ninth-grade students who had average intelligence but who were weak in word analysis. Criteria used in selecting the generalizations were (1) the need of the students to be taught, as defined by the author's previous experience and (2) a validity level for generalization of at least 90 percent. A post-test-only control group design was used with intact classes assigned to method at random. Each of 10 teachers had three classes assigned as follows: (1) inductive method, (2) deductive method, and (3) control group. Nine randomly selected disabled readers within each class served as the sample. It was concluded that a small number of phonics and structural analysis generalizations can be successfully isolated and taught to children. References are included.

Cline, Marion, Jr. "A-V Aids for Spanish-Speaking Pupils," Reading and Inquiry, J. Allen Figurel, Ed. International Reading Association Conference Proceedings, 10 (1965) 270-71.

The progress in language arts of Spanish-English speaking pupils when normal classroom situations were supplemented with audio-visual equipment and materials was evaluated. Two hundred eight-nine fourth-grade children in the northeastern part of New Mexico during the school years, 1959-1961 were divided into six control groups and six experimental groups. During a one-half hour a day period totaling two and one-half hours per week, the experimental groups were taught with all available visual and audio aids suited to the fourth-grade curriculum. The control groups were instructed without special attention to audio-visual aids. The California Achievement Tests and the Gilmore Reading Paragraph were utilized for pretests and post-tests. The percent of expected gain by each group in each area was computed with 1.7 (expected gain) equal to 100 percent. Over the entire period of the project, the experimental group achieved 100 percent of expected gain compared with 76 percent achieved by the control group. The adaptation of audio-visuals for the specific purpose of conceptualization for bilinguals was encouraged.

Coston, Phyllis and Merz, William. "A Team Reading Program for Retarded Readers," Illinois School Research, 1 (November 1964) 24-27.

A crash program in reading improvement for eighth-grade students who lacked academic potential and interest in reading and who had specific reading difficulties was designed and evaluated. Nineteen low IQ eighth-grade students who were in the lowest quartile of their class in all areas were taught by a regular language arts teacher and a school district reading specialist during the regular 90 minute class daily for 10 weeks. During the 10 weeks, the program utilized skill building units on word

attack, comprehension, and rate using the tachistoscope with Dolch basic sight vocabulary words, an Educational Development Laboratory Controlled Reader and timed reading exercises. The diagnostic process consisted of testing with the Diagnostic Reading Tests, Survey Section, Lower Level, evaluation of each individual's performance on these tests, and analysis of weaknesses noted by the language arts teacher, primarily in the three skill building areas. The actual development of reading skills was examined by comparing raw scores pre- and post-testing, and a critical ratio was obtained for each subsection. All three areas demonstrated positive gains in significance. The reading rate increased. The positive gains made show that pupils could benefit from a crash program. However, training periods spread over a longer period of time should insure more effective carryover.

Davy, Ruth Ann. "Adaptation of Progressive Choice Method for Teaching Reading to Retarded Children," American Journal of Mental Deficiency, 67 (September 1962) 274-80.

An adaptation of the Progressive-Choice method for teaching reading to retarded children was studied. An experimental reading program using Woolman's Progressive-Choice method was conducted for a 2-year period in a school for trainable retarded children. Thirteen subjects participated. Two received 2 full years of instruction; seven received one school year and three less than 1 year. Principles of invariance and discriminability of letters and their sounds were stressed during the program. Tests before and after long summer vacations revealed that the children retained a large percentage of learned material. Subjects who participated 1 year progressed from a nonreading level to ability to recognize and write most of the letters in the alphabet and use them in a few simple words. In 2 years, three children aged 11 to 13 whose IQ's were in the mid 50's progressed from no functional reading to the level of reading meaningfully stories considered appropriate for normal children at approximately the first-to-third grade reading level. Tables and references are given.

Ellson, D. G., et al. "Programmed Tutoring: A Teaching Aid and a Research Tool," Reading Research Quarterly, 1 (Fall 1965) 77-127.

Ten experiments concerning the development and testing of the technique of programmed tutoring and its application to the teaching of beginning reading are summarized. The behavior of professionally untrained persons in this technique was programmed in agreement with principles of learning and programmed instruction for individual teaching. Four hundred children, including retarded children, slow readers, and unselected populations of children in kindergarten and first grade, were tutored for periods ranging up to one semester. With a few exceptions, including one "normal" first grader and several children with IQ's below 50, no tutored child failed to read. Programmed tutoring was found to be most successful

when used as a supplement to and coordinated with regular classroom teaching. When used this way, it was found to produce significant improvement on standard tests which required sight reading, comprehension, and word analysis. Tables, figures, appendices, and references are included.

Fernald, Grace M. Remedial Techniques in Basic School Subjects. (New York: McGraw-Hill Book Company, Inc., 1943) 349 p.

Methods tested and used successfully at the University of California at Los Angeles Clinic School for retarded readers between 1921 and 1943 are discussed in this report. Nearly the first one-third of the book reviews emotional problems and different methods of reading instruction, noting particular success with a combination of the kinesthetic method with individualized interests in helping persons of all ages suffering from total or partial disability, inversions, reversions, or confusion of symbols, and consequent retardation in content fields. Applications of the experiments to general elementary education and in the Los Angeles City Schools and a discussion of the causes of reading disability close the methods section. Shorter sections deal with causes and remediation of spelling and mathematics problems as well as the application of all the remedial techniques previously discussed to the mentally defective. A final chapter presents a variety of case histories. The appendix includes sections on individual differences in imagery and the results of the Gates, Monroe, and Dearborn investigations of reading disability. A bibliography and an index are included.

Gilbert, Luther C. "Genetic Study of Eye-Movements in Reading," Elementary School Journal, 59 (March 1959) 328-35.

An investigation was made of eye movements in reading simple prose material to identify growth characteristics for fixation frequency, regressions, and pause duration during reading. The eye movements were first photographed when the 22 subjects were in second grade in Berkeley, California, and photographed again when they were juniors and seniors at the University of California. All subjects were given the Stanford-Binet test in first or second grade and the Durrell-Sullivan Reading Achievement Test, Intermediate Form A, in second grade. Three prose selections containing 77, 88, and 106 words were used in the study to test eye movements. The first two were prepared for the second graders. All three passages were read by the college students. Averages of a 45 percent reduction in the number of fixations per 100 words, at a 62 percent reduction in the number of regressions, and a 25 percent reduction in the length of the fixation pauses were found for the group as a whole. A substantial correlation was observed between the duration of the fixation pauses at the two levels, suggesting that the duration of the fixation pause is the most stable factor in the eye movement patterns. It was concluded that there are important factors in the speed and span of visual perception in the reading process that have not yet been identified. References and tables are included.

Gillingham, Anna and Stillman, Bessie W. Remedial Training for Children with Specific Disability in Reading, Spelling, and Penmanship. 7th Edition. (Cambridge, Mass.: Educators Publishing Service, Inc., 1968) 344 p.

In this manual for teachers, theories and techniques of the phonic approach to reading instruction for backward readers are explained with copious examples. After describing the problem faced by nonreaders in a series of case studies and outlining the ideal role which should be played by teacher, parents, pupil, and school authorities, specific techniques, approaches and materials are revealed in detail. Areas discussed are: Reading and Spelling with Phonetic Words, Words Phonetic for Reading but Not Spelling, Remedial Training for Upper Grades and High School, Acquiring Familiarity with Sound Symbols, and Expressing Ideas in Writing. Other helpful techniques appear under such topics as: Spelling Generalizations Based on Phonics, Handwriting, and Dictionary Techniques. An appendix and an index are included.

Gomberg, Adeline W. "The Lighthouse Day Camp Reading Experiment with Disadvantaged Children," The Reading Teacher, 19 January 1966) 243-46, 252.

The results of a reading program for disadvantaged children which was part of the day camp program conducted by the Lighthouse, a settlement house in North Philadelphia, are reported. The reading program was developed for three purposes: (1) to boost the opportunities in reading readiness for children about to enter first grade, (2) to enrich language experiences, and (3) to give remedial help to children with reading deficiencies. The campers met 4 days a week for 6 weeks. A daily schedule included reading activities which could become part of each activity. Language development was directed by 10 professional counselors. Consistent gains were found in the area of general oral language development and reading readiness. No marked changes were found in word recognition or hearing comprehension. The program was especially helpful to language development with younger groups. Other findings are discussed. References are included.

Harvey, O. J., Ed. Experience, Structure, and Adaptability. (New York: Springer Publishing Company, Inc., 1966) 406 p.

Featuring 15 papers given at a University of Colorado and Office of Naval Research sponsored conference, this anthology explores the problems of flexibility, adaptability, creativity, and ability to withstand stress in a changing and complex environment. No attempt has been made to integrate the chapters under one theoretical roof, although the selection and organization of the papers provide some consistency. Some facets of this broad symposium include: (1) calling attention to the personal and social significance of adaptability, (2) considering aspects of personality found to be related to the dependent variables under focus, (3) sketching the

role of developmental and maturational factors, (4) reviewing dimensions of early experience and environment, and (5) exploring ways to increase adaptability and flexibility by environmental manipulation and early experience. Other facets (6) extend the problems of creativity and flexibility to science and sociopolitical systems, and (7) deal with methodological pitfalls, such as achieving reliable measurements. Each paper features a bibliography, and an index is included.

Hegge, G.; Kirk, S. A.; and Kirk, Winifred D. Remedial Reading Drills, with directions by Samuel A. Kirk. (Ann Arbor, Michigan: George Wahr Publishing Co., 1955) 45 p.

Exercises in introductory sounds comprise the first 33 out of 44 drills in this collection. The last 11 drills are on sound combinations. Review drills occur every one to four lessons, and each section concludes with a test. All words are one syllable, except for the drills with "ing" endings, and include all vowels, vowel combinations, consonents, and consonent combinations.

Jones, J. Kenneth. "Colour as an Aid to Visual Perception in Early Reading," British Journal of Educational Psychology, 35 (February 1965) 21-27.

The value of color as an aid to the visual discrimination of words and letters is investigated and found to be significant. The sample consisted of 110 British nursery school children whose ages ranged from 3.5 to 5.1 years; 70 subjects were boys. The subjects were given a pair of matching tests, one in black and one in color, of English reversal letters, and this was followed by another pair of matching tests in black and in color of English words transposed into an unfamiliar script. The aim was not only to assess the differences between the scores in the black and colored version of each test, but also to see whether there were any significant differences in the visual perception of black and colored material with respect to sex, age, or preference and what was the extent of color matching in disregard to differences of shape and orientation. The results showed much higher scores for the colored version, which was also preferred by the children. Matching the black letters and black words was at least three times as difficult as the same task in color. There was no significant sex differences. The oldest group achieved significantly higher scores in the tests than the youngest group. References are given.

Long, RobertaAnn. A Printed Materials-Centered Approach Compared With a Machine-Centered Approach for Improving the Reading Efficiency of College Students. 78 p. (Ph.D., The University of Oklahoma, 1962) Dissertation Abstracts, 25, No. 4, 2350-1. Order No. 62-5880, microfilm \$2.75, xerography \$4.20 from University Microfilms.

The effect of two instructional programs, one using only printed materials and the other using only mechanical devices (tachistoscope and the controlled reader), on reading rate, level of comprehension, and paragraph comprehension was studied. The subjects were 142 undergraduate students enrolled in one of six 8-week reading improvement classes. Tests administered to the students included the Subtests I and VI of the Iowa Silent Reading Tests, Form AM, the Cooperative School and College Ability Test, and Form CM of the Iowa Silent Reading Tests. From an analysis of mean gains from pretest to post-test the author concluded: (1) Printed materials and mechanical devices appear to be equally effective in producing gains for reading rate and level of comprehension. (2) Printed materials seem more effective than the tachistoscope and the controlled reader for improving paragraph comprehension. (3) Students receiving reading instruction with either of the two methods develop greater reading efficiency than students who receive no special instruction in reading improvement.

Mathias, Daniel Clair. Teaching Reading to Retardates: A Comparison of Initial Teaching Alphabet with Traditional Orthography. 105 p. (Ph.D., The University of Wisconsin, 1967) Dissertation Abstracts, 29, No. 1, 69-70-A. Order No. 67-16,981, microfilm \$3.00, xerography \$5.20 from University Microfilms.

The effectiveness of the initial teaching alphabet (ita) for educable mentally retarded children who are beginning to read was compared with that of traditional orthography (t.o.). Forty subjects in two cities participated in the study. One group of 10 in each city began to read with ita while the remaining subjects in each city used the t.o. medium. The Metropolitan Reading Readiness Test was administered during the first week of school and no significant difference among the groups was found. At the end of the school year, the Metropolitan Achievement Test in the appropriate medium was given. The groups using t.o. were significantly higher on the Word Knowledge subtest, although there was no significant difference when the gains of the Word Discrimination subtest were analyzed. One year after the treatment, the t.o. version of the Metropolitan Achievement Test was given to all the subjects and both groups earned almost identical grade scores. In conclusion, the medium of instruction did not significantly influence the beginning reading of mentally retarded children.

Peters, Margaret L. "The Influence of Reading Methods on Spelling," British Journal of Educational Psychology, 37 (February 1967) 47-53.

A comparison is drawn between the kinds of spelling errors made by students taught by four different methods--the look-and-say, the phonic, the traditional orthography, and the initial teaching alphabet (i/t/a). Subjects were 69 8-year-olds in each group. Methods were ranked for vulnerability to specific types of error. Results showed that the i/t/a

produced fewest omissions, insertions, and perseverations. The look-and-say produced fewest doubling errors, consonant substitutions, faulty auditory perceptions and homophones. The phonic method gave fewest transpositions, vowel substitutions, and the greatest number of reasonable phonic alternatives. Results by sex and IQ revealed significant differences in the lower IQ range. It was concluded that overall spelling attainment was not affected, but perceptual and rule-following skills influencing spelling have important implications for remedial teaching. References are listed.

Roberts, Richard W. and Coleman, James C. "An Investigation of the Role of Visual and Kinesthetic Factors in Reading Failure," Journal of Educational Research, 51 (February 1958) 445-51.

Three hypotheses were formulated to test Fernald's theory that the development of a kinesthetic background is necessary before pupils are able to apperceive visual sensations stimulated by printed words. The hypotheses stated that a group of reading failures (1) will be significantly lower on a measure of perceptual acuity than a group of normal readers, (2) will show less efficient learning than a group of normal readers when the visual sense mode is the dominant mode utilized for the learning of new material, and (3) will show more efficient learning when kinesthetic elements are added than when a strictly visual method is used. An experimental group (E) of 27 boys drawn from the Clinical School and a control group (C) of 29 boys drawn from the University Elementary School were matched on the variables of sex, age, intelligence, socioeconomic background, and motivation. Reading achievement varied markedly. The E group had an average reading retardation of 2.9 grades. The C group was within the range achievement accepted for their age and grade placement. The subjects were required to learn nonsense syllables under conditions of visual perception alone and under conditions of visual and kinesthetic perception. All three hypotheses were supported by the findings. Tables and a references are included.

Robinson, H. Alan. "A Study of the Techniques of Word Identification," The Reading Teacher, 16, (January 1963) 238-42.

The relative effectiveness of various techniques for the identification of unfamiliar words met in reading is reported. Five hypotheses were tested using the techniques of context clues, word configurations, phonic or structural elements in initial positions, and whole words. The techniques were cumulative when presented in the experimental setting. Subjects were 61 fourth-grade students in Chicago. A pilot study was carried out to test the feasibility of using sixth-grade words from the Dale-Eichholz study. Twenty-two words were chosen and five forms of a selection were designed using the word attack techniques. Subjects read each form and tried to read the unknown word in its various settings.

Means, standard deviations, and percentages were used to analyze the data. Subjects found neither context clues nor context clues plus word configurations sufficient to identify words. The addition of phonic or structural elements in initial and final positions, and the entire word were not sufficient to identify the unknown word. A discussion of results, suggestions for further research, and references are included.

Ryan, Elizabeth McIntyre. A Comparative Study of the Reading Achievement of Second Grade Pupils in Programs Characterized by a Contrasting Degree of Parent Participation. 159 p. (Ed.D., Indiana University, 1964) Dissertation Abstracts, 25, No. 10, 5646-5647. Order No. 65-2392, microfilm \$2.75, xerography \$7.40 from University Microfilms.

The effect of parental participation, described as characterized in one instance by a planned program of parent participation and in the other instance by incidental participation, on the reading achievement scores of 232 second-grade children was studied. Testing procedures included the administration of the Ginn Second Grade Readiness Test, the Paragraph Meaning and the Word Meaning sections of the Stanford Achievement Test, Primary Battery Form J and K. Questionnaires were used also to determine the reading patterns in the home and evaluate the planned program of parent participation. The author summarized his findings by stating: (1) The experimental group was significantly superior to the control group on the Word Meaning Test. (2) On the Paragraph Meaning Test, there was no significant difference between the experimental and control groups. (3) On the Paragraph Meaning Test and the Word Meaning Test, there were no significant differences between the boys, girls, pupils with a higher level of readiness, or pupils with a lower level of readiness in the experimental and control groups. (4) Children in the experimental group read more extensively, visited the library more frequently with parents, and expected less help with new words from parents than did the control group. (5) The parents and teachers of the experimental group reacted favorably to the home reading program.

Smith, Carl B., et al. Correcting Reading Problems in the Classroom. Final Report. Interpretive Manuscript No. 4. 101 p. (OEC-1-7-070981-3731, Indiana University, Bloomington, School of Education, 1969) ED 024 848, microfiche \$0.65, hard copy not available from EDRS.

The responsibility of the classroom teacher in the treatment and prevention of reading difficulties is discussed. An interpretation of research about a set of causes, model programs aimed at overcoming the problems, steps in setting up a program and recommendations and guidelines for these programs are included. A discussion of how to identify specific skill deficiencies explains the use of teacher-made tests, classroom observation, and standardized tests. A description of sample techniques and of successfully operating programs suggests treating general

and specific reading deficiencies by using a method which suits the particular needs, by properly organizing the classroom, by providing varied skill-building materials, and by adequately preparing the classroom teacher. Pitfalls to be avoided are noted. Explanations of terms and techniques used in classroom diagnosis and a bibliography are appended.

Staiger, Ralph C. "Medicine for Reading Improvement," Journal of Developmental Reading, 5 (Autumn 1961) 48-51

A controlled study of the effects of deanol in retarded readers in regular school situations was conducted. Sixty pairs of retarded readers, matched for age, reading test scores, and intelligence level participated. Twenty-five pairs were in the fourth and fifth grades, 13 pairs were in junior high school and 22 pairs were college sophomores. Reading retardation and gain were measured by the Gates Reading Survey. Perceptual speed was measured by the Clerical speed and accuracy subtest of the Differential Aptitude Test Battery. Subjects were classified as slightly retarded and considerably retarded readers on the basis of the total reading test scores. The deanol used was administered under supervision of the family physician in two 75 miligram doses per day for 8 weeks with parents of school age children accepting responsibility for administration, and the College Clinic providing dosage for college students. Test scores before and after medication were compared by an analysis of variance technique. No significant differences in reading performance between the deanol and the placebo groups were noted in any category of students. Conclusions are discussed. References are given.

Strickler, Edwin. Educational Group Counseling Within a Remedial Reading Program. 343 p. (Ph.D., University of Southern California, 1964) Dissertation Abstracts, 25, No. 9, 5129-5130. Order No. 65-1284, microfilm \$4.40, xerography \$15.55 from University Microfilms.

The effects of an experimental program for the correction of reading disability which combined educational group counseling with remedial reading instruction was investigated. The total number of students participating in the investigation was 36, with an equal division of elementary level and secondary level subjects. Among the test instruments and other methods used to measure the effects of the program were Gilmore Oral Reading Tests, Gates Reading Survey, a specially devised Sentence Completion Instrument and companion Picture Interpretation Test, observations and ratings by three independent judges of student and teacher counselor behavior in counseling groups, parent conferences, and post-program questionnaires, completed by the students and teacher counselors. The results supported the major hypothesis that there would be comparable gains in the reading performances of the two treatment groups and that the counseled group would show significantly greater improvement than the non-counseled group in regard to the acquisition of more positive school and

social attitudes. An examination of the comparative findings for the two school levels revealed that the elementary level retarded readers demonstrated a greater ability to benefit from remedial treatment, whether of a specialized reading or of a counseling nature than did the secondary retarded readers. The author concluded that, within the limitations of this study, it appears that educational group counseling can effect improved school and social attitudes among retarded readers.

Swales, Terence D. "The Attainments in Reading and Spelling of Children Who Learned to Read Through the Initial Teaching Alphabet," British Journal of Educational Psychology, 37 (February 1967) 126-67.

The aim of this study was to determine the efficiency of the Initial Teaching Alphabet (i/t/a) in terms of average reading achievement, spelling accomplishment, and incidence of reading retardation. An experimental group using the i/t/a program and a control group using the traditional orthography (t.o.) method were matched with 99 third-grade pupils in each group. Pretest and post-test results were analyzed. Results indicated neither superior nor inferior total reading achievement after 3 years for either method. Spelling standards were not adversely affected. The two methods produced no difference in backward readers. Also, boys benefited slightly more than girls from the use of i/t/a. There was some indication that the consistency of i/t/a made reading and spelling easier than did the t.o. method.

Tinker, Miles A. "Recent Studies of Eye-Movements in Reading," Psychological Bulletin, 54 (July 1958) 215-31.

A summary of 72 bibliographies, critical evaluations, summaries, and studies of eye movements in reading, published from January, 1945, to October, 1957, is presented. The articles reviewed are grouped under the following headings: (1) techniques of measurement, (2) analysis of the reading process, (3) training to improve eye movements, (4) typography and eye movements, and (5) eye movements and fatigue. A brief summary of the research is given. A bibliography is included.

Valusek, John Emiel. The Effect of Drugs on Retarded Readers in a State Mental Hospital. 68 p. (Ph.D., The University of Michigan, 1963) Dissertation Abstracts, 25, No. 3, 1762-1763. Order No. 64-8219, microfilm \$2.75, xerography \$3.80 from University Microfilms.

The effect of drugs on reading disability cases in a mental institution and the differences in hospitalized and nonhospitalized readers on a battery of psychological tests were investigated. The sample population was 43 children, 9 to 18 years old, all retarded 2 or more years

below chronological age-grade placement. The population was divided into medication and placebo groups. Initial and final tests were administered. These included silent and oral reading, and a battery of psychological diagnostic measures used by the University of Michigan Reading Service. Some of the drugs administered to the group included Thorazine, Cytomel, Dexedrine, and Mecholyl. From an analysis of the results, the author states that there were "no significant differences in oral and silent reading or psychological test performance between the medication and placebo groups. The comparison of psychological test performance of hospitalized and nonhospitalized retarded readers indicates that the former differ significantly in mean scores and standard deviations from the latter."

Weeks, Ernest Emmett. The Effect of Specific Pre-Reading Materials on Children's Performances on the Murphy-Durrell Diagnostic Reading Readiness Test. 135 p. (Ph.D., The University of Connecticut, 1964) Dissertation Abstracts, 25, No. 8, 4586-4587. Order No. 65-2753, microfilm \$2.75, xerography \$6.40 from University Microfilms.

The effect of a commercial reading readiness program and an informal reading readiness program was studied. The total population of 158 children was divided into control and experimental groups. Four classes used the Scott Foresman reading readiness workbook *We Read Pictures* for a 9-week period at the end of the school year. Four classes held to an informal program using no commercially prepared materials. Experimental and control groups were tested in readiness factors at the close of the 9-week period using the Murphy-Durrell Diagnostic Reading Readiness Test. Statistical comparisons were made using the t-test of significance. The author concluded that the workbook program, as used within the limitations of this study, was less effective in developing visual discrimination than was the informal program. Use of the workbook did not enhance the development of auditory discrimination and learning rate. Chronological age and maturity appear to be closely associated with readiness as tested. Anxiety and tension were not unduly increased by the use of a structured reading readiness program in kindergarten.

Section 6: Examples of Remedial Programs

Ablewhite, R. C. The Slow Reader. (London: Heinemann Educational Books, Ltd., 1967) 95 p.

The development of an experimental remedial program for slow learners in an English metropolitan secondary school is described in narrative style using material taken from actual classroom work. The program stresses an indirect approach to reading improvement in a special self-contained class and includes field excursions and mimic activities. Basic

principles of an initial teaching scheme describe various approaches to readiness training and various methods of teaching. A report is given of a 1961 investigation of the factors related to reading difficulty in the case of the least intelligent 18 children in a two-school population of 198. Factors such as socioeconomic level, school grouping practices, and popularity with teachers and peers are included. Practical suggestions for the secondary remedial classroom conclude the program description. Tables and a bibliography are included.

Abrams, Jules C. and Belmont, Herman S. "Different Approaches to the Remediation of Severe Reading Disability in Children," Journal of Learning Disabilities, 2 (March 1969) 136-41.

A comparison of the effects, for severely retarded readers, of full-time specialized reading instruction with the effects of instruction ordinarily given and the effects of individual versus group psychotherapy is reported. The 16 male subjects, ranging in age from 8 to 12 years, all had Wechsler Intelligence Scale for Children (WISC) scores of 90 or above and word recognition and comprehension scores of 50 percent or lower on the Temple University Individual Word Recognition Test and an informal reading inventory. Four groups of four boys were matched according to intelligence, age, number of years in school, and socioeconomic status. Groups were randomly assigned to one of four treatments: (1) special instruction and individual psychotherapy, (2) special instruction and group psychotherapy, (3) group psychotherapy only, and (4) individual psychotherapy only. A medication was given to two boys in each group, and a placebo, to the other two. The two groups receiving instruction made significantly greater improvement on the Stanford Achievement Test, Word Meaning and Paragraph Meaning subtests, than the other groups. Tables and references are included.

Barclay, Gordon L. "i/t/a with Emotionally Disturbed Children," Modern Educational Developments: Another Look, Frederick B. Davis, Ed. Thirtieth Educational Conference of the Educational Records Bureau, 1965. (New York: The Bureau, 1966) 135-46.

The procedure and results obtained from the use of the Initial Teaching Alphabet (i/t/a) with emotionally disturbed children at the Rockland State Hospital are described. Three pairs of matched groups composed of 64 boys were established. Groups 1 and 2 were schizophrenic cases, groups 3 and 4 were behavior problems, and groups 5 and 6 were psychotic cases. The paired groups were matched for chronological age and IQ's. Assignment to experimental groups (1,3,5) was made on a random basis as opposed to those in the control groups (2,4,6). An inservice 3-day training period was set up to familiarize the participating teachers with the i/t/a system preliminary to the 12-week program. Comparison of progress for groups in the i/t/a program with that of groups of normal children was based upon

standardized test results. Individual reading improvement was compared with mental age to determine an improvement index as a measure of relative advancement. Both individual and group progress is discussed. Teacher observations of changes in attitude and individual adjustment are described. A substudy carried out with eight boys aged 10-14 years is also reported; results are evaluated in terms of pupil satisfaction which led to the establishment of other classes and the setting up of a library of reading materials in the dormitory area. References are given.

Burkott, Ann P. and Clegg, Ambrose A., Jr. "Programmed Vs. Basal Readers in Remedial Reading," The Reading Teacher, 21 (May 1968) 745-48.

An evaluation of the effectiveness of two methods of teaching reading (programed instruction and a basal text approach) used with 40 mildly retarded readers in grades 1, 2, and 3 is presented. Two experimental groups (10 subjects each) were taught with programed materials while two control groups (10 subjects each) were taught with the basal readers. One 45-minute period of instruction daily for 3½ months comprised the total instructional period. Pretests and post-tests using parallel forms of the Gilmore Oral Reading Test and the American School Achievement Test, Primary II, revealed no significant differences among the groups on the oral reading, the silent reading, and the spelling criteria. References are included.

Burmeister, Lou E. "Selected Word Analysis Generalizations for a Group Approach to Corrective Reading in the Secondary School," Reading Research Quarterly, 4 (Fall 1968) 71-95.

Word analysis generalizations were studied in order to determine (1) the identification of important phonic and structural analysis generalizations about the primary level and (2) the value of a deductive versus an inductive approach to the instruction of generalizations. Subjects were eighth- and ninth-grade students who could pronounce at least 20 but not more than 52 of the 65 key words on the Gates Reading Survey, Reading Vocabulary Test. A stratified random sampling of words by frequency was taken from the Thorndike and Lorge word list. A utility level for each generalization was computed on the total word sample. Generalization was computed on the total word sample. Generalizations with 90 percent utility and one deductive. Teachers had no experience with word-analysis generalizations. In each classroom nine randomly selected disabled readers served as the sample. A post-test only design was used with the Gates Reading Vocabulary Test. In oral reading, differences among the three groups significantly favored the experimental groups over the control, with no significant differences between the two experimental groups. Tables and references are included.

Dubnoff, Belle. "Perceptual Training as a Bridge to Conceptual Ability," Educational Therapy, Jerome Hellmuth, Ed., I, 317-49. (Seattle, Washington: Special Child Publications of the Sequin School, Inc., 1966.)

Theoretical formulations and practical applications of the curriculum at the Dubnoff School (populated by 80 full and part-time children 3 to 18 years) are presented as an effective way to restructure the inadequate intellectual, psychological, and social functions of children with severe learning and behavioral problems. A perceptual motor activities program is incorporated into the curriculum. Through heightened awareness, integrated perception, and the ability to use his body, the child is freed to discover himself and progress towards higher learning by applying these motor skills to the classroom. The steps and techniques for accomplishing the restructuring and transferral are discussed. Socialization, or making the child aware of, and cooperative with, others is also presented especially with relation to the autistic child. Pictures, a case history, examples, and references are included.

Emans, Robert. The Effectiveness of Emphasizing Reading Skills in an English Course for Underachievers. 77 p. (CRP-S-252, Chicago University, Illinois, 1966) ED 010 606, microfiche \$0.65, hard copy \$3.29 from EDRS.

Specially adjusted English courses for underachieving students in grades 10 through 12 were specifically designed to emphasize reading skills. A 15-student sample was divided into one experimental and two control groups and was matched on IQ, reading achievement, and grammar. The data were gathered over a period of one academic year, and the following hypotheses were tested--(1) emphasis on reading will be related to greater achievement in reading skills, (2) consequent reduction of grammar and essay writing for the sample group will not significantly impede achievement in these areas when compared with the control groups, and (3) students taking a course adjusted to their needs will express more positive attitudes toward learning than those students in unadjusted courses. After comparing the post-tests to the pretests, the author found that the experimental group made substantial gains in reading skills, and the two control groups also made gains but in smaller amounts. None of the groups made gains in comprehension. There was no significant difference among the three groups in both grammar and essay writing even though the experimental group received no instruction in this area. The experimental group received no instruction in this area. The experimental group's attitude toward learning was not improved, and in effect became hostile. The author suggested that, if some meaningful demonstration of the real progress made by the experimental group could be effected, the group would not feel singled out as "dumb" and would possibly evince a more positive attitude toward learning. The author concluded that such a specially designed English course which does not single out the underachiever as being different or unusual could be successfully implemented.

Gunter, G. O. and McNitt, Helen. Effectiveness of an Interest-Motivated Approach to Junior College Remedial English Instruction. 51 p. (CRP-2856, York Junior College, Pennsylvania, 1966) ED 010 121, microfiche \$0.65, hard copy \$3.29 from EDRS.

The effectiveness of an interest-motivated method of instruction in remedial English was evaluated. All students involved in the project were persons who had graduated from high schools in the lower 40 percent of their classes. They were admitted to college on a probationary basis. Eight groups of students were involved. Four groups were designated as experimental, and their class procedure followed the interest-motivated method of instruction. The remaining groups followed a traditional methods. The courses ran concurrently and covered two 15-week semesters. The primary study materials employed in the four experimental groups were "News-week" magazine and selected newspapers. Students' preexperimental and post-experimental essays were judged on the elements of mechanics, organization, and intellectual content. Analysis of variance was run on the scores. The experimental methods was no more effective in teaching than the traditional approach. It was concluded, also, that remedial English courses should be of no greater duration than one semester. Meaningful objective criteria were developed for scoring student essays.

Haring, Norris G. and Hauck, Mary Ann. "Improved Learning Conditions in the Establishment of Reading Skills with Disabled Readers," Exceptional Children, 35 (January 1969) 341-52.

The effects of an individually tailored program using different reinforcers on the reading performance of four elementary school-age boys were described. The boys were from grades 3, 4, and 5 and were severely disabled in reading (average or above in intelligence but 1 to 5 years retarded in reading skills). They were given 5 months of remedial reading instruction. Reading materials were sequentially ordered in a programed format with reinforcement provided on a point system. Points were exchangeable for edibles, trinkets, and toys. Pupil responses were measured both orally and in written form. Reinforcing events were arranged in such a manner as to first accelerate performance rate and then maintain the high rate and were sequenced through six distinct periods. Teacher instruction in this setting occurred primarily during oral reading. Almost all teacher communication was preplanned and prepared in script form. Under preexperimental conditions, subjects averaged 2.8 correct responses per session and spent considerable time not reading. Under experimental conditions, average response rates increased as did the length of work period. In the 5 months of instruction, reading levels increased from 1.5 to 4 years. Preferred reinforcers tended to be edibles and expensive items. Tables and references are given.

Hewett, Frank M.; Mayhew, Donald; and Rabb, Ethel. "An Experimental Reading Program for Neurologically Impaired, Mentally Retarded, and Severely Emotionally Disturbed Children," American Journal of Orthopsychiatry, 37 (January 1967) 35-48.

An experimental reading program for nonreading neuropsychiatric patients is described. The program was a modification of the Rainer School project. A basic vocabulary of 155 words was presented in programmed lessons using a teaching machine and a supervising teacher. Twenty-six subjects were divided into four disability groups. Ages ranged from 7 years 8 months to 9 years 11 months. All had had previous unsuccessful reading training. One normal nonreading girl 4 years 11 months old, was included in order to obtain comparative training. All children eventually made steady progress. The factors most responsible for the success of the programmed approach to reading instruction were structure and reinforcement. A most obvious variable for steady progress was the use of candy and other extrinsic motivators. Further research is suggested. References are listed.

Hillman, H. H. and Snowdon, R. L. "Part-Time Classes for Young Backward Readers," The British Journal of Educational Psychology, 30 (June 1960) 168-72.

An attempt to determine whether part-time teachers could help backward readers to make significant improvement in a specific remedial reading program is reported. Subjects, 130 children from 26 junior schools, participated in the scheme which was planned to relieve child guidance clinics of purely educational work which deprived them of the opportunity to give specialized psychological service. Remedial classes consisted of 12 pupils each, and met twice each week. Work was terminated upon recommendation of a coordinating teacher. Pupil selection was based upon 2-year retardation in reading as decided by the head teacher and classroom teacher concerned. Except for eight children, no intelligence test scores were available, but Burt's Graded Vocabulary Test of Reading Accuracy was used as a measure of progress. Each of the seven teachers was free to orientate instruction to the age, interest level, and difficulties peculiar to each child, and a consistently phonic rather than a whole-word or sentence-method approach was adopted. Materials and related activities were used extensively to enlarge and reinforce reading and writing experiences and to vary teaching techniques. Success was measured by a retest on the Burt test, which showed an average improvement of 11 months for one term and 2 years 5 months for three terms. Comparison with matched groups in regular and adjustment classes for age, school, socioeconomic background, and degree of backwardness also showed differences of from 4 months to 1 year 11 months in favor of the experimental group. Conclusions indicate definite value of the scheme for the Durham County school system. Five references are included.

Hite, Sister Rebecca. "Reading via Tape for the Inhibited Reader," Academic Therapy Quarterly, 2 (Fall 1966) 23-27, 63.

Two reinforcement media were compared to determine how tape lessons reinforce basic reading vocabulary for inhibited readers at the electronic classroom of Marillac School, Kansas City, Missouri. Eighty-three tape lessons were developed with accompanying worksheets and independent seatwork sheets. Thirteen second- and third-grade inhibited readers had 15-minute developmental lessons daily for 90 class days and were given time to complete work for each story lesson on both the tape lesson media and the independent seatwork media. Individual word perception and word recognition tests were given periodically. The status of each subject in reading and in related abilities before and after the experiment, analyzed on a 5-point scale, showed a 2- to 5-month instructional gain in basic word perception skills. An analysis of the tape lessons showed that their psychological value was in the working-with aspect of the lessons, that each lesson integrated principles of a good primary reading program and emphasized auditory-visual discrimination and functional development of meanings, and that the oral-auditory aspect allowed maximum use of pupil time and pupil response. The entire procedure allowed the teacher more time to guide students individually. Descriptions of the electronic classroom and the tape lessons and extracts of a tape lesson are included.

Keating, Leslie E. "A Pilot Experiment in Remedial Reading at the Hospital School, Lingfield, 1957-60," British Journal of Educational Psychology, 32 (February 1962) 62-65.

A pilot experiment in remedial reading was developed at the Hospital School for Epileptic Children, Lingfield, Surrey, England. A three phase program was used with the aim of improving the reading ability of boys over 11 years old who were unable to read or whose reading was too far retarded to enable them to be in normal classes. Phase 1 experiment is described as intensive teaching of reading to a very retarded class. This plan was found inadequate because the class was unable to work on their own while individual teaching was carried on. In phases 2 and 3, each subject was given 15-20 minutes, or more, of individual instruction per day, plus silent reading practice and teacher-prescribed exercises designed to help his reading. The reading levels of the students in the second and third experiments were found to improve to a point where several boys were returned to normal classes. A discussion of the findings and tabular interpretation are provided. References are given.

Krippner, Stanley and Herald, Clare. "Reading Disabilities among the Academically Talented," Gifted Child Quarterly, 8 (Spring 1964) 12-20.

In accordance with Conant's definition of the "academically talented," 21 elementary and secondary pupils were enrolled in the Kent State University Child Study Center for a study of the factors related to their

reading disability. The Bond-Tinker formula was used to describe "disabled" in reading. Diagnostic test data were used to arrive at the major contributing causes of disability. Chi square analysis was used to compare the etiological factors of the academically talented and the average groups. A modification of the Rabinovitch system was used in organizing the data. Individual case studies reflected the results of this study in terms of the many-faceted causal factors and the need for further investigation. Tabular description is presented for the etiological factors contributing to the reading disabilities of the two clinical groups. References are included.

Lytton, H. "Follow-up of An Experiment in Selection for Remedial Education," The British Journal of Educational Psychology, 37 (February 1967) 1-9.

The results for the total remedial period and the followup of an experiment in remedial education are reported. The original number of 97 children in the remedial reading group fell to 88, and the 40 of the remedial arithmetic group fell to 37. A Combined Criterion for Reading was determined on the basis of the Burt-Vernon Grades Word Reading Test (Vernon 1968), a comprehension test (Schonell 1950), and by the experimenter's own grading for accuracy, fluency and understanding as determined by the child's reading of the book he was using in class. A Report Form on the child's behavior as reported by a psychologist was combined with the teacher's rating and was included in the formulation of the Combined Criterion for reading. A scale was similarly formulated for arithmetic, although only the teacher's rating with the psychologist's report was used. A formula allowing for systematic differences between adjustment groups was used for the statistical analysis. In reading, there seemed to be no real difference between the teacher's judgment and test selection. In arithmetic, test selection was preferable. The pictorial IQ test gave good indication of success in remedial work. Contrary to the real progress made in reading, low IQ children derived no lasting benefit from special tutoring in arithmetic. Some gains were lost in reading, although these losses were more prominent among the secondary school children. Backwardness and small long-term gains seemed related to maladjustment. Studies of individual profiles may throw light on this question. Six references are given.

Malpass, Leslie F., et al. Programed Reading Instruction for Culturally Deprived Slow Learners. 45 p. (OEC-2-7-068438-0069, MacDonald Training Center Foundation, Tampa, Florida, 1966) ED 011 065, microfiche \$0.65, hard copy \$3.29 from EDRS.

The effectiveness of programed instructional materials for teaching basic reading skills to slow-learning, culturally-deprived, 6 to 9 year-old children was evaluated. The materials studied had been evaluated previously with educable mentally retarded subjects, 10 to 16 years of age. The study

was made to determine what modifications of these materials would be needed for use with the younger students. The 45 children were divided into one control group taught by traditional classroom techniques and two experimental groups, one taught by machine and one taught using programed workbooks. Each group received the same list of words selected by the authors. At the end of the experiment, the children were tested for vocabulary improvement. The scores of each group were statistically compared with every other group. The results showed a statistically significant improvement in vocabulary gain for the machine-taught group over the control group, but no significant difference was found between the machine-taught and the workbook-taught groups. The authors concluded that programed instructional materials tend to increase reading skills and are feasible for use with the population sampled.

Niles, Olive S. "Methods of Teaching Reading to First Grade Children Likely to Have Difficulty with Reading," The Reading Teacher, 20 (March 1967) 541-45.

All the children in 40 first-grade classrooms in 32 schools were divided into four groups of 10 classrooms each to study the effect of different materials and procedures used in beginning reading instruction. An extensive battery of pretests of intelligence and readiness was administered to identify the children who seemed least likely to be successful with first-grade reading. The control group (A) of 10 classrooms had no changes made in materials or procedures. One treatment group (B) used the same standard basal materials as group A, but the slow children (least ready) were given three extra 30-minute periods of instruction per week with a remedial reading teacher in the classroom. In another treatment group (C) of 10 classrooms, the slow children used different readiness materials followed by instruction using a collection of selected trade books with no additional reading personnel. Another 10 classrooms, group D, added both the remedial instruction and the different instructional materials for the slow children. Informal evaluation showed that the loosely controlled vocabulary of the trade books presented no problem to the children and that the children enthusiastically read more pages in trade books than did their counterparts in other groups. Test results showed that the battery of pretests accurately identified those children who experienced difficulty in beginning reading. Differences favoring the experimental groups were not statistically significant when scores of the slow children were analyzed. Test results showed no differences among groups A, B, C, and D at the end of first grade.

Norrell, Clarence Luther. A Comparative Study of Two Methods of Remedial Reading Instruction Employed with Selected Eighth Grade Students in Corpus Christi, Texas. 90 p. (Ph.D., East Texas State University, 1968) Dissertation Abstracts, 29, No. 10, 3504-A. Order No. 69-5435, microfilm \$3.00, xerography \$4.60 from University Microfilms.

Twenty matched pairs of eighth-grade students, half using the Follett Program and half using the Sullivan Program for remedial reading instruction, were compared for gains in reading comprehension and vocabulary. When the two methods were compared on a post-test, a significant difference was found between the vocabulary scores favoring the Follett Program, but no significant differences were found between the two groups on reading comprehension. However, the Sullivan group significantly improved their reading comprehension scores when their pretest and post-test scores were compared. Female students of the Follett group differed significantly in reading comprehension from the females of the Sullivan group. Female students of the Follett group performed significantly higher in reading comprehension than did male students of the same group.

Reid, Hale C.; Beltramo, Louise; and Muehl, Siegmur. "Teaching Reading to the Low Group in the First Grade--Extended into Second Grade," The Reading Teacher, 20 (May 1967) 716-19.

The influence of special help on the reading achievement of second-grade low reading groups was examined in the Cedar Rapids public schools, Iowa. Special help refers to 10 half-day inservice training sessions for teachers of low reading groups, special lessons designed for low reading groups, and special instruction by special teachers. Thirty-three teachers and their low reading classes were randomly assigned to one of three methods--(1) basal reader, (2) basal reader with inservice training, (3) special lessons, basal reader, and inservice training, and (4) basal reader with all three forms of special help. Analysis of covariance and t-tests were used in comparing the treatment groups. Overall results showed that the group that received all three kinds of special help was significantly superior to all other groups, with the exception of the group that had special lessons plus inservice training. This indicates that while special instruction produced superior results, special lessons provided the foundation for it. Inservice training failed to show beneficial effects.

Safford, Alton L. and Watts, Charles A. "An Evaluation of a Public School Program for Educationally Handicapped Children," California Journal of Educational Research, 28 (May 1967) 125-32.

The academic progress of 27 pupils in three classes of an educationally handicapped program in a public school setting was evaluated. All pupils had been diagnosed as suffering from central nervous system dysfunction. Instruction in basic skills was emphasized. The Jastak-Bijou Wide-Range Achievement Test was administered as a pre-post test. Bivariate distributions were computed on the basis of sex and median chronological age and intelligence scores. T tests were also used. The mean academic gains for all pupils was .3 of a year. Girls gained less than boys. There were significant differences between classes before and after the

experiment in reading and arithmetic. Implied in the study was that educationally handicapped pupils are resistant to academic instruction. Special educationally handicapped classes are not enabling pupils with severe learning deficits to make the academic gains necessary to return successfully to regular classes. A discussion, tables, and references are included.

Spieth, Phillip. "RISE: An Experimental Summer Program in Remedial Reading," Minnesota Reading Quarterly, 11 (February 1967) 81-88.

Five reading approaches were used during a 6-week summer program given to 90 first- and second-grade nonreaders. At grade-1 level four approaches were used: basal reader, language arts, programed, and Words in Color. With second-grade pupils, a programed approach and an approach using a kit of materials were contrasted. Children were diagnosed as behaviorally problematic, withdrawn, or perceptually handicapped, and the most efficient approach for each type was determined. A type of operant conditioning was also employed in setting expected goals on a daily basis. The Lee-Clark Reading Test was used to assess gains in the 6-week period. Children in the language arts group showed an overall reading gain of 2.15 months; gain in the reading kit group was 2.00 months; in Words in Color, 1.50 months, and in the basal reader, .57 months. The language arts approach was most useful with the withdrawn, older child. Programed materials were most useful with children exhibiting behavior problems. The author reported that operant conditioning was effective for all except perceptually handicapped children. Tables and references are included.

Spieth, Phillip. "RISE III: A Second Continued Experimental Summer Program in Remedial Reading," Minnesota Reading Quarterly, 13 (February 1969) 98-104, 134.

A 6-week followup summer experimental course in remedial reading approached 60 first-grade and 60 second-grade children grouped in classes of 15. Both regular teachers and aides were used. Also weekly group sessions for parents were set up with psychologists and social workers. Once again the children were categorized as withdrawn, perceptually impaired, or behaviorally problematic, and teachers employed the findings of previous classes, using language experience, kinaesthetic, and programed approaches with the respective groups. Pretest and post-test measures on the Lee-Clark Reading Test, the Wechsler Intelligence Scale for Children (Digit Span Test), and the Bender-Gestalt Test revealed that perceptually handicapped children exhibited the least growth. The author concluded that the typing of children was useful, that children with behavioral problems benefited most from programed material, and that children with perceptual motor handicaps did make startling gains with the methods employed. Tables and references are included.

Taschow, Horst. "Short-term and Long-term Corrective Reading in College," Reading Improvement, 5 (Winter 1968) 54-56, 68

A comparison was made between the effectiveness of a 10-week intensive corrective reading course versus a less intensive 20-week course for college freshmen. Students in both courses had the same instructor, sequence of instruction, materials, and number of instructional hours. The same methods were used in both courses. The Nelson-Denny Reading Test was administered immediately upon completion of each course and again 10 weeks later. Immediate results showed little difference between the two groups. However, retention scores favored the less intensive course at the .01 level of confidence. The less intensive group also made statistically significant gains in vocabulary, comprehension, and total reading when immediate and delayed scores were compared. For the intensive group no significant differences appeared in rate or in comprehension. For both groups significant improvement was made when comparing pretext with immediate and with delayed post-test scores.

Timashenka, Paul. The Effect of High and Low Readability Level of Lectures on Secondary Educable Mentally Retarded Pupils' Listening Comprehension of Material Presented. 128 p. (Ed.D., The Pennsylvania State University, 1967) Dissertation Abstracts, 29, No. 1, 157-A. Order No. 68-8753, microfilm \$3.00, xerography \$6.20 from University Microfilms.

A lesson on job attitudes was designed for educable mentally retarded pupils (EMR) on the secondary level and was taped at fourth-grade and tenth-grade readability levels. The Fog index and Dale's list of 3,000 words were used in the preparation of the lesson. It was hypothesized that the learning of terms related to job attitudes would be higher for EMR students who listened to the fourth-grade lecture than for those who listened to the tenth-grade lecture. A listening pretest was administered to two groups of 300 EMR students each. One group then listened to the fourth-grade tape while the other heard the tenth-grade tape. Learning took place with both groups; although, it was higher for the EMR group who listened to the low readability lecture. Listening was found to be a good channel of learning for EMR students.

Section 7: Evaluation

Adams, Mary Louise. The St. Louis Public Schools Reading Clinics: A Follow-Up Study. 218 p. (Ph.D., St. Louis University, 1960) Dissertation Abstracts, 21, No. 10, 2941. L. C. Card No. Mic. 61-741, microfilm \$2.85 xerography \$9.90 from University Microfilms.

A group of 555 children who received remedial reading instruction and who were judged to have developed an independent word attack were followed

up in grade school and high school to determine their scholastic achievement since leaving the St. Louis reading clinics. It was concluded that severely retarded readers in the St. Louis clinic are capable of making gains similar to those reported for other clinics in the literature. Children dismissed after achieving an independent word attack made gains nearly double those dismissed without acquiring an independent word attack. Seven out of ten children followed up graduated from elementary school and one out of five from high school. Small possibility existed for severely disabled readers eventually entering college. In this population students who fail and have to repeat grades have a greater tendency to drop out of school than children who are not failed. No assumption is made that remedial reading instruction is the dominant factor influencing improvement but improvement is attributable to a number of interacting factors.

Balow, Bruce and Blomquist, Marlys. "Young Adults Ten to Fifteen Years After Severe Reading Disability," Elementary School Journal, 66 (October 1965) 44-48.

The present study was designed to obtain an overview of the social and psychological status of young adults who had been diagnosed as severely disabled readers in their elementary school years. Occupational position, level of education, level of reading skill, educational status, attitudes toward reading and remedial help, and marital status were assessed by telephone interview and a testing session. The sample, 32 males between the ages 20 and 26, were studied initially at the University of Minnesota Psycho-Educational Clinic during the years 1948 to 1953. Selection of the sample was based on sex, age, clinical diagnostic classification, intelligence, and amount of retardation in reading. Only those pupils in a 50-mile radius, with no primary emotional disturbances or other handicapping conditions, and with IQ's in the average range were included in the study. The telephone interview was completed with 23 subjects, and the tests of current reading and emotional status were given to 9 of these subjects. Three groups of subjects were described: Group 1, those who completed the telephone interview and who agreed to come in for testing; Group 2, those who completed the telephone interview but refused to come in for testing; and Group 3, those who were unavailable for interview. Results of the study are discussed and additional research is suggested. Tables and references are given.

Buerger, Theodore A. "A Follow-up of Remedial Reading Instruction," The Reading Teacher, 21 (January 1968) 329-34.

Seventy-two students in grades 3 through 7 who received remedial reading instruction were compared with 72 students who received no remedial instruction. The experimental group demonstrated significant post-remedial reading gains but did not make greater long-term gains in academic achievement. Supportive reading assistance following the intensive remedial

reading instruction was suggested. Most remedial sample responses appeared to indicate that reading help was of value. Providing remedial teacher trainees with instruction and experience in counseling and therapeutic techniques was recommended.

Colvin, Charles R. "A Reading Program That Failed--or Did It," Journal of Reading, 12 (November 1968) 142-46.

The relationships of a Reading and Study Skills course and exposure to college life in general to the grade point average (GPA) of selected college freshmen were investigated. Students who scored below the fiftieth percentile on the Cooperative Reading Comprehension Test were assigned randomly to either a control (no reading instruction) or an experimental group. Post-test scores on the reading test, GPAs, and attrition rates were collected for both groups. No statistically significant differences were found between the two groups for GPA or reading achievement scores. However, on every measure the experimental group scored higher than did the control group. Both groups showed a significant growth in reading achievement. It was pointed out that the control students were given incidental aid in a number of ways that may have accounted for the lack of significant differences between the two groups. Tables are included.

Huelsman, Charles B., Jr. and Boster, Carol D. "Research Guidelines: Does Remedial Reading Work?" Ohio Reading Teacher, 3 (February 1969) 17-19.

A review was made of 11 studies concerned with the permanency of gains following termination of remedial reading instruction. The review was concerned with the questions: Are remedial reading gains permanent? Is the improved position of the child among the other readers of his age maintained after remedial instruction is terminated? What happens to these children 10 to 20 years later? The studies reviewed showed that children aided by remedial instruction do not return to former levels after instruction is stopped; remedial students generally will make less than normal growth during the school years subsequent to remedial instruction; and generally the more severe the reading disability initially, the greater the influence of the disability upon the subsequent life of the individual. Three implications evolved from the review: (1) the practice of returning children to the regular classroom without some modification in regular classroom procedure needs to be reconsidered, (2) additional research is needed, and (3) it is apparent that remedial education needs to be initiated as early as possible within the school career of the disabled learner and should be continued as long as needed. References are included.

Lovell, K.; Byrne, C.; and Richardson, B. "A Further Study of the Educational Progress of Children Who Had Received Remedial Education," British Journal of Educational Psychology, 33 (February 1963) 3-9.

A comparison of the educational progress of junior school children who had received full-time remedial help with the educational progress of junior school children who had received remedial help once a week in England is reported. The intensive training group was also compared to a control group, the members of which could have received remedial training but chose not to. Children were chosen for intensive help on the basis of intelligence and reading tests. The group was divided into backward and nonbackward by use of a reading age 85 percent of chronological age. Children had attended a regular school for at least 16 months at the time of the followup study. Reading age was determined by the Schonell Graded Vocabulary Test and the Vernon Graded Word Reading Test. In addition, an arithmetic concept test and a check on the stream of the children were included. The experimental and control group were matched on five factors. Data was analyzed by use of percentages, means, standard deviations, and Kendall's Tau coefficient. Reading quotient rise was the same for both studies. Between the followup study and end of treatment, the reading quotients fell. Only 40 percent of the backward readers had an understanding of place value. Over three-fourths of the backward, and one-half of the nonbackward subjects were found in the bottom or next to bottom stream of a three or more stream school. Seven tables and one reference are included.

Lytton, H. "Follow-up of an Experiment in Selection for Remedial Education," British Journal of Educational Psychology, 37 (February 1967) 1-9.

The results for the total remedial period and the followup of an experiment in remedial education are reported. The original number of 97 children in the remedial reading group fell to 88, and the 40 of the remedial arithmetic group fell to 37. A Combined Criterion for reading was determined on the basis of the Burt-Vernon Graded Word Reading Test (Vernon 1938), a comprehension test (Schonell 1950), and by the experimenter's own grading for accuracy, fluency, and understanding as determined by the child's reading of the book he was using in class. A Report Form on the child's behavior as reported by a psychologist was combined with the teacher's rating and was included in the formulation of the Combined Criterion for reading. A scale was similarly formulated for arithmetic, although only the teacher's rating with the psychologist's report was used. A formula allowing for systematic differences between adjustment groups was used for the statistical analysis. In reading, there seemed to be no real difference between the teacher's judgment and test selection. In arithmetic, test selection was preferable. The pictorial IQ test gave good indication of success in remedial work. Contrary to the real progress made in reading, low IQ children derived no lasting benefit from special tutoring in arithmetic. Some gains were lost in reading, although these losses were more prominent among the secondary school children. Backwardness and small long-term gains seemed related to maladjustment. Studies of individual profiles may throw light on this question. Six references are given.

Robinson, Helen M. and Smith, Helen K. "Reading Clinic Clients--Ten Years After," Elementary School Journal, 63 (October 1962) 22-27.

The program at the University of Chicago Reading Clinic is discussed. In 1958 the first followup study of subjects 10 years after they were enrolled in the clinic was made. Information concerning academic accomplishments and/or occupational status was secured through interviews and questionnaires sent to former subjects and their parents. A sample was drawn from clients who were given a diagnosis only and from clients who were also given remedial instruction. Forty-four subjects were chosen and data for each was secured and tabulated to answer specific questions concerning school progress, type of positions that the former clients held, extent of reading reported by these students, and reaction of parents to the services of the clinic. The findings in answer to these questions are cited in some detail; tables pertaining to the questions are included.

Shearer, E. "The Long-Term Effects of Remedial Education," Educational Research, 9 (June 1967) 219-22.

Most children who receive remedial education show immediate improvement, but long term effects are questionable. This hypothesis was confirmed by an investigation of 46 remedial education students, 22 of whom received continuing help in their modern school (group A), and 24 who did not (group B). Both groups were compared with children who had been recommended for remedial education but who did not receive it. An average of about one year was spent in remedial classes during which average gains of 2.44 years were produced. At followup, students who did not receive remedial help showed a 5.53-year retardation as opposed to 3.33 years for the remedial group. For the total remedial period, the mean gain per unit time for the remedial group was .92, and for the nonremedial group, it was .55. After discharge, the rate of reading progress showed significantly for remedial students but was still superior to that of the nonremedial group. At the time of discharge, the mean reading quotient of group A was only slightly higher than that of group B. At followup, it was significantly higher. This difference was attributed to continued remedial work. Because of limitations in subject number and experiment design, further research is recommended. Data tables and references are included.

Silver, Archie A. and Hagin, Rosa A. "Specific Reading Disability: A Twelve-Year Follow-Up Study," American Journal of Orthopsychiatry, 33 (March 1963) 338-39.

A 12-year followup study of specific reading disability is reported. The differences in the nature and extent of perceptual and neurological maturation in the various subgroups of reading disability were investigated. In 1961 and 1962, 25 subjects with specific reading disability as children

were tested, and the results were compared to a test taken 12 years earlier at the Bellevue Hospital Mental Hygiene Clinic. It was found that maturation does not overcome specific perceptual and neurological problems and that the most severely hampered child readers were also the most inadequate adults readers.

Taschow, Horst Gerard. A Comparative Study of a Corrective Reading Program and Its Effects on Two Freshmen Reading Groups at Central Oregon Community College. 144 p. (Ph.D., Oregon State University, 1968) Dissertation Abstracts, 29, No. 7, 2160-A. Order No. 69-464, microfilm \$3.00, xerography \$6.80 from University Microfilms.

Corrective reading instruction of varying degrees of intensity was studied with 70 students at the community college level. One experimental group received the treatment instruction over a 10-week period; the other received the same treatment over a 20-week period. It was hypothesized that there would be no significant difference in after-treatment reading performance between the groups. The conclusions seemed to bear out this hypothesis, since no apparent difference in reading performance was found between the groups immediately after the treatment periods. However, the less intensive instruction seemed to produce better performance on a delayed post-test.

PART VII--TRENDS, NEEDS, FUTURE DIRECTIONS

Few articles or studies seem to have been wholly devoted to the area of what the future may bring in reading remediation, therefore this part is slim. The reader, himself, after perusal of this bibliography, may have ideas about trends and future needs for diagnosis and treatment of reading disabilities.

Bateman, Barbara. "Learning Disabilities--Yesterday, Today, and Tomorrow," Exceptional Children, 31 (December 1964) 167-77.

A survey of literature in the field of learning disabilities is undertaken in terms of an integrative approach to the various disciplines concerned with the etiology, diagnosis, and treatment of children with verbal communication problems, reading problems, and sensory-motor disturbances. Approaches to causation of learning disabilities include single factor and multiple factor theories, as well as a behavioral view in which correlated, rather than causal, disabilities can be assessed. The discussion presents a behavioral view of the inseparability of diagnostic and remedial procedures and surveys some of these procedures. Taking a look at future trends the author discusses such things as early identification or problems, medical prevention, and more and finer categories in special education. A bibliography is included.

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Appendix A

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- Bibliography 3, International Reading Association Conference Proceedings Reports on Secondary Reading. September 1967.
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- Bibliography 5, USOE Sponsored Research on Reading. March 1968.
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