

AN OVERVIEW OF DYSLEXIA

by *ESD*

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CHAPTER I

THE PROBLEM AND ITS OBJECTIVES

Classroom teachers are constantly bombarded by the complexities of teaching reading to a highly individualistic group of youngsters. The problems are compounded when one finds a child of average intelligence or better who cannot read. For many years this inability to read has been little understood by the classroom teacher and researched only clinically. Recently, however, this dysfunction has been categorized under one broad heading called dyslexia.*

I. THE PROBLEM

Importance of the study. There seems to be a need to review the information about the broad topic of dyslexia given to us by doctors, educators, and specialists. This information should be presented to classroom teachers in a clear concise way so that they will be able to differentiate between children who do not learn to read because of normal reasons and those who cannot read because of a dysfunction of the brain. It is further hoped that this study will help teachers focus attention upon and gain new insights into the reading disability called dyslexia.

*A very controversial term, one on which even the experts cannot agree upon a concise definition.

Statement of the problem. Many times teachers have difficulty in identifying a child with a reading disability. They may falsely label him as a slow learner, a problem child with emotional immaturity, or a discipline problem who is not trying. With all the demands on the time and energies of today's teacher, there is a need for some guidelines that a classroom teacher may use in identifying a child with a reading disability.

Objectives. It was the purpose of this study (1) to make a survey of the literature on the topic of dyslexia, (2) to give a succinct description of children who are labeled dyslexic, (3) to form a checklist of symptoms that a classroom teacher may use in recognizing these children in a normal classroom situation, and (4) to cite some of the criticism leveled at the very controversial term "dyslexia".

CHAPTER II

REVIEW OF THE LITERATURE

When a child fails to learn to read satisfactorily, concern is felt by all those close to him. Our world is centered around the spoken and written word, and difficulty in this area is a definite obstacle which must be overcome. Reading requires the ability to receive information through the sense organs, to process this information through the brain, and to express the results in terms of language or behavior. When this process breaks down, a wide array of possible causes must be considered.¹

I. LITERATURE ON DYSLEXIA

There are many causes for reading problems, including children who lack intelligence, have emotional problems, are culturally deprived, are idle, or who have been poorly taught.² When the more easily discovered causes of reading disorders have been considered, we find that some children experience learning difficulties for which no clear explanation is available. The most distinguishing characteristic (apart from their reading difficulty) is that they reveal a marked unevenness or imbalance in their skills which are necessary for their educational development. This unevenness may involve the processes of reception, association, or

expression of language. This difficulty may be in the way a child sees or hears letters, syllables, or words; it may even be extended to thought processes.³ The word "dyslexia" is sometimes used to describe children with such symptoms.

Definition of dyslexia. The origin of the term dyslexia is indirectly from the word alexia, or the inability to read due to brain injury. Dyslexia, as the term is used today, does not invariably refer to brain damage as a causative factor. Dyslexia is not a simple entity because there is considerable variability in the degree and nature of this disability. Much of this variability comes from secondary and associated factors.⁴

There have been many names given to this inability to read. It has been known as congenital word blindness (Morgan, 1896), development dyslexia (Critchly, 1964), and dyslexia (Myklebust and Johnson, 1962).⁵ Eisenberg has called this condition "specific reading disability" which he defines as

failure to learn to read with normal proficiency despite conventional instruction, a culturally adequate home, proper motivation, intact senses, normal intelligence, and freedom from gross neurological defect.⁶

Specific dyslexia is difficult to describe because "there is no single clinical feature which can be accepted as pathognomic."⁷ In common usage, dyslexia means severe defective reading ability; technically, dyslexia implies some

type of cerebral dysfunction is responsible for the severe reading loss. Some describe it as a massive unreadiness for reading,⁸ while others say it is a defect in the visual interpretation of verbal symbols and the association of and with symbols.⁹

Obviously it is no simple matter to give an adequate definition and some have abandoned all attempts to do it. The Research Group on Developmental Dyslexia of the World Federation of Neurology which comprises an international body of experts--neurological, pediatric, psychological, and pedagogic--met in 1968 and drew up two definitions which they recommended for general acceptance.

Specific Developmental Dyslexia. A disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence, and socio-cultural opportunity. It is dependent upon fundamental cognitive disabilities which are frequently of constitutional origin.

Dyslexia. A disorder in children who, despite conventional classroom experience, fail to attain the language skills of reading, writing and spelling commensurate with their intellectual abilities.¹⁰

Dyslexia must be differentiated from other reading difficulties such as comprehension and retention; other complications, lack of instruction, attentional, and emotional problems, may also be present further complicating the problem. The condition of dyslexia is concerned with word recognition; it represents a developmental inefficiency in functioning which handicaps learning.¹¹

II. HISTORY OF DYSLEXIA

Medical knowledge of the problem of the inability to read goes back to the late 19th century when "word blindness" was used for people who could not learn to read. This dysfunction has been known for fifty years by neurological physicians, but not generally known to the lay public. The problem has been studied clinically for many years.¹²

Early historical studies. The last half of the nineteenth century was a period in which neurologists were particularly concerned in allocating specific psychological functions to certain areas of the brain. Efforts were made to define parts of the brain which were concerned with reading and writing. Descriptions of adult patients who had lost the power to read and write as a result of a variety of brain lesions were soon published (Broadbent, 1870; Kussmaul, 1885; Berlin, 1887; Bastian, 1898; and Bateman, 1890).¹³ It was perhaps inevitable that children who suffered from "congenital aphasia" were assumed to have brain lesions similar to those found in adults who had lost the powers to read and write.¹⁴

Contributions of ophthalmologists. Lloyd Thompson¹⁵ credits English investigators as the first to recognize the problem of specific reading disability, although they called it congenital word-blindness. He cites two ophthalmologists,

W. Pringle Morgan and James Hinshelwood as pioneers in this field. Morgan was the first to give a definitive description of specific reading disability. His article in the November 7, 1896 issue of the British Medical Journal remains as a classic, a precise delineation of reading disability accompanied by spelling errors. Morgan felt this defect was evidently congenital and due to a defective region of a part of the brain. Hinshelwood studied the condition of reading disability over a long period of time and published many articles that have been of great benefit to subsequent investigators. He also noted mistakes in spelling such as changing the place of letters or omission of letters. He felt the visual memory of numbers, letters, or words were stored in certain distinct areas of the brain, and reiterated his view that the condition could be due to some developmental defect starting in early embryonic growth in a part of the brain.

Thompson also points out that the many eminent ophthalmologists in this country and abroad who first recognized word-blindness were unanimous in pointing out that the cause of the disorder was not to be found in any dysfunction or disease of the eyes. Present-day ophthalmologists concur with this stand taken by their earlier colleagues.¹⁶

Samuel Orton. Samuel T. Orton, a neurologist and psychiatrist, may well be called "the father of dyslexia" in America.¹⁷ Early interest was shown in the study of neuro-

logical dysfunction associated with reading disability in 1925, when Dr. Orton began his work with children with specific language disability. He first called the attention of his medical colleagues in neurology and psychiatry to the fact that many otherwise normal children have a specific difficulty in learning to read.¹⁸

Dr. Orton's study of language problems in children began with reading disability and extended to special writing disability, developmental word deafness, motor speech delay, abnormal clumsiness, stuttering, and a combination of these syndromes. He gave no special guide for any one syndrome because each case was a special problem and the program would have to be set up for each child. He did, however, find one common trait running through all six problems: a difficulty in sequencing the exact order of the letters, sounds, or other units. He gave this difficulty the term "strephosymbolia" meaning "twisted symbols", which describes the difficulty without necessarily implying the existence of a brain defect.¹⁹

Studying not only the reading but also the oral language and writing skills in his young patients, he found many evidences of both the interrelation and separation of the various language functions. A poor visual memory for recognizing printed words would result in poor reproduction in recalling them for writing, and thus impair reading and spelling. A poor auditory memory for words would interfere

with their reproduction in recalling them for writing, and thus impair reading and spelling. A poor auditory memory for words would interfere with their reproduction in speech and in writing. There may also be word deafness, poor speech patterns, meager and confused vocabulary, ungrammatical writing, and poor spelling. Poor handwriting or speech would result in poor visual or auditory reinforcement of word patterns, further weakening the circuit.²⁰

He felt that there were three levels of sensations received by the sense organs giving rise to : (1) awareness of the external stimulus; (2) recognition of its concrete meaning; and (3) association with abstract or symbolic (language) meaning. Tests showed that in the visual area children with the specific reading disabilities with whom he was working could (1) see the print clearly and (2) could recognize that they were seeing letters and words and could even copy them correctly, but (3) could not identify them as meaningful language symbols. He thought there was a functional difficulty acting selectively at the third or word level in the visual or auditory areas of the brain. Since it is only at the third, or language, level that these association areas function from the dominant hemisphere, such observations strengthened Orton's opinion that the "dominance" aspect of the physiology of the brain provided the key to language development and its disorders.²¹

Dr. Orton was one of the earliest theorists in the field of dominance. To him language was an evolutionary human function associated with the development of a hierarchy of complex integrations in the nervous system and in unilateral control by one of the two brain hemispheres (cerebral dominance).²² Lateral dominance refers to the consistent choice or superior functioning of one side of the body over the other. This is believed to result from a dominant hemisphere which is on the side opposite the so-called preferred hand or foot. Orton believed memory traces that are found in the dominant hemisphere are involved in making symbolic associations. These traces in the nondominant hemisphere, he reasoned, are mirrored images of the former, and ordinarily are ignored in the language process. Should there be a dominance problem the mirrored traces evidence themselves in the form of reversals.²³

Followers of the Orton concepts. Many papers appeared in the United States and in European countries describing patients with symptoms very similar to those described by Orton. Many psychiatrists, neurologists, psychologists, and educators who were not associated with Orton have written articles and books on developmental dyslexia that deal with his concepts. Early interest in word-blindness prompted the Danes to form in 1943 a national association for word-blindness, and in that same year established a Word-blind Institute

in Copenhagen. Knud Hermann and his colleagues who worked at this institute carried out several studies; as a result of these studies Hermann wrote a book in 1955, later revised and translated into English in 1959 under the title of Reading Disability. His findings in general corroborated the findings of Orton and others with regard to the clinical syndrome, the evidence of confused dominance, and the hereditary aspects.²⁴

Hermann reported on the deficient penmanship and abnormal spelling of children with specific dyslexia. He noted the marked tendency for children to write "phonetically" and related this to their poor memory for shapes of words. He thought the deficiency was dependent on heredity and existed in the absence of intellectual defect or defects of the sense organs.²⁵

Even though Orton's principles have not received complete acceptance by authorities, he laid the groundwork for one explanation of the delayed ability to read. He believed many of the delays and defects in development of the language function may arise from deviation in establishing unilateral brain superiority.²⁶ Laretta Bender, who started her psychiatric career with Orton, followed his concept of developmental lag, but called this condition "maturational lag". She added new dimensions to his concepts especially in Gestalt psychology.²⁷

Contributions of others. Even before 1925 the concept of word-blindness had been qualified by other opinions; what had been the responsibility of the medical field now became invaded by sociologists and educational psychologists. The broader question of general scholastic inadequacy began to be probed.²⁸

The studies of Bronner and Hollingworth are mentioned by Thompson as important in this period. After her studies of disabilities in reading, Augusta Bronner, a child psychologist in the first child guidance clinic, conceived the idea that reading was a synthetic process uniting many separate elements into a whole. She felt that analysis of the mental processes involved in reading had never been applied to individual cases of reading disability. In her study of spelling disability Leta Hollingworth, an educational psychologist, concluded that disability is the "fag end" of normal distribution of spelling facility. She seemed to reject innate endowment as a causative factor and preferred environmental and emotional basis for the difficulty.²⁹

Similar reluctance to think in terms of a constitutional specific disability began to loom in the literature. Delayed or diminished powers of learning to read were regarded as a non-specific resultant of a diversity of factors. Backwardness in reading became envisaged more as a problem in sociology than a medical issue.³⁰

Magdalea Dortha Vernon³¹ has hypothesized that there is a particular type of reading disability which can be differentiated from other types; she refers to this specific disability as backwardness in reading. Vernon feels that the failure to read in backward readers might be due to the inability to perceive and remember the shapes of printed letters, or to analyze word shapes into letter shapes, or to combine letter sounds into the sounds of those words. There seems to be a lack of any systematic knowledge of phonic sounds and an inability to combine them together in the correct order. It might be concluded that there was some deficiency in the manipulation of these sounds, and a failure to perceive the identity of the sequences of separate letter sounds with whole word sounds. She feels that backward readers should not be regarded as a homogeneous group, but should be studied as individuals. They differ in the nature of their reading difficulties, and the factors associated with them differ also.

Conclusion. Scientific attitudes toward the problem of reading failure have swung like a pendulum over the last seventy years. Neurologists, while not denying that many cases of failure to learn to read fall outside their conception of a specific defect, believe that within the illiterate population there exists a hard core of specific cases which are neither psychologically determined nor an aspect of mental backwardness.³²

III. CHARACTERISTICS OF DYSLEXIA

Children who do not learn to read are usually labeled mentally slow or emotionally disturbed. The dyslexic child is neither. Typically he is of normal intelligence and wants to read. A description of a dyslexic child is a strange combination of paradoxes. Sometimes this condition is found in the hyperactive child who never sits still, never finishes anything, and flits from one activity to another. The child may be distractable, impulsive, with a short attention span, who perseverates (repeats) excessively. Again it may be found in the quiet, withdrawn, lethargic child who sits and looks out the window.³³

A dyslexic child is not easy to distinguish from the slow learner in the primary grades.³⁴ Sometimes the dyslexic child acts less intelligent because he has not read as much; often he seems lazy or has emotional problems stemming from embarrassment. Concerning intelligence Bryant has this to say:

Dyslexia is not a broad defect in general intelligence; IQ's tend to be in the normal range and occasionally reflect very superior ability. However, certain indices of intellectual performance are usually found to be relatively low, e.g., the Coding Subtest of the Wechsler Intelligence Scale for Children.³⁵

Behavioral characteristics. Some children with a reading disability show some behavioral characteristics in common. Kaluger and Kolson³⁶ have described one of the more significant characteristics as a history of "headbanging"

in early childhood. In place of this or maybe in addition to this the child may have been unusually rhythmic and active. Frequently the disabled reader is a child whose parents claim he was seemingly normal or even precocious in preschool life. Many of these children have the ability to learn by hearing, sometimes developing this aural learning ability very acutely. Another characteristic is an extreme fluctuation of the child's retention and learning rate.

Associated characteristics. Usually associated with reading difficulties is a directional sense disability or slowness in conceptualizing the position of the body in space, particularly in relation to the left-right dimension. Children with this kind of handicap are slow to distinguish their own left and right, to identify left and right on a person standing before them, and to read a road map with right and left directions. These same children have a tendency, at a later stage in their development, to be unable to write in a straight line, being unable to resist the rivalry of right over left or vice versa, if they are left-handed. Directional sense disability is in some cases associated with another problem of conceptualizing the body in space, that is affected children are slow in developing the ability to discriminate whether two adjacent or two nonadjacent fingers are touched, or whether a single finger is touched simultaneously in two places. They are also slow in achieving

ability to match the feel of a shape, held but not seen, with its matching twin which is seen but not held.³⁷

Many symptoms occur in disabled readers with greater frequency than in the normal population. In addition to the confusion of left and right, there may be confusion about months, seasons, judgement of time, distance, and size. On a test of motor development and coordination, the dyslexic is likely to score low, frequently below the norms for his age. He is more likely to have had speech difficulties in learning to read, more likely to have been premature or to have survived some complication of pregnancy.³⁸

Primary characteristics. The primary characteristics of the disability become apparent with the exposure to reading instruction. In spite of learning to recognize some words, there is difficulty in associating the sounds with the visual symbols of letters. There is confusion of letter sounds, particularly the vowels which have several interfering sounds. The stability of sound association in word recognition is many times more difficult to establish than for the normal child. The dyslexic child has great difficulty in learning sound associations as they are commonly taught in the classroom.³⁹

Another characteristic of the dyslexic reader is the tendency to ignore the details within words and to base word

recognition on initial letter, length of word, and a few other insufficient clues.⁴⁰ This can be indicated by the child who uses only one clue from a word to question what the word is, like calling horse for house. He can look at the configuration of the word and read horse because it has the same shape as house. This child may be able to learn words when they are placed in context. The child may mispronounce or miscall words because of his improper spatial orientation (left-right in space). He may say "bog" for "dog"; the fact that he cannot tell from the context of what he is reading that the pronunciation is wrong only serves to highlight the problem. It is possible for some children to misread or mispronounce a word and still know what they are reading. His reading output (what he says) is incorrect but internally he knows the word correctly.⁴¹

A third characteristic is obvious in the child's inability to consistently differentiate between reverse images such as the letters "b" and "d". Reversal and translocation of letters are examples of dyslexia traits which are not peculiar to dyslexics. These errors are common among all beginners in reading and writing. Usually, however, they are eliminated after a period of time. The dyslexic makes these errors, but makes more of them and for a longer period of time. His confusion of visual and body images seems to underline his difficulties of directional orientation.⁴²

There is an associative learning disability, making it impossible for the dyslexic to associate experiences and meaning with symbols or to associate symbol with symbol. The learner cannot deal with letters and words as symbols with resultant diminished ability to integrate the meaningfulness of written material.⁴³ This pupil will ask again and again for help with the same word. He has great difficulty with visual recognition and recall of familiar words.

IV. CAUSES OF DYSLEXIA

For many years people have pondered over the causes of reading disability; there is agreement that the causes are not adequately understood.

Classification of causes. During the past seventy years many writers have suggested several causal factors. At the present time, according to Thompson,⁴⁴ there is general agreement that the causes can be classified under three groupings:

1. Organic damage to the brain as it occurs in children through birth injury, encephalitis or head trauma.
2. Environmental or social-emotional influences, such as deprivation of developmental stimulation and conditioning against learning. Lack of opportunity, poor teaching or techniques, and poverty may contribute to poor reading ability but seldom fundamental in causation.
3. Innate or constitutional endowment with some evidence of hereditary predisposition. It is here that the concept of a developmental lag is most applicable.

Neurological dysfunction. Bruce Balow⁴⁵ cites a number of investigations in education, medicine and psychology which have produced evidence to support the hypothesis that behavioral and school achievement difficulties are related to specific anomalies occurring in pregnancy, birth, and infancy (Bateman, 1964; Birch, 1964; and Money, 1962). He cites Bronner as stating that the conditions possibly responsible for the defects in the cases of disability that she

studied were intra-uterine difficulties, birth injuries, infection, diseases in infancy and defective post-natal development. Hinshelwood believed that injury to the dominant hemisphere of the brain would cause reading failure. Orton felt incomplete cerebral dominance to be the cause of special learning disabilities. Balow believes that obviously some few cases are due to a neurological defect but the large mass of learning disabled are far more likely to derive from an innate or acquired vulnerability coupled with an environment in home and school that is inhospitable or downright hostile to education in the basic skills.⁴⁶

Critchley in his chapter dealing with maternal and natal factors of developmental dyslexia was doubtful of pre-natal causes. He feels that most neurologists would be reluctant to visualize in developmental dyslexia any focal brain-lesion. To do so would be to ignore the important factor of immaturity as applied to chronological age, cortical development, and processes of learning.⁴⁷

Maturation lag. Some believe the delayed maturation or impairment of intersensory transfer (ability to transfer a stimulus from one sensory modality to another) can lead to reading disorders.⁴⁸ Many times, but not always, a marked improvement shows as puberty is reached. A child may be behind in reaching the milestones of motor development, such as sitting and walking. Later in childhood he may be clumsy

and unskilled in coordination, language development may be slow, control of the body may be slow, and sensory discrimination may be immature.

Thompson's opinion is that, in the majority of cases, reading disability is due to a physiological developmental or maturational lag which may be accompanied by other signs of immaturity. The fact that the developmental lag has a heredity predisposition cannot be denied, and also it is possible that minimal insults to the brain from various sources during the prenatal period and early infancy might enhance or even produce the developmental lag.⁴⁹

The theory of developmental immaturity is based upon interrelated aspects of individual differences. Morton Botel⁵⁰ says that retardation is explained as a function of a syndrome of specific deficits or lows in trait performance which are interacting as a delaying force in maturation. The lack of a comprehensive, individualized instructional program sensitive to these aspects of individuals is regarded as basic in accounting for reading retardation.

Hereditary factors. The hereditary factor is considered by some as a very important cause of inhibited development of normal skills in working with written symbols. Thompson cites the study by Herman reported in 1959 in the book Reading Disability. Hermann felt of the various con-

tributory causes of congenital word-blindness, only one factor was found to be invariable and that was heredity, which he regarded as the specific pathogenic factor.⁵¹

Some authors feel there is a definite genetic component involved in specific dyslexia because of the familial incidence, while others cite that no chromosome or gene has yet been found to be responsible for dyslexia. Since the family comes from the same environment it is possible that a psychiatric effect is inherited, not a genetic effect. After reading the opinions of many authors, the writer is inclined to agree with Kaluger and Kolson⁵² that perhaps the disability is not transmitted by heredity, but rather that the predisposing conditions permitting primary reading disability to occur are transmitted in some families.

Sex-relatedness of causation. Dyslexia or reading disability seems to occur more frequently among boys than girls. Some have tried to explain this on the grounds of greater cultural pressure upon boys for academic success. This may account for some differential in rates of identification, because standards for boys may be more exacting. Boys are in general slower to acquire verbal facility and are more prone to exhibit behaviors in the early grades that teachers label "immature". Perhaps it is more important to relate these differences to the greater vulnerability of the

male to a wide variety of ills. Hermann and others have stated that dyslexia may be a recessive sex-linked trait like hemophilia that affects boys predominantly. From the moment of conception there is a highly significant differential in morbidity and mortality between the sexes.⁵³

Money⁵⁴ has stated that it seems harder for nature to make a male than a female. It is harder for nature to keep the male alive and to effect a male than a female psychosexual differentiation after birth; perhaps it is more difficult for nature to effect a development of territoriality and direction sense in the male, also.

Another reason given for this disability showing up more in boys is that their heads are larger, and this might mean a more difficult birth. A difficult birth gives more opportunity for anoxia (oxygen deficiency) to occur. An extreme amount of anoxia results in cerebral palsy, but a lesser amount of anoxia might cause some minimal damage. This brain damage may be nothing more than a lesion or scar tissue.⁵⁵

V. IDENTIFYING DYSLEXICS

Many times teachers ask if there is a way to tell whether a child is dyslexic or not. No fail-proof method of diagnosis has been found. This writer, with the help of several other authors,⁵⁶ has compiled a checklist of symptoms that may be used as a guide for the classroom teacher. These symptoms are ones that most writers agree call attention to a reading difficulty. No consensus has been found as to how many of these symptoms would be required before a child could be called dyslexic since many of these traits can be found in children who experience no reading difficulty. The purpose of this list is to help alert the classroom teacher to a difficulty not previously detected. If a child who is having reading trouble also possesses several or a combination of these symptoms, a teacher should be alert to a problem that should be studied carefully. Many times these are the problems not taken care of in the normal classroom situation.

CHECKLIST FOR TEACHERS

I. Physical Traits

- A. Poor coordination
- B. Awkwardness in walking and running
- C. Difficulty in skipping
- D. Poor visual motor coordination

- E. Lack of eye hand coordination
- F. Speech difficulties, sometimes stuttering, lisping, or cluttered speech
- G. Handwriting is poor, poorly formed letters, irregular characters, lack of evenness and style, letters or entire words may be reversed
- H. Shows evidence of delayed or incomplete establishment of one-sided motor preference--tends to be left-handed, ambidextrous or shows mixed dominance

II. Reading and Related Symptoms

- A. Oral reading tends to be word by word
- B. Repetition and guessing are frequent
- C. Reversals and translocations of letters and words, recall short or erratic, will know a word at times then not
- D. Poor auditory discrimination, inability to link sound and symbol, may scramble sentences
- E. Weak visual and auditory memory
- F. Inability to organize, induce principles or rules
- G. Weak in visual imagery and poor visual memory

III. Spatial Relationships

- A. Directional confusion--floor for ceiling, go for stop, east for west
- B. Imperfect directional sense--left, right, up, and down
- C. Perceptual difficulties, difficulty in seeing spatial relationships, difficulty in figure ground perception

IV. Personality and Background

- A. Generally an underachiever
- B. Usually normal intelligence, many times above average--verbal I.Q. tends to be significantly below performance I.Q.
- C. Hyperactivity or lethargy--distractable, impulsive short attention span, may perseverate
- D. May come from family in which there is left-handedness or language disorders or both

VI. CRITICISM OF DYSLEXIA

Dyslexia is a medical term formerly used only by physicians. It has, however, become a very popular term with the help of a favorable press. This word means something different to almost everyone with whom you discuss the problem. There are a great many people who have very strong feelings about this disability called "dyslexia".

Criticism by ophthalmologists. The participants of the I/D/E/A Institute⁵⁷ surmised that dyslexia has taken on a "fad and symbol" status in some areas. If parents who live on the "right" side of town can say they have a dyslexic child, it not only elicits sympathy but also compensates for the child's poor school performance. Because of recent publicity, ophthalmologists' offices are filled with possible dyslexics. The group at the institute agreed that the problem has been aggravated and further confused by publicity and overly concerned parents who lash out at the schools for lack of action. Many theorists are compounding the problem while deriving a financial benefit from the frustrated parents of disabled readers. It was felt there was a need to determine a child's reasonable expectancy before it could be determined if the reading problem was primarily due to disability or to incapacity. There seemed to be a need to know something about the class in which the child was ex-

pected to function.

Minimal brain damage. Melvin Howards⁵⁸ believes that too many people outside the field of education have been telling teachers how to teach reading.

The initial thrust toward dyslexia and specific learning disability has always been from people outside the reading field--neurologists, psychologists, optometrists, pediatricians and MD's, also motivated housewives and hospital personnel.⁵⁹

He feels that using this term of dyslexia in diagnosing reading problems does great harm, especially to boys since they seem to be the prime target for this malady. They have enough problems in school without this hanging over their heads. He feels that children are being diagnosed by persons of unknown qualifications and being put into special classes to correct a condition that cannot be proved even exists. About the neurological implications of this problem he states:

If a child does have some brain damage or neurological dysfunction due to cellular destruction, we cannot repair that tissue, and if that cellular matter or tissue does somehow directly affect reading and writing skills (and we cannot prove this yet), we cannot alter that situation. We cannot even prove the relationship exists between certain cells and reading. Thus, physiologically we cannot provide assistance.⁶⁰

He feels there is no significant connection between neurological dysfunction or minimal brain damage and reading performance. He cites that youth with cerebral palsy learn to read in spite of massive neurological damage.

Another author feels much the same way. Schubert⁶¹ in his article states:

In spite of the many suppositions, theories, and investigations, the relationship between neurological impairment or brain damage and severe reading disability remains undetermined. A number of leading authorities in reading believe that neurological impairment is seldom if ever a cause of reading disability.⁶²

He feels that teachers must rely on a pattern of symptoms when making neurological referrals. Labels such as dyslexia only confuse the issue since there is no agreement on the definition of the term used.

In the literature on this subject, many writers use the term minimal brain damage. Kaluger and Kolson⁶³ point out that authorities should be careful in using terms that give the idea that all these problems come from brain damage. There are probably not as many brain damaged children as one would imagine with so much talk on "minimal cerebral dysfunction". There are also degrees of brain damage in which the individual can carry on a perfectly normal life. They caution educators that they are not neurologists and should be careful in giving a child a label that he will wear for life. Anything relating to brain damage is very threatening to parents, and every care should be taken before using it.

Bond and Tinker⁶⁴ have definite ideas about the label of brain injury.

It is possible, or even probable, however, that reading disability due to brain damage does occur, though rarely. An occasional very severe case may have a neurological origin.⁶⁵

The prevalence of motor incoordination, minor speech difficulties, or difficult birth among some disabled readers might suggest that brain damage may be a factor, but they feel these few cases of severe disability that do not respond to the best clinical treatment should be referred to a medical specialist for diagnosis. They comment that evidence seems to indicate that brain damage is a relatively rare cause of reading disability, even though in recent years there seems to be a tendency to place increasing emphasis upon brain injury or cerebral dysfunction in relation to reading disability. They feel this is an overemphasis because mild brain injury is difficult to diagnose correctly. In many cases the injury is inferred from some kind of symptoms rather than from a neurological examination. They caution against assigning brain damage as a causal factor in reading disability cases. They feel that since it is practically impossible to distinguish "specific dyslexia" cases from others of severe reading disability, that the term may be questioned. They feel that this term may be favored more by medical men and those interested in medical physiology.

Slow maturation. Eichenwald⁶⁶ believes that a great majority of otherwise normal children who are said to be dyslexic during their early years of schooling do not have specific developmental dyslexia at all. They are normal children whose level of maturation of those symbolic integrative functions involved in reading is simply not so well developed as that of most of their peers. They represent one end of the bell-shaped curve which portrays the frequency distribution of the time when a sufficient specific maturity to permit reading is attained. This might explain why many types of therapy have proved unsuccessful. He feels, however, that some form of cognitive integrative disorder probably does exist, but the mechanisms which produce it remain unknown despite the many theories--which he believes to be fallacious. He goes on to say that this disorder is a multifactorial one produced by combinations of different circumstances.

Research criticism. Davis and Cashdan⁶⁷ have criticized the way dyslexia has been researched and documented. They feel little is known of the etiology of any form of reading backwardness. There seems certainly some relationship with low intelligence and with social class, but this has not been documented. Hereditary factors have been suggested but there is no clear cut evidence. They feel that the affected relatives in families of dyslexics is also inconclusive. Prognosis fares no better; there is still no evidence of why

some children improve with remedial reading while others do not. They feel that the only legitimate way that advances can be made in this field is by clinical investigation and by testing theories and hypotheses in clinical situations or by developing new insights. This should be followed by examining the relevance of separate factors one at a time, in specially selected groups of children who are backward in reading.

Interaction of factors. Gladys Natchez⁶⁸ believes the term "dyslexia" is used by many as a catchall for various kinds of reading difficulty. Most authorities use this term to designate a reading disorder that results from a dysfunction of the central nervous system or a brain lesion. Confusion occurs because there are children with reading disabilities which are caused by brain damage and others with brain damage who show no difficulty learning to read. She concedes that there is such a thing as dyslexia, but believes its course is influenced by the interrelationships of various causative components; the interaction of these components being far more complex than any of the elements taken individually. Despite the wealth of investigations and the recognition of multiple causes, few researchers have shown the interaction of separate components. This is due partly to the complexity of the problem and partly because most children have suffered at least one or more years of failure before examination. By this time the factors are so entwined that it is hard to know

which one takes precedence. Did the neurological difficulty cause the failure which in turn caused emotional disturbance, or did the psychological problem make the problem more difficult? Did poor teaching impede the progress of the individual, or did unfavorable home and school conditions heighten the conflicts in a sensitive child? The interaction of constitutional, psychological, and environmental factors is of primary concern.

Laterality. Studies are divided on the matter of laterality and dominance. It seems to be a conclusion of many authors that neither makes a difference, since many excellent readers have mixed dominance, and many poor readers do not.

Many psychologists and educators continue to support Orton's contention that non-established dominance contributes to a confusion of mental processes and results in a variety of learning disabilities. Dearborn (1931), Harris (1957), Orton (1937), and Zangwill (1962), among others, have reported a positive relationship between laterality patterns and reading, claiming that incomplete dominance is a characteristic of children with reading disabilities.⁶⁹ Harris⁷⁰ in his tests of lateral dominance taken by random sampling from second and fourth grade classes in several Manhattan and Bronx public schools stated that his data showed quite dramatically that a very high proportion of young reading

disability cases showed mixed dominance on the tests. Also the development of a fairly consistent preference for one hand took place later than the age of nine in a far higher proportion of reading disability cases.

Capobianco (1966)⁷¹ conducted an ocular-manual laterality investigation utilizing educable mentally retarded adolescents. His results demonstrated no significant difference in reading between established and non-established laterality groups. The intent of this investigation was to determine whether or not there is a relation between laterality patterns and reading ability in a specific clinic population such as children with diagnosed learning disabilities and associated cerebral dysfunction.

The contradictory results reported must be considered related to the differences in the samples used. Most investigators have concluded that laterality is probably just part of a symptom complex which hampers the reading process in clinic samples.⁷²

Bruce Balow⁷³ states that it is difficult to ignore the evidence that there is no relationship of lateral dominance to special learning difficulties. If dominance were a very powerful fact, it would be inordinately difficult for studies repeatedly to demonstrate the absence of a relationship between dominance characteristics and the ability to read. He cites the Balow (1963) and the Balow and Balow (1964)

studies as examples. First grade children were tested early for hand and eye dominance and then were tested at the end of first grade to measure achievement. It was found in the 320 first grade children measured that neither hand or eye preference, same side dominance, crossed dominance, mixed eye-hand dominance, nor directional eye-hand interactions were significantly related to reading readiness or to end of first grade reading achievement. All of the mixed eye-hand dominance children were found in the high achieving cells at the end of the year. In the second study these same children were pursued into second grade to see whether early or late establishment of dominance made any difference to reading achievement. Again, lateral dominance was unrelated to reading achievement or reading disability.

The Doman-Delacato system as cited by Balow emphasizes the development of a dominant hemisphere in the brain, through exercises such as creeping, cross-pattern walking, sleep patterning, and a variety of activities encouraging use of that side of the body designated to be the dominant side. This method has been experimentally studied by Melvin Robbins of 1966 with essentially negative results.⁷⁴

Extensiveness of dyslexia. Numerous estimates have been made of the prevalence of dyslexia; obviously these estimates depend on the criteria used. Thompson⁷⁵ cites many authors and their estimates of specific reading dis-

ability, most of them excluded mentally retarded children and only referred to children of average or above average ability. The low estimate was a 4 percent as given by Orton in 1926 to several recent estimates of over 10 percent. On the basis of the accumulated studies Thomposon's belief was that approximately 10 percent of school children in the United States have developmental dyslexia in some degree.

Dr. Charles T. Mangrum⁷⁶ from the University of Miami did a study on the number of dyslexic readers in a specified population. This investigation was undertaken in an attempt to obtain a rough estimate of the extensiveness of dyslexic readers among school children. To do this study he had to develop a consensus definition of a dyslexic reader since no definition was available upon which most writers agree.. Most writers contended the basic area of language difficulty was reading. However, little consensus existed as to how deficient in reading a child must be to be classified as dyslexic. Most writers agreed this difficulty was solidified at an early reading level which appeared to be equivalent to second grade reading ability.

According to the consensus definition, a dyslexic reader was one who possessed normal ability, adequate motivation for learning, and did not possess visual or auditory deficiencies. He had been in regular school attendance and had been exposed to systematic instruction; he was not culturally deprived and had no emotional difficulties existing

that were not considered secondary to reading failure. His reading performance was at or below second grade level. As defined in this study, the incidence of dyslexic readers was found to be .001 in the specified population.

A re-examination of the data allowed a study when reading performance was at or below a 4.3 reading level. As defined in this study, the incidence of dyslexic readers was .035 in the specified population.

Even though the instruments used in the study were gross and the definition of a dyslexic reader would not be agreed on by everyone, Dr. Mangrum concluded that dyslexic readers as defined are quite rare in populations similar to the one studied.⁷⁷

Difficulties of diagnosing dyslexia. The obvious criterion of reading retardation is that there is a significant discrepancy between a child's reading achievement level and his reading potential. It is a simple matter to identify reading retardation, but far from simple to make the differential diagnosis of specific dyslexia. No one has yet devised a foolproof way of diagnosing specific dyslexia. The problem is even more acute when, among prereaders and beginning readers, one would like to differentiate a prognosis of specific dyslexia from one of "late blooming". This is a form of temporary delay or retardation of literacy which in many instances, probably the majority, is self-

correcting. Without proper teaching, however, this condition may become a self-perpetuating retardation.

The problem hinges on the fact that no one has uncovered any tell-tale sign or group of signs that are exclusive to the syndrome of specific dyslexia and are not found in other conditions of reading retardation. In fact, the special errors and failures characteristic of specific dyslexia can all be found in the beginning reader, especially if he is tested to the limit of his ability and achievement, or under conditions of duress.⁷⁸ Standardized tests of achievement and capacity cannot be expected to yield accurate results for children with severe reading disabilities because a certain degree of verbal facility is necessary simply to understand testing directions and to read the questions if it is a written test.⁷⁹

Difficulties of combining medical and pedagogical theories. Medicine and pedagogy have been slow to come together to study problems of mutual interest. There is still a substantial pedagogical tradition that sees all reading retardation as a problem of defective instruction and there is keen argument over the phonic versus the sight-recognition methods of teaching reading. On the other hand, there is a growing body of medical opinion that some cases of reading failure does not represent poor reading instruction, poor motivation from an impoverished background, emotional blockage, intellectual deficit, nor ocular disability; but rather these

cases represent a specific disability in function that represents some injuries.⁸⁰

Scholars from the field of education have found it difficult to accept the term "dyslexia" as a diagnostic entity. They have reasoned that when no other cause for reading problems have been found, the workers within the medical field have presumed that brain damage or neurological dysfunction was the explanation for failure. Researchers within the educational field have tended to favor a pluralistic theory of causation, emphasizing the wide range of contributing handicaps and the wide spectrum of mild and severe cases. This latter group concluded that the cases of the adult who has lost his ability to read because of brain damage cannot be likened to the child who is unable to learn the reading process. Educators see the diagnosis of dyslexia as lacking operationality in that it does not lead to appropriate teaching aids. After the diagnosis is made, one must still investigate what reading skills are lacking, determine the child's mode of learning, and find appropriate materials.⁸¹

Schiffman⁸² believes that no one discipline or any one technique will solve the problems, but there must be emphasis placed upon early identification and placement in the proper program before an individual's problem becomes too complex. All children cannot learn to read by the usual pedagogical techniques that are successful with most children. Teaching techniques must be adjusted to the individual child--not the child to the techniques.

CHAPTER III

SUMMARY AND CONCLUSIONS

This study is a descriptive survey on the present facts and current conditions concerning the problem of dyslexia. The information in this study has been gathered on the hypothesis that some reading problems are unexplained and that more information on reading disability is needed.

Conclusions. The more that we read about what the experts have to say on this wide topic of reading disability, the more we realize that there is little agreement on its causes. The people working in this field do not even call it by the same name; nor do they agree on how to deal with the problem and its remediation. They all do, however, agree that there are problems that children have in reading. It is hoped that with this information in this report the classroom teacher will be more receptive to children with reading problems. It is hoped that we as teachers will stop labeling children as lazy, slow, or not trying hard enough until we have the full story on them. Many times these are the children who become our discipline problems and our dropouts when their failure becomes too much for them.

Teachers everywhere know about the number of "normal" children in their classrooms who do not learn to read by the

same methods that the majority of their classmates do. These same children often do not even profit by remedial instruction. Often dedicated teachers become concerned and frustrated when they fail to teach these children to read.

Can a teacher diagnose a reading disability? If we mean can we give it a correct label and give its cause, the answer would have to be no. If we mean can we be attuned enough to our children so that we can spot a child who is having a reading difficulty that is not being taken care of in the regular reading class then the answer is yes. It is our responsibility as teachers to detect children with reading difficulties as early as possible so that remediation can be started immediately. Teachers can often alert parents to reading problems who have not been aware of their severity. In turn this might lead to an examination by a physician which might shed new light on the difficulty. If a reading problem is not recognized early it may have devastating results on the value system and self concept of the retarded reader.

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AN OVERVIEW OF DYSLEXIA

by

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AN OVERVIEW OF DYSLEXIA

The research approach of this study is in the form of a descriptive survey. It includes present facts and current conditions concerning the problem of dyslexia, a so-called neurological dysfunction. The information in this study has been gathered on the hypothesis that some reading problems are unexplained and that more information on reading disability is needed.

There are many reasons for reading problems; some of these are intelligence, emotional problems, lack of maturity, cultural deprivation, physical deficiencies, and poor teaching. When the more easily discovered causes of reading disorders have been considered, teachers find that some children experience difficulties when no clear explanation is available. There is a marked unevenness or imbalance in their skills; this unevenness may involve the processes of reception, association, or expression of language. It may also involve the way a child sees or hears letters, syllables, or words; it may even be extended to thought processes. The word "dyslexia" is sometimes used to describe children with such symptoms.

In this report the writer has reviewed the literature on the reading disability referred to as dyslexia. This term was difficult to define because no consensus of opinion could be found as to its definition. There has been much confusion associated with this disability. Those who have

researched and written about this condition do not even agree that it exists.

The history of dyslexia has been traced from the late nineteenth century to the present day citing the contributions of ophthalmologists, sociologists, and educational psychologists. The work of Samuel T. Orton, a neurologist and psychiatrist, has been researched as well as others who have followed his concepts. There have been many theories advanced as to the causes of this disability; a number of these such as neurological dysfunction, maturational lag, and hereditary factors have been cited.

In many cases this disability is hard to distinguish from the slow learner. There has been an attempt to give a description of a dyslexic child and to form a checklist of symptoms that a classroom teacher may use in recognizing these children in a normal classroom situation.

There has been much criticism leveled at authorities who use this term in diagnosing reading disabilities. Many critics of this subject have been cited with their opinions about this condition.

It is hoped that with the information in this report the classroom teacher will be more receptive to children with reading problems. If these reading difficulties are not detected in time and studied for remedial help, these children may become our discipline problems and our drop-outs when their frustration becomes too much for them.