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LEARNING DISABILITIES: A MONOGRAPH

LEARNING DISABILITIES: A MONOGRAPH

A Study

Presented to

The Faculty of the Department of Psychology

Appalachian State University

Boone, North Carolina

by

Steve J. Leatherwood

In Partial Fulfillment  
of the Requirements for a  
Master of Arts Degree in  
Psychology

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August, 1974

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## PREFACE

In an effort to set the stage for this monograph on learning disabilities, the author has elected to include some excerpts from an article by Ernest Siegel, entitled, Learning Disabilities: Substance or Shadow. The following comments from the February, 1968 article seem quite appropriate as they relate to early thoughts on Learning Disabilities.

"Recent years have witnessed a growing practice among some educators of classifying certain children as "learning disabilities." This practice undoubtedly came about as a reaction to the many weaknesses inherent in the traditional medical/psychological basis for classification of exceptional children (e.g., "mentally retarded," "brain injured," "emotionally disturbed," etc.). It may also have evolved, in part, because of its implication to positive action (i.e., What do you do for a child suffering from specific learning disabilities?). It may even be a result of the unconscious desire of educators to demonstrate the importance of their discipline to the psychological and medical professions.

"Without systems and patterns, we have no order, only chaos. If a man never learned to generalize, each situation would be unique, and one would never profit from experience. In any categorizing model, we conscientiously seek similarities, while deemphasizing individual differences, hence losing some information. It is possible, then that any classification system will necessarily possess some limitations. That the practice of classifying children according to specific learning disabilities is thought to possess merits can be seen by the increased literature devoted to that entity...

"The chief strength of the emphasis on learning disabilities would seem to be that it makes a renewed plea for good teaching - i.e., teaching based on an understanding of the child's needs as well as an awareness of what the specific task entails and a recognition of its sequential components. Seen in this light, the focus upon specific learning disabilities can, within the framework of (rather than be seeking to displace) the traditional medical/psychological categorization system, give some direction and emphasis to the special educators.

"Another purpose served by the term learning disabilities is that it helped solidify various state chapters of parents of minimally brain injured children into a national group. A few years ago, when representatives from the various state chapters met for the purpose of consolidating into a national organization, they were unable to agree upon a common designation, each state having a different nomenclatural title. In the interest of compromise, the brain injured, perpetually handicapped, neurologically impaired, etc., were all welded into The National Association for Children with Learning Disabilities, Inc. In 1965, this association stated that its purpose is:

to promote the education and general welfare of children and youth, with normal or potentially normal intelligence, who have learning disabilities of a perceptual, conceptual or coordinative nature or related problems. (National Association for Children with Learning Disabilities, 1965).

This statement of purpose is printed on the association's official announcements. It seems that the parents are trying desperately to remember what the professionals told them the term learning disabilities means. Can the professionals do less?"<sup>1</sup>

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<sup>1</sup> Ernest Siegel, "Learning Disabilities: Substance or Shadow," Exceptional Children, (February, 1968), pp. 433, 437.

#### ACKNOWLEDGEMENTS

I would like to thank my advisor, William H. Knight, Ph.D., for his assistance and counseling in the preparation of this paper. In addition, I would like to express my gratitude to my wife, Dotty, and to my son, Jeff, for their encouragement during this period and for her assistance in typing the final copies. Without the help, toleration, and continuing reinforcement of these individuals, this monograph might not have been a reality.

Steve J. Leatherwood

#### ABSTRACT

A study of the classification "Learning Disabilities" is presented. Historical information, definitions of the term, and characteristics of behavior are cited. Several theories and techniques are presented and evaluation materials are listed and summarized. The study is an effort to bring together some of the information currently available on the subject and to provide a basis for related studies.

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## Chapter I

## INTRODUCTION

Statement of the Problem

An increasing awareness of exceptional children has brought with it new and puzzling case histories which are not explicable in familiar terms and which do not allow categorization in established groups. Educators, psychologists and teachers have been baffled by individual cases which do not seem to fit into expected profiles. This confusion has in turn brought about much study relating to remediation procedures for these "special" children. It seems that these children have always existed but were often passed off as "underachievers", "slow-learners", "non-readers" and the like. Since these children obviously presented a special problem to educators, these labels often became rationalizations for their poor classroom behavior and therefore, special programs were not necessary. This is not to say that education has not been accomplishing its goals. On the contrary, since the mid 1950's educators have produced quality programming for the majority of the students in public school programs.<sup>2</sup> However, as any other manufacturer attempts to improve his product, educational institutions likewise up-grade, up-date and revitalize their product. This increased concern to provide more adequate programming has brought about a serious

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<sup>2</sup> George Kaluger and Clifford J. Kolson, Reading and Learning Disabilities (Columbus, Ohio: Charles E. Merrill Publishing Company, 1969), p.1.

reconsideration of this small but significant group of students which has presented numerous problems in the past.

Kaluger and Kolson approach this problem noting that "The conventional approaches to diagnosis and remediation of reading disabilities are to be retained and respected for they have been tested and found to be valuable. But, there are some children who have reading (learning) disabilities which are so severe or are due to such uncommon causes that the traditional procedures prove inadequate in helping them overcome their problems."<sup>3</sup> Therefore, in considering this select group of individuals we must elect to establish individualized diagnostic and prescriptive techniques designed to meet their select needs.

Frequency of Occurrence

Varying definitions and characteristics delineating "learning disabled" students from other students made difficult the task of pinpointing the frequency of its occurrence. Estimates range from three to twenty percent of the total school population. Myklebust and Kass suggest from three to five percent of the school population experience such learning difficulties.<sup>4</sup> Van Osdol, Van Osdol, and Shane state that "A general estimate seems to indicate that at least five percent of the United States school children possess learning disabilities.

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<sup>3</sup>Ibid., p.2.

<sup>4</sup> Corrine E. Kass and Helmer R. Myklebust, "Learning Disabilities: An Educational Definition," Journal of Learning Disabilities, Vol. 2, No. 7 (July, 1969).

Major interest in the learning disability area is of very recent origin and there is still confusion among professionals as to terminology and identification. Therefore, estimates of incidence seem to depend on individual interpretations of the scope of the category and may vary from five to twenty percent of the total school population."<sup>5</sup>

Kaluger and Kolson estimate the number to be between ten and twenty percent of the school population.<sup>6</sup>

While the above estimated percentages seem to represent a wide variation in the population, it remains obvious that the figure to be considered is at least significant and worthwhile.

#### Justification of the Study

It has been said that "fifty percent of the learning disabilities that we now call mental retardation could be prevented."<sup>7</sup> If it is also true that "the cause of mental retardation remains unknown in in approximately seventy-five percent of the six million Americans labeled mentally retarded,"<sup>8</sup> how can we in the field of education and/or

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<sup>5</sup> Bob M. Van Osdol, William R. Van Osdol, and Don G. Shane, Learning Disabilities K-12 Manual (Moscow, Idaho: Idaho Research Foundation, Inc., 1973), p. 3.

<sup>6</sup> Kaluger, op. cit., p. 2.

<sup>7</sup> Donald J. Stedman, "Much Mental Retardation Tied to Cultural Deprivation," Frontiers of Hospital Psychiatry, Vol. 5, No. 12, December, 1968, p. 1.

<sup>8</sup> Ibid.

rehabilitation be effectively meeting the needs of those persons we are bound to serve. It seems mandatory that new systems of identification, evaluation, and management be established. One of the most controversial topics in current literature and programming is that of "learning disabilities". If we are classifying persons by inappropriate standards and are "writing off" their developmental lags to the rationalizations of "under-achiever" or "slow-learner" when, in fact, their individual situations simply dictate needs for special programs, and if we, through the implementation of special programs, can elevate these persons to average or above levels, then we are seriously violating the ideal and role of education. If we can prevent fifty percent of the disabilities labeled "mentally retarded", if, in fact, we can prevent twenty-five percent of these cases from becoming a reality, then it is our duty to do so. If that means by-passing old, "established" approaches of classification and treatment in order to accept new, more appropriate definitions and interventions, then we must make that move. Medical science, electronic technology, and other fields realize advancement almost daily. Previous procedures and techniques often step aside to more advanced and more effective ones. Those procedures and techniques which are effective for the majority often must be superceded by new innovative ideas which are geared to a more individualized, minority approach.

Educational strategies must not differ in their flexibility and adjustment. If the idea of "learning disabilities" is a more appropriate way of approaching an individual's particular needs then we in education

must provide that alternative. In this paper, it is the author's intention to pull together a number of the classifications, theories, and treatment programs relating to this target population and to draw some conclusions as to their effectiveness and/or merit.

## Chapter II

### REVIEW OF LITERATURE

#### Historical Background

One of the earliest recorded notations concerning a condition related to the present day "learning disabilities" category was in 1895 when James Hinshelwood, an ophthalmologist in Scotland discussed a condition called "word blindness". This condition occurred in children who, with normal intelligence, possessed a defect in visual memory and hence, a severe reading difficulty. The following year, two Britons, James Kerr, a physician and W. P. Morgan, an ophthalmologist, reported similar case histories of severe reading problems in children of normal intelligence. An influential publication in 1917 by Hinshelwood on congenital word blindness doubtlessly sparked new interest in this growing area of concern. As would be expected, much of the efforts centered around experimentation and research. One of these early researchers who has been referred to as a "pioneer" in the field, was Dr. Samuel Orton, professor of psychiatry at the medical school of the University of Iowa. In 1925, some of his efforts resulted in the establishment of a mobile mental hygiene clinic. Through this mobile clinic, he happened upon a young man who, though he had normal intelligence, had never learned to read. Dr. Orton conducted a lengthy study of this young man and later identified a significant number of other individuals similarly involved. He found that these individuals were troubled by reversals and confusions of visual symbols.

Later in 1925, Orton presented his findings to the American Neurological Association meeting and an overwhelming acceptance brought to him a Rockefeller Foundation Grant to continue his work in the area. In an effort to describe the memory-for-word-patterns and letter orientation problems encountered by his subjects, Orton coined the term "strephosymbolia".

One of the first actual learning disabilities programs in the United States was established through the efforts of Grace Fernald. It began in 1921 as the Clinic School at the University of California and Los Angeles. Initially, it accepted children in all ranges of intelligence but later developed into a program specially oriented toward individuals of normal intelligence with severe educational problems. Her remedial text was published in 1934 and continues to be sold in the early 1970's. In 1934, the Institute of Logopedics was established in Wichita, Kansas, its benefactor being Wichita State University. The Institute was to provide assistance to individuals having severe communication problems. It provided in-patient or out-patient speech, physical and occupational therapy as well as educational programming. The Institute is a non-profit organization and continues to provide its services as needed to date.<sup>9</sup>

A specific group of symptoms were described in 1947 by A. A. Strauss to identify "brain injured" individuals. Strauss described

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<sup>9</sup> B. R. Gearheart, Learning Disabilities: Educational Strategies (St. Louis: The C. V. Mosby Company, 1973), pp. 4-5.

these individuals, whose retardation was supposedly due to some external cause, as hyperactive, emotionally labile, perceptually disordered, impulsive, distractible and perseverative.<sup>10</sup> He became interested in this area of exceptionality following his efforts in re-educating brain injured war veterans in Germany. Along with Dr. Laura Lehtinen Rogan and a number of others, Strauss organized the Cove Schools in 1947 at Evanston, Illinois. This program continues to date and is directed toward the remediation of learning problems and the return of the individual to the regular classroom.<sup>11</sup>

The culmination of past efforts seemed to come in the late 1950's and 60's. In 1959, Ralph D. Rabinovitch attempted to establish a criteria to group retarded readers into three categories: primary reading retardation, secondary reading retardation, and reading retardation associated with organic brain injury. Later Rabinovitch and some associates at Hawthorne Center began to note that a number of the problem children sent to the Center for psychological or psychiatric therapy had additional problems in reading. Following some study, Rabinovitch and Ingram (1962) listed their characteristics for this problem. These characteristics were: 1) Retardation in School Achievement; 2) Reading Process Disturbance; 3) Indiscriminating Language Deficits; 4) Specific Concept-Symbolization Deficiency in Orientation; 5) Body Image.<sup>12</sup>

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<sup>11</sup> Gearheart, op. cit., p. 6.

<sup>12</sup> George Kaluger and Clifford J. Kolson, Reading and Learning Disabilities (Columbus, Ohio: Charles E. Merrill Publishing Company, 1969), pp. 57-58.

Also in 1959, the chief physician of the neurological unit of the University Hospital in Copenhagen, Denmark, Kund Herman (1959) became interested in the study of word-blindness. He observed a difference in some of the children who attended his clinic. He observed that these children were severely retarded in reading but were all of at least normal intelligence. He suggested that this group comprised approximately ten percent of the total group attending the clinic. After some study, he found that similar groups of children had been noted by others in England, Sweden, and Germany. He listed their common characteristics as follows: 1) They all had a defective capacity for learning and could not read. 2) There were no apparent intellectual defects nor defects of sense organs. 3) The children had difficulty with symbols such as notes found in music, the Morse Code and numbers, 4) There was much evidence of a familial history and, as such, the defect seemed to imply that constitutional factors were responsible for its occurrence. 5) The disability persisted into adult life.<sup>13</sup>

Herman Krieger Goldberg (1959), an American ophthalmologist, made electroencephalographic studies of 125 learning disabled children in 1959 and identified two types of disabled readers. One group consisted of poor achievers who had no observable signs of brain damage but were unable to learn to read with remedial instruction. The second groups were void of any constitutional disturbances and appeared to have their

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<sup>13</sup> Ibid., p. 55.

learning mechanism intact. His list of primary characteristics compares with others. He found that his subjects were all of normal or superior intelligence; that there appeared to be a high incidence of left-handedness or ambidexterity; that left-right disorientation problems existed; and that most had difficulty recognizing a Gestalt figure as an entity.

A psychologist and director of clinical research, Gerald B. Fuller, attempted to devise a psychometric test by which to identify primary reading disability. His efforts, in combination with those of L. T. Laird, resulted in the development of the Minnesota Percepto-Diagnostic Test, discussed in the January, 1963 issue of the Journal of Clinical Psychology. This instrument, the authors claim, seems to differentiate three types of disabled readers.

During this same period, Newell C. Kephart (whose theories will be discussed later) postulated that a "perceptual-motor match" must be made by the child if he is to be able to perform appropriately. If this match is not successful, the child responds to stimuli with inappropriate responses and the resulting behavior is seen as bizarre.

This history would not be complete without recognizing the contributions of Marianne Frostig in the area of evaluation. Frostig states that in order to provide adequate programming for any given child, one must first consider and account for his individual abilities in each of the six major psychological functions developing during infancy and childhood. These areas to be considered are: sensori-motor function, language, perception, thought process, emotional development, and social adjustment. The student's performance and

abilities in each of these areas will determine much of the strategy to be used in his education.<sup>14</sup>

By this time several states began to include in their legislations particular documents which established bases for learning disability programs or classes. By 1969, only twelve states, however, had passed legislation which referred specifically to children with learning disabilities. The states of (with year of passage of legislation) Connecticut (1967), Florida (1968), Hawaii (1967) and Massachusetts (1966) referred to "learning disabilities" or "specific learning disabilities"; California (1963) and Colorado (1965) termed these individuals "educationally handicapped" which included learning disabled and emotionally disturbed; Idaho (1965) used the term "perceptual impairment"; Nevada (1956) indicated "neurological disorders or defects"; New Jersey (1966) referred to "neurologically or perceptually impaired"; Pennsylvania (1965) used the term "brain damage"; while Texas (1967) used "language-handicapped child". Additional programs, while they may have been present, existed under other classifications such as "physically handicapped" and are less apparent.

In January of 1968, the first issue of the Journal of Learning Disabilities was published. This appears to be the first publication of any kind which devoted its entirety to the area of learning

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<sup>14</sup>  
Ibid.

disabilities. In April, 1970, Federal legislation directed toward the establishment of learning disabilities model centers for training and research was enacted as Part G of Title VI of Public Law 91-230.<sup>15</sup>

#### Definition and Characteristics

Since the term "learning disabilities" first appeared in the early 1960's, numerous efforts have been made to define the characteristic behaviors it includes. The author does not plan to select any one definition as "best" but will present several of the more acceptable ones for study.

The National Advisory Committee of Handicapped Children, headed by Dr. Samuel Kirk, suggests the following definition.

Children with special learning disabilities exhibit a disorder is one or more of the basic psychological processes involved in understanding or in using spoken or written languages. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental phasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage. (From Special education for handicapped children: First Annual Report of the National Advisory Committee of Handicapped Children, Washington, D.C., 1968, Office of Education, Dept. of HEW)

In the October, 1962 issue of Exceptional Children, Kirk and Bateman state that: A "Learning Disability" refers to a retardation, disorder, or delayed development in one or more of the processes of speech, language, reading,

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<sup>15</sup>  
B. R. Gearheart, Learning Disabilities: Educational Strategies (St. Louis: The C. V. Mosby Company, 1973), p. 6-7.

writing, arithmetic, or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances. It is not the result of mental retardation, sensory deprivation, or cultural or instructional factors.<sup>16</sup>

Hellmuth, from the Kansas Association for Children with learning disabilities projects that the learning disabled child is more often a male, "who performs significantly below his grade placement and general intelligence level in reading and spelling. This child does not exhibit measurable neurological defects or loss of visual or auditory acuity. Academically, this child is unable through the general curriculum to acquire at a normal rate, a proficiency in reading and spelling, which corresponds to his general ability, and this is true even when good instructional procedures are used."<sup>17</sup> In addition, minimal neurological signs may be seen; i.e. right-left disorientation, impaired motor control, perceptual-motor and visual-motor problems, perseveration, short attention span, impaired two-point discrimination, unusual reading/writing posture, impulsive actions, and mixed laterality. Hellmuth also lists behavior or emotional problems existing by late third grade.

Cruickshank (1966) states that disregarding terminology, "some children experience a disturbance of some sort in normal cephalo-caudal neural maturation in different stages of development,

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<sup>16</sup> James J. McCarthy and Joan F. McCarthy, Learning Disabilities (Boston: Allyn and Bacon, Inc., 1969), p. 1.

<sup>17</sup> Bob M. Van Osdol, William R. Van Osdol, and Don G. Shane, Learning Disabilities K-12 Manual (Moscow, Idaho: Idaho Research Foundation, Inc., 1973), p. 2.

either perinatally, prenatally, or post-natally. This disturbance may result in an inability to progress normally in various sensory modalities, which cause these children to characterize visual-motor, audio-motor, and/or tactual-motor deficiencies."<sup>18</sup>

Often, one might observe that a more appropriate approach to defining "Learning Disabilities" is to identify what learning disabled children are NOT. They are NOT children who are mentally retarded. They are NOT ones with severe hearing problems. They do NOT possess severe visual problems. They do NOT have severe motor involvement.<sup>19</sup>

Gearheart identifies only three characteristics which are common to all learning disabled children: "1) they must have average or above average intelligence; 2) they must have adequate sensory acuity; and 3) they must be achieving considerably less than the composite of their IQ, age, and educational opportunity (health, availability of schooling, and cultural opportunity) would predict."<sup>20</sup> He identifies the secondary characteristics as hyperactivity, hypoactivity, lack of motivation, inattention, overattention, perceptual disorders, lack of coordination, perseveration, and memory disorders.<sup>21</sup>

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<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

<sup>20</sup> B. R. Gearheart, Learning Disabilities: Educational Strategies (St. Louis: The C. V. Mosby Company, 1973), pp. 9-10.

<sup>21</sup> Ibid.

Kirk and Bateman (1962) also identify three common symptoms:

1) All are retarded or disordered in school subjects, speech or language, and/or manifest behavior problems. 2) None are assignable to major categories of exceptionality such as mental retardation or deafness. 3) All have some presumed neurologic basis (cerebral dysfunction) for their manifested disability or disabilities.

Van Osdol, Van Osdol, and Shane note other characteristics which can be cues to teachers and parents. Learning disabled children will tend toward reversals of letters (b-d, p-q) and inversions of numbers (17-71). Coordination problems may be apparent as well as a defect in auditory discrimination. Perseveration may be present. The child may be hyperactive; have difficulty in screening out some of the stimuli he receives. This often results in a shortened attention span. Learning disabled children will sometimes have very poor handwriting, art work, and hand-eye coordination. However, teachers will often be convinced that, while something is missing, they are not retarded. The child may get lost easily, have poor perception of time and space, and may not be able to tell time. He may recognize a word or symbol one day and deny ever seeing it the next. He may not be able to recognize an object from different angles. The learning disabled child may have inadequate impulse control and may overreact to stimuli. For example, after working diligently on a project such as a painting, he may suddenly lose control and burst into tears and screams.

The most frequently cited characteristics of learning disabled children, according to Sam D. Clements (1966) are as follows (in order of frequency):

1. Hyperactivity
2. Perceptual-motor impairments
3. Emotional liability
4. General orientation defects
5. Disorders of attention (short attention, distractible, etc.)
6. Impulsivity
7. Disorders of memory and thinking
8. Specific learning disabilities in reading, arithmetic, writing and spelling
9. Disorders of speech and hearing
10. Equivocal neurological signs and electroencephalographic irregularities<sup>22</sup>

Children classified as "learning disabled" may have all of the characteristics noted by the preceding individuals or they may only have a few of the signs. Regardless of the number of the behaviors observed, these children all meet the basic requirements; they are functioning at a sub-average level academically, and they possess average or above intelligence.

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<sup>22</sup> Van Osdol, op. cit., p. 7.

## Chapter III

## SOME INTERVENTION THEORIES AND PROGRAMS

Raymond H. Barsch

During the time he served as Director of the Teacher Preparation Program for Teachers of the Physically Handicapped and Neurologically Impaired at the University of Wisconsin, Dr. Raymond Barsch developed most of his theories relating to learning disabilities. In addition to his duties at the University, Barsch assisted the Madison Public Schools in the establishment of a special experimental learning disabilities curriculum. Prior to his association with the University, he had served as director of an Easter Seal Child Development Center for fifteen years. Barsch's theory, known as MOVIGENICS (Latin meaning origin and development of moving), is perceptual-motor in structure and is based on ten constructs. The author will present these ten constructs as an explanation of his theory, in part.

1. "The fundamental principle underlying the design of the human organism is movement efficiency.
2. "The primary objective of movement efficiency is to economically promote the survival of the organism.
3. "Movement efficiency is derived from the information the organism is able to process from an energy surround.
4. "The human mechanism for transducing energy forms into information is the percepto-cognitive system.
5. "The terrain of movement is space.
6. "Developmental momentum provides a constant forward thrust toward maturity and demands an equilibrium to maintain direction.
7. "Movement efficiency is developed in a climate of stress.
8. "The adequacy of the feedback system is critical in the development of movement efficiency.

9. "Development of movement efficiency occurs in segments of sequential expansion.
10. "Movement efficiency is symbolically communicated through the visual-spatial phenomenon called language."<sup>23</sup>

Thus, movement efficiency, which is necessary to the organism's survival, is based on the appropriate gathering of information from one's environment while under varying conditions of stress. The more efficient the individual is in this process, the less adverse the stress and the more successful he is in coping with his environment. Barsch suggests that each individual possesses a "movement efficiency matrix" which leads the person to constantly strive toward a higher degree of movement efficiency. This matrix is composed of three organizational units and fifteen parts. The "postural-transport orientation" unit consists of muscular strength, dynamic balance, body awareness, spatial awareness and temporal awareness. The "percepto-cognitive modes" assist in information gathering through gustatory, olfactory, tactual, kinesthetic, auditory and visual senses. The third unit, "degrees of freedom" consists of bilaterality, flexibility, rhythm, and motor planning.

Barsch states that "Every transaction with his environment provides the learner with some form of spatial information to be utilized in building a more complex level of behavior."<sup>24</sup> He believes movement to be the basis of all learning and that a retarded development in motor abilities will be transmitted to learning problems

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<sup>23</sup>Gearheart, op. cit., pp. 38-40.

<sup>24</sup>Ibid., p. 41.

in cognitive areas.<sup>25</sup>

Bryant J. Cratty

Bryant J. Cratty, a current proponent of perceptual-motor activities for learning disabled children, seems to view that component somewhat less basic than some of his contemporaries. He is Director of the Perceptual-Motor Learning Laboratory at the University of California at Los Angeles<sup>26</sup> and states that "movement games may help the child with learning problems, may aid the active normal child to learn better, and may improve the academic progress of the culturally deprived and retarded child".<sup>27</sup> Cratty notes that poor motor abilities and inability to play games well may result in peer rejection, deflated self-concept, and, therefore, poor academic performance. He also notes this is particularly true of boys and statistics seem to point toward a larger percentage of boys with learning disabilities. While he sees hand-eye and general body coordination as essentials to academic performance, he does not seem to place perceptual-motor activities as important as some. Cratty does not claim movement to be basic to all learning and that, while these activities are important, we should not expect too much.<sup>28</sup>

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<sup>25</sup>Ibid.

<sup>26</sup>Ibid.

<sup>27</sup> Bryant J. Cratty, Active learning: Games to enhance academic abilities (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1971), p. 10.

<sup>28</sup> Gearheart, op. cit., pp. 41-49.

Carl Delacato

Referring to his system as a neuropsychological approach to the development of language, Delacato feels that an abnormal development of the neurological organization in a child will result in communication or mobility problems. This development is noted to occur between the first tri-mester of gestation and approximately six and one-half years of age. Individuals experiencing difficulties or delays in this development should, in his opinion, be evaluated to determine the incomplete areas, and should then be subjected to the proper organization to overcome the problem. Delacato is concerned with causes and suggests that remediation can be accomplished through direct treatment on the brain. His philosophy is that "ontogeny recapitulates phylogeny—that the individual organism repeats the pattern of development of the species".<sup>29</sup>

His theory appears to be the most controversial of the perceptual-motor theories and often commands either total support or total opposition. Delacato's views have brought criticism from a number of sources to the extent that an official critical statement was issued in 1968. This statement was endorsed by such organizations as the National Association for Retarded Children, The American Academy of Neurology, the American Academy of Pediatrics and the American Association of Mental Deficiency. Nothing really came from the statement except for a reply from Delacato in the official publication

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<sup>29</sup> Ibid., p. 52.

of the Institute for the Achievement of Human Potential, which Delacato co-directs with Glenn Doman.

Much of his theory is based on the work of Dr. Temple Fay, a neurologist and one-time co-worker of Delacato. The theory approaches an evolutionary pattern as the progression of man from the most basic of beginnings. He discusses how man developed handedness, language, use of tools, drawing, music and so forth. He sees this long, slow evolutionary process as the only means to reach a neurological readiness to read.

In approaching a diagnosis for a child with learning disabilities, Delacato, in a 1963 text The Diagnosis and Treatment of Speech and Reading Problems, identifies the use of an intelligence test score as helpful in beginning stages. Later in a 1966 text, Neurological Organization and Reading, he fails to mention this as an effective contributor. He sees consistently, however, a carefully taken case history as essential. This history should include: 1) information to a genetic basis for a learning problem; 2) facts about the individual's birth and early childhood which were particularly traumatic or otherwise significant; 3) facts relating to the early developmental progress of the child, eg. dates crawling, walking, etc. He approaches his diagnostic procedure from an evolutionary standpoint by beginning with cortical level responses and moves successively through lower cortex, midbrain, and pons areas. At the cortical level he evaluates hand, eye and foot dominance and tonal ability. At the midbrain level, comes the creeping evaluation, for which Delacato is most known by the casual student. The creeping

should be smooth, rhythmical and in a cross pattern (right knee/left hand, left knee/right hand paired) if it is to be considered normal. Sleep positions are evaluated at the pons level. Delacato describes the appropriate "most used" sleep position of a right-side dominant individual as sleeping on his abdomen, with his head turned toward the left, his left arm and leg flexed and his right arm and leg extended. Compliance with this position denotes adequate organization at the pons level.

Treatment by Delacato is based on the assumption that specific types of experiences will effect specific areas of the brain. This is, therefore, a treatment of the brain rather than a treatment of the symptoms. With this statement, Delacato meets much criticism. His treatment has one major focus, that of providing opportunity for the child to complete incomplete neurological organizations.

Criticism for his theory often stems from one of the following points:

1. Assumption that the Institute's recommended methods directly treat the brain.
2. Physical prevention of self-motivated activities of the child. (eg. preventing walking if evaluation determines a need for crawling activities)
3. A program that makes parents "therapists" and often blames poor therapy if the program fails.
4. Statistical defects in studies that purportedly prove the value of the method.
5. Implication that a number of almost universal child-rearing practices can cause serious neurological damage.
6. Actual test instrument (the Doman-Delacato Neurological Developmental Profile). Some disagree as to its validity and reliability as well as its usefulness. 30

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<sup>30</sup> Ibid., pp. 51-57.

Marianne Frostig

In 1968, Dr. Marianne Frostig was presented with a Learning Disabilities Award by the Association for Children with Learning Disabilities. This award was brought about by her major contributions in the evaluation and treatment of learning disabled children. She acts as executive director of the Marianne Frostig Center of Educational Therapy in Los Angeles. At this non-profit Center, much research, training and treatment are accomplished. In addition to her efforts at the Center, Dr. Frostig designed one of the most widely used evaluation instruments in classrooms to date, the Developmental Test of Visual Perception. Most often the instrument is referred to simply as the "Frostig".

The Center, which is part of the Foundation of Educational Therapy for Children, functions under a seemingly unusual framework. While employing a psychoanalyst as medical director, Dr. Frostig states a strong favoring of B. F. Skinner's theories in operant conditioning procedures. The opposing viewpoints seem to be able to function side by side, however, since individualization of programming is stressed by Frostig. Psychiatric, educational, psychological, and psychotherapy and counseling aspects are considered in each individual case and are used as needed.

A general battery of tests used as a diagnostic technique at the Center usually includes: 1) "the Frostig" (DTVP); 2) the Wepman Test of Auditory Discrimination; 3) the Illinois Test of Psycholinguistic Abilities (ITPA); and 4) the Wechsler Intelligence

Scale for Children (WISC). A variety of other tests might be employed as determined by this initial battery. Test data, family history, and other information is compiled and reviewed by a team of persons at the Center who then make recommendations for treatment.

Four basic educational programs are offered at the Center. A full-time program for elementary grades is taught with groups of 5-7 children. Where there are more than five children in a class, two teachers are required. Here again the individualized approach is stressed, however, the children are grouped with those who have similar problems and levels of achievement. A highly individualized junior high school program is taught in the afternoon in conjunction with the public school program. This program comprises half of the student's school day. Pre-schoolers have a chance to benefit by some pre-academic work in the morning. Each student is evaluated extensively and individualized programs are established. An individual tutorial program is also offered which concentrates on specific academic subjects and their development or remediation.

Much of the Frostig program centers around the development of visual-perceptual skills, however, she emphasises the importance of self- fulfillment in each individual. The program materials are usually viewed as easily understood, useable, and motivational to many children. Her Developmental Test of Visual Perception, along with others in her test battery, will be discussed later in Chapter IV.<sup>31</sup>

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<sup>31</sup> Ibid., pp. 68-72.

Newell C. Kephart

The director of the Glen Haven Achievement Center at Fort Collins, Colorado, Dr. Newell C. Kephart, centers his theory around what he refers to as the "perceptual-motor match". Much of the basis for this approach stems from the following statement. "It is logical to assume that all behavior is basically motor, that the prerequisites of any kind of behavior are muscular and motor responses. . . . Behavior develops out of muscular activity, and so-called higher forms of behavior are dependent upon lower forms of behavior, thus making even these higher activities dependent upon the basic structure of the muscular activity upon which they are built."<sup>32</sup> In describing the "perceptual-motor match" it seems most appropriate to do so by saying that this match is completed when the person is able to substitute one ability for the other; that the child/person is able to recognize a ball on a table (for instance) equally well with his vision as with his touch. If these connections are made appropriately allowing the input information to be shared, then perception and motor abilities are able to act as partners and reinforce each others decisions. Kephart states that this match must occur by matching perception to motor, and not visa versa.

The next major step of the child, according to Kephart, is to develop the ability to establish figure-ground relationships.

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<sup>32</sup> Newell C. Kephart, The Slow Learner in the Classroom, Rev. Ed. (Columbus, Ohio: Charles E. Merrill Publishing Co., 1969), p. 79.

However, he emphasizes that the perceptual-motor match must be accomplished before progressing to the figure-ground relationships. In discussing learning disabled children, Kephart (who refers to this group as slow learners) postulates that these children, in comparison to their peers, have experienced a generalized slowing in their developmental process or that somewhere along the line an actual break has occurred. In order to "normalize" the individual, one must then provide remedial activities based on the individual's particular level of development. In the evaluation of the learning disabled individual, Kephart recommends the following instruments: Purdue Perceptual-Motor Survey, Frostig Test of Visual Perception, Illinois Test of Psycholinguistic Abilities, and the Wepman Auditory Discrimination Test. These instruments, along with others, will be discussed later in Chapter IV.

Kephart states that the major difficulty in teaching a child of this type stems from the fact that many of them have been forced to make adaptations in areas they were not capable of handling. Then when one attempts to retrace the developmental steps and restructure the behavior of the individual, usually effective techniques for training are unsuccessful. This attempt at retraining must involve an older individual, the unlearning of inappropriate behaviors and the relearning of appropriate ones. Often this becomes a long and involved process.<sup>33</sup>

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<sup>33</sup> B. R. Gearheart, Learning Disabilities: Educational Strategies (St. Louis: The C. V. Mosby Company, 1973), pp. 29-32.

The "efficiency of the higher thought processes can be no better than the basic motor abilities on which they are based".<sup>34</sup>

These basic motor abilities referred to are as follows: 1) Posture- The basic pattern which is the initial beginning of all movement. It is through posture that we maintain a reference point with our environment and that we maintain a "zero point" from which to originate other movements. 2) Laterality- the ability to differentiate between two sides. 3) Directionality- the ability to recognize right-left relationships of objects in space. 4) Body image- the ability to see relationships between the body parts as well as relationships of the body parts to objects in space. Once the individual develops these basic motor abilities, he is able to investigate his surroundings and obtain information valuable to his developmental process. In making this exploration meaningful, Kephart identifies these four basic movement abilities: 1) balance and posture; 2) locomotion; 3) contact; and 4) receipt and propulsion. Without these abilities, the child's ability to learn will be decreased. Kephart's remediation training recommendations include the use of walking boards, balance beams, trampoline, rhythm activities, gross and fine motor activities, auditory-motor matching, visual fixation, ocular pursuit, matching, symbol recognition, cutting and pasting activities, and various scanning activities.

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<sup>34</sup> Kephart, op. cit., p. 81.

The prime factor in developing academic learning and abstract thinking skills, according to Kephart, is proper development of visual-motor abilities. Kephart tends to disregard auditory input as a contributing factor.<sup>35</sup>

Helmer B. Myklebust

Dr. Helmer B. Myklebust is identified as a language development system theorist. He was director of the Institute for Language Disorders at Northwestern University until recently. Much of his work has centered around deaf and aphasic children and adults.

In 1967, Myklebust and Doris Johnson published a text Learning Disabilities: Educational Principles and Practices. This work put forth the basis for his theory as to the remediation of learning disabilities. In the text, Myklebust refers to a neurogenic origin for learning disabilities.<sup>36</sup>

Basically, Myklebust states that "children can learn normally only if certain basic integrities are present and only if they have had appropriate opportunities to learn".<sup>37</sup> He stresses that one must evaluate the opportunity to learn in gathering a total diagnostic workup on the individual.

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<sup>35</sup> Gearheart, op. cit., pp. 32-37.

<sup>36</sup> Ibid., p. 91.

<sup>37</sup> Ibid.

Myklebust categorizes these basic "integrities" into three groups: 1) psychodynamic factors; 2) peripheral nervous system functions; and 3) central nervous system functions. The psychodynamic factors he identifies as identification (with parents), imitation, and internalization of feedback. The peripheral nervous system functions, category includes the individual's ability to see, hear, touch, etc. He differentiates learning disabilities children from those who have dysfunctions in these sensory areas. The third category deals with the central nervous system. Myklebust sees that learning disabilities children possess dysfunctions in this area of the nervous system. In terminology, he refers to this as a "psychoneurological learning disability" and presents a rationale to reject other terms such as minimal brain damage, Strauss syndrome, dyslexia, neurophrenia, etc. as appropriate classifications for these learning disorders.

His theory is built on the semiautonomous systems concept of brain functioning. Specifically, this means that one sensory area of the brain may, at any given time, function in several different capacities; the area may at times function semi-independently, at times in a coordinated fashion with other areas, or at times, in a totally related manner involving the total system. Myklebust omits olfactory, gustatory, and proprioceptive systems as having little bearing on learning disabilities.

Myklebust sees learning processes categorized into three areas: intraneurosensory (learning which mainly involves only one system), interneurosensory (involving more than one system) and integrative (all systems functioning together). In the first case, he includes

learning which primarily involves one sense, while such learning is limited, some types of learning do fall here. An example might be the spoken word. It is learned mostly through the auditory modalities and channels. His second grouping is larger in content. Conditions such as expressive aphasia, dyslexia, visual dyslexia are included. In these disabilities the person may learn the response through one channel but may not be able to express that response through another channel and vice versa. Integrative learning is the most complex area. This classification involves learning, expression, and understanding. The ultimate goal is reached at this level when a person adds inner meaning (true understanding) to words and expressions through experience. Myklebust cautions the reader, that these classifications are not scientific but are simple attempts to explain observable behaviors in children with reading and learning problems. He also notes, quite interestingly, that in integrative learning, an "overloading" may occur. In the learning process, input from several sensory areas may come into conflict. In some cases, the individual may be able to shut off some of the competing stimulation, e.g., shutting his eyes; or closing off the ears. This may be seen as inappropriate by a teacher, parent, etc., but in reality may be the most effective way for the individual who may "silent read" well is asked to read aloud. Reading aloud presents complications and he may then read quite poorly.

Myklebust notes that the process of learning may fall into five levels or hierarchies of experience. From most simple to most complex

these are: 1) sensation; 2) perception; 3) imagery; 4) symbolization; 5) conceptualization. Sensation is the initial stimulation reception; perception is discrimination between on-going stimulations; imagery involves memory for previously discriminated stimulations; symbolization attaches meaning to stimulatory input; and conceptualization involves the ability to abstract and categorize stimulation.<sup>38</sup>

Myklebust sees remediation programmed with the following considerations: 1) Individualization of the program; 2) Teach to the level or heirarchy of problem (e.g., perception); 3) Consider the type of involvement (e.g., intrasensory); 4) Teach according to the child's total level or readiness (academic, psychological, social); 5) Remember that input precedes output; 6) Consider tolerance levels ("overloading"); 8) Teach to total child, not to deficits alone; 9) Vary teaching along the semiautonomous system concept; 10) Do not assume a need for perceptual training; 11) Control important variables such as attention, proximity to others, rate of presentation, size of writing, etc; 12) Emphasize verbal and nonverbal learning; 13) Consider both behavioral and psychoneurological components in the remedial plan.<sup>39</sup>

#### Samuel T. Orton

One of the earliest publications relating to the ideas of learning disabilities was put forth by Samuel T. Orton and was titled Reading,

<sup>38</sup> Ibid., pp. 91-99.

<sup>39</sup> Ibid., p. 100.

Writing, and Speech Problems in Children. The work was published in 1937 and noted that there are "inherent or constitutional differences in certain children, apart from those of general intelligence, which markedly influence their acquisition of the language function."<sup>40</sup> His interest centered around the deveopment of communication and the abilities inter-related in the acquisition of language. In attempting to describe these individuals and their problems, Orton coined the term "Strephosymbolia" or " or "twisted symbols".<sup>41</sup>

Much of his early work was accomplished at the Neurological Institute, Columbia-Presbyterian Medical Center in New York. While here, he met and supervised Anna Gilligham, who later published their methods in a useable form for the classroom.

While Orton's basic theoretical structure centered around his belief that the dominant hemisphere is opposite to the preferred hand, a generally disputed theory at present, his contributions to the field are nonetheless profound. Many of his methods, or derivations of his methods, are in regular use today. One of the most important of these was his development of a basically phonetic teaching method for use with disabled children. This method replaced, quite successfully, the popular method of teaching by sight recognition of whole words.<sup>42</sup>

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Samuel T. Orton, Reading, Writing, and Speech Problems in Children (New York: W.W. Norton and Co., Inc., 1937), p. 19.

<sup>41</sup>

James J. McCarthy and Joan F. McCarthy, Learning Disabilities (Boston: Allyn and Bacon, Inc., 1969), pp. 55-57.

<sup>42</sup>

Gearheart, op. cit., pp. 103-104.

Orton suggested that in identification attempts one should be aware of: 1) Stutterers whose impediment began with earliest speech; 2) Children with difficulty in understanding the spoken word; 3) Children who were abnormally clumsy; 4) Children who were late in developing handedness; and 5) Children with a family history of left-handedness or developmental language disorders.<sup>43</sup>

In addition to using the phonetic approach to teaching, Orton also suggested that, 1) the program be highly individualized, 2) the typewriter might be incorporated in teaching programs, and 3) that faulty motor patterns should be attacked in simpler units and later combined in appropriate order.<sup>44</sup>

Orton states that "Many of the delays and defects in the development of the language function may rise from deviation in the process of establishing unilateral brain superiority in individual areas. Such disorders should respond to specific treatment if we become sufficiently keen in our diagnosis and if we prove ourselves clever enough to devise the proper training methods to meet the needs of each particular case."<sup>45</sup> Orton's work was further developed and modified by Anna Gillingham and Bessie Stillman. A clinic is currently maintained in Winston-Salem, North Carolina.

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<sup>43</sup> James J. McCarthy and Joan F. McCarthy, Learning Disabilities (Boston: Allyn and Bacon, Inc., 1969), p. 42.

<sup>44</sup> Ibid., pp. 60-62.

<sup>45</sup> Orton, op. cit., p. 200.

Robert E. Valett

Presently serving as an educational psychologist on the staff at Fresno State College, Dr. Robert Valett published one of the first recognized works in the field of Learning Disabilities. This publication was an attempt to offer practical suggestions to the classroom teacher in her efforts to instruct the learning disabled child.

Valett's theory centers around a profile he refers to as "psychoeducational growth and development" which includes a list of fifty-three basic abilities the individual should learn. These basic areas of development and specific skills are listed as follows:

GROSS MOTOR DEVELOPMENT

1. Rolling
2. Sitting
3. Crawling
4. Walking
5. Running
6. Throwing
7. Jumping
8. Skipping
9. Dancing
10. Self-Identification
11. Body Localization
12. Body Abstraction
13. Muscular Strength
14. General Physical Health

SENSORY-MOTOR INTEGRATION

15. Balance and Rhythm
16. Body-Spatial Organization
17. Reaction-Speed Dexterity
18. Tactile Discrimination
19. Directionality
20. Laterality,
21. Time Orientation

## PERCEPTUAL-MOTOR SKILLS

22. Auditory Acuity
23. Auditory Decoding
24. Auditory-Vocal Association
25. Auditory Memory
26. Auditory Sequencing
27. Visual Acuity
28. Visual Coordination and Pursuit
29. Visual-Form Discrimination
30. Visual Figure-Ground Differentiation
31. Visual Memory
32. Visual-Motor Memory
33. Visual-Motor Fine Muscle Coordination
34. Visual-Motor Spatial-Form Manipulation
35. Visual-Motor Speed of Learning
36. Visual-Motor Integration

## LANGUAGE DEVELOPMENT

37. Vocabulary
38. Fluency and Encoding
39. Articulation
40. Word Attack Skills
41. Reading Comprehension
42. Writing
43. Spelling

## CONCEPTUAL SKILLS

44. Number Concepts
45. Arithmetic Processes
46. Arithmetic Reasoning
47. General Information
48. Classification
49. Comprehension

## SOCIAL SKILLS

50. Social Acceptance
51. Anticipatory Response
52. Value Judgments
53. Social Maturity<sup>46</sup>

Consecutive numbering of each of the fifty-three abilities allows paring of that skill with specific teaching activities which are listed under that number in the Handbook. Valett's suggestions

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<sup>46</sup> Robert E. Valett, The Remediation of Learning Disabilities: A Handbook of Psychoeducational Resource Programs (Palo Alto, California: Fearon Publishers, 1967), Contents.

are readily applicable to the classroom since they pinpoint specific activities designed to develop the particular skill in question.

In 1966, Valett published a Psychoeducational Profile of Basic Learning Abilities in an effort to improve educational planning for learning disabled children. This is not a new test instrument but serves as a method to compile and integrate available information and test data. Also in 1966, the Valett Developmental Survey of Basic Learning Abilities was published for use by classroom teachers. This instrument was aimed toward pre-school and kindergarten levels for children ages two through seven. It identifies adilities in motor integration and physical development, tactile discrimination, auditory discrimination, visual-motor coordination, visual discrimination, language development and verbal fluency, and conceptual development. The Survey is most effective when used in conjunction with an educational consultant who can assist the teacher in implementing a developmental program for the individual student.

In 1968, Valett developed A Psychoeducational Inventory of Basic Learning Abilities which proved to be another survey instrument for use with elementary school-age children. The Inventory is based on the fifty-three abilities cited earlier and is designed to be administered by teachers. Valett suggests the use of additional tests such as the "Frostig", to supplement information since the Inventory is not a standardized instrument.

Valett had made an exceptional effort in bringing learning disability theory and methodology to a useable form for the classroom teacher. He has provided a comprehensive remediation program for a lacking area.<sup>47</sup>

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<sup>47</sup> Gearheart, op. cit., pp. 72-75.

## Chapter IV

### EVALUATION MATERIAL

While the field of learning disabilities has experienced a number of widely varying theories, diagnostic materials used by the different theorists sometimes overlap. This section is devoted to the delineation and discription of the most popular instruments used in this evaluative area. Theoretically, the "good" evaluator would incorporate any instrument which would provide information leading toward the most appropriate individualized approach for the particular case. Therefore, no specific "batteries" of tests will be identified.

Bender-Gestalt Visual Motor Test      American Orthopsychiatric Asso., Inc.  
49 Sheridan Ave., Albany, N.Y. 12210

This test is designed to measure perception and organization. It requires the individual to reproduce nine configurations of varying complexity. It is scored according to the degree and types of errors the individual demonstrates in his reproductions. It has been said that levels of maturity and possible neural dysfunctions have been identified by the instrument. It should be pointed out that factors such as poor visual functioning, emotional problems, auditory perception difficulties, educationally non-stimulating environments, etc., might have negative effects on performance. Therefore, the examiner should remain open to a number of possibilities and not limit himself to only one explanation for the test results.

Detroit Test of Learning Aptitude (DTLA) Babbs & Merrill Co.  
Indianapolis, Indiana

The DTLA is a test which contains nineteen subtests designed to test in the following general intelligence areas: 1) Reasoning and Comprehension; 2) Practical Judgment; 3) Verbal Ability; 4) Time and Space Relationship; 5) Number Ability; 6) Auditory Attentive Ability; 7) Visual Attention Ability; and 8) Motor Ability. The examiner, a trained psychologist, will select from nine to thirteen of the sub-tests best suited to the needs of the particular situation. This is an individually administered test which yields, in addition to a general mental age, a series of subtest mental ages, rank ordered and graphed on a visual profile. The test is suitable for pre-school children as well as high school students.

Frostig Developmental Test of Visual Perception Consulting Psychologists Press  
577 College Ave.  
Palo Alto, Calif. 94306

Developed by Dr. Marianne Frostig, the DTVP is designed to evaluate the student's level of functioning in five areas of visual perception: 1) visual-motor coordination; 2) figure-ground perception; 3) perceptual constancy; 4) perception of position in space; and 5) perception of spatial relationships. It was obvious to Frostig that if a child was to be successful in academic endeavors, he must be able to perceive visual input accurately. The developmental period during which most of this skill is mastered falls between the ages of  $3\frac{1}{2}$  and  $7\frac{1}{2}$  years. The five areas to be evaluated are said to develop independently of each other so that information

relating to each area is necessary for a total picture to be constructed.

The test is designed for use by classroom teachers as well as by psychologists and specialists in other disciplines.

Illinois Test of Psycholinguistic Abilities The Psychological Corp.  
(ITPA) 304 E. 45th St., New York, N.Y.

The ITPA is directed more toward the specific delineation of abilities and disabilities in children for remediation purposes than toward classification of individuals. The representational level of the instrument consists of activities requiring ability to attach meaning or significance to auditory or vocal symbols. The automatic level deals with the less complex, more automatic processes. The ITPA consists of 12 tests as follows:

- 1) Auditory Reception - measuring the ability of the individual to derive meaning from verbally presented material.
- 2) Visual Reception - measuring ability to gain meaning from visual symbols.
- 3) Auditory Association - measuring ability to relate concepts presented orally.
- 4) Visual Association - measuring ability to relate concepts presented visually.
- 5) Verbal Expression - measuring ability to express own concepts vocally.
- 6) Manual Expression - measuring ability to express ideas manually.
- 7) Grammatic Closure - measuring ability to make use of the redundancies of oral language in acquiring automatic habits for handling syntax and grammatic inflections.
- 8) Visual Closure - measuring ability to identify a common object from an incomplete visual presentation.
- 9) Auditory Sequential Memory - measuring ability to reproduce from memory sequences of digits increasing in length.
- 10) Visual Sequential Memory - measuring ability to reproduce sequences of nonmeaningful figures from memory.
- 11) Auditory Closure - measuring ability to fill in missing parts which were deleted in auditory presentation and produce a complete word.
- 12) Sound Blending - measuring ability to synthesize the separate parts of the word and produce an integrated whole.

Minnesota Percepto-Diagnostic Test (MPD) Clinical Psychology  
Publishing Co., Inc.  
4 Conant Square, Brandon, Vt.

The MPD attempts to assess visual perception and visual motor abilities. The subject is asked to copy six Gestalt designs which are scored for degrees of rotation, separation, and distortion.

Oseretsky Tests of Motor Proficiency American Guidance Service, Inc.  
Publishers' Building, Circle  
Pines, Minnesota

This instrument attempts to evaluate fine and gross motor development of children ages 4-16 years. The year by year scale includes tasks which require general static coordination, dynamic coordination of the hands, general dynamic coordination, motor speed, simultaneous voluntary movements, and performance without extraneous movements.

Peabody Individual Achievement Test American Guidance Service, Inc.  
Publishers' Building, Circle  
Pines, Minnesota

The Peabody Individual Achievement Test is an easily administered test which provides a wide-range survey of the individual's educational level in basic skills and knowledge. The PIAT is divided into five subtests: mathematics, reading recognition, reading comprehension, spelling, and general information. It is designated usually as a screening instrument.

Peabody Picture Vocabulary Test (PPVT) American Guidance Service, Inc.  
Publishers' Building, Circle  
Pines, Minnesota

The PPVT represents an individually administered test which is simple and quick. The test consists of 150 plates, four pictures each, which make up a wide range picture vocabulary sample. The

subject responds by indicating the picture (one of the four) which corresponds to a verbal stimulus provided by the examiner. The age range for the test is 2 years 6 months to adult. Administration and scoring time is 15 minutes or less. Resulting raw scores are quickly converted into mental ages, standard score I.Q.'s and percentiles.

Primary Mental Abilities Test (PMA) Science Research Associates, Inc.  
259 E. Erie St.  
Chicago, Ill. 60611

The Primary Mental Abilities Test is designed to be administered on an individual basis and to provide a multifaceted as well as a general measure of intelligence. It is based on five primary mental abilities and the resulting profile is often quite helpful to the teacher or counselor in his attempt to understand the varying behavior of children who appear to be of similar intelligence. The Verbal meaning (V) score identifies the person's ability to understand ideas expressed in words. His ability to work with numbers, to handle simple quantitative differences is reflected in the number facility (N) score. Reasoning (R) tests are aimed toward the ability to solve logical problems. Perceptual speed (P) reflects a person's ability to recognize likeness and differences between objects and symbols. Spatial Rotations (S) deals with his ability to visualize figures and objects rotated in space and how these objects/figures relate to one another.

The test requires approximately one hour to administer. The Perceptual Speed (P) is the only section which requires accurate timing. Levels K-3, 4-6, and 6-9 are evaluated.

Psychoeducational Inventory of Basic Learning Abilities by Robert E. Valett

Fearon Publishers  
Belmont, California

This inventory was designed with teachers and educators in mind. The inventory is to be used in the initial evaluation of suspected learning disabled children at the elementary or high school level. It provides very specific educational programs for the population it delineates. Six major areas of development are surveyed: Gross Motor Development, Sensory Motor Integration, Perceptual Motor Skills, Language Skills, Conceptual Skills, and Social Skills.

Purdue Perceptual-Motor Survey Charles E. Merrill Publishing Co.  
1300 Alum Creek Drive  
Columbus, Ohio 43216

The Purdue Perceptual-Motor Survey has three major subject areas: directionality, perceptual-motor matching and laterality. Strengths and weaknesses are readily visible when entered on a performance profile. The Survey is sub-divided into 11 tests with specific instructions, ratings, and procedures.

SRA Achievement Series: Arithmetic (1957) Science Research Associates  
259 East Erie St.  
Chicago, Ill. 60611

It is important to make early identification of learning disability problems. Often it is difficult to determine or differentiate between a child's ability to do mathematical problems and his ability to avoid a reading problem. The instrument consists of exercises in recognizing number symbols, understanding cardinal and ordinal use of numbers, time and money concepts as well as a few simple comparisons of quantity.

Templin-Darley Tests of Articulation Univ. of Iowa Bureau of Educ.  
Research & Service  
Iowa City, Iowa.

This is a printed form picture test and is useful to clinicians in diagnosing specific speech problems.

Vineland Social Maturity Scales American Guidance Service, Inc.  
Publishers' Building, Circle Pines,  
Minnesota

The "Vineland" is directed toward identifying the presence of specific behaviors which indicate a progressive capacity for adult independence. The behaviors are arranged in increasing difficulty from birth to maturity. Six categories are surveyed: Self-Help, Self-Direction, Occupation, Communication, Locomotion, and Socialization. It is administered by an array of professional persons in an interview capacity.

The Wechsler Scales The Psychological Corporation  
304 E. 45th St., New York, N. Y. 10017

The Wechsler Scales are probably one of the most widely used diagnostic instruments presently available. In addition to providing a score of general intelligence (IQ) it subdivides activities into Verbal Scales and Performance Scales and reflects abilities as they relate to each of these areas. A number of instruments have been developed which purport diagnosis of emotional disturbance, brain damage and the like by additional interpretation of the scale scores of the tests.

The Scales are now four in number:

Wechsler Preschool and Primary Scale (WPPSI) ages 4-6½  
Wechsler Intelligence Scale for Children (WISC) 5-15  
Wechsler Adult Intelligence Scale (WAIS) 15 and up  
Wechsler Intelligence Scale for Children - Revised (WISC-R) 5-16

In basic design, the scales designate one specific area to evaluate and progress from easiest to most difficult. The specific areas identified are, in the verbal section: information, comprehension, arithmetic, similarities, vocabulary and digit span; and in the performance section: picture completion, picture arrangement, block design, object assembly, coding, and mazes (optional). Specifically, in the Verbal section, information questions attempt to identify the person's level of early learning of basic bits of information. It reflects the individual's exposure to educational stimulation and cultural experience and the score will be depressed in cases of cultural or educational deprivation. The Comprehension section attempts to measure one's understanding, judgement and acceptance of conventional standards of behavior as well as to evaluate his ability to use past experience in practical applications. The Arithmetic section is directed toward memory, concentration and numerical fluency. Since this section is closely timed, scores often reflect the individual's reaction to time pressure and emotional stress. Concept formation, ability to think abstractly, and ability to make logical connections are evaluated in the Similarities section. The Vocabulary section involves the individual's ability to express verbally word meanings he has acquired. This section, as did Information, is likely to produce lower scores in cases of educational or cultural deprivation. The Digit Span section is designed to measure immediate recall, attention, concentration, auditory receptivity and rote memory. In performing these tasks, the individual must be able to screen out stimuli resulting from anxiety, etc. Scores will be depressed when the individual is deficient in this screening ability.

The Performance Section is said to possess a high interest factor. The Picture Completion sub-test attempts to measure alertness to the environment and the ability to perceive detail. One must have previous experience and be able to relate that experience to the determination of missing parts in a given object picture. Picture Arrangement involves social alertness and the ability to see cause and effect relationships. The individual must size up a total situation as depicted on several cards, anticipate and plan the outcome, and arrange the pictures in logical order. Block Design is another of the self-motivating activities on the test. In this timed section, the individual must perceive and analyze patterns (two color) and reproduce the pattern with blocks. The ability to see part-whole relationships is important as well as adequate visual-motor coordination. Object Assembly is also timed and involves the construction of a familiar form from a group of parts. The individual must be able to analyze the parts as they relate to the whole and work in a flexible manner to be successful. Coding measures perceptual speed, eye-hand coordination, accuracy, psychomotor speed, attention, and is often affected by time pressure, anxiety, and poor motivation. An optional sub-test, Mazes, measures foresight, planning ability, and visual-motor coordination.

An optional scoring technique has been identified by Bannatyne (1968) in which the scale scores of the Picture Completion, Block Design, and Object Assembly are added to derive a Spatial Score and Comprehension, Similarity and Vocabulary scales scores make up a Comprehension Score. A third score, Sequence Score, is obtained by combining the scale scores of Digit Span, Picture Arrangement, and Coding.

Waugh and Bush (1970) have also identified an optional grouping of scores into six different areas: Spatial, Conceptual, Sequencing, Perceptual Organization, Verbal Comprehension, and Freedom from Distractibility. Their method purports to identify specific areas of difficulty requiring remediation.

The Wechsler Scales are rigid in administration and requires a trained examiner for proper administration. Each level of the Scale requires approximately one hour to administer and are carried out on an individual basis.

Wepman Auditory Discrimination Test      Language Research Associates  
300 N. State St., Box 5607  
Chicago, Ill. 60610

This test is designed to assess the subject's ability in auditory discrimination. It consists of forty pairs of words that are similar except for one sound and should be administered by a qualified person.

Wide Range Achievement Test (WRAT)      Guidance Associates, 1526 Gilpin,  
Wilmington, Delaware

This instrument is divided into three sub-tests (reading, spelling, and arithmetic) and each sub-test is designed for two levels. Level I is geared for individuals ages 5 years 0 months to 11 years 11 months while Level II is constructed for persons 12 years 0 months to adulthood. The reading sub-test attempts to evaluate the individual's ability to recognize and name letters and to pronounce words. The spelling sub-test is designed to evaluate his ability to copy marks which resemble letters, to write his name, and to write single words from dictation. The arithmetic section is aimed toward counting, reading number symbols, solving oral problems, and performing written computation.

The WRAT seems to have proven its worthiness in the diagnostic field. In particular, areas of reading, spelling, and arithmetic disabilities for persons of all ages can be evaluated with specific results. The instrument has been used to evaluate the educational achievement of adults referred to Vocational Rehabilitation for training and/or job placement and for the selection of persons to fill various positions in business, industry and the National Services. It has also been used to select students for special technical schools and professional institutions of learning. Probably its most popular use has been within schools to determine the functional levels of school children and to compare the achievement in school with other variables, especially in disturbed or maladjusted children.

Results on the WRAT are reported in grade rating, percentiles, and standard scores or deviation quotents based on grade ratings. While grade ratings are reported to be a rather arbitrary score and may vary with socio-economic levels, it is also said to be a rather stable score. Grade rating for children below 14 years of age seems to be less arbitrary than for older individuals. The WRAT standard score has as its mean 100 and a standard deviation of 15. The results of this instrument can be directly compared to both the Wechsler Scales and the Stanford-Benet since they are statistically similar. The standard score of the WRAT represents the learning rate, rather than achievement and is thus a more meaningful score. Standard scores of the WRAT are broken down in the following classification system.

Standard Score	Classification
130 and up	very superior
120 - 129	superior

Standard Score	Classification
110 - 119	high average
90 - 109	average
80 - 89	low average
70 - 79	inferior
69 and below	defective

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48

Bob M. Van Osdol, William R. Van Osdol, and Don G. Shane, Learning Disabilities K-12 Manual (Moscow, Idaho: Idaho Research Foundation, Inc., 1973), pp. 25-45.

## CONCLUSIONS

What Does Vocational Rehabilitation Have to Say?

An article in the May-June, 1972 issue of the Journal of Rehabilitation approaches "The Emerging LD Crisis" from a VR standpoint. In this article, Dr. Elisabeth Wiig, Assistant Professor in Special Education at Boston University says that while our elementary and junior high school programs are beginning to adapt their programs to serve the learning disabled child, problems associated with learning disabilities are not unique to younger children. Indeed, these "disabilities" are present in older individuals. "If the problems are minimal, they may not be recognized till the question of higher education or of a vocation arises." <sup>49</sup> Later, she states that while these disabilities are not irreversible and early remedial procedures have proven successful, "specific academic and vocational limitations may result from the <sup>50</sup> basic perceptual problems in learning disabilities".

In applying our established system to a learning disabilities case, one finds that, in order to be successful in academics or a vocation, the individual must be able to produce specific results on written tests, and must demonstrate an ability to read well. Often times the learning disabled person is not able to perform up to par in these areas. "A secretary who cannot fold a letter neatly,

<sup>49</sup> Elisabeth Wiig, "The Emerging LD Crisis," Journal of Rehabilitation, Vol. 38, No. 3 (May-June, 1972), p. 15.

<sup>50</sup> Ibid., p. 16.

a waitress who cannot set a table correctly, or a mailman who had problems in sorting and classifying mail become vocational hazards." 51

The implications of such situations and their relation to a Rehabilitation Plan seem obvious. In order to effectively "rehabilitate" a person of this type, adaptation is in order. It is important for the Vocational Rehabilitation Counselor to work closely with the Psychologist in determining the adaptations needed. Taping of lectures, programmed texts, oral examinations, recorded material, etc., may play important parts in such a rehabilitation plan. 52

#### A Parent Speaks Out

"It is difficult to make a prediction about a child like Joey. It's difficult to gain his cooperation in a testing situation and thus determine what his learning potential is. And there is no way of determining his potential to function at a particular job. They are unable to tell us if he will ever function independently of us." 53

Despite the varying opinions relating to learning disabilities, it does seem likely that these individuals do possess the potential to become self sufficient and productive members of society. Therefore, it seems to be mandatory that educators make every attempt to adequately identify and serve these individuals. In an effort to comply with these demands, the author and the Burke County Board of Education have designed two pilot programs for the 1974-75 school year to serve children with

special needs. One of the programs, an adapted physical education class, will be included in the high school curriculum and will be geared to serve individuals identified as having visual-motor coordination problems. A second program, an occupational school for children with special problems will function as an option for individuals who are unable to profit from the regular education curriculum. Initially the school will serve only individuals identified as trainable mentally retarded but expansion to serve learning disabled and emotionally disturbed students is planned. It is hoped that the achievements of these two pilot programs will foster the development of additional services for learning disabled individuals and continued support for those presently in existence. With appropriate attention and funding, adequate programs for the learning disabled can, and hopefully will, be commonplace.

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51

Ibid.

52

Ibid.

53

Phyllis Stewart, "Net result will be seven million winners," Long Island Press, Sunday, February 17, 1974.

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