

DOCUMENT RESUME

ED 123 859

EC 090 227

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 TITLE Team Approach in Assessment and Treatment of Children with Learning Disabilities.  
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 PUB. DATE [76]  
 NOTE 20p.

EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.  
 DESCRIPTORS Definitions; \*Etiology; Exceptional Child Education; \*Identification; \*Interdisciplinary Approach; \*Learning Disabilities; Screening Tests; \*Teaching Methods

ABSTRACT

The etiology and identification of learning disabilities are summarized and a team approach in assessment and treatment is suggested. Topics covered include definition of learning disabilities (definitions which refer to central nervous system functioning and definitions which emphasize the learning and behavior disorders without central nervous system reference); characteristics for identifying a learning disabled child (such as inappropriate behavior, poor memory, and hyperactivity); 16 specific areas of problems (which include auditory and visual association, verbal expression, and spatial relationships); tests used in discriminating children with learning disabilities (including the Purdue Perceptual Motor Survey, the Wepman Auditory Discrimination Test, and the Wechsler Intelligence Scale for Children); and methods used to teach children with learning disabilities (such as patterning exercises, individual activities, and visual training). Stressed is the need for early identification of children with special problems by an interdisciplinary team of professionals including psychologists, neurologists, pediatricians, audiologists, ophthalmologists, electroencephalographers, specialists in communicative disorders, social workers, and educators. (SB)

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## TEAM APPROACH IN ASSESSMENT AND TREATMENT OF CHILDREN WITH LEARNING DISABILITIES

Until recent years, children who had problems in learning and adjustments were categorized as mentally retarded, sensorily impaired, or emotionally disturbed. In some cases, special education classes were established to teach these unfortunate children. More often the children were ignored due to lack of knowledge, facilities, and interest. However, it was discovered that, given the opportunity, many so-called "mentally retarded" children performed at high levels in certain areas, and when proper stimulation was provided others overcame their "retardation."

Often a learning disabled child is classed as a lazy student, a dunny, the class clown, or one grossly lacking motivation. He may also be recognized as a juvenile delinquent or a drug addict. Often this child disrupts the class and cannot follow the instruction. He is also categorized as undisciplined, bored, underachieving, spoiled, slow learning, and daydreaming. At first the parents may be led to believe that their child will outgrow this difficulty, but as the student falls progressively behind in his schoolwork so, correspondingly, do the behavior problems increase.

### Definition of Learning Disabilities

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### Definition of Learning Disabilities

Just what does the term "learning disabled" mean? According to Bannatyne, "a child with learning disabilities is one who has a number

of specific deficits in perceptual, integrative, relational, or expressive processes not attributable to sense-organ defects which impair learning efficiency. This includes children who have central nervous system dysfunction which is expressed primarily in impaired learning efficiency" (Bannatyne, 1973).

The following definition has been suggested by the National Advisory Committee to the Bureau of Education for the Handicapped which is a branch of the U.S. Office of Education:

Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or using spoken or written language. 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 aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, or to mental retardation, emotional disturbance, or to environmental disadvantage.

Children With Special Learning  
Disabilities Act of 1969, PL91-230  
The Elementary and Secondary  
Amendments of 1969 (Bryan and Bryan,  
1975)

This definition is used to prepare proposals for federal funding of services for learning disabled children.

The State of Michigan defines a learning disabled child as:

A person identified by an educational planning and placement

committed based on a comprehensive evaluation by a qualified school psychologist as having one or more of the following problems:

- A) disorder in the basic psychological process in spoken or written language
- B) disorder of a visual perceptive nature
- C) disorder of the cognitive or psychomotor domains
- D) unsatisfactory performance not based on educational or cultural background
- E) child needs a special educational setting in which to function

Mandatory Act R 340.1713 Rule 13.

Kirk's definition, as quoted by Lerner, emphasizes difficulty in academic and learning tasks:

A Learning Disability refers to a retardation, disorder, or delayed development in one or more of the processes of speech; language, reading, writing, arithmetic, or other school subjects resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbance. It is not the result of mental retardation, sensory deprivation, or cultural or instructional factors (Lerner, 1976).

Myklebust supports Kirk's definition by stating that the learning disability group is homogeneous in that it consists of children who are not primarily retarded, emotionally disturbed, sensorially impaired, culturally deprived, or grossly cerebral palsied, yet who are unable to learn and profit from the normal educational experiences.



The group is heterogeneous, in that the learning problems vary in both type and degree (Mykelbust, 1963).

"Because of the heterogeneous nature of this group of children, the concept of specific learning disability has been hard to define," says Kirk (1972). Many labels are used to define a learning disabled child, such as "dyslexic child," "perceptually handicapped child," and "neurologically handicapped child." The terms "minimal brain dysfunction" and "central nervous system dysfunction" are often used to define these children. "Specific language disability" is used for children with problems in that area and "aphasia" is used for children with delayed speech. The area of learning disabilities is of interest to parents and educators, as well as psychiatrists, neurophysiologists, psychologists, speech pathologists, family physicians, and many others. Because of the wide area of approach to this subject it is extremely difficult to arrive at any one single definition.

There seem to be two categories of thought in defining a child with learning disabilities: 1) definitions which apply reference to the functioning of the central nervous system as they relate to learning disabilities and 2) those definitions which emphasize the learning and behavior disorders without special reference to central nervous system etiology or minimal brain dysfunction as the cause (Kirk, 1972).

Clemments (1966), in his definition, puts emphasis on the deviant functions of the central nervous system as the cause of behavior abnormalities ranging from mild to severe. He states:

Children of near average, average, or above average general intelligence with learning and/or certain behavioral abnormalities ranging from mild to severe, which are associated with subtle deviant functions of the central nervous system. These may be characterized by various combinations of deficit in perception, conceptualization, language, memory and control of attention, impulse; or motor function (Clements, 1966).

To summarize the various definitions cited above, one could say that a child with learning disabilities is not a retarded child. On the contrary, he is intelligent enough to know that he is experiencing trouble in learning and adjusting. He recognizes his perceptual problems; he feels his lack of organization and ability to put into meaning what he sees, hears, and thinks. Usually he has no obvious physical handicaps. He is not primarily emotionally disturbed, although he frequently displays inappropriate behavior. He comes from any economic level, racial origin, or religious background. His problems center in the areas of reading, writing, and language usage. Often a learning disabled child is a boy rather than a girl.

Characteristics

What are the general characteristics or warning signs to look for in identifying a learning disabled child?

1. He can't cope, although he has normal or above-average I.Q.
2. His behavior is inappropriate. He makes disruptive noises, ignores requests, or engages in idleness. Example: He stares at the wall or out of the window.



3. He is distractible.
4. He displays apparent laziness; he seems to have a low energy level.
5. He shows signs of withdrawal.
6. His attention span is short. Also he is a poor listener and often misunderstands instructions.
7. He is uncooperative in his voluntary participation.
8. He has poor memory.
9. He displays poor coordination.
10. He is hyperactive. For example, he stands up constantly, runs around, turns in his chair, or rocks.
11. He works from right to left, not from left to right.
12. He confuses laterality; for example, right and left.
13. He writes letters upside down or backwards.
14. He walks, runs, and skips more awkwardly than his peers.
15. He is aggressive.
16. He rejects his peers, or his peers reject him.
17. He shows general confusion about direction.
18. He is usually a disorganized person. Often his desk is messy and he can't find things.
19. He is impulsive. He does the unexpected. For example, he hits or kicks other pupils, walks aimlessly about, constantly seeks attention.
20. He functions well below the level of expectation in reading, writing, and related language arts techniques.

The child may not have problems in all of these areas, but if he shows three warning signs then parents and teachers have legitimate reason to seek professional help.

Specific Areas of Problems

- A learning disabled child may be lacking in one or more of the following 16 skills:

1. Auditory reception--the ability to comprehend the spoken word. In observing classroom behavior, a teacher may observe a child who seems to be normally intelligent in most areas, but who is unable to grasp very simple, short directions. This child usually enjoys stories or understands directions if pictures; diagrams, or gestures are used.

2. Visual reception--the ability to comprehend pictures and written words. The child fails to grasp context clues when reading from the illustrations in readers. Frequently he cannot explain what is happening. When asked to rearrange a series of pictures in the proper order, he may have difficulty. Often he can succeed better if he is asked to verbalize what is happening in each picture.

3. Auditory association--the ability to draw relationships from what is heard. It is necessary for the child to hold two concepts in mind and find their parallel aspects--to understand not only two isolated concepts, but the relationship between the two. Children who experience difficulty in this area often do foolish things because they do not see the present situation in relationship to past experience or future consequences. They do not see the two situations in juxtaposition. It is often difficult for them to generalize from one situation to another.



4. Visual association--the ability to relate meaningful visual symbols. Visual association is the organizing process whereby a child sees the relationship between concepts presented visually. Here again the child must keep the two concepts in mind and recognize the point to point correspondence between them. For example, he must see that a pin and a thimble have a relationship to each other because they are used together in sewing. When asked to tell about a picture, a child with poor visual association is more apt to describe objects or label them than to tell a story or relate various parts of the picture. He may also do poorly in craft work because he does not see the relationships among materials or develop parallel ideas to others seen. These children often fail to see absurdities in pictures and have difficulty grasping the content of a story from a series of pictures in the right sequence.

5. Auditory memory--the ability to retain and recall information. Factors such as distractability, anxiety and hyperactivity influence a child's ability to remember a sequence of auditory stimuli long enough to make use of the information. The child with poor auditory memory may be poor in spelling, and if he goes up to the teacher to ask how to spell a word, he may not remember it long enough to get back to his seat and write it down. He often gets the sounds or syllables of a word twisted, reverses number or letter sequences or cannot remember directions long enough to execute them. He may be poor in phonics because he cannot remember the sounds long enough to blend them.

Often the child has a history of not being able to learn his address, nursery rhymes, to count, or the alphabet. It is not uncommon for the child to be slow in speech and articulation. Sometimes he tries to repeat things to himself in order to rehearse them, hoping in this way to remember.

6. Visual memory--the ability to correctly reproduce a sequence of symbols. One determining factor in poor visual memory may be a correlated visualization problem. The child frequently shows reversals in reading and spelling, in writing his name, in recognizing sight words, and in finding the right page number. He cannot remember a word or series of numbers long enough to get to the blackboard to write it. In reading, he is dependent upon phonics and often remembers items better if he can say them out loud or write them down.

7. Auditory closure--the ability to vocalize a word with a syllable left out, when heard.

8. Grammatical closure--the ability to use grammar in the right place.

9. Sound blending--the ability to synthesize the sounds into a word.

10. Visual closure--the ability to add the left-out portion of a pattern that is seen.

11. Verbal expression--the ability to express one's ideas in spoken words. A child with poor verbal expression will answer most questions with one-word answers or not at all, or he may answer specific questions but fail to divulge what information he does know

on more open-ended questions where he has to initiate ideas. He may rely on gestures to express himself. Many of these children would rather draw a picture or demonstrate with their hands or show how a thing is done than tell about it. The young child may point but say nothing or may spill out a few disconnected words. The older child can sometimes express himself well on paper but does poorly in oral work.

12. Manual expression--the ability to express one's ideas in gestures.

13. Visual motor--the ability to coordinate eye-hand skills.

14. Figure ground--the ability to recognize certain figures regardless of size, shape, texture, or position.

15. Position in space--the ability to discriminate reversals and rotations of figures presented in series.

16. Spatial relations--the ability to recognize the position of objects in relationship to themselves and of objects in relationship to any number of other objects, such as up and down, over and under, inside and outside. The child with a problem in this area cannot tell time.

#### Causes

Learning disability is not a form of retardation. It is sometimes caused by prenatal and birth complications, such as inadequate oxygen at the time of birth, brain damage, nutrition factors, maturational lag, high fever, or toxic chemicals during infancy. It may occur in as high as 20% of all school children.

Although brain injury is assumed to be one of the major causes of learning disability, a few cases may develop from severe emotional problems. "A child may develop learning problems, for example, if his world is so chaotic that he simply does not go through the normal steps of childhood development. Severe cultural deprivation may also be at the root of such problems. A slum child who is rarely spoken to and has nothing to play with to develop the skills of hand, eye, and brain will obviously not develop normally. An intriguing, though unproven theory holds that TV is a form of sensory deprivation that may contribute to learning disability in some children--that a child who spends thousands of hours gawking at the tube during his early years does not spend time exploring his world and learning to relate himself to it. There are some types of learning disabilities that run in families and are often inherited through the father's side" (Lerner, 1976).

One must be absolutely honest in saying that the exact cause for learning disabilities is not known as yet. It is difficult to say that all LD children have neurological problems, nor can they all be diagnosed as hyperactive youngsters. To render effective service to those children who have learning problems, much research is needed in this relatively new area of special education.

Since some of the causes of minimal brain dysfunction appear to be genetically based, doctors emphasize the necessity for a complete examination of children who are suspected of having learning disabilities. The examination includes:

PBI test for thyroid

Glucose tolerance test

Calcium and complete blood tests

Bone marrow test to detect endocrine problems

Kidney, examination

Chromosome studies

Electroencephalograph (EEG) test

Screening instruments are used in areas of intelligence, perception, language, audiometric, and reading diagnosis. Tests used in discriminating children with learning disabilities include the following:

1. Purdue Perceptual Motor Survey--this test is used to identify children lacking perceptual motor abilities necessary for acquiring academic success.
2. Purdue Hand Precision Test--children's eye-hand coordination and various skill areas are measured by this test.
3. Purdue Pegboard--this test is for checking visual perception, dominant hand, transfer of patterns, etc.
4. Wepman Auditory Discrimination Test--children are asked to auditorially discriminate between like and different sounds when given two words. From items missed, the teacher may be able to identify specific phoneme areas.
5. The Wechsler Intelligence Scale for Children (WISC)--This test assesses children's intelligence performance between the ages of six and sixteen.

6. The Wechsler Preschool and Primary Scale of Intelligence (WPPSI)--designed to cope more effectively with the psychometric problems presented in testing children between four and six and a half.
7. Bender Visual-Motor Gestalt Test (Bender, 1938)--a maturational test in visual motor gestalt functions of children, designed to explore retardation, regression, loss of function, and organic brain defects in both children and adults, and to explore personality deviations especially where there are regressive phenomena.
8. Draw A Man Test (Harris, 1963)--children are asked to draw a human figure.
9. Cross Motor Tests (Vuckovich, 1968)--this test includes a) hopping on either foot; b) standing on one foot; c) tandem walking, heel-to-toe; d) observation of child's walking gait.
10. Fine Sensory-Motor Tests (Vuckovich, 1968)--the Finger-Agnosia Test assesses the child's ability to recognize, through tactile sensation, which of his fingers is being touched by the examiner.

#### Education Facilities for the LD Child

Educational programming for children with learning disabilities depends on the definition of the population and the individual disorders. Since there are many reasons for learning difficulties and school failures, the group must be defined. Because of the variety of symptoms manifested, it is necessary to analyze each child's learning patterns and problems. The homogeneity, as well as the

heterogeneity, of the population must be considered before planning remedial programs. Without a definition and diagnostic study, there is little basis for placing children in special education programs. Moreover, the methods and procedures are apt to be selected randomly without a frame of reference or rationale.

Recognizing the complexity of the human brain, as well as the forms of verbal and nonverbal behavior that a child is expected to learn, it is evident that many types and combinations of problems can result from even a minor disturbance. Whereas some children have difficulty with perceptual skills, others have difficulty with memory. Therefore, none of the typical diagnostic categories, such as aphasia, dyslexia, perceptual handicap, or hyperkinesis is sufficiently inclusive to denote the total group.

As a result, one is compelled to use the broad term "learning disability" but, simultaneously, to define the individual problem.

The definition and classification of a learning disability can only be reached through a comprehensive study of the child. This is done by an interdisciplinary team of several professional persons including psychologists, neurologists, pediatricians, electroencephalographers, ophthalmologists, audiologists, specialists in communicative disorders, social workers, and educators. Such a study can rule out problems of mental retardation, emotional disturbance, auditory and visual acuity, and other physical handicaps which may hinder a child's learning process.

One point must be made clear: the earlier this comprehensive study is done by the multidisciplinary team, the better it is. The

benefit of early identification of children with special problems cannot be over-emphasized. Prolonged medical and educational or cultural deprivation will only add to the child's affliction.

Some of the methods which may be used to teach children with learning disabilities include:

1. Walking the rail. Children walk forward and backward on a 2" x 4" board set on edge. Eyes are kept on a target, such as a colored X pasted on the wall. If the child has difficulty focusing on the target, an auditory clue may be given.

2. Patterning exercises. Children lie flat on the floor. They slide their left knees from a straight to a bent position and their left arms from a side to a raised position while turning their heads left. This exercise can also be reversed.

3. Rhythms. By keeping time to a metronome, children do different types of exercises.

4. Reading. Children read aloud from their own pack of flash cards. The words used are those the children want to know. Experience charts and a standard beginning-reading series are used.

5. Individual activities.

- a. Games for tactile identification.
- b. Bow-tying.
- c. Form-copying on pegboard.
- d. Clapping together in imitation.
- e. Circle drawing.
- f. Circle and vertical line chalkboard-drawing using both hands simultaneously.

- g. Imitating drum-beat patterns.
- h. Using elastic exercisers.
- i. Solving the Montessori peg and hole problems. The child must insert the correct size into the appropriate hole.

6. Visual training. The room is darkened and the children use a flashlight to follow the curved pathways of a large pattern drawn on the board. The children also follow the teacher's Flashlight as she draws a line, square, or other pattern.

A few short years ago there were almost no materials available for use in teaching these children. Now the picture looks much brighter. A partial list of materials on the market at this time follows:

- 1. Academic Games Development--games for learning.
- 2. Auditory Discrimination Training--a program for pre-reading and beginning reading.
- 3. Children's World--a kit of multi-sensory materials for early enrichment and screening.
- 4. Concept Builders--write and see.
- 5. Dandy Dog's Early Learning Program--a readiness program.
- 6. Detect--a sensorimotor approach to visual discrimination.
- 7. Developing Learning Readiness Program--a motor and perceptual development program.
- 8. The Fitzhugh PLUS Program--perceptual training, spatial organization books, for reading and arithmetic.
- 9. I Can Do It--visual-motor activity exercises.
- 10. Inquisitive--games for exploring numbers.

The educational prospects of children with learning disabilities are continually improving and the future of such children is full of promise. A team approach of diagnosing the problem and treatment of it would help the child tremendously to either overcome his learning problems or to compensate for them.

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