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ABSTRACT

This paper describes the Self-Based Competency-Based introductory program in learning disabilities at Arizona State University that is designed to help students develop the basic competencies needed to know and understand why learning disabled children fail to learn. The 391 objectives included in this program were selected to provide students with competencies needed for successful entry into experiences that concentrate on how to remediate learning disabilities. The objectives are divided into 301 cognitive objectives; 64 affective objectives; and 26 skill objectives, which place emphasis on student demonstration of skill in the use of specific diagnostic techniques and instruments. The 32 units in the program are grouped into 9 modules that focus on a specific area. Each unit begins with a statement of cognitive objectives, affective objectives, and skill objectives and ends with a self-correcting posttest. (A nine-item bibliography is included, and a unit and posttests are appended.) (PD)

Application for Consideration
for the
1975 Distinguished Achievement Award
to the
American Association of Colleges of Teacher Education

Program: Self-Paced Competency-Based Introductory Program in Learning Disabilities

Institution: Special Education Department
College of Education
Arizona State University
Tempe, Arizona 85281

Applicants: Dr. Del D. Weber, Dean, College of Education
Dr. Willard Abraham, Chairman, Special Education Department
Dr. Larry A. Faas, Associate Professor, Special Education Department

Summary:

The self-paced competency-based introductory program in learning disabilities at Arizona State University was designed for use by students who wish to develop the basic competencies needed to know and understand "WHY" learning disabled children fail to learn. The 391 objectives included in the program were selected to provide students with competencies needed for successful entry into experiences which concentrate upon "HOW" to remediate learning disabilities.

The 391 objectives are divided into 301 cognitive objectives, 64 affective objectives and 26 skill objectives. The term "skill objective" is a modification of Bloom's "psychomotor domain" which places emphasis upon student's demonstration of competency or skill in the use of specific diagnostic techniques and instruments.

The 32 units included in the program are grouped into 9 modules. Each module focuses upon a specific area or topic. Each unit begins with a statement of cognitive objectives, affective objectives, skill objectives (where applicable) and ends with a self-correcting posttest.

The program currently being used is the second revision of the original program which was developed during the Summer of 1971. The original program and the

first revision were effectively used with over 600 students. The current program has been used successfully with 700 Arizona State University students and on two other college campuses since 1974.

Student's acceptance of the program has been enthusiastic. The fact that several former students have patterned their own public school teaching approaches after the program indicates the effect this program is having upon our graduates.

Development and Description of the Program

The self-paced competency-based introductory program in learning disabilities at Arizona State University combines two of the most exciting educational developments of this decade -- the widespread initiation of preparation programs for teachers of learning disabled children and the new emphasis upon competency-based teacher preparation. The current program is based upon the belief that:

1. The foundation of effective instruction is well planned written objectives.
2. Students should be able to examine the instructional objectives and expected levels of competency before enrolling in a course of instruction.
3. The length of time required to develop competency should be the variable in learning rather than the level of competency which students develop.
4. Students should, within reason, determine the rate at which they will pass through the instructional experience.
5. The instructional model should provide the learner with regular feedback regarding his mastery of the learning objectives.
6. Evaluation of student progress should be directly related to mastery of instructional objectives.
7. Grading should be related to mastery of previously announced competency levels rather than the comparison of one student's performance with that of another.

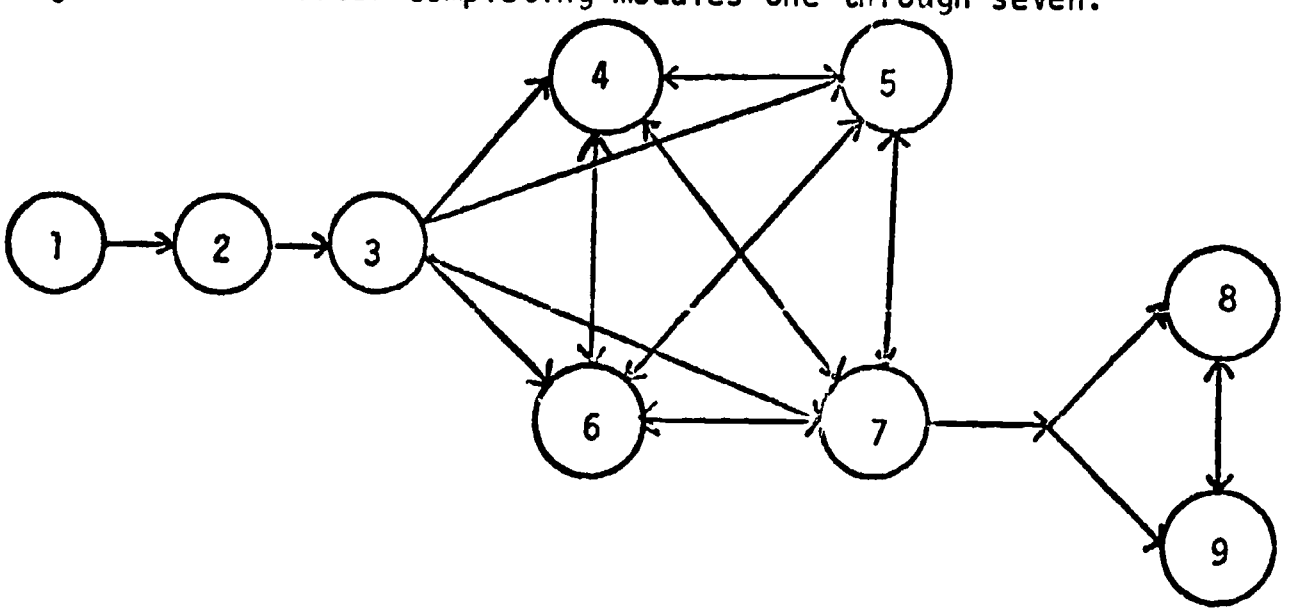
This introductory instructional program is designed for use by students who wish to develop the basic competencies needed to understand and know "WHY"

learning disabled children fail to learn. The 391 competencies included are selected to provide students with the background required for successful entry into experiences which concentrates upon "HOW" to remediate learning disabilities.

The thirty-two units included in this program are grouped into nine modules. Each module focuses upon a specific area or topic. Each unit begins with a statement of cognitive objectives, affective objectives, skill objectives (where applicable) and ends with a posttest. Three-hundred-one cognitive objectives, 64 affective objectives and 26 skill objectives are included.

The posttest for each unit is followed by a second copy of the posttest which contains suggested answers. (Two of these units are attached.) This feature provides the reader with an opportunity for self-evaluation of his mastery of the cognitive content of each unit. The inclusion of the answers makes it possible to self-correct one's work and immediately determine the level of competency that has been attained.

The following road map contains the recommended sequence and possible options which may be exercised while studying the modules contained in this program. Each number on the road map refers to a module number. Students start with module number one and move on in the direction of the arrows. They may move on to module four, five, six or seven after completing module three. They then move on to modules eight and nine after completing modules one through seven.



The competency check-off sheets which are attached are used by our students to record their movement toward competency.

Personnel Involved

This program was developed and refined by Dr. Larry A. Faas, Associate Professor of Special Education at Arizona State University. The current program is the second revision of the original self-paced individualized instruction program which was developed during the Summer of 1971. Other members of the Arizona State University faculty who have been involved in the field testing and use of this program include Dr. Dale Harper, Dr. Thomas Roberts, Ms. Jean Oracheff and Ms. Robyn Sullivan. The program has also been used at Hayes (Kansas) State College by Dr. Earl Morrison and at Madison College (Virginia) by Mr. James Kidd. The program is currently being used in the Special Education Department at the University of Arizona in Tucson.

Budget

This program was developed without a budget specifically designed for its development. Typing services and incidental costs were covered by the Arizona State University Special Education Department.

Contribution to the Improvement of Teacher Education

This program is the first venture into competency-based instruction at Arizona State University. Therefore, it serves as a model for others who wish to follow. The most visable effects of the program to date have been in the form of public school programs which have been patterned after this instructional program by our former students. For example, one former student who teaches educable mentally retarded children at Carl Hayden High School in Phoenix has patterned his entire program after this instructional procedure.

Evaluation

Student reaction to the program has been for the most part enthusiastic. Forty percent rate the self-paced competency-based procedure to be superior to traditional procedures. Another fifty percent of the students indicated that the procedures used in the program were better than or equal to conventional instructional procedures. It is interesting to note that those students who objected to the weekly accountability involved in the program were nearly always the same students who were frequently absent from class.

The most favorable responses have been received from those students who are highly motivated, organized and of above average ability.

COMPETENCY CHECK OFF

(A record of competency development)

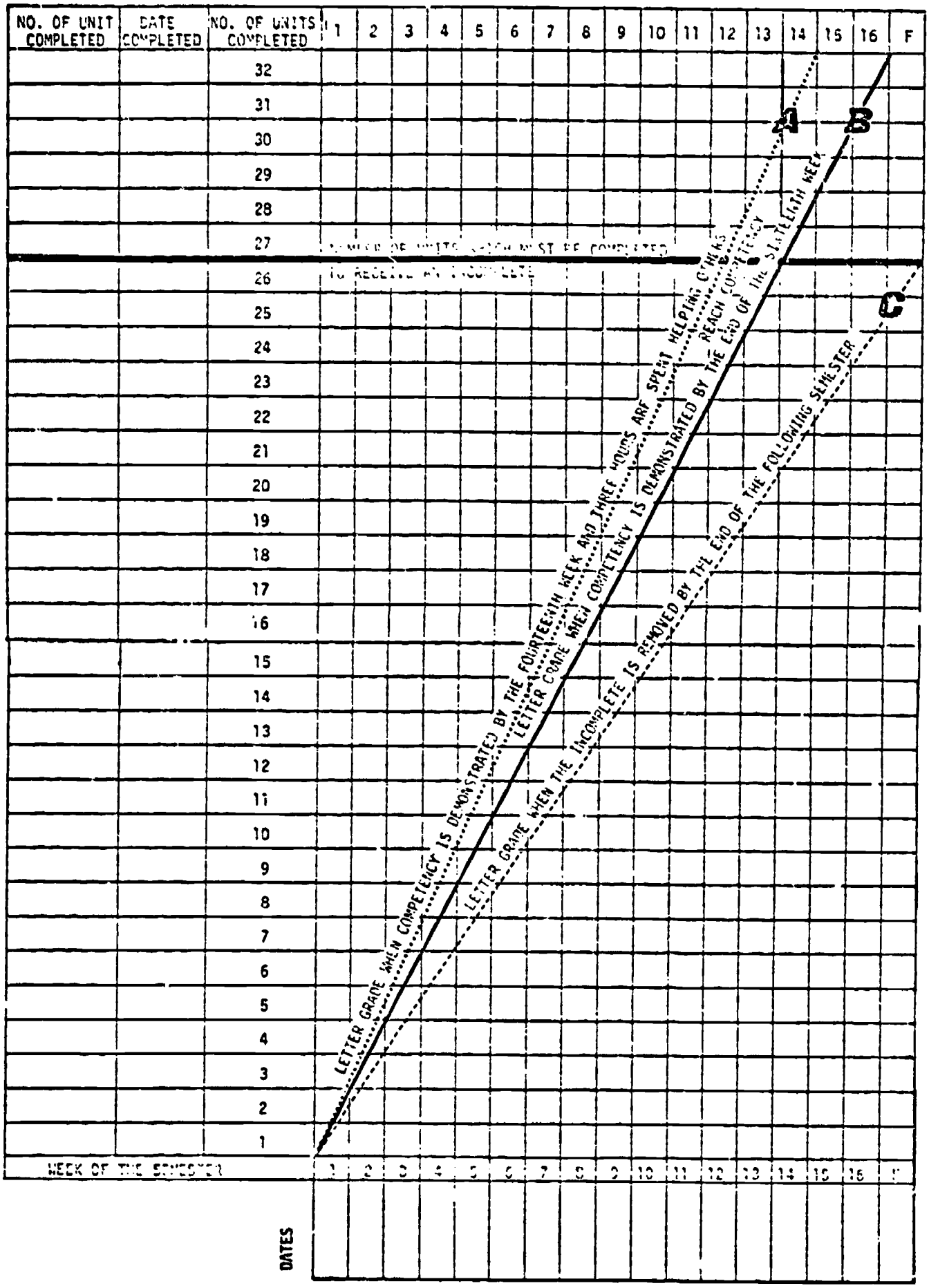
	COGNITIVE												AFFECTIVE		SKILL	DATE COMPLETED
MODULE # 1 INTRODUCTION TO LEARNING DISABILITIES																
Unit # 1	1	2	3	4	5			8	9	10			1	2		
Unit # 2	1	2	3	4	5	6	7	8	9				1	2		
Unit # 3	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit # 4	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit # 5	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
MODULE # 2 THE DEVELOPMENT AND TESTING OF BASIC LEARNING ABILITIES																
Unit # 6	1	2	3	4	5	6	7	8	9				1	2		
Unit # 7	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit # 8	1	2	3	4	5	6							1	2		
MODULE # 3 THE DEVELOPMENT AND TESTING OF BASIC CONCEPTS																
Unit # 9	1	2	3	4	5	6	7	8	9				1	2		
Unit #10	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #11	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #12	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
MODULE # 4 PERCEPTUAL-MOTOR PROBLEMS AND TESTING																
Unit #13	1	2	3	4	5	6	7	8					1	2		
Unit #14	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #15	1	2	3	4	5	6							1	2	1 2 3	
MODULE # 5 VISUAL-PERCEPTUAL PROBLEMS AND TESTING																
Unit #16	1	2	3	4	5	6	7	8	9	10	11		1	2		
Unit #17	1	2	3	4	5	6	7	8	9	10			1	2		
Unit #18	1	2	3	4	5	6	7	8	9	10			1	2		
Unit #19	1	2	3	4	5	6							1	2	1 2 3	
Unit #20	1	2	3	4	5	6							1	2	1 2 3	
MODULE # 6 AUDITORY-PERCEPTUAL PROBLEMS AND TESTING																
Unit #21	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #22	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #23	1	2	3	4	5								1	2	1 2 3 4 5 6	
MODULE # 7 LANGUAGE PROBLEMS AND TESTING																
Unit #24	1	2	3	4	5	6	7	8	9	10	11		1	2		
Unit #25	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #26	1	2	3	4	5	6	7						1	2	1 2	
MODULE # 8 ACADEMIC PROBLEMS I																
Unit #27	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
Unit #28	1	2	3	4	5	6	7						1	2		
Unit #29	1	2	3	4	5	6	7	8	9	10			1	2		
MODULE # 9 ACADEMIC PROBLEMS II																
Unit #30	1	2	3	4	5	6							1	2		
Unit #31	1	2	3	4	5	6							1	2	1 2 3	
Unit #32	1	2	3	4	5								1	2	1 2 3 4 5 6	

Note: This form and procedure was used during the spring semester of 1974. Ninety-five percent of the students who were enrolled met the criteria for an A by the end of the fourteenth week of the term.

RATE OF MOVEMENT TOWARD COMPETENCY

Record the numbers of the units you complete, the dates you complete them and fill in the graph as you move toward attainment of competency and completion of the course.

NO. OF UNIT COMPLETED	DATE COMPLETED



COMPETENCY CHECK OFF

(A record of competency development for use with modular posttests)

MODULE	# OF ITEMS	# REQUIRED TO MEET MINIMUM CRITERIA	TEST FORM	# OF ITEMS CORRECT	DATE COMPLETED
1 Part I	6	5			
1 Part II	9	8			
2	8	7			
3	11	9			
4	8	7			
5 Part I	6	5			
5 Part II	7	6			
6	8	7			
7	8	7			
8	8	7			
9	6	5			
	85	73			

Number of correct responses required for an A (95%)	81
Number of correct responses required for a B (85%)	73
Final Grade	

UNIT #2 DEFINITIONS, TERMINOLOGY AND INCIDENCE

LEARNING OBJECTIVES

COGNITIVE OBJECTIVES

After carefully reading this unit, you will be able to:

1. Identify the two general approaches used in defining the term learning disabilities.

2. State the primary concern reflected in the two approaches to defining the term learning disabilities.

3. Indicate the type of discrepancy Bateman is referring to when she uses the "principle of disparity" in defining the term learning disability.

4. List four groups of children with special needs who are excluded from the learning disabled population in definitions of learning disabilities.

5. Distinguish between cause-oriented and effect-oriented terminology.

6. Indicate the per cent of our children which the ACLD and Valett report are learning disabled.

7. Indicate the type of educational provisions required by most mildly and moderately learning disabled children.

8. State the per cent of children who according to Valett have learning disabilities so severe that most of their education will need to take place outside the regular classroom.

9. Indicate the ratio of males to females who have learning and behavior disorders.

AFFECTIVE OBJECTIVES

After reading this unit, the author intends that you will:

1. Be aware of and appreciate the differences in the orientation of those who use definitions and terminology which follow the cause and the effect approaches.

2. Incorporate these approaches into your understanding of learning disabled children.

THE DEFINITION PROBLEM

Large numbers of definitions of the term "learning disabilities" have appeared in the professional literature during recent years. An examination of these definitions reveals the existence of two distinct approaches to looking at learning disabled children. Frierson and Barbe described these approaches in 1967 when they indicated:

> "The first approach is cause-oriented. The second is an effect-oriented approach. Those who look at learning disorders from the first perspective attempt to identify the source or etiology of observed behaviors. Those who take the second approach are primarily concerned with analyzing, describing and modifying observed behaviors regardless of underlying causes."

Clements' 1966 definition is cause-oriented. He stated:

> "The term 'minimal brain dysfunction syndrome' refers to children of near average, average or above average general intelligence with certain learning or behavioral disabilities ranging from mild to severe, which are associated with deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairments in perception, conceptualization, language, memory, and control of attention, impulse, or motor function."

Johnson and Myklebust also referred to central nervous system dysfunction in their 1967 definition:

> ". . . we refer to children as having a psychoneurological learning disability, meaning that behavior has been disturbed as a result of a dysfunction of the brain and that the problem is one of altered processes, not of a generalized incapacity to learn."

Effect-oriented definitions stress educationally significant factors such as the child's difficulty in academic and learning tasks and discrepancies between achievement and potential. Effect-oriented definitions often end with a list of other children with special needs who are not regarded to be learning disabled.

Kirk's 1962 definition emphasizes the child's disability in one or more of the learning processes and ends with a listing of those children who are excluded. He wrote:

> "A learning disability refers to a retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, spelling, writing, or arithmetic resulting from a possible cerebral dysfunction and/or emotional or behavioral disturbance and not from mental retardation, sensory deprivation, or cultural or instructional factors."

Bateman's 1965 definition emphasizes the "principle of disparity", disorders in the basic learning processes and ends with a listing of children whose special problems are not to be confused with learning disabilities. She indicated that children with specific learning disabilities are those who:

> ". . . manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance related to basic disorders in the learning processes, which may or may not be accompanied by demonstrable central nervous system dysfunction, and which are not secondary to generalized mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss."

The most widely cited and accepted definition was formulated in 1968 by the National Advisory Committee on Handicapped Children. It states that:

> "Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in 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, to mental retardation, emotional disturbance or to environmental deprivation."

This definition was adopted by Congress as part of the Children

With Specific Learning Disabilities Act of 1969. It has also been adopted as the official definition by a number of states.

TERMINOLOGY

A review of the literature in medicine, education and psychology reveals the following list of terms which are used by various groups and individuals to describe learning disabled children.

1. Association Deficit Pathology
2. Organic Brain Damage
3. Organic Brain Disease
4. Organic Brain Dysfunction
5. Minimal Brain Damage
6. Diffuse Brain Damage
7. Neurophrenia
8. Organic Driveness
9. Cerebral Dysfunction
10. Choreiform Syndrome
11. Minor Brain Damage
12. Minimal Brain Injury
13. Minimal Cerebral Injury
14. Minimal Chronic Brain Syndrome
15. Minimal Cerebral Damage
16. Minimal Cerebral Palsy
17. Cerebral Dys-synchronization Syndrome
18. Brain Injured
19. Minimal Dysfunction
20. Minimal Cerebral Dysfunction
21. Brain Damaged
22. Brain Dysfunction
23. Minimal Brain Dysfunction
24. Strauss Syndrome
25. Hyperkinetic Behavior Syndrome
26. Character Impulse Disorder
27. Hyperkinetic Impulse Disorder
28. Aggressive Behavior Disorder
29. Learning Impotence
30. Hyperkinetic Syndrome
31. Dyslexia
32. Specific Dyslexia
33. Hyperexcitability Syndrome
34. Perceptual Cripple
35. Perceptually Handicapped
36. Neurologically Handicapped
37. Primary Reading Retardation
38. Specific Reading Disability
39. Clumsy Child Syndrome

40. Hypokinetic Syndrome
41. Aphasoid Syndrome
42. Conceptual Handicapped
43. Attention Disorders
44. Interjacent Child
45. Developmental Imbalance
46. Maturational Lag
47. Educationally Handicapped
48. Language Disorders
49. Learning Disorder
50. Learning Disability
51. Learning Impaired
52. Performance Deviation
53. Performance Disability
54. Performance Handicapped
55. Problem Learners
56. Problem Readers
57. Psycholinguistic Disabilities
58. Psychoneurological Disorders
59. Psychoneurological Learning Disorders
60. Reading Disability
61. Remedial Education Case
62. Special Learning Difficulties
63. Special Learning Disorders
64. Specific Learning Difficulties
65. Specific Learning Disorders
66. Underachiever
67. Hyperkinetic Disorder
68. Catastrophic Behavior
69. Neurophysiological Dysynchrony
70. Central Nervous System Disorder
71. Word Blindness
72. Learning Block
73. Strephosymbolia
74. Congenital Alexia
75. Congenital Strephosymbolia
76. Bradylexia
77. Agraphia
78. Disgraphia
79. Acalculia
80. Dyscalculia
81. Tactual Agnosia
82. Auditory Agnosia
83. Visual Agnosia
84. Sensory Aphasia
85. Receptive Aphasia
86. Expressive Aphasia
87. Motor Aphasia
88. Alexia
89. Specific Language Disability
90. Learning and Language Disability

The redundancy in this list is immediately obvious. For most people there is no recognizable difference between "brain injured" and "brain damaged" children. There are, however, a few who feel strongly that distinct differences do exist between such similar appearing terms.

The prefix "dys" or "dis" is used in terms to suggest that the disability is partial while the prefix "a" suggests a total inability to perform. For example, the term dyslexia refers to reading problems while alexia refers to a total inability to read.

The distinction between cause and effect orientation is readily apparent in the above terminology. Clinicians whose primary concern is the identification of the cause of the child's problem generally prefer etiological terms such as minimal cerebral dysfunction, organic brain damage and organic behavior disorder.

Educators usually favor terms which describe the effect the problem has upon the child's observable classroom behavior. As a result they prefer terms such as reading disability or perceptually handicapped. The terms that a person uses to describe a learning disabled child tend to directly reflect the person's orientation.

The term "learning disability" is regarded in this instructional program as an "umbrella term" which refers to a broad range of learning problems.

Other terms such as dyslexia, aphasia and agraphia are used under this umbrella when making reference to specific types of learning disabilities.

Many of the above terms will be reintroduced, defined and discussed

in the units which follow.

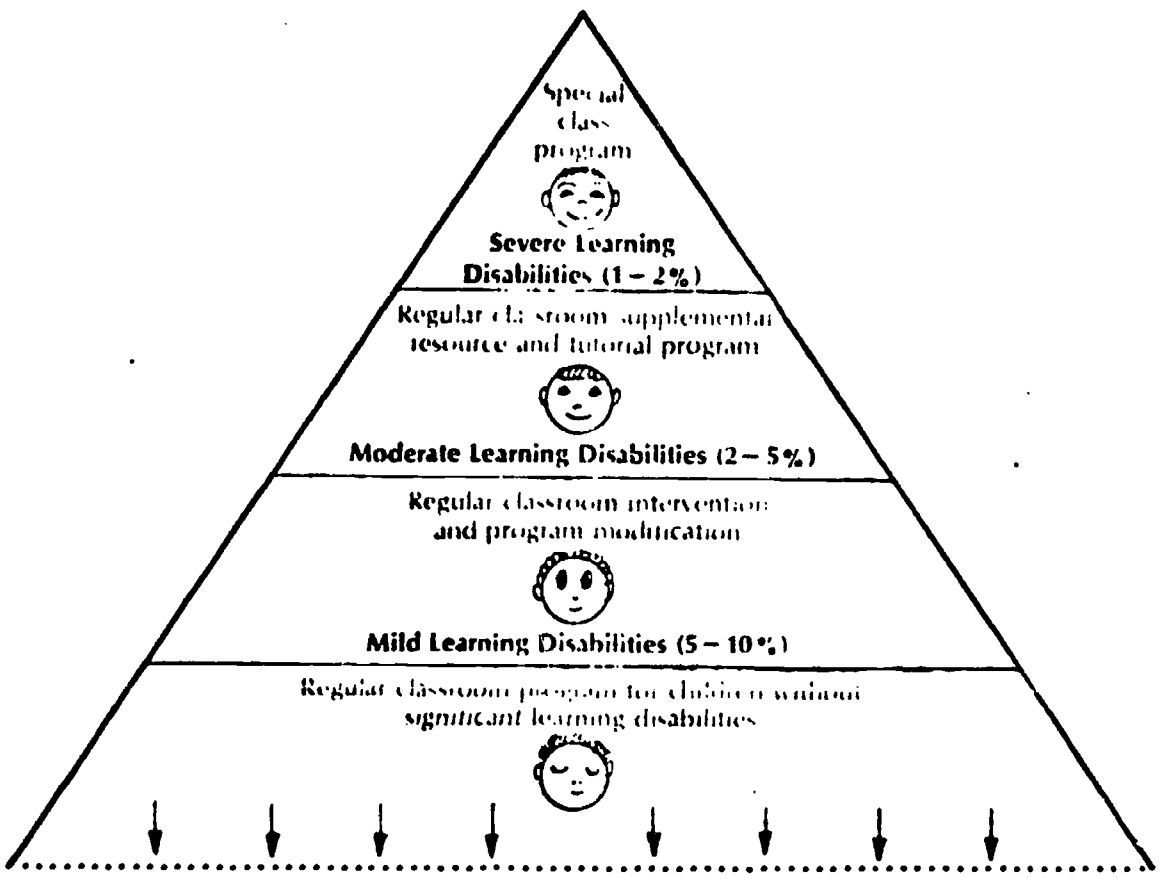
THE INCIDENCE OF LEARNING DISABILITIES

Estimates of the incidence of learning disabilities vary widely. This is due to the lack of agreed upon criteria for use in determining which children are learning disabled.

Kass and Myklebust estimate that from 3 to 5 per cent of the school population is learning disabled.

Valett estimated in 1970 that between 8 and 17 per cent of our school children are learning disabled.

Valett indicates in the following diagram that most of these children's problems are of mild or moderate severity which can be handled in the regular classroom by modifying the instructional program and providing supplemental resource and tutorial programs.



Walzer and Richmond (1973) report that there is ". . . widespread agreement that learning and behavior disorders are 3 to 10 times more frequent in males than females . . ." They also indicate that the reasons for this difference are still not clear.

The incidence figures cited are estimates. While they are important for program planning, it is the identification and provision of appropriate services for all learning disabled children, however many there may be, that must be foremost in our thoughts.

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POSTTEST 2
DEFINITIONS, TERMINOLOGY AND INCIDENCE

1. Identify the two general approaches used in defining the term learning disabilities.

2. State the primary concern reflected in each of the following approaches.

   cause-oriented:

   effect-oriented:

3. Indicate the type of discrepancy Bateman is referring to when she uses the "principle of disparity" in defining the term learning disabilities.

4. List four groups of children with special needs who are excluded from the learning disabled population in definitions of learning disabilities.

5. Circle all of the effect-oriented terms in the following list:

brain injured	perceptually handicapped
brain dysfunction	minimal brain damage
reading disability	cerebral dysfunction
language disability	neurologically handicapped

6. Indicate the per cent of our children which Johnson and Myklebust report are learning disabled.

7. Indicate the type of educational provisions required by most mildly and moderately learning disabled children.

8. State the per cent of children who according to Valett have learning disabilities so severe that most of their education will need to take place outside the regular classroom.

9. Indicate the ratio of males to females who have learning and behavioral disorders.

POSTTEST 2

(Self-Correction)

1. Identify the two general approaches used in defining the term learning disabilities.

   Answer: *cause-oriented and effect-oriented*

2. State the primary concern reflected in each of the following approaches.

   Answer: cause-oriented - *the identification of organic etiology such as neurological dysfunction or brain damage.*

   effect-oriented - *educationally significant factors such as how the child's academic achievement and classroom behavior are affected.*

3. Indicate the type of discrepancy Bateman is referring to when she uses the "principle of disparity" in defining the term learning disabilities.

   Answer: *". . . an educationally significant discrepancy between their estimated intellectual potential and actual level of performance . . ."*

4. List four groups of children with special needs who are excluded from the learning disabled population in definitions of learning disabilities.

   Answer: *(any four from the following)*

   mentally retarded
   sensorially deprived
   culturally deprived
   those who have not been instructed
   environmentally deprived
   hearing impaired
   visually handicapped
   motor handicaps
   emotionally disturbed

5. Circle all of the effect-oriented terms in the following list:

   Answer:
   brain injured
   brain dysfunction
   reading disability
   language disability
   perceptually handicapped
   minimal brain damage
   cerebral dysfunction
   neurologically handicapped

6. Indicate the per cent of our children which Johnson and Myklebust report are learning disabled.

   Answer: *three to five per cent*

7. Indicate the type of educational provisions required by most mildly and moderately learning disabled children.

   Answer: *Attendance in regular classrooms where the instructional programs have been modified and supplemental resource and tutorial programs are available.*

8. State the per cent of children who according to Valett have learning disabilities so severe that most of their education will need to take place outside the regular classroom.

   Answer: *1 to 2 per cent.*

9. Indicate the ratio of males to females who have learning and behavior disorders.

   Answer: *3 to 10 males to 1 female*

UNIT #19 THE BEERY-BUKTENICA DEVELOPMENTAL TEST OF VISUAL-MOTOR INTEGRATION (VMI)

LEARNING OBJECTIVES

COGNITIVE OBJECTIVES

After carefully reading this unit, you will be able to:

1. Indicate what the Beery-Buktenica is designed to measure.
2. Indicate the ages and grade levels at which the Beery-Buktenica is used.
3. Describe the Beery-Buktenica test used.
4. List the five levels Beery includes in his hierarchy of tasks leading to visual-motor integration.
5. Describe how Beery differentiates between the directions which assessment (testing) should move on his developmental hierarchy.
6. Indicate the relationship that has been found between Beery-Buktenica scores and first grade reading achievement.

AFFECTIVE OBJECTIVES

After reading this unit, the author intends that you will:

1. Incorporate an understanding of the Beery-Buktenica into your professional awareness.
2. Incorporate an understanding of Beery's developmental hierarchy into your professional awareness.

SKILL OBJECTIVES

After careful study, practice and being checked out on the use of the Beery-Buktenica, you will be able to:

1. Administer the test.
2. Score the test.
3. Interpret the test findings.

PURPOSE: The Beery-Buktenica is used to determine the degree to which young children's visual perception and motor behavior have become integrated.

AUTHORS: Keith E. Beery and Norman A. Buktenica

PUBLISHER: Follett Educational Corporation
1010 West Washington Boulevard
Chicago, Illinois 60607

PUBLICATION DATE: 1967

COST:		
	Test Booklet (long form)	$8.25 (pkg. of 15)
	Manual	$6.08
	Research Monograph	$7.92

AGE RANGE: 2 - 15 (intended primarily for pre-school and early primary grades)

ADMINISTRATION TIME: Approx. 10 - 15 minutes

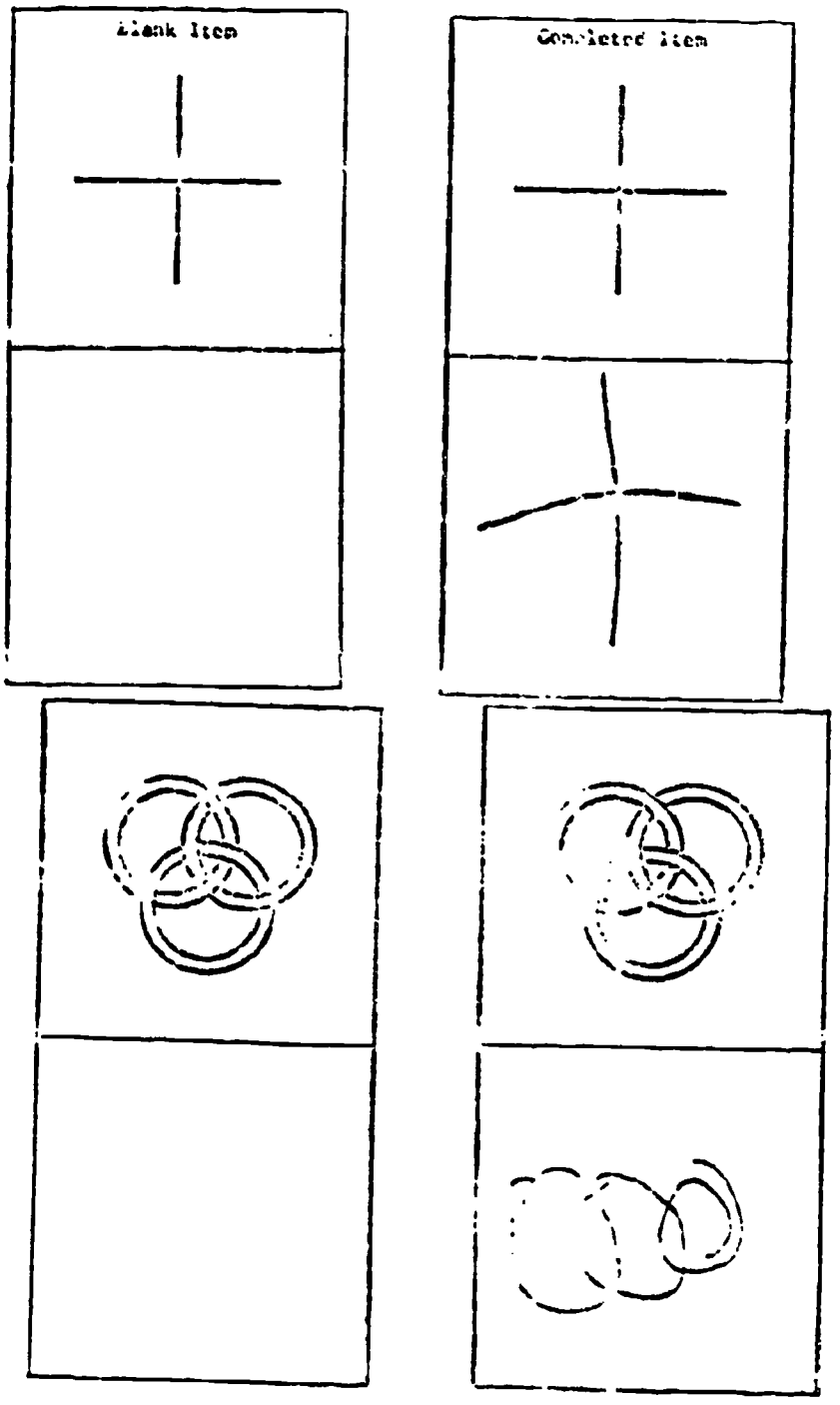
TYPE OF ADMINISTRATION: Individual or group

CAN BE ADMINISTERED BY: Teachers, counselors and psychologists

DESCRIPTION

The Beery-Buktenica contains 24 items. Each of these items consists of a pair of boxes. A geometric form appears in the top box in the pair while the lower box is left blank for use during the administration of the test. The child being examined responds by making a copy in the lower box of the figure which appears in the top box. Testing continues until all 24 items have been administered or until the child has failed three consecutive items.

EXAMPLES OF ITEMS (reduced 75%)



SCORING

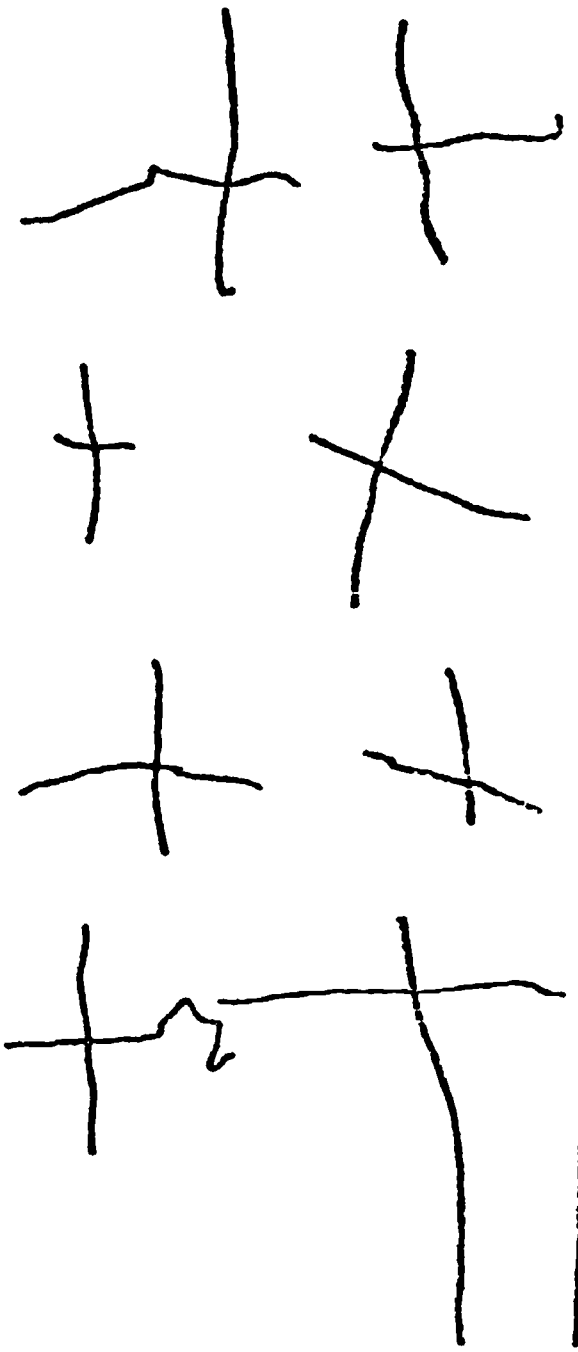
Each item is socred "pass" or "fail". The manual contains a page of scoring criteria for each test item. This page contains examples of both passing and failing reproductions which have been selected from actual reproductions made by children. The following scoring criteria for test item #4 appears on page 25 of the test manual. Scoring criteria for the other 23 items appear on other pages in the test manual.

FORM 4 Vertical-Horizontal Cross

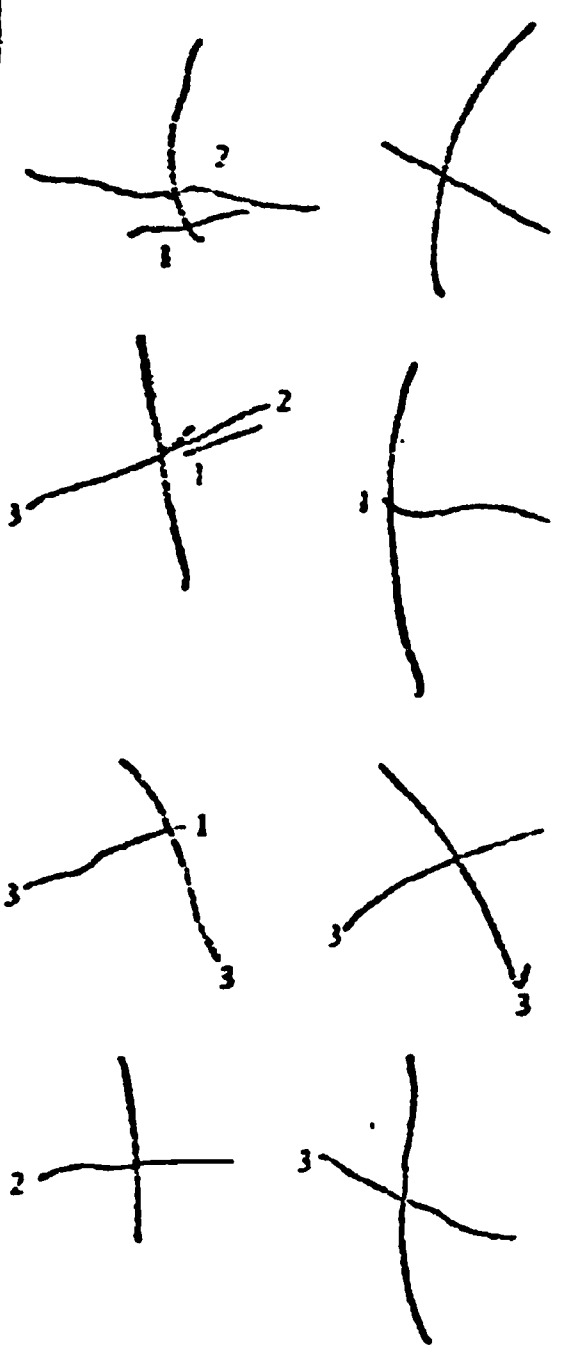
Scoring Criteria

1. Two fully intersecting lines — not:
2. Two continuous lines — not:
3. At least ½ of each line within 20° of its correct orientation — not:

Passing



Failing



Test results are reported in the form of age equivalents. The maturational differences between boys and girls are reflected at some levels in the tables which are used for converting raw scores to age equivalents.

DEVELOPMENTAL COMMENTS

These comments report the findings of researchers such as Gesell and Cattell regarding the ages at which children become proficient in reproducing the geometric figures contained in each item. Accompanying this data is a brief discussion of the factors involved in the reproduction of each item.

THEORETICAL RATIONALE

Beery outlines a five-level hierarchy of visual-motor skills involved in developing visual-motor integration.

Level V: Visual-Motor Integration
Level IV: Visual Perception
Level III: Tracing
Level II: Tactual-Kinesthetic Sense
Level I: Motor Proficiency

He suggests that "assessment (testing) begins with the complex tasks and proceeds downward toward the simple tasks" while "teaching begins with the simple tasks and proceeds upward toward the complex tasks". It is pointed out that while "the hierarchy or order of tasks applies to most groups, it may not apply in every case". These individuals may master a higher level and still have difficulty at a lower level.

The five levels in Beery's hierarchy are broken down into tasks which might be assessed at each level. If a student has difficulty

with one of these tasks, the task might then become an area of emphasis in the student's curriculum.

LEVEL V - VISUAL-MOTOR INTEGRATION

Direct Reproduction (The Beery-Buktenica measures this skill.)
Imitation (The child can draw a figure after being shown how to do it.)
Dot-to-Dot (After a form has been outlined with dots, the child can draw the form by connecting the dots.)

LEVEL IV - PERCEPTION

Perceptual - Motor Closure (The child can complete a partially drawn figure.)
Recognition of Similarities (The child is given a group of figures and asked to select those that are similar.)
Recognition of Differences (The child is given a group of figures and asked to select those that are different.)

LEVEL III - TRACING

The child is required to follow the line with his pencil in this task. A pastel colored marking pen might be used so that the child will be able to compare his movements with the original lines. The object of tracing activities is directed toward helping the child learn to reproduce forms correctly.

LEVEL II - TACTUAL-KINESTHETIC SENSE

Kinesthetic Control (The child can move his hand according to verbal directions which are received while he has his eyes closed, e.g., up-down, right-left, diagonal-circular.)
Kinesthetic Recognition (The child can identify the pattern of movement when his hand is moved while his eyes are closed.)
Tactual Localization (The child can tell you what part of his hand, fingers or arm has been touched while his eyes are closed.)

LEVEL I - MOTOR PROFICIENCY

Control (The child can follow a moving target which is lightly touching his hand or finger while he is blindfolded.)
Speed (The number of marks of a certain kind which a child can make on a piece of paper in one minute.)
Scribble (What kind of marks are made when given a pencil and paper? e.g., vertical, horizontal, diagonal, circular, and can he learn to make others?)
Grasp (Can the child pick up, hold, manipulate and release a pencil?)

REMEDIATION

Beery suggests that several short remediation sessions per week are preferable to one long session. The test manual contains a variety of remedial suggestions for use in remediating problems in the various tasks involved in developing visual motor integration. A set of worksheets for use in remediation are available from the Follet Educational Corporation at an approximate per student cost of $1.50 when purchased in sets of 10.

RESEARCH FINDINGS

The following summary of research findings is drawn from the Research Monograph prepared by the test authors.

1. Correlation of .89 between test scores and chronological age for the 2 to 15 age range.

2. Higher correlations were found between test scores and mental age than with chronological age.

3. Correlations between mental age and chronological age higher during first grade (.59) than in older children (.39).

4. Correlation between test scores and reading achievement is higher than those found between reading achievement and IQ.

5. Test scores of kindergarten and mentally retarded children improve with perceptual-motor training.

POSTTEST 19
THE BERRY-BUKTENICA DEVELOPMENTAL TEST OF VISUAL PERCEPTION

1. Indicate what the Beery-Buktenica is designed to measure.

2. Indicate the ages and grade levels at which the Beery-Buktenica is used.

3. Describe the Beery-Buktenica test items.

4. List the five levels Beery includes in his hierarchy of tasks leading to visual-motor integration.

5. Describe how Beery differentiates between the directions in which assessment (testing) and teaching should move on his developmental hierarchy.

6. Indicate the relationship that has been found between Beery-Buktenica scores and first grade reading achievement.

POSTTEST 19

(Self-Correction)

1. Indicate what the Beery-Buktenica is designed to measure.

   Answer: *The degree to which a young child's visual and motor behavior have become integrated.*

2. Indicate the ages and grade levels at which the Beery-Buktenica is used.

   Answer: *2 to 15 years. It was designed principally for the pre-school and early primary grades.*

3. Describe the Beery-Buktenica test items.

   Answer: *Each of the 24 test items consists of a pair of boxes. A geometric figure appears in the top box of each pair while the lower box is blank.*

4. List the five levels Beery includes in his hierarchy of tasks leading to visual-motor integration.

   Answer:
   V. Visual-Motor Integration
   IV. Visual Perception
   III. Tracing
   II. Tactual-Kinesthetic Sense
   I. Motor Proficiency

5. Describe how Beery differentiates between the directions in which assessment (testing) and teaching should move on his developmental hierarchy.

   Answer: *He suggests that assessment should begin at the top of the hierarchy and move toward the bottom while teaching should move from the basic tasks to the higher level ones.*

6. Indicate the relationship that has been found between Beery-Buktenica scores and first grade reading achievement.

   Answer: *Beery reports finding a higher correlation between VMI scores and first grade reading achievement than between reading achievement and IQ.*