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INDIVIDUAL TEST INTERPRETATION FOR TEACHERS OF THE MENTALLY RETARDED.

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FOUR COMMONLY USED INDIVIDUAL INTELLIGENCE TESTS ARE DESCRIBED. DESCRIPTIONS OF SUBTESTS ARE GIVEN, ALONG WITH EXPLANATION OF WHAT EACH TEST MEASURES. THIS INFORMATION IS PROVIDED TO ASSIST THE TEACHER IN IDENTIFYING SPECIFIC ABILITIES AND WEAKNESSES IN INDIVIDUAL CHILDREN. (JW)

Bulletin No. 18

INDIVIDUAL TEST INTERPRETATION For Teachers of the Mentally Retarded

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INDIVIDUAL TEST INTERPRETATION

The descriptive terminologies used in stating the mental potential or achievement levels of students are frequently baffling to many teachers. It is difficult for persons not specialized in the area to have a working grasp of the practical implications of test data. Too frequently a student is categorized on the basis of an I.Q. score with limited involvements of general test interpretation. In reality, children obtaining similar I.Q. scores may be vastly different in "teachability" and adjustive capacity..

Constructive utilization of test information requires a type of differentiated analysis. Numerical ratings or scores indicate a general level of functioning. The danger in this is that supposed group characteristics are applied, sometimes, indiscriminately, to the individual. There is nothing sacred about an I.Q. score. It must be interpreted in terms of its limitations as well as its positive values. For optimum benefit to the individual this numerical rating must be qualified by a supportive analysis of the specific strengths and weaknesses the student evidenced in obtaining the score. There are many facets of learning process which are not assessable on present tests. These concomitant influences are as important as the level of intellectual ability in determining the content and degree of learning in the individual.

This is not to negate the value of individual psychometrics. When properly integrated within the structure of total affective influences, test data is of great value. The I.Q. score and test interpretation data do not necessarily determine the nature of the specific learning activity. General test data may be expected to provide a basis for better identification of specific strengths and weaknesses of the individual student. It would appear therefore, that it is the responsibility of educational personnel to adapt the varying facets of learning theory to the development of the specific abilities areas suggested by the test administration. In short, test data could be expected to provide information concerning the characteristics of a child's ability patterns but not designate the specific techniques and methodologies essential to optimum development.

To assist teachers in more beneficial utilization of psychological test reports, the following summaries of four commonly administered individual intelligence are presented. The results from two or more of these or other tests may be combined to give more adequate diagnosis. We offer them as one of the means for identifying the specific abilities and limitations with which the teacher should be cognizant in developing realistic provisions for individual differences.

The attached form depicts a commonly used comparative tool for identifying general ability distributions on the basis of the normal curve. It should be recognized that the unit differentiations are on the basis of general group characteristics. Specific students falling within any group designation will evidence markedly different ability patterns.

STANFORD BINET INTELLIGENCE SCALE – L-M

The Stanford-Binet Intelligence Scale is one of the most widely known and generally administered measurement scales. The Form L and Form M versions were combined in 1960. The new Form L-M is composed of items from the 1937 scales. However, they have been re-structured to eliminate "out-of-date content and improve general structure".

A summarization of the phases of intellectual functioning assessed by this instrument could include the following designations of ability areas at the various levels.

Year II.

1. *Three Hole Form Board:* Recognition and manipulation of forms.
2. *Delayed Response:* Involves attention and directing ideas in combination with memory span.
3. *Identifying Parts of Body:* Comprehension of simple speech.
4. *Block Building - Towers:* Exhibit purposive behavior by imitating activity in manipulating material on direction.
5. *Picture Vocabulary:* Indicate level of visualization, recall and verbal identification by recognition of familiar objects.
6. *Word Combinations:* Second stage of language development. Involves using two words meaningfully and fuctionally but not necessarily in a structurally correct manner. This stage is usually preceded by repetition of two syllables in a single word.

ALTERNATE: *Identifying Objects By Name:* Development of verbal symbols in identifying common objects by name. Previous to designation and object naming himself.

Year II-6.

1. *Identifying Objects by Use:* Knowing object and identification to verbal description. Involves attaching definitions to concrete objects and language comprehension.
2. *Identifying Parts of Body:* See II-3.
3. *Naming Objects:* Use of specific objects as extension of II - 3.
4. *Picture Vocabulary:* Indication of level of visualization, recall and verbal identification by recognizing familiar objects.
5. *Repeating Two Digits:* Memory span for verbal material. Immediate recall.
6. *Simple Commands:* Interpretation and organized, purposive response to verbal direction.

ALTERNATE: *Form Board: Rotated:* Extension of II - 1 but requires reorientation.

Year III.

1. *Stringing Beads:* General motor coordination.

2. *Picture Vocabulary:* See II - 5.

3. *Block Building:* See II - 4.

4. *Picture Memories:* Ability to control a directing idea and checks memory for non-verbal material. Comprehension and attention involved.

5. *Copying a Circle:* Recognize and execute a design. Involves hand-eye coordination.

6. *Vertical Line:* Execution of by demonstration. Hand-eye coordination.

ALTERNATE: *Repeating Three Digits:* See II - 6, 5

Year III-6.

1. *Comparison of Balls:* Identifying relative size, involves conceptualization of physical form.

2. *Patience: Pictures:* Ability to establish part - whole relationships. Total figure completion.

3. *Discrimination of Animal Pictures:* Visual discrimination and perceptual ability. Establish form similarities.

4. *Response to Pictures:* Enumeration of objects and to interpret in terms of single elements of whole.

5. *Sorting Buttons:* Involves motor manipulation according to verbal direction and physical characteristics.

6. *Comprehension I:* Ability to reasonably evaluate a situation and give a pertinent response.

ALTERNATE: *Comparison of Sticks:* Visuo-perceptual discrimination.

Year IV

1. *Picture Vocabulary:* See II - 5.

2. *Objects From Memory:* Determine ability for immediate recall.

3. *Opposite Analogies:* Associative ability.

4. *Picture Identification:* Determine use of definitions or ability to isolate and eliminate items.

5. *Discrimination of Forms:* Ability to compare and contrast visual form perceptions and to apply critical discriminations.

6. *Comprehension II:* See III - 6, 6.

ALTERNATE. *Sentence Memory* Immediate auditory recall.

Year IV-6.

1. *Aesthetic Comparison.* Comparison and practical judgement involving discriminative ability for aesthetic values.

2. *Opposite Analogies.* Association ability.

3. *Pictorial Similarities and Differences.* Discriminate differences on visual perception reactions.

4. *Materials.* General information and language comprehension.

5. *Three Commissions.* Ability to retain and accomplish verbal directions in sequence.

6. *Comprehension:* See III - 6, 6.

ALTERNATE: *Picture Identification:* See IV - 4.

Year V.

1. *Picture Completion - Man:* Some elements of visuo-motor coordination. Visual discrimination and perception.

2. *Folding Triangle:* Visual memory and motor coordination.

3. *Definitions:* Ability to associate verbal symbols with objects and general vocabulary.

4. *Copying Square:* Motor control, eye-hand coordination, and recognition of spatial relationships.

5. *Pictorial Similarities and Differences:* See IV - 6, 3.

6. *Patience Rectangles:* Manipulation of materials. Involves spatial relationships and perception.

ALTERNATE: *Knot:* Ability to manipulate and initiate.

Year VI.

1. *Vocabulary:* Isolate and express word meanings.

2. *Differences:* Concept of dissimilarity. Must discriminate on abstract or ideational level.

3. *Mutilated Pictures:* Perception and part-whole relationships.

4. *Number Concepts:* Involves rote counting ability and number concepts.

5. *Opposite Analogies:* IV - 6, 2.

6. *Maze:* Perception, general comprehension in making choices. Directed motor response involving eye-hand coordination

ALTERNATE: *Response to Pictures:* See III - 6, 4.

Year VII.

1. *Picture Absurdities:* Ability to isolate incongruities and absurdities of visual material.

2. *Similarities:* Discriminating reactions determining essential similarities.

3. *Copying Diamond:* Motor control and perceptual differentiation. Corner element is major problem.

4. *Comprehension IV:* See III - 6, 6.

5. *Opposite Analogies:* See IV - 6, 2.

6. *Five Digits:* See II - 6, 5.

ALTERNATE: *Three Digits Reversed:* Reversal function involved in comprehending directions and immediate memory and recall.

Year VIII.

1. *Vocabulary:* See VI - 1.

2. *Wet Fall:* Verbal comprehension, memory and recall.

3. *Verbal Absurdities:* Identify incongruous elements of situation.

4. *Similarities and Differences:* Concepts of sameness and difference. Discriminatory response.

5. *Comprehension:* See III - 6, 6.

6. *Days of Week:* General information and long-term recall.

ALTERNATE: *Problem Situation:* Identify practical elements of situation.

Year IX.

1. *Paper Cutting:* Manipulation in response to verbal directions. Introspective ability.

2. *Verbal Absurdities: II:* VIII - 3.

3. *Designs:* Visuo-memory ability and perception.

4. *Rhymes:* Controlled association by specific stimulus.

5. *Change:* Arithmetical concepts and monetary values.

6. *Four Digits Reversed:* See alternate, VII.

ALTERNATE: *Rhymes:* See IX, 4.

Year X.

1. *Vocabulary:* See VI, 1.

2. *Block Counting:* Perception, introspection, and enumerative description.

3. *Abstract Words:* Ability to select general characteristics by disregarding irrelevant details. This process of comparison, generalization, and abstraction precedes definition.

4. *Finding Reasons:* Identify cause and effect in analyzing situation to reach goals.

5. *Word Naming:* Verbal expression, linguistic facility. Free association.

6. *Six Digits:* See II-6, 5

ALTERNATE: *Verbal Absurdities III:* See VIII, 3.

Year XI.

1. *Designs:* See IX, 3.

2. *Verbal Absurdities:* See IX, 2.

3. *Abstract Words:* See X, 3.

4. *Sentence Memory II:* Immediate recall of verbal stimuli.

5. *Problem Situation:* Ability to analyze elements of situation and establish focal relationships.

6. *Similarities:* See VII, 2.

ALTERNATE: *Finding Reasons:* See X, 4.

Year XII.

1. *Vocabulary:* See VI, 1.

2. *Verbal Absurdities:* See VIII, 3.

3. *Picture Absurdities:* See VII, 1.

4. *Five Digits Reversed:* See IX, 6.

5. *Abstract Words:* See X, 3.

6. *Minkus Completion:* Use of abstract words for language completion.

ALTERNATE: *Designs:* Attention and visual clues combine with recall and specific motor reproduction.

WECHSLER INTELLIGENCE SCALE FOR CHILDREN

The Wechsler Intelligence Scale for Children is based upon the rationale that intelligence is part of a large whole, namely, the total functioning of the individual. A deliberate attempt was made to take into account variables in addition to intellectual factors contributing to the total effective intelligence of the individual.

The WISC is composed of twelve tests divided into two subgroups identified as Verbal and Performance sections. The tests are different measures of intelligence rather than measures of different intellectual traits. However, clinical use has led to some application of the subtests to define areas of relative strengths and weaknesses of the individual child in relation to his age group. Each test starts at a fairly low level of difficulty and increases in complexity as it progresses.

Presented with the characteristics of each subtest are some of the inferences clinicians derive from each.

Verbal Scale

Information Test: Composed of 25 questions to tap the subject's range of information. It could reflect influence of child's cultural, social and education background. It often indicates subject's awareness of world around him. Results are sensitive to child's level of verbal comprehension and retentive memory.

Comprehension Test: Subject is required to give a generalized, fairly direct answer to a question relating to an environmental or culturally oriented situation. Success on this test would appear to depend upon the possession of some practical information and a general ability to evaluate past experience. Sometimes referred to as a test of "common sense." The test is difficult for poor verbalizers.

Arithmetic Reasoning Test: A group of arithmetic problems touching upon common situations involving practical calculations. The score can be highly affected by past educational experiences. Requires concentration on the task at hand. Poor reasoning or memory will affect results. It correlates with the information test as an indicator of school scholastic achievement.

Similarities Test: Subject is asked to verbally establish similarities between superficially unrelated items. He is required to percieve their common elements and bring them together in a single concept. It gives an indication of generalization or abstract reasoning ability. Verbal comprehension is involved. The test ascertains level of thinking on everyday items, i.e., essential or superficial likeness.

Vocabulary Test: A group of words are presented one at a time. The subject is asked to explain or define them. Test indicates level and range of verbal expression, i.e., abstract, functional and concrete. Test influenced by educational and cultural background. Verbal comprehension is highly involved.

Digit Span Test: In the first of two sections the subject is required to repeat a group of numbers in forward sequence. In the second section he is required to repeat backwards another set of numbers. It test ability to attend and concentrate. The test requires immediate memory recall. Youngster's functioning on this test can be affected by anxiety.

Performance Scale

Picture Completion Test: Requires the subject to discover and name the missing part of an incompletely drawn picture. Measures the individual's basic perceptual and conceptual abilities as they are involved in the visual recognition and the identification of familiar objects and forms. He must be aware of the essential quality of the missing part. It measures the individual's ability to differentiate essential from non-essential details.

Picture Arrangement Test: A group of pictures are presented in a disarranged fashion and subject is asked to put them in right order to make a sensible story. It measures individual's ability to comprehend a whole from disorganized parts. Gives indication of subject's ability to use intelligence in social situations. Sometimes referred to as "social awareness."

Block Design Test: Individual is given a number of blocks with which he is asked to duplicate a presented design. It requires the subject to break up model pattern into its component parts. Clinically valuable in analysis of individual's manner of attacking material, i.e., hasty, impulsive, deliberate, perceive quickly, use of trial and error and so forth. Visual-motor coordination can be a factor in speed of response.

Object Assembly Test: Examiner presents disorganized parts of a figure to subject, who is then required to assemble them into whole figure. This series requires assembling of disjointed parts into a whole. It is valuable in analyzing individual's approach to problems. The test helps reveal threshold of frustration.

Digit Symbol Test: The subject is required to associate certain symbols with other symbols and to note them on test form. Subject is scored both on correctness of responses and the speed with which they are accomplished. It tests visual-motor coordination. Memory can enter in to enhance speed of reproducing correct symbols. The individual's functioning on this test is sometimes coorelated with individual's numerical and verbal abilities.

Maze Test: Subject is presented mazes of varying difficulty and is asked to "find their way out". Tests ability to pre-plan and visual-motor coordination. This test is not used as often as the others.

LEITER INTERNATIONAL PERFORMANCE SCALE

It is sometimes necessary to use different individual intelligence scales to determine the level of functioning in certain individuals who have severe speech problems, speak foreign languages, are extremely shy and withdrawn and have hearing problems.

The Leiter is one of these tests which has proven to be very valuable in obtaining data which assists in classifying pupil's levels of intelligence. This test is especially useful with youngsters suspected of having at least a mental age of two. In certain instances of suspected mental retardation this scale may be administered to pupils in their teens.

When the final results are obtained, the person receives a score which is called a mental age. This mental age is obtained in a manner similar to the way the mental age is determined on the Binet.

The initial test procedures, beginning with year two, provide the examiner with an opportunity to observe the child in a learning-testing situation. This is valuable because it permits the examiner an opportuhity to observe how a child attacks new problems, the child's perseverance, degree of initiative and so forth. The sub-tests at years two and three may be used to orient the individual to the tests so that he understands what is expected of him.

There are four sub-tests at each year beginning with year two and extending through year sixteen. This scale tests a variety of basic visual motor preceptual functions. It is primarily one of association and matching in varying degrees of complexity.

There are matching color trials at years two, four and five. The essential task is to match colors which are the basic colors.

The matching of forms is found at the second, third, fourth, eighth, fourteenth and eighteenth year. The application of critical discrimination in visual form perceptions is the main function tested with these sub-tests.

Number discrimination is found at years three, four, seven, eight, nine, sixteen and eighteen. The number concepts of two and four are at years three and four. Estimation of numbers are located at the higher levels.

Block designs are at year two, three, five, six, nine, ten, twelve and sixteen. For an analysis of block designs refer to section on block designs in the material presented on the Wechsler test for children.

Some other example of single test items are: Genus at year five which involves completing the matching of a tree, soldier, ball and so forth. Clothing at year five involves knowing what part of the body uses a glove, shoe and hat. The line completion at year nine requires the matching of blocks to complete a line which indicates how a child assembles visually the small sections to finish a whole item.

MEASUREMENT OF INTELLIGENCE BY DRAWINGS
Goodenough "Draw A Man Test"

Investigations have suggested that drawings made by children may afford a valuable index to the nature and organization of the child's mental processes, and may thus throw light on some of the characteristics of mental growth. Early investigators were able to show rather conclusively that the drawings made by young children have an intellectual rather than aesthetic origin. They are determined by concept development rather than by visual imagery or by manual skill. The truth of the saying that "a child draws what he knows, rather than what he sees" has been verified by repeated experimentation. Drawings of the human figure were found to be most suitable for this purpose. By means of objective analysis and comparison of the drawings of several thousand children of different ages and varying educational achievement, a method of scoring has been derived which has proved serviceable as a measure of general intellectual maturity. The non-verbal nature of the test makes it particularly suitable for studying the mentality of children from foreign homes and of deaf children.

The Goodenough Intelligence Scale can be briefly characterized as follows:

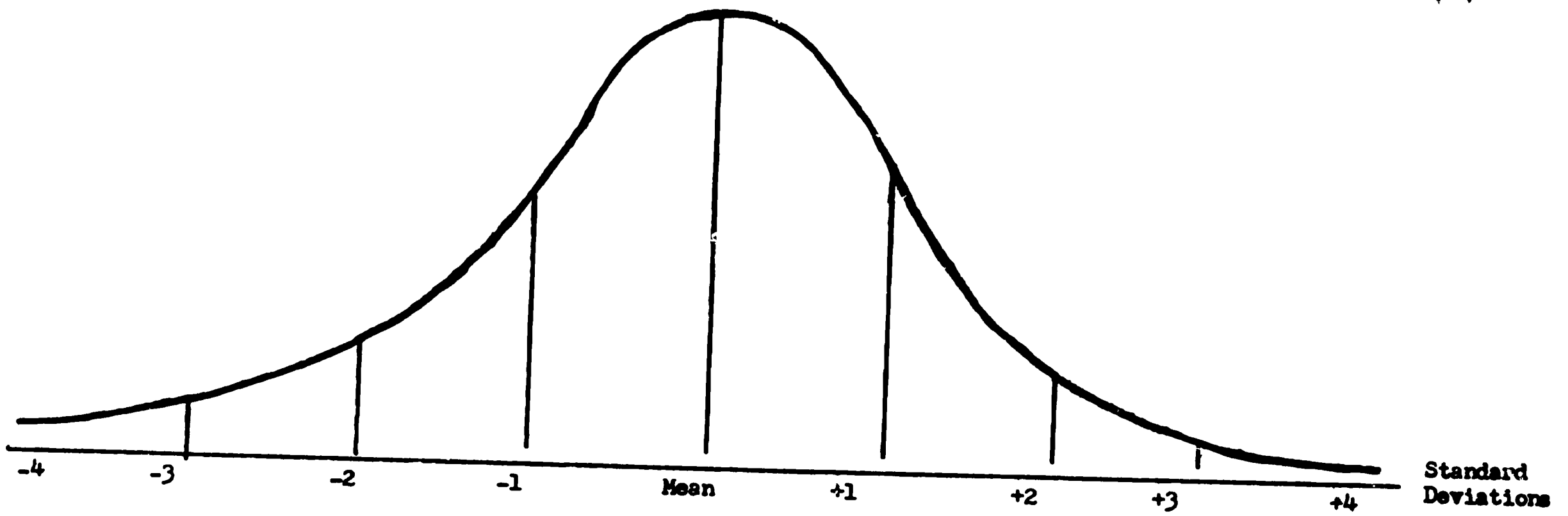
1. It utilizes nothing but the child's drawing of a man.
2. It is accordingly non-verbal.
3. It commonly requires no more than ten minutes for testing and a comparatively short period of time for scoring.
4. It is useful chiefly with children from mental age 4 to mental age 10.
5. Its realibility for a single unselected age group in this range lies between 80 and 90.

This test compares favorably with any group test, whether non-verbal or verbal, that has been devised for use in kindergarten and the first two grades. It is convenient to handle and requires a minimum of time as compared to other scales or instruments.

The idea that the spontaneous drawings of young children may throw light upon the psychology of child development is not a new one. Studies were made as early as 1885. Some investigators have found that drawing to the child is primarily a language, a form of expression, rather than a means of beauty. In the beginning the child draws what he knows rather than what he sees. The ideoplastic basis of children's drawings is shown most conspicuously in the relative proportions given to the separate parts. The child exaggerates the size of items which seem interesting or important and other parts are minimized or omitted. Drawings made by mentally sub-normal children resemble those of younger normal children in their lack of detail and in their defective sense of proportion. They often show qualitative differences, however, especially as regards the relationship of the separate parts to each other. Children of inferior mental ability sometimes copy well, but they rarely do good original work in drawing. The child who shows real creative ability in art is likely to rank high in general mental ability. Up to about the age of ten years children draw the human figure in preference to any other subject.

The drawings are divided into two classes, namely Class A and Class B. In Class A the subject cannot be recognized. In Class B all drawings can be recognized as attempts to represent the human figure, no matter how crude they may be.

This test is another tool used by the examiner in an attempt to gather more information about the child.



NORMAL CURVE SHOWING VARIOUS DISTRIBUTIONS