UNIT 4 ASSESSMENT AND CERTIFICATION

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4.0 INTRODUCTION

In the previous Units, you have learned about the various developmental disorders. In this Unit, you will be learning about their assessment. You will also know about the certification of disorders.

4.1 OBJECTIVES

After studying this Unit, you will be able to:

- discuss the meaning and importance of psychological assessment;
- describe the methods of psychological assessment;
- list out different types of tests used for assessing different disabilities; and
- explain the process of certification of disability.

4.2 PSYCHOLOGICAL ASSESSMENT

Psychological assessment is a reliable and indirect means of obtaining behavioural data. It refers to the process of estimation of the mental abilities and traits of the individual client. For the people with mental handicap, such assessment provides ancillary data for diagnosis and evaluation. Under the testing condition attempt is made to elicit certain specific behaviours under relatively controlled stimulus conditions which can be relatively easy to measure (Benton, 1967). It provides standardised and objective measure of sample behaviour (Anastasi, 1982). These tests are often conceived as laboratory procedures comparable to serology, electroencephalography and radiology procedures in clinical diagnosis. Such instruments can be viewed as microscopes or x-rays, if one wants to grasp the significance (Benton, 1967). Such test results should not be accepted as valid unless qualified psychologist feels confident that all requirements of psychological testing is fulfilled (Pitrowski, 1967).

Psychological tests used for assessment of disability may be broadly classified as criterion referenced tests and norm referenced tests. Several such norm-referenced as well as criterion referenced tests are used for the purpose of diagnosis and intervention. The norm referenced-tests are those which have normative scores or standard scores obtained from the normal population to compare a given score obtained from an individual; whereas, criterion referenced-tests are those, which do not have a norm or standard to compare. The individual’s own performance is used as the basis for comparison with his future performance in order to measure the change, may be in response to education or training. A wide range of tests are now commercially available to identify and diagnose the children with disabilities.

4.3 INTERVIEW

Interview is the most frequently used technique for diagnosis particularly at the early phase of assessment (Hawkins, 1979). It is a method by which an interviewer collects information verbally by interacting with an interviewee. The parents, teachers or caregivers of the retarded children provide excellent background data regarding important areas of behaviour which are not accessible to the therapist otherwise. Although interview does have important bearing on formulation of treatment strategies, the information may be susceptible to biases of the interviewee. Such biases may be generated from the informant’s general feeling about the retarded child.
Although, interview is an important means of gathering information, the scope of interviewing as a single assessment method particularly for the mentally retarded people, is limited. The problem of assessment is often compounded with speech defects and poor competence in self-reporting of the retarded person. Behaviour checklists contain description of a wide range of behaviour. This is used to assess a variety of skills of the retarded individual which are difficult to elicit from an informant in an interview alone.

4.4 BEHAVIOURAL ASSESSMENT

Behavioural assessment is a procedure of objective observation and measurement of behaviour either in natural or defined setting. This is a procedure of objective observation and measurement of behaviour. While assessing persons with disabilities, it is necessary to define the behaviour under study. In this context behavioural observation plays a significant role. This procedure of objective observation and measurement is behavioural assessment. It is basically a funnel-shaped process with a broad scope leading to eventual narrow and constant focus on specific behaviour (Hawkins, 1979; Cone & Hawkins, 1977). Behavioural assessment has five principal functions: (1) screening and general disposition, (2) definition and quantification of problems of desired achievement, (3) pinpointing the target behaviour(s), (4) monitoring the progress and (5) follow-up (Hawkins, 1979).

4.4.1 Direct Observation

Direct behaviour observation is the process by which the target behaviours are concurrently being observed and recorded (Repp, 1983). The goal of direct observation is to arrange learning conditions so that each occurrence of a response can be reliably recorded. It can be classified under four principal groups: (1) direct observation in natural setting or anecdotal observation, (2) controlled situation test, (3) role-play, and (4) self-report.

In anecdotal method, the aim of observation is to record the behaviour as it occurs in the natural setting. The behavioural assessor produces a narrative of the individual's behaviour within a specific time. An account of the environmental condition under which the behaviour is emitted is recorded as well. Apart from allowing the observer to measure various dimensions of behaviour, it provides excellent opportunity to identify the antecedent and consequent events which maintain behaviour under study.

In applied behaviour analysis, the narrative recording is maintained in antecedent-behaviour-consequence. The narrative recording method is most vividly illustrated by Barker, & Wright (1951). In their book ‘One Boy's Day’, the authors have given a detailed account of a 7-year old boy's behaviour for an entire day. However, the behaviourally oriented assessors have devised more sophisticated means of observation. Various codes have been introduced for recording of specific behaviours. These codes are tailored according to the response pattern of the target sample.

Observation codes are a series of symbols or abbreviations used for recording the presence or absence of certain classes of behaviour or events (Tawney, & Gast, 1984). Different codes have been devised by the observers to record behaviour under various settings. The observational codes designed by O'Leary, & Becker, (1967) for behavioural observation in classroom setting is one of the earliest attempts to employ the approach. Their codes were tailored to evaluate the effects of a token economy programme on class-room disruptive behaviour. These codes have been revised and updated by O'Leary and O'Leary (1972). Bijou et al. (1969) devised a general response code for studying children in class-room setting. Similarly Bersoff, & Moyer
(1973) developed an observation code to record administration of concrete rewards, verbal and non-verbal praise, attention and physical contact, behaviours that are presumably neutral with respect to their reinforcement qualities (e.g. asking questions) and responses of aversive nature (e.g. admonishment and non-verbal disapproval). For evaluating the antecedent and/or consequent events responsible for maintenance of disruptive behaviour, Patterson, Ray, Shaw and Cobb (1969) developed an observational code that evaluates the interaction between individual and significant others in the environment. A class-room observation system has been used by Jacob, O’Leary and Rosenbald (1978) to assess the environmental determinants of hyperactivity. For providing follow-up information on hyperactivity, similar codes have been used by Campbell, Edman, and Bernfield (1977). Abikoff, and Gittelman-Klein (1977), Johnson and Bolstad (1973), Kent and Foster (1977) have discussed the problem and advantages associated with observational assessment.

The basic difficulty inherent in naturalistic observation is that the observer has very little control over the setting where the behaviour has to be observed. For example, it is not always possible to observe the client’s behaviour in natural setting. In order to avoid these shortcomings, situation tests are designed. These tests are most frequently used in parent-child interaction.

4.4.2 Role Play

Role Play is often used to assess individual client’s behaviour in social environment where the therapist or the teacher attempts to elicit the target behaviour by asking the client to play certain roles. Such role-play situations provide excellent opportunity to observe certain behaviours which are almost impossible to observe in natural environment. The most extensive use of role play is found in assessment of social skills of the retarded individuals.

4.4.3 Self-report

Self-report or self-observation is another indirect method of assessment of individual behaviour. This method is used to assess behaviour which are not possible to be observed by an assessor. The client is asked to record his/her own behaviour in an objective and quantifiable manner. In spite of its drawbacks, it is an unique method of obtaining information regarding private behaviour of the client. However, it has restricted use for the people with mental retardation. Questionable reliability, poor expressive speech in some retarded people and poor comprehension are some of the problems faced in using this method as a reliable tool of behavioural assessment.

Self Assessment Questions 1

1) What is a norm referenced test?

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2) Describe the five principal functions of behavioural assessment.

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People with mental retardation have a wide range of deficits, which requires multidimensional assessment. The basic purpose of assessment is to diagnose cognitive, behavioural, biologic, emotional and/or developmental difficulties of the client and suggest diagnostic-prescriptive intervention. In recent years, increased attention has been paid to accurate assessment due to litigation concerning conventional assessment procedures, legislation related to provisional services to the handicapped children and updated standards for best professional practices (Reschley, 1980). Assessment can be undertaken at three different levels: at individual level, group or family level as well as at community level. However, in most general sense, assessment in mental retardation refers to the individualised assessment.

The diagnostic assessment of mental retardation is focused on two important domains: (1) Intelligence Quotient (in case of children, Developmental Quotient) and (2) Adaptive Behaviour. People with mental retardation are diagnosed primarily through assessment of intelligence and their adaptive behaviour. Alfred Binet, the pioneer of intelligence testing viewed intelligence in terms of three basic component skills: (1) Directionality: the tendency to take and maintain direction of behaviour, (2) Adaptive solution: finding means to reach the goal, and (3) Autocriticism: the capacity to show selective judgment and self-criticism. It requires the ability to process information efficiently, recall knowledge quickly and solve problems accurately, regardless of the information or problem involved (Mussen, et al., 1979). Intelligence test scores describe how the individual performs here and now and that all things being equal, he will continue to perform in like manner (Marrow, & Marrow, 1973). Some of the tests which are used most frequently for assessment of intelligence are discussed below:

4.5.1 Stanford-Binet Scale

Alfred Binet designed this scale of intelligence in 1905 to differentiate the children with mental retardation from others. He introduced the concept of mental age (MA) as the normal mental ability of an individual at any particular age. This is determined by his performance on age-appropriate tasks. The intelligence quotient (IQ) of an individual is determined by dividing the mental age by chronological age and multiplying this with 100 (IQ= (MA/CA) x 100). For calculation of mental age, Binet used the concept of basal age that is the age at which the individual correctly responds to all items in a test of intelligence correctly. In other words, it is the highest age at which the individual client responds correctly to all items. A ceiling age indicates the lowest age at which one fails to succeed in all the items. The age between these two, which is calculated by taking partially correct performances is called fractional age. Thus mental age is calculated by adding up the basal age with the fractional age. The areas which were covered...
under this scale of intelligence were Language, Memory, Thinking, Reasoning, Motor and Social Intelligence (Lezak, 1976). The Stanford-Binet Scale of Intelligence was adapted for Indian population by V. V. Kamath, which is popularly known as Binet-Kamath Test for General Mental Ability.

4.5.2 Wechsler Scales

David Wechsler developed a group of intelligence tests to assess intelligence of adults and children. The recent and revised version of adult scale of intelligence is Wechsler Adult Intelligence Scale–Revised (WAIS-R). It consists of 11 subtests, 6 of which are verbal tests and 5 are non-verbal tests. The verbal scales include Information, Comprehension, Memory Span, Arithmetic, Similarities, Digit Span and Vocabulary. The performance scales include Picture Arrangement, Picture Completion, Block Design, Object Assembly and Digit Symbol. Small (1980) has provided an outline of the intellectual functions tested by these subscales.

Table 1: The Intellectual Functions Tested by Subscales of Wechsler’s Intelligence Scales

<table>
<thead>
<tr>
<th>Verbal Scales</th>
<th>Performance Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests</td>
<td>Target Abilities</td>
</tr>
<tr>
<td>Information</td>
<td>Storage and retrieval of old data</td>
</tr>
<tr>
<td>Comprehension</td>
<td>Exercise of judgment, reasoning and abstract thinking</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>Mental calculation</td>
</tr>
<tr>
<td>Similarities</td>
<td>Concept formation and associative thinking</td>
</tr>
<tr>
<td>Digit Span</td>
<td>Recent memory and capacity to attend and concentrate</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Comprehension and expression of word meaning</td>
</tr>
</tbody>
</table>

There are three fundamental factors involved in Wechsler Intelligence Scales: Verbal, Attention and Perceptual-analytic (Witkin et al, 1950). Sensitivity of the Verbal Subscales to left hemisphere lesion and Performance Subscales to right hemisphere lesions has extended its application beyond detection of the level of intelligence for diagnosis of mental retardation alone.

The individual scores obtained from each subtest is compared to the standard deviation by which it deviates from the mean. The scores expressed in terms of standard deviation units are termed as standard scores. IQ expressed in this manner is called deviation IQ.
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Wechsler Scales yield three different deviation IQs: Verbal, Performance and Full Scale. The reliabilities of these scores are .97, .93 and .97, respectively.

The Wechsler intelligence scale for children (WISC), fourth edition (Wechsler, 2004) is used for assessing intelligence in children. The subscales in these tests are: Information, Comprehension, Arithmetic, Similarities, Vocabulary, Picture Completion, Picture Arrangement, Object Assembly, Block Design, Coding and Digit Span. WISC has been adapted for Indian children by A. J. Malin, called Malin’s Intelligence Scale for Indian Children (MISIC). In diagnosis of mental retardation, Wechsler Scales of Intelligence have been recognised as a standard tool (ICD-10, 1989) and are one of the most widely used scales for screening mental retardation.

4.5.3 Seguin Form Board

This is a performance test of intelligence which is also known as Goddard Form Board (Cattell, 1953). It can be used for assessing general intellectual functioning for children in the age group of 3.5 years to 10 years. The test consists of 10 wooden blocks of geometrical designs and a form board, also called pegboard on which these blocks can be appropriately placed. Although, the test primarily measures form perception and motor co-ordination of children, this can also be used as a measure of intelligence for children in the above age group for screening out mental retardation.

4.5.4 Gesell Developmental Schedule

Arnold Gesell (1925) developed this scale for assessing the developmental quotient (DQ). DQ is considered to be the equivalent to IQ and is calculated by using the same formula that we have discussed earlier for calculation of IQ. The domains which were covered under this test includes mental retardation, motor developmental retardation, neurological defects and organicity, adaptive behaviour, language development and personal-social behaviour. It supplements the medical examination in identification of children with mental retardation at the early stage of life (Arya, 1987). Its recent revision has upgraded its psychometric property as a screening instrument for mental retardation.

4.5.5 Adaptive Behaviour Scales

Adaptive behaviour refers to a person’s ability to cope with the demands of the environment. Individuals are considered normal only when they adapt to the social environment. Grossman (1983) defined adaptive behaviour as the effectiveness or degree to which an individual meets the standard of personal independence and social responsibility expected for age and social group (p.157). These behaviours are more likely to be modified through appropriate treatment or education. Prior to the development of intelligence tests, social incompetence was the main characteristic on the basis of which a person was judged whether he is mentally retarded or not (Nihira, 1969). As the retarded individual grows, he has to respond to more complex social demands and therefore, more likely to be identified in the later stages of life.

Although adaptive behaviour is an ill-defined term, an illusive concept and no single tool can measure all adaptive behaviours, there is need for assigning the key adaptive behaviours for identification and placement of children with mental retardation. The measurement of adaptive behaviour cannot be performed directly and must be determined by a series of observations. Some adaptive behaviour scales are discussed in this Unit.

An Adaptive Behaviour Scale developed by Nihira et al., (1969) was designed for the age group of 3-12 years as well as for 13 years and above. A combined form was developed in the years 1974 by Nihira and his associates called AAMD Adaptive
Behaviour Scales. A Public School Version of the instrument was also developed by Lambert (1975). This has got two parts, one dealing with adaptive skills and the other with problematic behaviours.

<table>
<thead>
<tr>
<th>Part One</th>
<th>Part Two</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independent functioning</td>
<td>10. Aggression</td>
</tr>
<tr>
<td>2. Physical Development</td>
<td>11. Antisocial vs. Social</td>
</tr>
<tr>
<td>3. Economic Activity</td>
<td>12. Rebelliousness</td>
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<tr>
<td>4. Language</td>
<td>13. Trustworthiness</td>
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<tr>
<td>5. Number and Time</td>
<td>14. Withdrawal vs. Involvement</td>
</tr>
<tr>
<td>6. Pre-vocational Activity</td>
<td>15. Mannerism</td>
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<tr>
<td>7. Self-direction</td>
<td>16. Interpersonal Manners</td>
</tr>
<tr>
<td>8. Responsibility</td>
<td>17. Acceptability of Vocal Habits</td>
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<td></td>
<td>19. Activity Level</td>
</tr>
<tr>
<td></td>
<td>20. Symptomatic Behaviour</td>
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<td></td>
<td>21. Use of Medication</td>
</tr>
</tbody>
</table>

AAMD Adaptive Behaviour Scales can be administered through the first person who knows the target child or may be conducted by the assessor directly by observing the behaviour of the concerned child. Each item is scored either as 0, 1 or 2 depending on either total absence, occasional or frequent presence of the behaviour.

**4.5.6 Behavioural Assessment Scales for Indian Children with Mental Retardation**

These scales have been designed to elicit systematic information on current level of behaviour of children with retardation who are in the age group of 3 to 18 years. However, the authors claim that this can be used as an assessment tool for people with severe mental retardation, even beyond 18 years of age (Peshawaria, Venkateshan, 1992). These scales have been developed in two parts: Part A consists of 280 items distributed over 7 domains like Motor, Activities of Daily Living, Language, Reading-Writing, Number-Time, Domestic-Social, and Pre-vocational-Money. The Part B of the Scales consists of 75 items distributed across 10 different domains of behaviour problems. It includes Violent and Destructive Behaviours, Temper tantrums, Misbehaviour with Others, Self-injurious Behaviours, Repetitive Behaviours, Odd Mannerisms, Hyperactive Behaviour, Rebellious Behaviours, Antisocial Behaviours and Fears. Inter-rater reliability of these scales was 0.84.

**4.5.7 Balthazar Scales of Adaptive Behaviour**

This instrument was developed by Earl E. Balthazar (1971) primarily for individuals who are profoundly and severely retarded. It has two sections to measure the effects of treatment and training and other types of programmes for individuals in residential institutions, day-to-day care centres, and assessment of self-care skills. Section I of the scales emphasises on assessment of self-care skills whereas Section II deals with social behaviour.

BSAB has to be administered directly by observing the child’s behaviour in a natural environment in familiar condition. Section II can be scored by recording the given behaviour either through frequency or in duration (with one-minute intervals). These scales are best used in a multidisciplinary setting.
4.5.8 Adaptive Behaviour Inventory for Children

This is a part of the System of Multicultural Pluralistic Assessment (SOMPA) developed by Mercer (1977) and Lewis (1977a; 1977b). It is designed to assess children between 5-11 years. The subscales are: (1) Family role performance, (2) Community role performance, (3) Peer group role performance, (4) Non-academic school role performance, (5) Academic school role performance, (6) Self-maintenance role performance. After rating, the raw scores are converted into scaled scores and plotted on the comprehensive SOMPA profile. It is a culture-free instrument.

4.5.9 Vineland Social Maturity Scale

This scale was developed by Edgar E. Doll in the year 1935 at Vineland, New Jersey. The scale primarily focuses on ‘social maturity’ of the individual, which roughly indicates the adaptive behaviour between 0-15 years of age. This scale was standardised and adapted in India by A. J. Malin at Nagpur. The scale consists of 117 items covering the domains of Self-help Skills, Occupation, Locomotion, Communication, and Socialisation. Although it covers the age up to 25 years, it is most applicable for younger children.

The Vineland Social Maturity Scale (Sparrow, Balla, & Ciccheti, 1984, 1985) has got three versions: (1) Interview Edition: Survey Form, (2) Interview Edition: Extended Form and (3) Classroom Edition. The first two forms are used for the age group of birth to 18 years 11 months. The Classroom Edition is used for children between ages of 3 to 12 years 11 months. These scales include items under four domains: Communication, Daily Living Skills, Socialisation and Motor skills. An optional Maladaptive Behaviour Domain is included in the Interview Edition to measure undesirable behaviour. These scales are useful for diagnosis of people with mental retardation.

4.5.10 Pre-school Screening System

Hainsworth and Hainsworth (1980) developed this test for pre-schoolers in the age group of 2 years 6 months to 6 years 9 months. This screening system has 4 principal domains such as Body Awareness, Visual-perceptual-motor and Language Skills. Its test-retest reliability is 0.99. It serves as an excellent tool for pre-school screening for developmental disability.

Self Assessment Questions 2

Tick mark the correct one:

1) Which of the following is not a verbal subtest in WISC?
   a) Information
   b) Comprehension
   c) Digit Symbol
   d) Arithmetic.

2) According to Alfred Binet, which of the following is not a core factor of intelligence?
   a) Directionality
   b) Adaptive solution
3) Which of the following scales has an interview edition?
   a) AAMD Adaptive Behaviour Scales
   b) Diagnostic Reading Scales
   c) Balthazar Scales of Adaptive Behaviour
   d) Vineland Social Maturity Scale.

4.6 LEARNING DISABILITY

Children who do not learn at a normal rate for reasons other than general mental impairment, lack of opportunity, social-emotional disturbance, or sensory defect are referred to as learning disabled (Hallahan, & Bryan, 1981). In fact, it is a heterogeneous group of disorders manifested by significant difficulties in one or more psychological processing involved in using spoken or written language (U.S Office of Education, 1968). According to most estimates, between 5-15 per cent of school aged children have learning disability. The incidence varies with socio-demographic and cultural-familial factors (Eisenberg, 1978; Rutter, 1978).

Children with learning disability exhibit certain specific problems which distinguish them from other children. These problems are primarily concerning academic achievement and school performance. They most often fail to develop age and grade appropriate aptitudes in areas such as reading, spelling, mathematics and written expression. Although, most children with learning disability have pervasive academic deficits, some children have academic difficulties in specific areas. Even if provided with appropriate schooling or learning experiences, they do not achieve at the proper age, one or more scholastic abilities. Secondly, the student has severe discrepancy between achievement and intellectual disabilities in one or more areas like reading, writing, arithmetic or spoken language.

For screening-out children with learning disability systematic assessment is a necessary prerequisite as one may land up in problems of including children with other problems which also lead to scholastic underachievement. All children with learning disability have poor grade points in specific subjects but all children with poor grade points are not learning disabled. At the initial stage, learning disabled children should be distinguished from children with mental retardation. Some children enter to the regular schools with mild or moderate mental retardation. It is manifested by general underachievement in school subjects. Management of such children requires extensive planning for remedial instruction, that many school fail to afford.

The assessment of people with learning disabilities is intricately linked with the theoretical models and issues related to the definition as well as identification of the condition. There are four assessment models which are based on (1) the discrepancy between aptitude and achievement, (2) low achievement, (3) intra-individual differences, and (4) response to intervention (Fletcher, Francis, Morris, & Lyon, 2005). One of the basic purposes of assessment is to differentiate this group of underachievers from other groups of underachievers such as those with mental retardation and other forms of psychopathology affecting their academic performance. This may include sensory disabilities, poor educational instruction and lack of adequate opportunities. Therefore,
the assessment has a broad meaning. In this Unit we will focus on psychometric and psycho-educational assessment.

Initially, the individual's general intelligence or general cognitive abilities are required to be tested in order to distinguish mentally retarded individuals from those with learning disabilities and even to compare whether their academic performance matches with their actual intellectual abilities. Assessment of poor scholastic achievement can be conducted through teacher-made curriculum-based tests used for regular scholastic assessment. One can take, the grade-points obtained by the child into account as index of scholastic achievement of individual child in specific subjects. However, there are number of drawbacks in taking poor scholastic achievement alone as an index of learning disability because all children showing poor scholastic performance are not learning disabled. Some of them may be mentally retarded too. Some may have sensory defects or a poor score can be simply due to poor instruction in the class. The preparatory strategy of the child also matter in performance. Many children enter to the regular schools without a standard assessment of intelligence at the early stage of schooling. As a result of which these unscreened children show generally poor scholastic performance. Therefore, additional screening is required. For assessing general intellectual impairment, standardised intelligence tests discussed above can be used.

In the Western countries, where English is the native language and often used as the mother tongue, several standardised tests have been developed in English particularly to find out the reading quotient of children. However, in India, where English is not a mother tongue for majority of people, developing such standardised tests of reading has not been possible. We still rely on the qualitative measures while comparing children's scholastic performance with a standardised test of Intelligence. However, for assessment of intelligence or general intellectual abilities, several tests have been adapted to the individual requirement. Some such comprehensive tests are the following:

**4.6.1 NIMHANS Index for Specific Learning Disabilities**

This battery of tests was originally developed by John (1989). The test was standardised in a population of 50 children with learning disability and 50 normal children. In 1992 Kapur and associates (Kapur et al, 1992) expanded this test. Now it consists of the following tests: Attention Test (Number Cancellation), Language Test (Reading, Writing, Spelling and Comprehension), Arithmetic Test (Addition, Subtraction, Multiplication, Division, and Fractions), Visuo-motor Skills (The Bender Gestalt Test and Developmental Test of Visuo-motor Integration) and Memory (Auditory and Visual). The scale was administered to children from slum schools as well as those catering to the middle class. NIMHANS Index for Specific Learning Disabilities has two levels: Level I and Level II. The first is meant for children in the age group of 5-7 years and the second, for those who are in classes 1-7. It was found that among slum children, about 15 per cent children could perform class appropriate tasks, whereas, 66 per cent children from middle class families had difficulties in learning academic kills.

**4.6.2 Diagnostic Test of Learning Disabilities**

Swarup and Mehta, (1991) developed this diagnostic test of learning disability which was primarily for screening out children. The test consists of 100 items in 8 different core areas, which included visual processing, auditory processing, motor-coordination, cognitive, language, memory functions, perseveration tendencies and disorders in affective domain. Assessment is conducted in different areas of functioning such as Eye Hand Coordination (EHC), Figure-Ground Perception (FG), Figure Constancy (FC), Position in Space (PS), Spatial Relations (SR), Auditory Perception (AP), Cognitive
Abilities (CA), Memory (M), Receptive Language (RL), Expressive Language (EL). There are 10 items in each domain.

4.6.3 Learning Disabilities Screening Checklists

Behavioural Checklist for Screening Children with Learning Disability (BCSLD) (Swarup, 1991) is used as a tool for general screening to identify children with learning disability. This checklist consists of 30 items in order to assess the abilities in 8 different areas, like visual processing, auditory processing, motor-coordination, cognitive, language, memory/functions, perseveration tendencies and disorders in affective domain. Thus, the checklist not only takes the perceptual and cognitive aspects but also emotional functions into account.

A Classroom Screening Instrument for Tentative Identification of Children with Learning Disabilities (Revised and Enlarged Edition of 1970) (Meier, 1971) is a checklist developed in Rocky Mountain Educational Laboratory, Colorado. The battery consisted of 8 different areas of assessment, including Visual, Auditory, Speech, Body/Motoric, Writing, Reading, Relational/Conceptual and Social-Emotional. A teacher who has been teaching the children, is asked to fill in the screening instrument indicating the average number of hours and days he/she spends with the children under screening also. Both the above screening devices require the children to respond to certain items in these instruments.

Myklebust, 1968) suggested a formula of Learning Quotient (LQ) i.e LQ = Expectancy Age (EA)/Achievement Age (AA). Expectancy age (AA) = Mental Age(MA) + Chronological Age (CA) +Grade Age (GA)/3. Achievement age can be calculated by using achievement tests. If the score is less than 0.98 the individual is considered as learning disabled.

4.7 READING ASSESSMENT

There are number of informal as well as formal tests of reading. The informal test are often used by the teachers and therapists. Day-to-day observation during oral reading, seat-work and recreational reading constitute the tasks for reading assessment. Oral reading i.e reading loudly and silent reading, both should be taken into account for assessing the subjects’ reading skills. Apart from this attitude and interest, word analysis skills, use of context cues, attention to meaning and fluency are important indicators of reading. A reader may make several mistakes in reading.

4.7.1 Ekwall Reading Inventory

Ekwall (1986) developed a 30-items checklist. Some of the areas are as follows : (1) word by word reading, (2) incorrect phrasing, (3) poor pronunciation, (4) omissions, (5) repetitions, (6) inversions and reversals, (7) insertions, (8) substitutions, (9) basic sight words, not known, (10) sight vocabulary, (11) guesses at words, (12) consonant sounds not known, (13) vowel sounds not known, (14) vowel pairs and consonant clusters not known (e.g. diagraphs, diphthongs, blends), (15) lack of desirable structural analysis, (16) unable to use context cues, (17) contractions not known, (18) inadequate comprehension, (19) inadequate vocabulary, (20) unaided recall, (21) response poorly organised, (22) unable to locate information, (23) inability to skim, (24) inability to adjust rate to difficulty of materials, (25) low rate of speech, (26 ) high rate expression etc.

A teacher may mark different types of reading errors such as omissions (0), insertions
Developmental Disorders

but), substitution (element supplement), reversals (_______), repetition (///), hesitation (/) aided words (fragile : teacher aids). A standard proof reader’s proof correction symbols can be used or special symbols can be invented for indicating reading errors. Cloze Test is used as a test of reading comprehension. This test is based on the Gestalt psychologists’ principle of perception. Every individual reader has an innate tendency of filling in the ‘gaps’ in perception and that aids in understanding of the information provided. A skilled reader uses this process to derive meaning from the text, which an unskilled reader fails to do effectively. Therefore such ‘gaps’ are purposively created in reading text by removing word at different places of the text. The reader is asked to fill in the gaps. There are several tests of reading available in the West, which contain cloze test as an item in the battery of tests. Ahuja and Ahuja (1989) developed a Reading Comprehension Test in English language for children in VIII to X grades,. The test consisted of 9 different passages. The subject is asked to fill in the gaps in each paragraph. Different time limits were set for responding to these gaps for students of different classes. It indicates reading comprehension. A cloze test is relatively easier to construct and it provides roughly the same assessment as multiple choice tests of reading.

4.7.2 Gates-McKillop-Horowitz Reading Diagnostic Tests

Gates-McKillop Reading Diagnostic Tests (Horowitz, McKillop & Gates, &, 1981) is an individually administered test for children between 2-6 years and examines a wide range of word analysis skills. Two parallel forms of this test is available. The subtests include (1) oral reading with error analysis, (2) flash presentation, (2) untimed presentation of words, (3) flash presentation of phrases, (4) knowledge of word parts, (5) recognition of visual forms representing sounds and (6) auditory blending. There are supplementary tests too including spelling, vocabulary, syllabication and auditory discrimination. This is considered as one of the most complete tests of reading.

4.7.3 Woodcock Reading Tests

There are five subtests in Woodcock Reading Tests-Revised/Normative Update (WRMT-R/NU) (Woodcock, 1998), which include (1) letter identification (naming different uppercase and lower case manuscripts and cursive letters of the alphabet), (2) word identification (identification of specific words), (3) word attack (identification of nonsense words), (4) word comprehension (completion of analogy formats) and (5) passage comprehension (silent reading of a passage and supplying appropriate words for the blanks). The test is used for children upto XII grade. This test has two alternate forms, each can be administered within 30-40 minutes time.

4.7.4 Durrell Analysis of Reading Difficulty

Durrell Analysis of Reading Difficulty (Durrell, & Catterson, 1980) is one of the most widely used test of reading used for children from non-reading level to grade VI and administered by trained professional. The oral reading passages used in this test are accompanied by comprehension questions. There are also paragraphs for silent reading and listening comprehension. The subtests include (1) listening, (2) vocabulary, (3) sounds in isolation, (4) spelling, (5) visual memory of words, (6) identifying sounds in words, (7) pre-reading phonic abilities. It can be administered within reasonable time period. The checklist of errors provided in the test is one of the most complete of its kind.

4.7.5 Diagnostic Reading Scales

This test was developed by Spache (1981) to assess competence in reading. It consists
of 3 word recognition lists and 22 passages of increasing order of difficulty to evaluate
word recognition, word analysis and comprehension. While reading, the errors are
checked and questions are put to assess comprehension. There are three levels of
difficulty assessed through this test: (1) Instructional, (2) Independent and (3) Potential.
In order to assess consonant and vowel sounds, blending, initial consonant and vowel
sounds, blending initial consonant substitution, and auditory discrimination there are 12
supplementary tests. This test is meant for children in a wide age range of 1-7 years.

There are other more specific reading tests such as Gray Oral Reading Test (Gray, &
Robinson, 1967), Gilmore Oral Reading Test (Gilmore, & Gilmore, 1968), Doren
Diagnostic Reading Tests (Doren, 1973), Botel Reading Inventory (Botel, 1978), Test
of Reading Comprehension (Brown et al., 1978).

Self Assessment Questions 3

1) Describe the four assessment models of learning disabilities.
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

2) Cloze test is used to assess:
   a) Perception
   b) Reading comprehension
   c) intelligence

3) Answer whether the statements are true or false.
   a) Receptive language is a sub-test in Diagnostic Test of Learning Disabilities.
      Yes/No
   b) Grade Level Assessment Device is one of the tests of learning disability.
      Yes/No

4.8 WRITING ASSESSMENT

Writing is considered as one of the most complex forms of communication. Proficiency
in written language requires competency in many areas of language and psychomotor
skills such as speaking, reading, spelling, hand writing, grammar, usage of words,
vocabulary and so on. Accordingly, assessment is complex and requires attention to a
number of sub-skills. The achievement tests of writing are used for comparing the
student’s performance with statistically derived standardisation norms. It indicates the
individual student’s position in comparison to others of same grade or age range. The
findings are usually reported in terms of grade equivalents, percentiles etc. The teacher
does not get specific error patterns to formulate intervention plan for the student. Some
such standardised achievement tests are given in Table 2.
### Table 2: Achievement Tests with Written Expression Sections

<table>
<thead>
<tr>
<th>Tests</th>
<th>Components Assessed</th>
<th>Grade Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>California Achievement Tests (Tiegs, &amp; Clarks, 1970)</td>
<td>Word usage, mechanics, and grammatical structure</td>
<td>3-12</td>
</tr>
<tr>
<td>Stanford Achievement Tests (Madden, &amp; Gardner, 1972)</td>
<td>Mechanics and grammatical structure</td>
<td>3-9</td>
</tr>
<tr>
<td>Iowa Test of Basic Skills (Hieronymus, &amp; Lindquist, 1971)</td>
<td>Word usage and mechanics</td>
<td>1-9</td>
</tr>
<tr>
<td>SRA Achievement Series (Thorpe, Lefever, Nasland, 1974)</td>
<td>Mechanics and grammatical structure</td>
<td>2-9</td>
</tr>
<tr>
<td>Metropolitan Achievement Tests (Durost, et. al., 1970)</td>
<td>Word usage, mechanics, and grammatical structure</td>
<td>3-9</td>
</tr>
</tbody>
</table>

* Mechanics includes punctuation and capitalisation.

**Source:** Wallace, & Larsen (1991)

Apart from achievement tests there are diagnostic tests too to find out specific writing disorders, but the numbers are very few.

#### 4.8.1 Picture-Story Language Test

This test was developed by Myklebust (1965) to study written expression. The student is presented a picture and asked to write a story. The stories are evaluated in terms of productivity, correctness and meaning. Productivity refers to the amount of language used or the length of the story. The number of words used per sentences is also computed. Correctness refers to the correctness of syntax. That includes word usage, punctuation etc. Meaning refers to the actual content of the story. Once the scores are obtained, they are converted to age equivalents and percentiles and stanines.

#### 4.8.2 Sequential Test of Educational Progress

This test was developed by Educational Testing Service (1985). This is a standardised test that consists of items in the following areas: organisation, conventions, critical thinking, effectiveness and appropriateness. The test was prepared by analysing the actual errors made by the students in writing.

Informal tests are frequently used to assess the quality of writing of students in the classroom. They focus on the (1) mechanical aspects like handwriting or penmanship, punctuation and capitalisation and (2) sentence and paragraph sense. The legibility of handwriting, including letter formation, spacing, alignment, slant and quality of line are important factors. Development of gross and fine-motor coordination is essential for good handwriting.
There are number of other psychological characteristics which coexist with learning disability and some have causative significance, which require more specialized and criterion-based assessment.

### 4.9 MATHEMATICS DISABILITY

#### 4.9.1 Formal Assessment

There are various tests of mathematical abilities; some are standardised achievement tests and others are diagnostic tests of arithmetic tests. Some of these tests constitute a part of the battery for assessment of overall scholastic performance of the child. A few selected tests are briefly described below.

One of the widely used tests is *Peabody Individual Achievement Tests* (Dunn, & Markwandt, 1970). This is meant for assessing children from kindergarten level to Grade 12. *Wide Range Achievement Test* (Jastak, & Jastak, 1965) is used for children at pre-school level and above. It assesses counting, numbers, symbols, oral problems, and computational skills. Similarly, *Metropolitan Achievement Tests* (Durost, Bixler, Wrightstone, Prescott & Balow, 1971) is used for children in grades of 3-9. It measures computational skills, problem solving and concepts. All the above tests are designed for English-speaking children.

The SRA Achievement Series in Arithmetic (Thorpe, Lefever, & Naslund, 1964) assesses computational skills, reasoning and mathematical concepts of children in the grades of 1-9. The *California Achievement Tests* (Tiegs & Clark, 1963) also measure computational skills for children in the grade levels of 1-9.

There are number of other diagnostic tests of mathematics. Widest range of tests covering KG to Grade 12 are *Comprehensive Test of Basic Skills*, *Iowa Tests of Basic Skills*, and *Stanford Achievement Test, Kaufman Test of Educational Achievement-Normative Upgrade* (K-TEA-NU), *Peabody Individualised Achievement Tests-Revised* (PIAT-R), and *Stanford Diagnostic Mathematics Test* (SDMT, 3rd ed.). There are other tests like (Test of Early Mathematic Ability-2 (Grades Pre-school-3), and *Test of Mathematical Abilities-2* (Grades 3-12). *Enright Diagnostic Inventory of Basic Arithmetic Skills* (Grades 6-Adult), *Key Math- Revised* (Grades K-6), *Diagnostic Tests of Self-Helps in Mathematic* (Grades-3-8), *Sequential Assessment of mathematics Inventory* (Grades K-8), *Brigance Comprehensive Inventory of Basic Skills-Revised* (Grades K-9), *Brigance Diagnostic Inventory of Essential Skills* (Grades 6-Adult), and *Wide-Range Achievement Test-3* (WRAT-3) Age 5-adulthood, *Diagnostic Mathematic Inventory Mathematic System* (Grade 1-12) are some of diagnostic mathematical tests, which are necessary for programme planning as well.

For Indian children in the grade 1 through 4, Ramaa (1984) developed a test of mathematical disabilities. The test covers 3 major areas: number concept, arithmetic process (operations) and arithmetic reasoning. Recently, Narayan (1997) developed a Grade Level Assessment Device. The device was designed to assess learning disabilities in children in the range of 1 to 4 grades and has two formats: Format I and Format II.

#### 4.9.2 Informal Assessment

Diagnostic tests of arithmetic are conducted in order to determine the exact nature of arithmetic skill deficits. However, formal tests seem to be more useful for the purpose of classroom instruction and training. Apart from using standardised and diagnostic tests, a teacher should also use informal measures of mathematical skills by constructing inventories based on the curriculum used in the classroom. For example, in order to
assess the process of mental operations, he/she may ask questions regarding the steps followed in performing the calculations. The mathematical errors such as errors of place value, computational facts, using wrong process, or working from right to left may be checked in informal assessment. Where standardised tests are not appropriate to administer, due to technical and other reasons, a teacher may use curriculum-based tests.

What is most important in assessment of children with learning disabilities is to make curriculum based-assessment, by preparing tests which are based on the curriculum of the children. Text-books prescribed for the syllabus can be used as effective source of sampling items for testing instead of using the foreign tests which have not been standardised for the children under assessment.

The children suspected of learning disability should be assessed first with more general batteries of learning disability, then for assessment of specific scholastic skills. Now, instead of using discrepancy model for diagnosis of children with learning disabilities, attempt is made to use alternative means of diagnosis (such as assessing the children’s response to intervention or processing deficit) to identify and train children with learning disabilities.

4.10 CERTIFICATION

The Central Government amended the (Central) Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Rules in December, 2009. Accordingly, the issue of Disability Certificate is now an essential requirement for the Persons with Disabilities to avail benefits under various schemes and concessions from the Government. For certification of people with different disabilities, there are prescribed criteria of assessment and certification. Rehabilitation Council of India is the apex body that determines the qualification of the rehabilitation professionals for the specific forms of disabilities. A Central Rehabilitation of Register is maintained for such professionals. You can refer to its website to have the guidelines for certification for various professionals working in the area of disability. Only, about 35 per cent of persons with disabilities had been issued disability certificates as in October, 2010. Hence, the process of certification for various disabilities for persons with disability has been simplified now. Disability Certificates are issued by three-member Medical Boards constituted at the District level.

In pursuance of the amendment to the Central Persons with Disability Rules, guidelines have been issued to State Governments to constitute a Medical Board for issuing disability certificates. As far as Medical Board is concerned, different boards are constituted for different disabilities. For instance, for Locomotors and Leprosy, those specialists working on regular basis in the field of Physical Medicine and Rehabilitation (PMR)/Orthopedics are empowered to do so. For certifying disability certificate to people with Hearing Impairment, the specialist are those who are working on regular basis in the field of ENT; in case of Mental Illness and Mental Retardation, it is those who work in the field of Psychiatry; for Blindness & Low Vision those in the field of Ophthalmology; and for Multiple Disability the Medical Board should comprise of one Chairman and three members as follows: One Specialist each from the Departments of Physical Medicine and Rehabilitation (PMR)/Orthopedics, ENT, Psychiatry and Ophthalmology. The senior most specialists shall act as the chairman of the Board. For the purpose, certain Hospital/Institutions are being specified as the “Medical Authority” for the same. The amended Rules enable simplified and decentralised procedure for issuance of Disability Certificate. Directions have been sent to issue disability certificate as far as possible,
within seven days from the date of receipt of application but in any case not later than 1 month. There is also a provision for review of the decision regarding the issuance or otherwise of the certificates from time to time. You will learn further about the issue of certification in Unit 3 of Block 2 in MPC-054.

Self Assessment Questions 4
1) Describe the Picture Story language test.

2) Who issues the disability certificate?

4.11 LET US SUM UP
In this Unit you learned that psychological assessment of people with disability is important as it provides ancillary data for diagnosis and evaluation. There are various methods of psychological assessment which include interviews, behavioural assessment, and psychological testing. Each one of it has its advantages and limitations. You also learned the different tests used for assessment of mental retardation, learning disabilities, reading, writing and arithmetic skill. It was also pointed out that for the purpose of certification, qualified rehabilitation professional should conduct psychological assessment of such children with disabilities.

4.12 ANSWERS TO SELF ASSESSMENT QUESTIONS
Self Assessment Questions 1
1) Norm referenced-tests are those which have normative scores or standard scores obtained from the normal population to compare a given score obtained from an individual.

2) Behavioural assessment has five principal functions: (1) screening and general disposition, (2) definition and quantification of problems of desired achievement, (3) pinpointing the target behaviour(s), (4) monitoring the progress and (5) follow-up.

3) The four principal groups of direct observation are as follows: (a) direct observation in natural setting or anecdotal observation, (b) controlled situation test, (c) role-play, and (d) self-report.

Self Assessment Questions 2
1) a) Digit Symbol
2) c) Persistence

3) d) Vineland Social Maturity Scale

**Self Assessment Questions 3**

1) The four assessment models of learning disabilities are based on (1) the discrepancy between aptitude and achievement, (2) low achievement, (3) intra-individual differences, and (4) response to intervention

2) b) Reading comprehension

3) a) Yes
   
   b) Yes

**Self Assessment Questions 4**

1) The picture story language test was developed by Myklebust (1965) to study written expression. The student is presented a picture and asked to write a story. The stories are evaluated in terms of productivity, correctness and meaning.

2) Disability Certificates are issued by three-member Medical Boards constituted at the District level.

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**4.13 UNIT END QUESTIONS**

**Section A**


2) Define learning disability and describe some comprehensive tests of learning disability.

3) How would you assess people with reading disability? Discuss.

4) Discuss the formal and informal tests that can be used for assessing.

**Section B**

Write short notes on the following:

a) Behavioural assessment

b) Interview

c) Gesell Developmental Schedule.

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**4.14 REFERENCES**


### 4.15 SUGGESTED READINGS


