Unit 4 ❒ Identification and Assessment of Visual Impairment

Structure

4.1 Introduction

It is important to identify children who have impaired vision. The children with visual problems can be identified with some simple techniques; Vision may be improved with spectacles, treatment or operation. Early intervention services have significant impact on improving visual functioning of the visually impaired infants and toddlers. Thus, it is important to identify children who have impaired vision at an appropriate time. The identification of these children must be carried out on the basis of objective assessment of the eye condition and visual functioning. This assessment provides information regarding a student's ability to use his vision within the learning environment. In this unit we shall discuss the meaning, need and importance of clinical and functional assessment procedures – attention, tracking, visual closure visual background, from constancy, eye- hand coordination and eye-foot coordination and the activities to improve the visual efficiencies. The report on the "Global initiative for the elimination of avoidable blindness by the World Health Organization" documents that there are 8.9 million blind people in India.

The definition of Low Vision defined by WHO-ICEVH conference on the "Management of the Low Vision in children is: A person with low vision is one who has impairment of visual functioning even after treatment or standard refractive correction and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10° from the point of fixation, but who uses, or is potentially able to use vision for planning and / or execution of a task." This is a functional / working definition of low vision. It recognizes that people with limited amount of vision are low vision. While the educational service for blind persons in India is more than 100 years old, the education of low vision is of recent origin. In the 1980s, education of low vision was provided with non-visual methods. In this unit, we shall analyze the maximum use of remaining vision to increase the visual efficiency that all children and adult get the greatest benefits from whatever sight they have. In this unit, we shall analyze the concept of clinical

evaluation, functional vision, visual efficiency and activities to promote visual efficiency etc.

The Importance of early identification and intervention, clinical assessment, activities for functional assessment and the use of adapted tests for assessment are discussed in this unit.

Vision is responsible for 80 to 90% of what a child learns during the first six years of life. A child uses vision in real life situations and these real life situations are the environments which promote his/ her growth and development.

Functional vision refers to an individual's ability to use his/her vision in the everyday tasks of real life, such as reading, doing house work, getting around place to place.

A functional vision assessment measures how well a child uses his/her vision to perform routine tasks in different places and with different materials throughout the day. This information gathered in the assessment enables the Low Vision teacher and the parent/ caretaker to develop an educational programme which will further enhance the development of functional vision.

The assessment of functional vision aims to determine:

- What people see
- How they can see and use their vision
- Under what conditions they can see

The information can be used to understand why people can or cannot do particular activities. The purpose is to provide information about the use of vision plan training to enhance visual skills.

A functional vision assessment is conducted by rehabilitation professional –a low vision specialist, or a teacher who is specially trained in low vision; Information about how the child uses his / her vision is gathered from parents/caregivers and other teachers who know the child well. Specialist will review records and may talk to the eye doctor to learn more about the child's visual condition.

Functional Assessment can be done at various places and with a variety of materials. It is crucial to assess the child in everyday setting at home (indoors and outdoors); school(in the classroom or playground); or in the community, doing his/her usual activities and tasks. The low vision specialist will observe the child in his/her usual surroundings to learn how the child uses vision. It is essential to evaluate the child's effective use of vision

Factors that affect how well a person sees

- Visual Acuity
- Visual Field
- Control of eye movements
- Light
- Colour
- Contrast
- Duration and severity of low vision
- Use of low vision at an early age/ visual experience
- Intelligence

*** What is Functional Vision?**

Functional vision is the use of vision for particular activities. Functional visual skills are required to carry out every day activities.

4.2 Objectives

After studying this unit, the learners will be able to:

- Identify the children with visual problems
- Define and describe the need and importance of intervention
- Understand the importance of clinical assessment
- Distinguish "clinical evaluation" from " functional vision"
- Describe visual efficiency and suggest activities to promote visual efficiency to the visually impaired person;
- Explain the optical and non-optical devices that are used to increase visual function
- Suggest activities to promote visual efficiency training programme for the visually impaired person;
- Identify the useful activities to improve eye hand coordination and eye foot coordination;
- State the importance of guidance and counselling to promote visual efficiency training programme

- Use commonly adapted tests for visual assessment
- Carry out functional assessment to low vision children.

After studing this unit the students will be able to learn :—

- What is functional assessment of vision.
- How the assessment of functional vision aims to determine.
  — What people see
  — How they can see and use their vision.
  — Under what conditions they can see.
- Factors that effect how well a person sees.

4.3 Interpretation of clinical assessment of vision

4.3.1 Importance of Early Identification and Intervention:

Child development research has established that the rate of human learning and development is most rapid in the infant and toddler stage. Neglect of appropriate eye check-up of children reporting eye problems runs the risk of damaging the vision of children who otherwise can be helped to make the best use of their remaining vision. This will also run the risk of missing an opportunity to learn during a state of maximum readiness. Karnes and Lee (1978) have noted that only through early identification and appropriate programming can children develop their potential.

Children with low vision experience challenges in playing communicating, interaction, learning, problem-solving skills, and performing in daily routines and activities. Early intervention plays a significant role in preventing and reducing the extent of developmental delays. Early intervention applies to children of school age or younger who are discovered to have or be at risk of developing handicapping condition. These children can be helped in overcoming their difficulties by appropriate provision of services for the purpose of lessening the effects of the condition.

Early intervention is a part and parcel of total rehabilitation process. It is individual based. It aims to help attain independence in children with special needs resulting from low vision condition. Early intervention can be remedial or preventive or remedying the existing developmental problems or preventing their occurrence. Early intervention focuses on the child alone or the child and the family together. It could be centre-based,

home based, hospital based or a combination of these. Early intervention may begin at any time between birth and school age. There are three primary reasons for initiating early intervention. They are:

1. To enhance the child's development
2. To provide support and assistance to the family
3. To maximize the child's and family benefit to the society.

4.3.2. Tools for Low Vision Assessment

The tools for low vision assessment are long handled occluders, Janelli's and Halberg clips, printer, trial lens holder, clip-on pin-hole, universal and paediatric trial frames, jackson's cylinders up to 2 diopters, ruler and torch. The tools also include a full aperture trial lens set and a good range of auxiliary lenses like Stenopic slit, red green filters, prisms, etc.

These may include Snellen's, ETDRS LogMar, Sloan's Letter, Lea's symbols, VA Tester, Lea's preferential looking paddles, paediatric low vision test, Fienbloom distance test, Bailey-Hall Cereal test. Other tests include brightness acuity test for glare assessment. Panel D15 for quantitative colour vision assessment, Lea's low contrast symbol test for contrast sensitivity assessment, Amsler chart manual for central visual field assessment and Ishihara test for colour blindness.

Following is the routine for a low vision examination.

Steps of Low Vision Assessment

3 Steps:

1. Clinical Evaluation
2. Functional Evaluation
3. Vision Rehabilitation

It involves a complete understanding of the condition, its symptoms and concluding the management of the low vision patient. Careful observation of the client's behaviour and his physical status can provide an insight to the severity of the problem.

Importance of Diagnosis: the clinical team is primarily responsible for diagnosing the low vision client accurately as the functional implications of the cause of low vision is different in each eye disorder. The areas of intervention are specific to certain eye

disorders. Similarly, the age and the status of the eye disorder, whether progressive and non progressive also has a bearing on the interventions planned for the low vision client.

4.3.3 Clinical Low Vision Assessment:

A. Observation

Patients can be observed as they enter the room to see whether they walk unaided or are supported, whether they feel for a handrail or easily recognize open doorways. Wearing dark spectacle lenses or holding the head down may imply sensitivity to light, although this head position could be due to arthritis. Other things to look for are difficulty in holding things or, tremor. Many elderly low vision patients may attend with a care taker or relative. To summarize observe the following :

1. Mobility
2. Fixation
3. Posture
4. Psychology of patient

- Ready to accept the services
- Motivated/ depressed

B. Interview and History Taking

Interviewing is important in order to understand the emotional status and individual needs of the client. The interview also works as a platform for developing a rapport between the examiner and the client. The interview starts with the case history with emphasis on the visual problem. This is followed by the individual's personal history that includes occupation, education, living status and specific functional aspects, like independence, orientation, mobility and activities of daily routine.

The daily routine of the client can identify the needs of the individual and areas where help may be needed. Brining to focus activities that may be possible can help in narrowing down the objectives of the client. All the data from the interview have to be recorded in an organized manner so it could be used effectively in finding the solutions.

History taking is one of the most important aspects of any low vision evaluation

It is critical for the development of appropriate and realistic evaluation and management strategies. Following points should be covered.

*** General Information**

- Demographic Information
- Interaction between the patient and the accompanying family member
- Marital Status/ Living Situation

*** Ocular History**

- Ocular history correlates the onset of specific visual complaints with disease appearance, progression or treatment
- Diagnosis and onset of symptoms
- Past, current, or planned surgeries or treatments
- Stability of vision
- Family history of eye disease
- Previous history of eye disease or vision problem
- Current or previous use of spectacles, contact lenses, or low vision aids
- Patient's understanding of vision condition and implications for functioning
- Virtually, very ophthalmic intervention has functional consequences

*** Systemic History**

- Many systemic illness have direct ophthalmic effects, one of the most obvious being Diabetes.
- General health review
- Current medications
- Hearing impairment or other handicapping conditions
- Self- care needs (e.g., ileostomy, diabetes)
- Orthopaedic handicaps
- Psychology considerations (e.g., denial, depression, co-dependency, or suicidal tendencies)
- Activities critical to manage are:-

*** Educational or Vocational Status**

- School requirements

- Seeing blackboard
- Computers
- Reading Instrument
- Retired
- On leave from work due to low vision
- Homemaker
- Has the client considered retiring or resigning because of the vision
- Social activities hampering

*** Financial Status**

- It's important to understand the commitment to the device
- Basic needs of the client
- Affordability of the device

*** Task Related History**

- It is most important as it provides insight into day-to-day problems that the patient faces. Task –related history should also focus towards the occupation of the patient. It helps the practitioner to understand the basic requirement of the patient.
- Visual tasks can be divided into

*** Lighting Situation**

We also need to check the lighting situation to understand the patient's problem whether he is able to tolerate sunlight, having difficulty in seeing in dim light, Whether any difficulty in going from bright to dim light. Whether comfortable with sunglasses or requires more bright light(incandescent or fluorescent.)

Depending on patient's needs one's recommendation can differ from patient- to patient. It helps you to recognize patient potential as well as limitations and suggests possible interventions.

C. Visual Acuity

Measurement of visual acuity is one component of the evaluation that allows one to quantify the degree of high-contrast vision loss and, in many cases, clearly identifies

the patient's visual impairment as it relates to the chief complaint. Measuring visual acuity also allows the clinician to:

- Help determine best corrected visual acuity (BCVA)
- Monitor the effect of, stability and progression of the treatment of a disease
- Assess eccentric viewing postures and skills cases, afford the patient an opportunity to experience process
- Furthermore, the result of visual acuity testing are the basis for determining initial magnification requirements and the potential for specific rehabilitation strategies. Estimate the dioptric power of optical aids necessary for reading regular print size
- Verify the person's eligibility for tasks such as driving
- Classify patients as "legally blind" for the purposes of government, insurance and other benefits of exemptions
- The methods of assessing distance and near visual acuity in visual acuity in visually impaired patients may be modified to address specific concerns.

C.1- Visual Acuity Assessment (Distance)

The visual acuity assessment begins with determining the distance acuity of the patient. The procedure involves showing the patient large size numbers on sheets from a particular distance and asking him or her to identify them. Optotypes, single –letter chart gratings and crowded letters of different size may be shown to the patient alternatively. The same procedure is repeated for each eye individually also.

1. Traditional methods of testing acuity are not practical for low vision patients.
2. Vision charts designed for low vision are hand held or movable rather than fixed or projected. Each line contains several characters so memorization is less likely
3. ETDRS charts are recommended for more accurate recording.
4. Patients feel more confident when they are able to read more letters and the start of low vision is with a positive note.
5. The hand held charts avoid glare, give better contrast and can be moved closer so that letter size is doubled

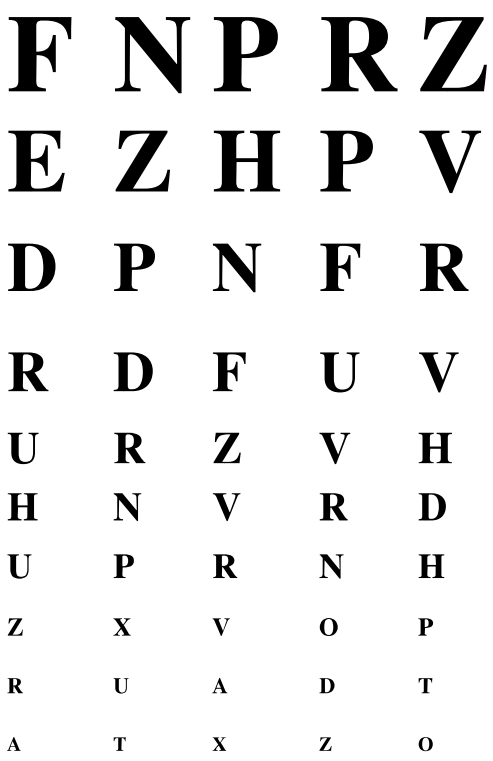
6. Changing testing distance requires recalculation of acuity.
7. All patients should be examined first in daylight condition
8. Special charts with grey background should be used in patients with glare problems
9. Bailey & Lovie charts are the logarithmic scale. Main advantage of chart is that it's near vision equivalent; greatly simplify the process of calculating the estimated magnification required by a patient.
10. Log MAR chart- ETDRS uses sloan optotype. Essentially it is same design as Bailey Lovie charts but differ in actual letters used.

*** LogMAR Charts**

- Principle of a LogMAR chart is that it uses a logarithmic scale. LogMAR means Log Minimum angle of Resolution
- Ian Bailey and jan Lovie first to incorporate a log scale which has stepwise changes
- Calculation of required magnification easy
- Five letters per line. There is constant size progression ratio of 5/4 and line is 1.25 X bigger/ smaller than previous

*** Advantage of a LogMAR chart: Design feature and advantages**

1. Equal number of optotypes per line and allows the use of single –letter scoring which reduces test-retest variability
2. Equal logarithmic interval between lines
3. Equal average legibility for each line. It ensures that letter size is the sole determinant of difficulty on a given line
4. Consistent spacing between letters and line i.e..proportional inter-letter and inter-line spacing
5. Geometric progression of letter sizes and allows testing distance to be variable. Vision recording is done at 4m to 2m to 1m. Correction factor of 0.3 should be added to the Log score when the distance is halved.



*** Pinhole Acuity Assessment**

Pinhole acuity test is used to assess the presence or absence of a refractive error improvement in vision and whether indicates that the person may benefit from refractive correction.

*** Low Contrast Visual Acuity**

1. The vast majority of our visual interaction with the world involves resolving low contrast details. Variation in contrast in everyday tasks is undertaken by all patients.
2. Bailey- Lovie low contrast chart, Pelli Robson charts; symbol charts- Lea's symbol charts, hiding Heidi charts with smiling faces to measure low contrast acuity.
3. When optotype based letter charts are used for assessing contrast sensitivity, patient should be given enough time to recognize the letters (temporal summation)

4. Practical relevance of low vision contrast visual acuity is that it helps the patient for better understanding of the nature of their visual impairment.
5. Patients feel relieved to see a clinical test that equates to their experience.

C.2-Near Acuity Assessment

In this step the patient identifies or reads certain typeset of a smaller size from a nearer distance. The distance is accurately recorded. The typeset size is denoted in M units. Reading acuity is the patient's ability to read a more congested and complex typeset prints from a measured distance.

Near Vision Testing

1. In low vision near vision is recorded as the size of print that can be read fluently and easily.
2. Perform near vision at two distance allow the patient to read at his/ her preferred distance. Measure the distance
3. Secondly measure functional reading ability for each eye at 40 cms.
4. For both near testing situation use reading cards specifically designed for low vision.
5. It is imperative to undertake near vision assessment only after having completed an accurate refraction and having determined optimal distance vision, low contrast vision, contrast sensitivity measurements.
6. Use M System along with testing distance for recording visual acuity. Discrepancy of more than two M units between the two eyes when tested at same distance, in this case better seeing Eye alone can be corrected by low vision aids.
7. Record near acuity as fraction – the reading distance in cms is the numerator. The print size in M units is denominator eg. 40/4m
8. Use single character visual acuity
9. Evaluate word recognition abilities.
10. Measure continuous text visual acuity. Graded continuous text materials will provide a more accurate measure of reading ability than single optotype measures and are recommended for evaluation of performance with reading devices.

11. Assess effects of illumination.
12. Use appropriate vision charts (Lighthouse near acuity chart, near ETDRS chart, LVRC, Sloan M series charts- these are calibrated in mater equivalents (M Units); and these simplify calculation of magnification.
13. Final determination and prescription of low vision device should be based on performance (i.e., reading actual printed materials such as newspaper and labels not printed acuity charts.)

4.4 Functional Assessment of Vision : Concept, need and methods

4.4.1 Concept

Functional vision is the ability to use vision to perform desired tasks. Because of impairment in the eye and other parts of the system, low- vision children will not learn visually without intervention and help. Selection of instructional programmes and techniques requires a thorough assessment and understanding of the child's capabilities. This is mostly done by the educators. In vision evaluation procedures, there are two levels- the screening and grouping of children with different degrees of impairment, and assessment of the disability of the child. The children can be classified into several groups: those with

Light perception

Light perception without projection

Visual acuity less than 3/60

Visual acuity 3/60-6/24

The children are assessed for visual disability- Dr Jill Keeffe's procedure of screening for impaired vision can be adopted. The assessment is done for distance visual acuity, near vision, visual field, contrast sensitivity, and colour vision. The functional vision skills of individuals are also assessed. The functional assessment explores how the child uses vision, at what distance he/she sees object, at what distance certain size symbols can be read, the visual language understood by the child and other educationally and related skills. Observation should be made to determine the technique that the child presently uses in communication, orientation, mobility and daily living skills.

After assessment, a training programme should be planned. The training programme includes appropriate sequential visual stimulation activity which would help the child to enhance visual efficiency.

4.4.2 Need for Assessment of Functional Vision

This assessment provides information regarding a student's ability to us his vision within the learning environment. It includes acuity, colour, field and environmental accommodations. It will include a list of recommendations for modification and adaptations of instructional materials. The clinical evaluation of a student with visual impairment does not always reflect the student's true visual abilities. It is the responsibility of teachers of visually impaired to gather assessment data of a student's functional vision, it is recommended that materials be used with which the student is already familiar and which are at the student's current level of functioning. The activities used for the functional vision assessment should be drawn from a variety of task, i.e. academic, non-academic, extracurricular, and special context. In addition to the visual functioning information, information should be gathered from parents and the staff involved with the students. A functional vision assessment tends to be subjective; therefore, care must be taken into account.

Children develop visual skills at different rates. The specific nature of visual impairment will influence the rate and level of achievement. In other words, visual functioning is related in part to the condition of the eye or the structure of impairment. The use of functional vision may be improved with training.

Many children can learn to make better use of their residual vision and can function effectively with only small amount of visual information. Objects and print can be recognized even when they are blurry or even if only parts of them can be seen.

*** Aim of the Assessment of Visual Functioning**

- To Determine current visual functioning level of the child/ adult
- To determine the visual stimulation and instruction needed to help the person make use of remaining vision
- To help the child to use this limited vision to the highest potential.
- To plan programmes for specific curricular areas like orientation and mobility training or adaptive training in use of optical devices like magnifiers, telescopes etc. and non-optical a devices like reading stands, table lamp etc.

- To find which visual stimulation materials is most appropriate to the child
- Determine nature of the primary reading medium-i.e., whether the child will need to be taught Braille or can he use large print.

4.4.3 Areas and skills covered in functional vision

Visual skills used for functional vision follows the sequence of normal visual development. These visual skills are used to carry out every day activities.

The assessment of functional vision has been based on the **Low Vision Kit.**

The seven areas of skills to be assessed are:

1. **Awareness and attention to objects**

Finding an object or target and looking at it (fixating) long enough to be aware of it or recognize it.

Importance of assessment: Can a person see objects close to them? Does the person search for objects visually or with their hands? What makes objects easier or possible to be seen? Factors that affect how easy an object is to find or recognize are:

- Size
- Distance
- Contrast
- Familiarity (makes it easier to recognize)

2. **Control of eye movements –Tracking**

Being able to follow moving objects with the eyes or hand movement

Reason for assessment: can the person follow the movement of objects without "losing" where they have gone?

Different direction of movements should be tested:

- Up and down
- Side to side
- Diagonal and
- Near to far

3. Control of eye movements- Scanning

Accurately moving eyes and shifting his/ her from one object to another.

Reason for assessment: Some people with low vision have to search around for a long time to find objects, and others may find it difficult to change from looking at near objects to look for something further away.

4. Discrimination of objects

Recognizing objects from an outline or general shape.

Reason for assessment: to learn if a person can discriminate between people and objects recognize familiar objects, recognize different or similar object. Objects can be discriminated because of their colours shape, contrast with the back ground, position or size, its distance the type of object, how familiar it is, and whether the objects is moving or still etc. Good scanning and discrimination skills is needed to discriminate an object.

5. Discrimination of details to identify actions and match objects

The discrimination of details to identify an object is more difficult than seeing the object. Features of the object have to be identified.

Reason for assessment: Most learning occurs from visual awareness and imitation. It is important to know what can be seen and how the environment (Such as lighting) affects what can be seen. The factors of distance, size, colour and contrast are very important.

6. Discrimination of details in picture

Pictures can be simple outline or complex, detailed. The important features (parts) in pictures have to be identified so that the meaning of the picture can be understood.

Reason for assessment: Pictures give useful information on posters , advertisement or in books, objects in pictures may be difficult to find and recognize

7. Identification and perception of patterns, numbers and words

Matching letters and number by their similarity or their differences; this does not require reading but is a necessary skill for reading.

Reason for assessment: to find out if a person can discriminate between similar and different shapes and letters. The result will help in making decision on whether a person should use normal size print, large print, low vision devices or needs Braille.

* Guidelines to develop better functional vision

- Recognize full sensory utilization and encourage it
- Get visual attention to all tasks
- The utilization of residual vision of low vision children should be stressed.
- Makes the class room visually attractive
- The school should maintain a case study containing
    - Eye report
    - Referral reports
- Just having sight does not mean that we all use our eyes well. We have to train our brains to interpret what our eyes see. A person with low vision does not automatically try to make himself see unless he is extremely motivated to do so. He needs to be helped to interpret what he sees. He can develop good functional vision.
- Visual functioning relates to how well a child is able to use his or her remaining vision for his or her everyday tasks. According to Barraga (1980), visual functioning is a learnt behaviour, primarily developmental, the more visual experiences the child has, the more the pathway to the brain is stimulated, which leads to a greater accumulation of a variety of visual images and memories.
- It is the role of the special educators and parents to participate in the assessment of the low vision child. Assessment should address the implications of the child's visual, social, emotional, and cognitive development. It is particularly important that functional vision assessment and observation should be done in the child's everyday environment.
- In the area of education, the resource teacher, itinerant teacher often function as a low vision instructor responsible for assessment. This allows for more communication between a regular teacher and the resource teacher which helps the low vision child to function well in the classroom. The modification needed should be based on the implication of the visual loss. The accessor's cooperation and interaction, the school personnel and their understanding of low vision are the factors to be considered for effective learning.
- The effectiveness with which a student is learning to use vision can be predictor of future success with aids. Some students compensate so well with visual skills that they may consider optical aids to be "too much trouble". Some students hardly use their vision because they have encountered psychological difficulties or never have learned certain visual skills. They rely on other modalities from sighted helpers.

- The development of visual ability is not an inert overcome reflex but one aspect of the total behaviour of a person in the specific environment. Visual acuity is a misleading quality in estimating a person's seeing ability. Visual ability is not necessarily related to the kind of degree of impairment or loss of vision. It is a sequentially learned skill.
- Even though the basic conditions of the eye remains unchanged, training and experience have been contributing factors in improving development of visual process, especially the degree of visual efficiency. The visual efficiency is essential to plan more precise programme for the use of how he/she is using vision and increases the students' efficiency.
- There are a few research studies done on visual efficiency in relation to visual behaviour and the involvement of the resource teachers and special educators in developing the visual efficiency.
- Implement the low vision stimulation programme for the integrated and the special school programme and improve the visual efficiency of the low vision children
- Many of the programmes that have already started special training for the low vision have wound back due to the feeling expressed by their totally blind students that they are given less importance compared to the low vision students. Efforts have to be made to make the totally blind students understand that it is the need of the low vision students and not a factor of importance for them.
- The low vision students have to be developed as a compliment to totally blind students.
- Follow up result information related to the low vision child.

4.5 Tools for functional assessment of vision and skills: Functional Skills Inventory for the Blind (FSIB), Low Vision Assessment by Jill Keeffe, Lea Tests, and Portfolio Assessment.

4.5.1 Functional Skills Inventory for the Blind (FSIB)

The success of an assessment depends on the object chosen. So use objects which are familiar to and interesting for the child being assessed. The size, distance, contrast,

colour, position and light on an around object are factors needed to be considered while testing.

*** The Visual skills used for Testing Functional Vision**

1. The Visual skills used for testing

Whether the child has functional vision are listed here in the order in which they should be assessed. The order of the skills follows the sequence of normal visual development.

A child with low vision may be able to progress through all the steps without special training. Some skills may not be achieved but the child can still progress on to later steps.

The areas of skills to be assessed are explained and examples are given of how the skills are used. These visual skills are used to carryout everyday activities. The methods of assessing the visual skills are described in the following section.

2. Awareness of Attention to objects

The aim of this test is to find out the ability of the child to attend to an object.

Choose a bright or shiny object like toys or balls about the size of your hand. Hold the object at the child's eye-level, standing one metre away from the child. Let the child look at the object. Ask him to reach for it and touch it. If the child doesn't show any response to the object (because he cannot see the object from a distance of one meter) the same procedure is followed by standing half a meter away from the child.

If the object cannot be seen at less than half a meter, try to attract the child's attention with sound or movement.

3. Control of Eye Movements

Tracking – Following a moving object.

Activity:

A bright ball can be rolled towards side of the child in a well lighted area. Stand beside the person and show him the object. Tell him to watch the object as you roll it and ask him to walk to it where it has stopped.

You need to watch the child to see how far he was able to follow the object with his eyes. Note the distance he was able to track. Activities are provided to the child's

central and peripheral (Side) field of vision. When the child is able to track the ball, as next activity, a ball which is smaller in size or has less brightness can be used. When the child's performance is not appropriate, training is given to achieve the activity. Repeat the activity using shorter or longer distance depending on the result and record the distance till which the child was able to track the object.

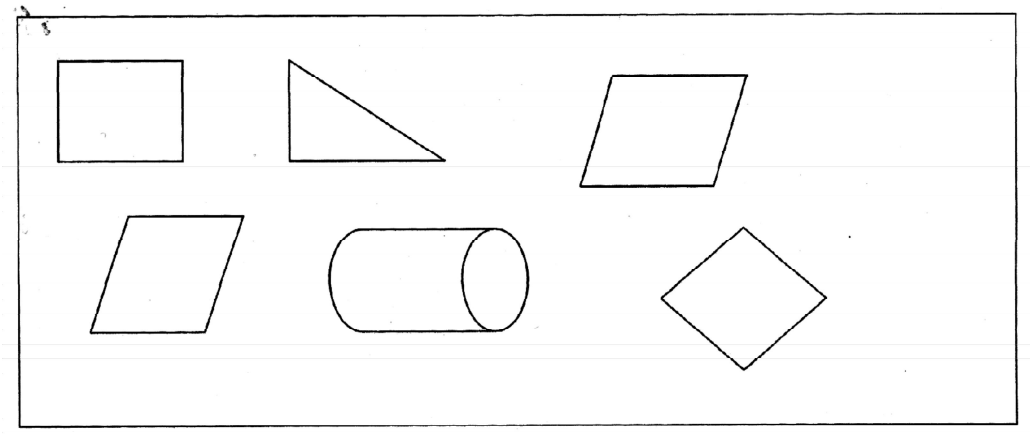
4. Scanning –searching for a particular stimulus Among Other Visual Stimuli.

Use two different objects about the size of your hand. Stand one metre from the child. Hold the objects in outstretched hands at your sides and front of the child at eye level.

Name the object held in each hand. Let the child look at one object and then to the other object in turn. Show one object and then the other. Repeat this at least once. Example, look at the fruit, now look at the tumbler, back to fruit and to the tumbler.

Activity

Search for different shapes in the given shape card.



There should be distinct horizontal eye and head movements from one object to the other. If the object cannot be seen from a distance of one metre move closer and record the distance at which the child could scan both the objects.

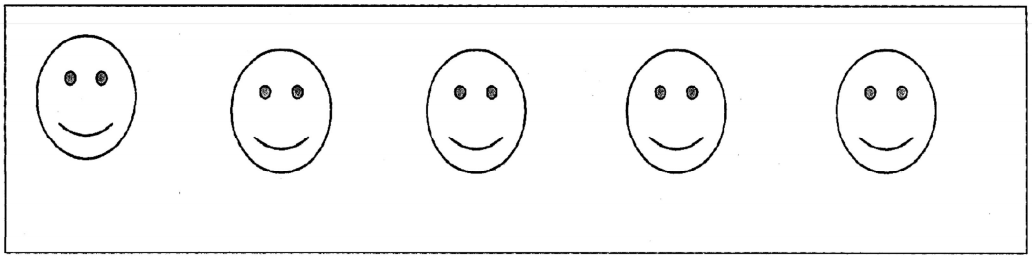
5. Visual Discrimination:

It is the ability of the child to distinguish between near distant object. Choose objects which are familiar to child (coin, piece of food, spoon or plate).

The objects have to be recognized by looking at them without touching them. Record the distance needed to recognize near objects.

Activity

An activity for two dimensional items (Picture card) is given Discriminate the one which is deferent from the four figures given. Take the child to outside place where a variety of a activities are happening and where there are variety of objects.



Note if the child recognizes objects, people and activities, record the distance for recognizing objects, people and activities.

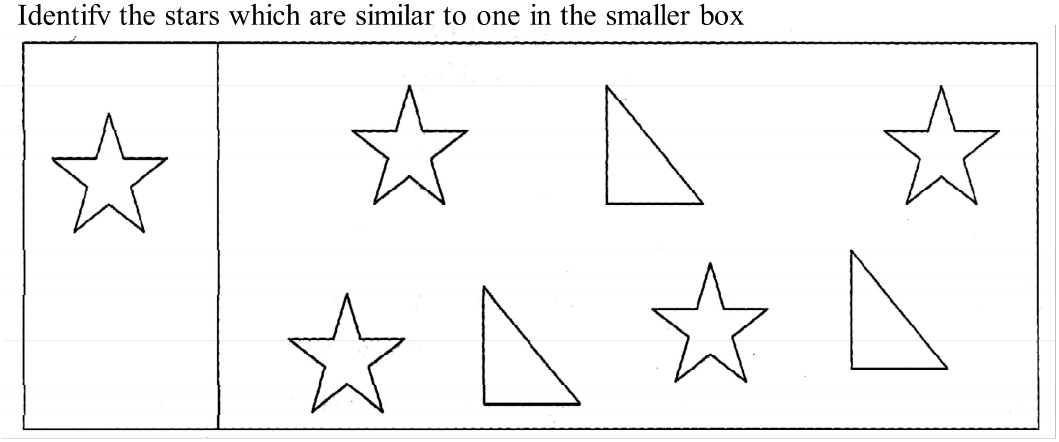
6. *Visual Figure-Ground Discrimination*

This refers to the ability of the child to isolate a particular picture/ object from the background, i.e. seeing the distinctive feature of an object.

Ask the child to locate a particular spot on the picture. The child can be asked to identify buttons, belt, and shoes and also recognize actions in the picture.

Activities

Identifv the stars which are similar to one in the smaller box



If the answers are not correct, ask the child to describe what he sees in the pictures. Record the answers and the distance of the eyes from the page.

7. Visual Memory

This refers to the child's ability to store and recall past experiences and integrates those with new ones.

Hide the objects the child has seen in the environment and ask him/ her to describe them. Present object/ pictures (like play activity e.g., Cricket or picture of zoo etc.) of an activity sequence on flash cards in a particular order and then remove them. Ask the child to recall the sequence in which the cards were presented. Give diagram of activity sequence on flash cards. Record the child's answer.

Activity

This type of informative picture can be given for a few minutes say one or two minute to observe. Get back the picture. Ask the child to describe what she has seen in the picture.

8. Visual Closure

It is the ability of child to perceive a total picture or object when only a part is visible/ available. Ask the child to identify the missing part in an object/ figure. Note whether the child is able to do so or not. E.g. picture of animals, jug or a chair in part.

Activity

Provide a part of picture and ask the child to identify what they are:

From Constancy

It is the ability of a child to perceive the same object at different angles.

Objects like comb, fruit can be held at different angles for identification.

Picture of a tree, bucket, chair, spoon etc, can be pasted at different angles and the child should be asked to identify the object. Record the result.

Activity

Pictures are examples of tree in different position. Ask the child to identify picture :

9. Eye-Hand Coordination

It is the ability of a child to perform a task using hands and eyes in harmony.

Ask the child to put a particular coloured bead in the thread provided.

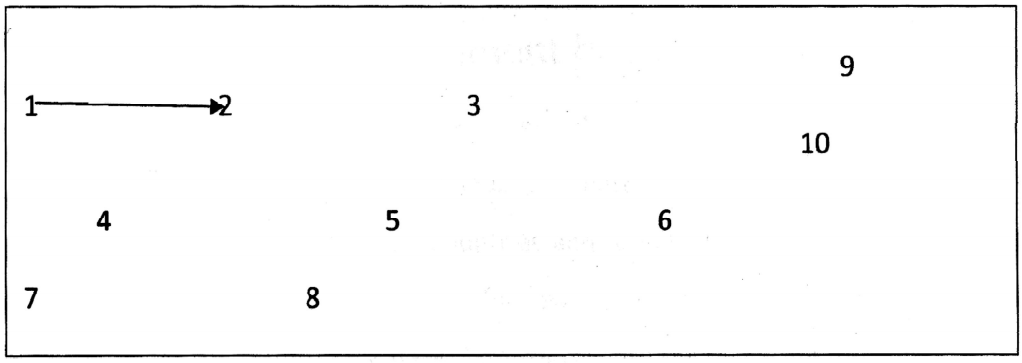
Ask the child to tear waste paper along the lines that you have marked

Ask the child to colour a particular object in a picture

Ask the child to throw the ball below the net

Activity

Ask the child to join the numbers in order and record the result



10. Eye- Foot Coordination

It is the ability of a child to perform a task using eyes and foot in harmony.

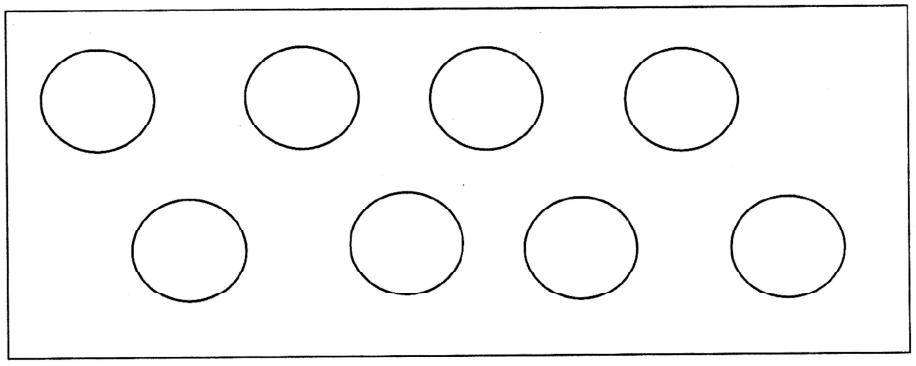
Choose an outdoor pathway. It could be a path from one building to another building or through the bush. The pathway should contrast with the ground on either side.

Ask the child to walk in front of you. Follow closely to keep the child from coming to harm by falling or bumping.

Observe if the child is aware of the sides of the path to follow. Check if he can see turns in the path and does not trip over rocks or hit over hanging branches.

Activity

A circle with white chalk can be drawn on the floor like cited below and ask the child to step on the markings.



The results give an understanding of the effects of the Low Vision for each child and how residual vision can be used. The results show the importance of factors such as distance, size, contrast and light for each child. The result should be discussed with the child with Low Vision, his family and other such as teachers and community based workers. It can be used to plan and execute a vision training programme.

4.5.2 : Low Vision Assessment by Jill Keeffe

Simple but effective tests have been developed by Dr. Jill Keeffe for the WHO annual –Programme for the Prevention of Blindness. These tests of distance and near vision based on E - test have been field tested in 32 countries and found to be appropriate for developing countries and their effectiveness for screening for low vision has been confirmed. The tests are simple to learn to use. The result can be easily interpreted and the test materials are portable. This screening helps to detect people with impaired and those with potentially normal or low vision.

Testing the Distance Visual Acuity.

The first step is to test distance visual acuity. It does not matter if a person cannot read for this assessment using the E test card.

The test distance is 6 metres (20 feet) for distance vision. The person must stand at 6 metres from the assessor. Six metre distance must be measured using measuring tape.

If measuring tape is not available, a six metre cloth tape preferably white in colour, marked at each metre can be used or the assessor may measure or count the number of his/her steps equal to six metre. The chart should be placed at a distance of 6 metres from the child.

The E chart may be placed hanging against the wall or held at the hand. Whether it is hung or held at hands it should be at the eye level of the child / client being assessed. The child should be explained that the arms of the letter E are directed in different directions. For younger children an E cut out made of black cardboard can be given in their hands to show the directions.

The visual acuity measurement can be started by testing the smallest symbol that can be (the directions) recognized. But due to limited visual ability it can be begun with the top line on the chart and proceed downward to the child's limit. Light should shine without glare on chart. Room illumination should be constant without light shining into child's eyes.

Visual acuity is represented as a fraction.

Acuities	
First Line	6/60
Second Line	6/36
Third Line	6/24
Fourth Line	6/18
Fifth Line	6/12
Sixth Line	6/9
Seventh Line	6/6

The numerator indicates the distance from the chart at which the test is conducted. The denominator means the smallest line of letters that the child can read from the testing distance.

Procedure for Assessment

- Test eye separately
- Always begin with the right eye.

- Occlude or close one eye. In the case if right is being assessed, left eye is occluded. After testing each eye separately, test both eyes. If the child wears corrective lenses (spectacles) test child with lenses. Begin testing the visual acuity without spectacles and then test with the correcting lenses. The measurement of visual acuity while wearing spectacles should be considered.
- The child should identify characters by pointing when using E chart.
- Record the last line the child read and that is the visual acuity of the child. For example, if the child reads the third line and could not identify the characters in the nest line (fourth), the child's visual acuity recorded as 6/24. If 3 responses out of 4 are correct no further testing of distance vision is needed. Record the visual acuity.

In case where the child is unable to read the uppermost letter on the chart, he/she should walk one metre.

After one metre forward, until the child can see the top line or symbol. The distance between child and chart becomes the numerator and vision is recorded as such 5/60, 4/60, 3/60. Test visual acuity with the large E at 2 or 1 metre. If the child does not recognize the top letter from a distance of less than one metre from test whether the child identifies finger counting or only hand movement or able to perceive only light or total absence of light. The child may have usable vision and it is important to discover the amount and quality of vision even though it is limited.

If the vision is being tested, the World Health Organisation (WHO) categories should be used.

- Normal vision is acuity of 6/18 or better
- Low vision is acuity less than 6/18
- Blindness is acuity less than 3/60

For functional description low vision is considered vision up to light perception because the child with light perception can use the vision to identify doorways, discriminate day and night, for direction concept, mobility etc.

For child with low vision, spectacles may improve the vision but not correct it to normal.

The Assessment Form :

ANNEXURE- 1

Screening of Impaired Vision

Name of the child :

Standard :

Cause of Visual Impairment :

I. Visual Acuity (Distance Vision)

	Without correction	With correction
R.E	_____	_____
L.E	_____	_____
Both Eyes	_____	_____

II. Near Vision

N 48

N 20

N 8

III Visual Field

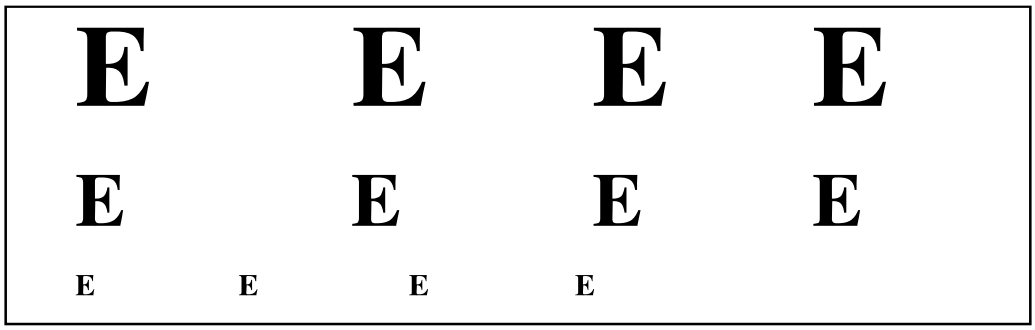
Normal/ Restricted/Severely Restricted

Date : Signature of the Assessor

Testing near vision

The purpose of testing near vision is to determine whether the child can perform near vision task like reading or what changes the child needs to perform the task or modification in the environment require or visual aids would be useful. The results of a near vision show the child's ability to see the details of near objects within the arm's distance from the body. Near tasks include eating, personal care and hygiene, leisure activities, sewing and reading. Near and distance vision is not always affected to the same degree in all eye conditions. In children near vision is often not as severely affected as distance vision.

The near vision test card has three sizes of **Es**. The smallest size of the Es is **N8** which are similar to the print size of the adult or children in middle school level. The middle size Es are **N20** which are similar to the print size books of children in standard –I. The largest size of Es is N48 which are similar to headings in books and newspaper.



Testing procedure

- No standard distance is required.
- The test card is held at the distance preferred by the person.
- The light should come from behind and to one side of the window. Make sure that the person is not looking towards the sun or other bright light.
- Start with large Es. If the child cannot see these, tell him to hold the card closer to eyes.
- Record the smallest the child is size the child is able to read correctly. For example if the child reads the smallest size of the letters in the card, record the near visual acuity as N8.

4.5.3 : LEA Vision Test System

For Assessment and Screening

The International Classification of Functioning, Disability, and Health (ICF 2001, ICF-CY2007) is the basis for assessing functioning and disabilities and requires consideration of all impairment and disabilities. The ICD- based measurement of visual acuity and visual field is adequate for reporting visual impairment in surveys, where visual acuities are reported for both distance and vision (WHO/PBL/03.91,http:// whqlibdoc.who.int/ hq/2003/WHO_PBL_03.91.pdf).

Visual acuity test is the test most frequently used to assess visual functioning. These tests are designed so that geometric progression is the same at all visual acuity levels and spacing is proportional, i.e. on each line it is equal to the width of the optotypes on the line. Only a limited number of tests have the required structure. They include test based on Sloan letters like the ETDRS test (Ferris et al 1982), on British letters (Bailey and Lovie1976, Salt et al 2007), and on LEA symbols and LEA Numbers (Vaidhyan et al 2007). These tests have been calibrated against the reference optotype, the Landlot Ring,and provide similar visual acuity values. The small differences found in visual acuity values in several studies depend on the structure of the cohorts. Some studies included extrafoveal measurements, which affect the values specifically for each set of optotypes. In an ideal test, the optotypes blur equally at threshold (LEA test). If differences exist with optotype recognition, optotypes are selected to include a certain number of easy and difficult optotype on each line (Sloan letters).

Visual Acuity

The LEA test require recognition optotype. This requirement differs from resolving the direction of lines in the E-test or the gap in the C-test. In the assessment of visual acuity the goal is to measure the ability to recognise pictures of common objects, as well as characters and numbers.

Children's visual functions and communication during the assessment vary. Therefore, several tests have been designed to assess visual acuity in difficult test situations. Visual acuity test includes:

- Test with single symbols for measurement at distance and near
- Line test for measurement at distance and near
- Test with tightly spaced optotypes
- Test at low contrast 25%, 10%, 2.5% and 1.2%

Near and distance test based on the same optotype reveal difference in visual acuity between distance and near vision and are, thus, an improvement compared with the present situation in many countries where near vision is measured with text tests only.

LEA symbols visual acuity tests are single optotype test, standard line test, and line test with tightly grouped optotype. Single symbols test from near (40cm) and distance (3m) are the easiest optotype tests because there is no interference by surrounding visual information. LEA Numbers visual acuity tests are fewer in number than the symbols test because there are less often difficulties in communication in the assessment of school children and adults. The visual acuity line tests have 100% spacing between

optotypes. Near test includes spacing of 50%, 25% , and 12% to assess vision for reading and detect difficulties with other crowded information.

To achieve accuracy in measuring visual acuity, the tester should not point to individual optotypes. Pointing gives a visual reference, which improves fixation and visual acuity. Pointing to individual optotypes is likely to reduce amblyopia detection. The tester can cover the line above the line to be read that the tester and the child are reading the same line.

If a child's oculomotor functions are irregular, the screening test with more space between the lines in the near test and only one line visible on each page in the distance test facilitate testing. If fixation is stable but the saccades are irregular, the LEA puzzle can be used as the key card, which will allow child to feel the optotype forms without having to look at them. Many Young Children need a training period with the LEA Puzzle to learn matching or naming. While the child is playing with the LEA Puzzle, the test may observe the child's eye-hand coordination and visual and motor spatial memory by the turning the Puzzle board without the child noticing. The detailed instructions for testing are on the homepage www.lea-test.fn.

Grating Acuity

Grating acuity is measured either as *detection acuity* with LEA Grating in a preferential looking situation or as *discrimination acuity* using LEA Grating Acuity Test, which requires the ability to define and show or describe the orientation of the line.

Contrast Sensitivity

Contrast Sensitivity is measured with optotype and grating test. If the result from the measurements of contrast sensitivity, visual acuity value, and grating acuity value are marked on the recording form, the type of visual information transfer at different contrast level is clearly depicted.

Colour Vision

"Colour vision Testing Made Easy", created by Terrance Waggoner, OD, works well in testing young children's colour vision. Quantitative measurements are possible with the Panel 16 colour vision test. The test can be trained at www.lea-test.fi section Games.

Motion Perception

Detection and discrimination of slow movement can be tested with the pepi test, which can be copied from www.lea-test.fi. This test can be used to assess the vision of infants by observing the following movements. Older children can describe whether or what

they see. Johansson's " Walking Man" can be used to test perception of biological movements.

Visual Adaptation

Visual adaptation changes early in many retinal disorders. The functionally important cone adaptation can be observed during the CONE adaptation test game. This test requires a room where the illumination can be changed quickly from photopic to mesopic luminance to measure cone adaptation time.

Direction and Length of Lines

These two basic structures of pictures may be falsely encoded when entering the brain or distorted in the higher visual functions. This can be tested using the LEA Mailbox and LEA Rectangles.

Heidi Expressions

Children may have specific loss of perception of facial expressions. To discuss facial expressions with young children, the Heidi Expressions cards can be used as a matching game.

If you have not used the test before, practice with normally sighted infants and children with age appropriate behaviour. When you feel comfortable holding the test and can concentrate on observing child's way of answering, you are ready to set children with disabilities.

4.5.4 Portfolio Assessment

Historically, the traditional school examinations consisted of a set of questions to be answered orally or in writing. In either case, the examinee composed and formulated the response. The term "essay question" come to be used broadly to cover all free-response question, including not only those demanding a lengthy essay but also those requiring the examinee to produce a short answer or to work out the solution for a mathematical problem. "Objective question," by contrast, were those that called for the choice of a correct answer out of the alternatives provided for each question. Although there are several kinds of items that require examinees to select a response, such as true-false and matching, the multiple-choice question has been, by far, the most widely used, the most thoroughly studied, and, also, the most frequently criticized type of test item.

Critics of the multiple –choice format argue that it promotes rote memorization and learning of isolated facts rather than development of problem-solving skills and conceptual understanding. In addition, many uniformed people within the educational and political establishments equate multiple –choice items with standardized testing and disparage both of these elements of assessment methodology at once. In an ironic turn of events, the same standardized testing programmes used to chart educational progress often have been seen as contributing to the educational deficits they have uncovered. Unfortunately, the criticism about excessive and inappropriate use of standardized test as been thoroughly justified in some cases. At any rate, charges that testing drives the curriculum and that both are in urgent need of reform have emanated from educators at all levels and have grown increasingly stronger in the past two decades. Advocates of educational reform believe that a major overhaul is needed in curricular goals and instructional method, as well as in the tools of assessment, and they perceive all of these areas as inextricably tied.

Since the philosophical, political, and practical aspects of educational reform are beyond the scope of this book, we shall confine ourselves to discussing some of the proposed alternatives in assessment methodology. These alternatives are described by various rubrics, such as "performance-based" assessment, "authentic" assessment, and "direct" assessment.

The method known ***portfolio assessment*** provides another set of alternatives. This type of evaluation tool is aimed primarily at making the process of educational assessment as meaningful and realistic as possible. Although there are a wide range of procedures to which the term is applied, a portfolio usually consists of a cumulative record- collected over an extended period of time- of samples of students' work in specific areas, such as writing or any other endeavour that involves a process in which progress can be documented. The portfolio method of assessment offers a great deal of flexibility and can be implemented more or less formally and with various degrees of collaboration between the student and the teacher.

The reader will have gathered even from this brief overview that a great deal of attention is being paid to the means by which evaluation of learning and of students' work are conducted. This concern extends not only to what different items measure and how well they measure it, but also to other psychological aspects of test items. For example, Zeidner (1993) has investigated students' attitudes toward item formats and found that they prefer multiple-choice items rather than essays. Lu and Suen's (1995) research indicates that performance based assessment tends to favour field-independent over field dependent students. Other investigators have looked into the relationship between

test anxiety and item type and found that scores on constructed response test seem to be more affected by anxiety than those of selected response tests.

At the same time, the empirical literature concerning the strictly psychometric properties of performance based tasks used in academic settings has been accumulating gradually. Both the pace of the research and the direction of the result differ widely depending on the specific types of items in question. A fairly large number of students have investigated the reliability of the scoring procedures used for constructed response task.

4.6 Tools for psychological assessment of the Visually Impaired

4.6.1 : Vithova Pakinikar Performance Test

It would be worthwhile, at the outset, to describe, in brief, the development of Intelligence Testing from Binet, the pioneer in this field to the present day problems in this field including the work done that is useful in measuring intelligence of the blind.

Measuring intelligence by age Scales is the first stage. Binet's tests were first published in a graded form in 1905. They were again published in 1908 and 1911 in the form of an age scale ranging from year three to adulthood. D. Wechsler's Bellevue Intelligence Scale (1944) both verbal and performance has shown a good way to get over the difficulties referred to above. His method of converting total scores into I.Q's as standard scores is most useful from the practical point of view. The above scale is a point scale as distinguished from age scale. The method of finding I.Q. by this scale is easier than one of finding M.A. and then I.Q. Mr. K.K.Paknikar has followed D. Wechsler's method of finding I.Q's. Apart from the above Wechsler Bellevue Intelligence Scale (WBIS), he has to his credit the following viz. Wechsler Adult Intelligence Scale (WAIS) and Wechsler Intelligence Scale for Children (WISC). All are widely used.

Then comes the stage of performance Test for measuring intelligence. The pioneers in this field were Healy and Fernad (1911). Other prominent names in this field are: Fnox Pintner and Patersen, Gwyn kempf Schmitt, Hall Bruckner and King Gluk, Anderson, Kohs, Woodworth, Wells, Goddard and Alexander. At the beginning single tests were standardized. But to arrive at subject's I.Q.s a scale of scale performance Test was needed. The first of this kind is given by Pintner and Paterson (1917). Individual standardized Performance Tesst were included in the scale to form a battery of performance Test.

A significant point about performance test has not been referred to so far. Originally they were designed for measuring intelligence of the physically handicapped, or of those who had language difficulty. They were also used to supplement the finding arrived at by verbal tests. Whether they will be most suitable for measuring intelligence of the blind will be seen in the discussions that follow.

Obviously, the blind can take verbal test using their auditory power. But then the tests are to be presented orally only. This necessity will certainly put limitations to the presentation of the test. The experiences usually better gained by sight, e.g. forms of objects are out of question in an oral test. Secondly, the oral test will be time consuming. There is another handicap for the blind in having a test with the help of a printed question. It cannot be in the usual script. It must be in Braille and if it is presented in Braille and the test cover all aspects of intelligence. The bulk of paper to be handled will be big and the taking of the teat will be cumbersome and time consuming for the blind.

Earlier the writer has referred to the inherent difficulties in standardizing a verbal test for the blind. Difficulties in administering it are also noted. Individual performance tests, though standardized, will not give true picture of the intellectual potential of the blind unless they form a battery of tests. Secondly, individual performance tests that are now used with the blind are given with suitable modifications in the original tests for the sighted. Comprehensive Performance Scales for the sighted have not as yet been tried on blind population. These Scales also are time consuming and in certain sub-test there is an element of trial and error. Hence the need of comparatively shortrd battery of performance tests for the blind, which are nearly void of any chance element in them. The writer has genuinely tried to give to the blind population such a battery of Performance Tests.

The writer has already referred to the experimental finding that visual impairment does not impair the intellectual potential. Human experience shows that there have been intellectual giants and mental defectives among the blind. The writer knows many blind geniuses. During the testing programme in blind Schools the writer came across mental defectives who were a great strain on teachers' capabilities for handling the handicapped during teaching periods.

Predictive value of intelligence tests is unquestionable now. Problems of the blind have now passed from the social level to the educational. A shorter scale of performance Tests, therefore, is needed to spot out the genius and to weed out the M.D. from the population in schools.

Selection and description of performance tests for the blinds

The tests that are included in the present performance Scale are based on the tactual and kinaesthetic experiences only of the subjects to be tested. Visual experiences though the richest –in-life, are out of question here. The other Performance Scales referred to test of memory, e.g. repetition of digits by tapping blocks in a particular order, number formation by means of dominoes and actual repetition of digits or consonants. The first two tests require visual experiences and the third auditory ones. The first two are out of question with the blind. The third type may be included in a performance Scale for the blind. During the testing programme, we used tests of repeating digits in the same order or the reverse according to the scheme at different age levels as given by Kamat in this revision of Binet's scale. This was continued till more than 150 subjects were tested. The experience was discouraging as in general, the blind subjects did not pass the test at their age levels. When inquired, otherwise intelligent subjects, remarked that they could not easily attend to the repetition of digits by the examiner. This finding goes against the general impression that auditory experiences of the blind are better than those of sighted persons. It would be worth while if we quotes significant observation of Dr. Kamat under 'repetition' tests in this scale. 1) It is difficult to secure attention to the repetition of digits by the examiner. 2) Trial series are, therefore, included in a repetition test. 3) Repetition test should not come first. It should be taken later after the examiner sees that the subject is taking tests easily. 4) Several repetitions of practice series may be required. 5) Three trials are given and the subject should pass at least in one trial. 6) Even with repetition of meaningful syllables a second repetition may be required. If the subject passes, do not count success but go to the next trial. 7) A repetition test puts strain on the mind. Hence it should not be given at the end of the examination. Fatigue is setting in them. 8) Even with the repetition of meaningful syllables the subject's attention may flag. So two trails with one error each may be taken as a success. 9) Practice may begin with a trial at a lower age level. 10) Memory for digits falls off after 16.

The Paknikar has purposely quoted these observations to show that a 'Repetition of Digits' Test seems to be a handicap to a blind subject. Why should another handicap be added to the natural one or one brought by misfortune namely, loss of sight? He has dilated on this point as objection may be raised to his omitting 're petition of digits test in the thus barring the subjects auditory experiences leaving only two types of experience, viz., tactual and kinaesthetic to be used. Secondly, the tests are included in the scale according to the criteria that are generally accepted. The criteria are statistical and other.

1. The nature of the scale, whether age or point, should be next consideration. The Paknikar has discarded the age scale as he thinks that deciding upon the median time for successful performance at each age level, for assigning age to each test is a very laborious process. He has also refer to the drawbacks of an age scale. It is easier to fix points to each test if highest time limit for complete performance at lower age level is considered. This has been strictly followed. Success with in time will earn some points. Success beyond time-limit will earn zero score.
2. The scale should not measure any specialized ability. The test materials is so simple that even manipulative skill is out of question.
3. Maximum scores should not be obtained by most subjects. There has been gradual rise in average score from the lower age level to the higher age level.
4. The tests should discriminate well at all levels of intelligence from the lower to the higher. The results show that subjects at higher ages take less and less time to complete a test as compared to subjects at lower ages.
5. There should be no cases where subjects of higher age fail while subjects of lower age pass. No such cases are found with the exception of M.D's.
6. On actual try out it was found that tests 1 to 5 worked well. There was a short pilot study. At the first stage, these tests were tried by three sighted adults blindfolded to see how they would work with the blind. They had the impression that latter tests would not work well. Then they were tried by a blind pupil from a secondary school. Surprisingly, they worked well with the blind subject. She was successful in even those tests in which the adults failed trying them blind-folded. Later some sighted children also tried these tests blind-folded with interest. These cases are not included in the sample on which norms are based. The usual method of a pilot study could not be adopted as the subject in pilot study cannot be included in the actual data. In the case of blind population this would entail a loss in actual data which is available with great difficulty. Hence the objective in this pilot study was to see how the tests of circle formation would work with the blind.
7. Experience with the test should determine the validity of the scale. Generally correlation with recognize tests and teachers' rating are considered.
8. The test should lend themselves to scoring with relative ease.
9. An average individual with average opportunity should be able to acquit of himself well. It is so with the tests.

10. There should be increasing frequency of success in test with higher intellectual level. It is so found.
11. There should be some order of difficulty in the test. When the nature of test is similar they are arranged according to difficulty-from simple to complex.
12. The test should be interesting to the subject. Mr. Paknikar experience with the blind subjects tested was that their interest did not flag during testing time.

4.6.2 A short scale I.Q. measure for the Visually Impaired based on WISC-R

The intelligence scales developed by David Wechsler include several successive editions of three scales, one designed for adults, one for school age children, and one for preschool children. Besides their use as measures of general intelligence, the Wechsler scales have been investigated as a possible aid in psychiatric diagnosis. Beginning with the observation that brain damage, psychotic deterioration and emotional difficulties may affect some intellectual function more than others, Wechsler and other clinical psychologists argued that an analysis of the individual's relative performance on different subtests should reveal specific psychiatric disorders.

Antecedents and Evolution of the Wechsler Intelligence Scales. : The first form of the Wechsler scales, known as the Wechsler –Bellevue Intelligence Scale, was published in 1939. One of the primary objectives in its preparation was to provide an intelligence test suitable for adults. In first presenting this scale, Wechsler (1939) pointed out that previously available intelligence test had been designed primarily for schoolchildren and had been adapted for adult use by adding more difficult items of the same kinds. The content of such tests was often of little interest to adults. Unless the test items have a certain minimum of face validity, rapport cannot be properly established with adult test takers. Many intelligence test items, written with special reference to the daily activities of the schoolchild, clearly lack face validity for most adults.

It was in order to meet these various objections that the original Wechsler Bellevue was developed. In form and content, this scale set a basic pattern for all the subsequent Wechsler intelligence scale, each of which has, in turn, added some refinements to its immediate predecessor. In 1949, the Wechsler intelligence Scale for Children (WISC) was prepared as a downward extension of the Wechsler Bellevue (Seashore, Wesman, & Doppelt, 1950). Many items were taken directly from the adult test, and easier items of the same type were added to each subject. The Wechsler Bellevue itself was supplanted in 1955 by the Wechsler Adult intelligence Scale (WAIS), which corrected some of the

earlier scale's technical deficiencies with regards to size and representativeness of the normative sample and reliability of the subtests.

The development of the WISC was somewhat paradoxical, since Wechsler embarked upon his original enterprise partly because of the need for an adult scale that would not be a more upward extension of available children's scales. The first edition of the WISC was, in fact, criticized because its content was not sufficiently child-oriented. In the revised edition (WISC-R), published in 1974 and designed for 6 to 16 years- olds, special efforts were made to replace or modify adult oriented items so as to bring their content closer to common childhood experiences. In the Arithmetic subtest, for instance, " cigars" was changed to "candy bars". Other changes included the elimination of items that might be differentially familiar to particular groups of children, and the inclusion of more female and Black persons in the pictorial content of the subjects. Several of the subtests were lengthened in order to increase reliability. Improvements were also introduced in administration and scoring procedures.

Description of the Scale: By now, each of the three Wechsler scales has gone through one or more revisions. The current versions, published under the name of David Wechsler even after his death in 1981, are the Wechsler Adult Intelligence Scale- Revised (WAIS-R-Wechsler,-1981), which covers the age span of 16 to 74 years; the Wechsler Intelligence Scale for Children- Third Edition (WISC-III-Wechsler, 1991), intended for children aged 6 years to 16 years and 11 month; and the Wechsler preschool and primary scale of intelligence revised (WPPSI-R-wechsler, 1989), which now covers the range of 3 yers to 7 years and 3 months. WAIS- III has been revised in 2005 and named WAIS- IV.

WAIS- III has some advantages. Its major advantages are as under:

i) It incorporates the modern multidimensional nature of human intelligence, including fluid intelligence and processing speed.

ii) It incorporates the possibility of pattern analysis.

iii) It is appropriate most suitable for assessing adult human intelligence.

iv) It uses deviation IQ.

v) It has impressive degree of reliability and validity.

vi) It uses a point scale.

vii) It makes provision for index score which provides a support to multidimensional nature of human intelligence.

However, WAIS – III has also some disadvantages as under:

i) It is a poor measure of extreme levels, that is, high or low level of intelligence.

ii) It does not take into consideration the theories of multiple intelligence as enunciated by Gardner(1983).

iii) It has poor reliability for the individual subtests.

The WAIS-R, WISC-III, and WPPSI-R share many features, including their basic organization into Verbal and performance scales each of which consists of a minimum of five subtests (and a maximum of seven) and yields separate deviation IQs. The individual scores on all 10 of the regularly administered subtests (11 for the WAIS-R) are combined into a Full Scale IQ which has a mean of 100 and an SD of 15, as do the Verbal and Performance IQs. Of the 17 different kind of students used in the WAIS-R, the WISC-R, the WISC-III, and the WPPSI-R, eight(5 verbal and 3 performance subtests)are common to all three scales. In administering the scale, the verbal and performance subtests are alternated and given in a predetermined sequence that varies with each scale.

The information subtest is the first verbal subtest to be administered in all three scales and serves as a good rapport builder. Efforts have been made to avoid specialized knowledge. The first items are easy enough to be passed by the vast majority of examinees, unless they are mentally retarded or have reality orientation problems. In such cases the examiner may quickly decide to discontinue the testing. The question in the WAIS-R and WISC-III version of Information cover facts that most person in the United States would have had a chance to learn, such as “What month comes right before December”.

The WPPSI-R has similar questions, albeit at a lower difficult level. The Arithmetic subtest is another verbal measure that illustrates the wide range of difficulty across the Wechsler scale. The easiest WPPSI-R Arithmetic items require pointing to the one object pictured in an array that illustrates a quantitative concept (such as “smallest” or more)

The performance subtest of the Wechsler scale typically require the manipulation of

various objects. Such as puzzles and blocks, or the visual scanning of printed materials, like pictures or symbols. They all place time limits on the test taker, who in most cases is also given bonus points for speed. In the verbal scale, by contrast, only one subtest (Arithmetic) is speeded. Picture Completion is a performance subtest shared by all three Wechsler scales; it requires the examinee to identify what important part is missing from pictures of common objects or scenes. The items for the earlier ages rely on basic visual inspection-for example, by presenting the picture of an animal with a limb missing.

Concluding Remarks on the Wechsler Scales

The successive edition of the three Wechsler scales an increasing level of sophistication and experience in test construction, corresponding to the decades when they were developed. In comparison with order individually administrated tests, their principal strengths stem from the size and representativeness of the standardization samples, particularly for adult and preschool populations, and technical qualities of their test construction procedures. The treatment of reliability and validity in the WISC-III manual is especially commendable. The popularity of the Wechsler scales assures them of a constantly expanding research base for the time being.

However, some critics have noted that even the latest, most improved versions of the Wechsler scales may soon become obsolete in light of the current demands for links between assessment instruments and intervention strategies.

In this regard, the weakest feature of all the Wechsler scales has been their lack of theoretical grounding, which makes it hard to find a coherent basis for interpretation. Furthermore, the composition of the scales seems to presume that the ability domains tapped by their subjects across age levels are the same because of the superficial similarities among test materials and tasks.

4.6.3 Adapted EPQ (Eysenck Personality Questionnaire)

Based on a lifelong programme of factor analytic questionnaire, Eysenck and Eysenck (1975) developed a series of test designed to measure normal and abnormal dimensions of personality. Eysenck identified three major dimensions of personality: psychoticism (P), Extraversion (E), and Neuroticism (N). The Eysenck Personality Questionnaire (EPQ) comprises items that intend to measure these three dimensions of personality. The EPQ consists of 90 statements to be answered in terms of either Yes or No and is specially suited for persons aged 16 and old. It also incorporates a Lie (L) scale to

assess the validity of the testee, or examinee's responses. Also a junior EPQ is available for assessing these dimensions among children aged 7 to 15 and it consists of 81 statements. A brief description of these three scales are as under:

1. **P Scale:** P scale assesses the dimension of psychoticism which is not equivalent to psychosis such as schizophrenia although a schizophrenic is expected to score high on P scale. It assesses traits like poor concentration, poor memory, insensitivity, liking for unusual things, disregard for danger and convention, cruelty, lack of caring for others. Such persons are considered peculiar by others. A high score on P scale indicates impulsivity, aggressive and hostile traits, empathy defect and a preference for liking odd or unusual things. Antisocial personality and schizoid personality often obtain high scores on this dimension. A low score on P scale indicates some derivable characteristics like empathy and interpersonal sensitivity. A few examples of items of P scale are:

   Do you take risk just for fun ?(T)

   Do you often break the rules? (T)

2. **E Scale:** E scale assesses the dimension of extraversion and its polar opposite introversion. High scores on E scale indicates tendency to be outgoing, preference for activities involving contact with other people, desire for novelty. Such persons are fun-loving and gregarious. Low scores on this scale indicate introverted traits such as preference for solitude and quiet activities. Such persons show tender mindedness, introspectiveness and seriousness. A few examples of items of E scale are:

   Do you like plenty of excitement? (T)

   Are you quiet when with other? (T)

3. **N Scale:** N scale assesses the dimension of neuroticism that includes traits like slowness in thoughts and actions, suggestibility, tendency to repress unpleasant fact. Lack of sociability, below –average emotional control, will power and capacity to exert self. A high score indicates that the person is nervous, maladjusted and over emotional and a low score indicates that the person is stable and confident. A few examples of items N scale are:

   Are your feelings easily hurt? (T)

   Do you feel dullness in life? (T)

A major focus of research with the EPQ has been to find out the empirical correlates of extraversion and its opposite introversion and such researches have linked several perceptual and physiological factors to the dimension E-I. Some of the important such linkages are:

(I) Extroverts have a greater need for entertaining external stimulation.

(II) Extroverts are readily conditioned to stimuli associated with sexual arousal.

(III) Extroverts are more suggestible than introverts.

(IV) Introverts are vigilant in watch keeping.

(V) Introverts' performance on signal detection tasks are comparatively more improved

(VI) Introverts are less tolerant of pain but more tolerant of sensory deprivation

The psychometric properties of the EPQ are satisfactory. The one-month test-retest reliabilities were. 78(P), 89 (E),96 (N), and 84 (L). The internal consistency reliabilities were in the 70s. for P and the .80s. for the remaining three scales. The construct validity of EPQ is also well established in several studies using emotional, behavioural, attentional, learning and therapeutic criteria (Eysenck & Eysenck, 1975,1985)

4.6.4 Adapted Blind Learning Aptitude Test

Testing the blind presents a very different set of problems from those encountered with the deaf. Oral tests can be most readily adapted for blind persons, while performance tests are least likely to be applicable. In addition to the usual oral presentation by the examiner, other suitable testing techniques have been utilized, such as tape recordings. Some test, such as the College Board Scholastic Assessment Test (SAT), are also available in large-type formats or in Braille. The latter technique is somewhat limited in its applicability, however, because of: the greater bulkiness of materials printed in Braille compared to those provided in ink; the slower reading rate for Braille; and the number of blind persons who are not facile Braille readers. The test taker's responses may likewise be recorded in Braille or on a keyboard. Specially prepared embossed answer sheets or cards are also available for use with true-false, multiple-choice, other selected response items. In many individually administered Tests, of course Oral or gestural responses can be obtained.

Among the earliest examples of general intelligence test that have been adapted for the blind persons is the Binet. The first Hayes-Binet revision of testing the blind was based on the 1916 Stanford-Binet. The most recent adaptation comparable to the Stanford-Binet from L-M is the Perkins –Binet test of intelligence for the blind.

The Wechsler Scales have also been adapted for the blind test takers. These adaptations consist essentially in using the verbal tests and omitting the performance tests. A few items inappropriate for the blind are replaced by alternates. In general, the studies of children who have poor vision or blindness suggested that these conditions may have a negative impact on their cognitive development, even the verbal area, because of the limitations such condition impose on the range and variety of their experiences.

Very few instruments have been developed specifically for use with visually impaired persons. Possibly the best known example of these is the Blind Learning Aptitude Test. (BLAT). The BLAT is an individually administered test that incorporates items adapted for other tests such as Raven's progressive Matrices, and other nonverbal items, and presents them in an embossed format. Emphasis is placed on the learning process rather than on products of past learning, which might handicap the blind child. Information regarding reliability and validity is scant and requires further research. Nevertheless, the BLAT can be useful component along with verbal tests, in the evaluation of blind children elementary school age.

The Intelligence Test for visually impaired children incorporates haptic or tactile versions of tasks such as Block Design into a Battery that includes several on verbal and verbal subtests. As in this case all the other special conditions discussed, visually Impaired occurs in a wide ranges of gradations and quite often combination with other problems. Thus, the decision of whether to use standard tests, adaptations of them, or specially designed tests for the blind depends on the objectives of the assessment and the unique characteristics of the persons in question. In general, tests users should always remember that modifications tests such as tactile presentations of Visual design or extended time limits, cannot be assume the same constructs as the Original Versions.

4.6.5 Concept Development for blind children

Concepts grow out of the perceptual process and become enriched as the child develops language. The breadth of concept development is dependent in large measure on the breadth of the perceptual experiences. Because the blind child lacks one source of

sensory input, his perceptual processes are deficient. He may never grasp some concepts and need more experience than the sighted child to grasp other.

A concept is a network of significant inferences by which one goes beyond a set of observed criteria properties exhibited by an object or event to the class identity of the object or event in question, and thence to additional inferences about other unobserved properties..... the network of inferences that are may be set into place by an act of categorization.

The developmental theory of Piaget will from the frame reference for identifying mental developmental needs. Piaget's stages of intellectual development are outlined very briefly here. (For more details, see Flavell, 1963; Ginsburg & Opper, 1969; and Maier, 1665)

The first 2 years of life are described as the *sensorimotor stage*. The infant progresses from purely reflex activity to more systematic and organized behaviour. He learns that he has some control over object world and will search for a toy he has lost. He learns that objects are independent for himself. Finally he learns to imitate and to respond to people through imitative behaviour.

At approximately 2 years of age the child enters the *symbolic pre-conceptual phase.* The imitative behaviour of the previous period becomes internal imitation (accommodation) and provides the child with symbols which acquire meaning through assimilation. He will apply his symbols in a playful make-believe fashion to other situations as he tests out their appropriateness. He begins to use language for objects and events that may not be present at the moment.

The child enters the phase of *intuitive thought* at about 4 years of age. This phase and the preceding pre -conceptual phase are sometimes called the preoperational stage. Language now becomes repetition, monologue and collective monologue; it is described by Piaget as egocentric, that is, the child is neither concerned with nor interested in what another is saying. By contrast, communication is based on interaction with others and has as a purpose the relaying or sharing of information. During this period, the child employs imitation more or less consciously in a pre-identification fashion. Further, he broadens his social horizons and interest in the world about him.

From approximately 7 to 11 years of age the child passes through the stage of concrete operations. During these years, the child acquires the ability to order and to relate his experiences into a gestalt, or organized whole. He establishes system of classifications and moves from inductive to deductive thinking. While language is now a tool of

communication, he still employs symbolic speech without true understanding of meanings. He looks beyond his family for models to imitate.

At about the age of 12, the child enters the stage of *formal operations,* the final period of intellectual development. During this stage, the adolescent moves from the concrete to the abstract. He enters the world of ideas. He formulates hypotheses concerning the various results of an action and considers what might occur. He utilizes language as a means of communicating thoughts and ideas. He reaches an understanding of his world and where he fits in that world.

It should be remembered that the ages attached to the stages in this outline are approximate, and that development through the stages may not proceed evenly on all fronts.

In case of blind children abstractions such as a concept of colour may never be formed, since the child has no possibility of acquiring a background of sensory input for this concept. His understanding of this group of concepts will of necessity remain on the verbal level and be based on what others have described to him. Thus, his grasp of such concepts will come only through various experiences and cannot truly be his own. In this area, he may have difficult moving beyond the stage of concrete operations.

The concepts of distance and time illustrate another group which eventually may or may not be grasped, depending on the variety and number of experiences designed to give them meaning. For example, the sighted child may acquire some meaningful concept of distance by visual input, that is, how far he can see, and later through an understanding of relative as shown on a map drawn to scale. While the blind may reach some understanding of distance through his kinesthetic sense, he encounters difficulty in doing so. Walking a specific distance would be the most meaningful procedure, but a walk of sufficient length to give an idea of great distance would not be feasible. Further, his deficiency in grasping what distance is prevents his making maximum use of maps through his tactile sense in order to acquire a concept of relative distance. He needs many concrete experiences through his kinesthetic sense in order to use maps effectively.

Educators need to be aware of potential difficulties of the visually impaired children in the area of concept formation and particularly should emphasize meaningful concrete experiences in order to maximize concepts that have relevance for the child.

4.6.6 Reading Preference Test for Children with Low Vision

A research on "Development of Low-Cost Functional Assessment Kit and studying the Relationship Between Visual Acuity and Visual Efficiency of Low Vision Children " was conducted by the Dr. M.N.G. Mani from 1994-1997. This research work was

supported by the Educational Research Innovations committee of the National Council of Educational Research and Training, New Delhi. The study was conducted with 321 low vision children in the state of Tamil Nadu, India. It reveals that majority of low vision children do not have formal visual efficiency training. Moreover, there is empirical evidence that the higher visual acuity of the child does not mean that the visual efficiency too is better. The research reveals that visual efficiency skills of low vision children improve only through systematic visual efficiency training. Large print materials should be prescribed for some low vision children and not for all. While deciding about print reading, certain components such as prior familiarity of print letters, print size required, distance at which reading task is performed, fatigue, etc., have to be considered. Research reveals that a low vision student may use his vision for reading large print for a brief time may not be able to use it for a prolonged time. Similarly another student may use 30 points print size comfortably but all books cannot be presented such a magnified manner. Even use of magnifiers may reduce the field of vision. Still in some other cases, the vision in the low vision students may be deteriorating. Therefore all low vision students may not be benefited by large print materials or magnifiers. They require Braille for reading purposes while the residual vision can be used for mobility, reading news headline, etc. Therefore it is most essential to know the reading preference of a low vision child before prescribing large print or Braille. The Reading Preference Test (REPT) has emerged out of a through research and helps any practitioner to determine the print of Braille reading preference of a low vision child. The areas, which are considered as vital, in the assessment of the reading preference of a low vision child are:

1. *Light perception: sunlight/Dim light difference*
2. *Light perception: Good light/ poor light difference in a class.*
3. *Light tracking*
4. *Detecting hand movement*
5. *Distance of detecting hand movement*
6. *Finger counting : Fingers raised one at a time*
7. *Finger counting: Fingers spread apart*
8. *Finger counting- (general): Fingers closed together*

9. *Finger counting inside the classroom with good lighting condition*
10. *Finger counting inside the classroom with poor lighting condition*
11. *Visual background*
12. *Colour detection*
13. *Visual Closure*
14. *Form constancy*
15. *Eye/hand coordination*
16. *Eye/ foot coordination*
17. *Print size preference without magnifiers*
18. *Print size preference with magnifiers*
19. *Time taken to read a passage (Mother tongue/ English)*
20. *Skill in reading both print and Braille*
21. *Ability to write*
22. *Writing speed.*

The REPT is not accompanied by a TESTING KIT. A testing kit was deliberately avoided to improve the usage of the test even in rural areas. Through some concepts like 'lighting condition' can be tested better under controlled and laboratory conditions, the test does not envisage children being tested so. The description of 'good' and 'bad' lighting condition is viewed in the context of the available lighting condition in the school or locality where the child with low vision is identified. Whatever condition perceived by majority of seeing children as 'bad' and 'good' lighting condition should be used with low vision children too. A contrived situation for testing not created. *We are fully aware of the fact that such testing may not be accurate. However, it would be definite beindicators about the reading preferences of the vast majority of* low *vision children.* Experiments with the most of the low vision children reveal that the environmental conditions created in REPT are appropriate. However, the reading preference of 2-3% of low vision children may not be detected by REPT. As the objective of REPT *is to make reading preference assessment a mass movement for all low vision children in the rural areas, the expected benefits for low vision children far outweigh the forced limitation of the Test.* Therefore, the limitation of the test is not by its construct by its concept.

The assessment items and the accompanying self- instructional guidelines are enumerated as follows:

1. Can the child distinguish between the light Perception in sunlight and the same under Cloudy Conditions? **How to Test?** If the child has light perception, he should Detect It when the sun comes out of the cloud. Therefore, the testing Should be done in such a natural condition. If the child succeeds, proceed to item 2. If no, the assessee is a child without light perception he is certainly a Braille reader.	**Yes:** **No:** **Remarks:**
2. Can the child localise the light source? **How to test?** For testing this, move a Torchlight in front of the child and see Whether or not he/ she is able to track The light source. If the child succeeds, he/she can involved in various educational experiments in science which involve light (for example, light rays pass in a line) but Still the child may be a braille reader. In Such a condition more difficult conditions may be tested. If no, light perception of the Child has only a very limited use in education.	**Yes:** **No:** **Remarks:**
3. Can the child detect hand movement in front? **How to Test?** For testing this, move your hand from left to right and vice versa in front of the child If yes processed to item 4. If no, the child will certainly be a Braille reader, but the residual vision is useful for mobility and other purposes.	**Yes:** **No:** **Remarks:**

4. Can the child count fingers when they are Kept together? **How to test?** Show the palm with fingers with put together and ask the child to count fingers. If the child succeeds, see whether the child can perform the task under different lighting condition. If no, the child cannot succeed in print reading. Teach Braille but orient the child to scrip letters too. He can read large print with difficulty.	**Yes:** **No:** **Remarks:**

4.6.7 Cornell Medical Index for Visually Handicapped Children

The Cornell Medical Index (CMI) was created in 1949 and its purpose as stated in the original manuals was: to meet the need for an instrument suitable for collecting a large body of pertinent medical and psychiatric data at a minimal expenditure of the physician's time. It serves as a standardized medical history and as a guide to subsequent interview: The original CMI was validated through several studies on populations of varying sizes.(See: Lowe, DJ. The Cqrnell indices: A bibliography of Health questionnaires. 1975 :

The Cornell University Medical College Library, New York, NY.([PDF copy available]) form Its inception through the 1970s, the CMI was widely used both at new York Hospital(Now New York-Presbyterian Hospital) and throughout the country. It was considered valid, reliable, and reputable particularly since it bore the name of Cornell. The CMI had been copyrighted by Cornell University Medical College (now the Joan and Sanford I. Weill Medical of Cornell University) so individuals wishing to use the CMI purchased the questionnaire forms and the manual from the medical college.

By 1980 the situation had changed. The questionnaire was becoming out of date, particularly in the language that was used. The supply of questionnaires was depleted and a reprinting was required. There was a concern about reprinting the CMI without some revision so the questionnaire was revised but only at the level of the wording. No substantive revision was made in the nature of the data collected by the questionnaire. The revised questionnaire was completed and copy righted in 1986 and a new printing was completed. This revised version was sold until 1990. Cornell

Medical Index is a medical subject Heading and this linked Pub Med/ Medline search will bring up a bibliography of the Index's use.

Also in 1986, the issue of the future of the CMI was raised. Sales were declining and the college wanted to investigate the options available for marketing the CMI. Since it bore Cornell's name, there was concern with the product. A committee to study the CMI Was formed with members appointed by the Chairs of Medicine, Neurology, and Psychiatry. The committee examined the issues concerning The CMI, did a survey of post customers, investigated other instruments available for similar uses, and looked at the content of the CMI. These investigations found that there were many uses of the CMI. These investigations found there were many uses of the CMI but the predominant use was by private practice physicians. Many of the comments the committee received indicated a need for revision although there were users who are satisfied with it as is. The committee also found the CMI was no longer being used in the New York Hospital because it was not felt to be particularly useful. There also did not appear to be any enthusiasm by the individuals on the committee for revising and revalidating the questionnaire, something that would need to be done if it were to continue to be actively marketed. As a result of this review, the committee concluded that the CMI was no longer a viable product and should be phased out. They believed that the CMI was a product that no longer served a useful purpose and that is continuance had been related more to its historical position then to its contribution to health screening.

As a result of this review, the CMI was phased out over period, July 1990 - June 1991. Since that time, requesters were told that the CMI was out-of- print. The college still retains the copyright, however, so it could reinitiate the CMI in the future if there were clinicians interested in doing a revision and revalidation. Since 1991, requesters have been informed that they could receive a sample copy and could reproduce it for their own non - commercial use that they must take Cornell's name of the forms. This approach has allowed the College to respond to requests but at the same time inform the requester of the problems associated with using the CMI.

As of July 2001, this practice has ceased and now the CMI is available only for historical purposes and for research not involving human subjects. Individuals interested in receiving a copy of the CMI for these purposes should contract the Medical Centre Archives of New York- Presbyterian/ weill Cornell at (212) 746- 6072 or at email-archives@med.comell.edu.

4.7 Report Writing

We will examine some of the broad issues involved in the communication of test results with particular reference to ethical and social implications. For the clinician, such communication usually includes the preparation of a written test report or case report that is often followed by discussion or consultation with the client parents, teachers, or other professionals. Even in those situations that do not require a written report, it is a good idea to prepare one as a record for future reference. The preparation of a report also helps to organize and clarify the clinician's own thinking about the case and to sharpen her or his interpretations. Report writing represents the final stage in the clinician's synthesizing function. In its content, the report should draw upon all the data sources (test and non test) available to the clinician.

veral books provide guidelines for report writing. Without duplicating the many lists of suggestions that can be found in such sources. We shall focus on some of the major points. **First,** there is no one standard form or outline for all reports. Both content and style should and do vary with the purpose of the assessment, the context in which it is conducted, the persons to whom the report is addressed, and the theoretical orientation and professional background of the clinician. It is especially important to adapt the report to the needs, interest, and background of those who will receive it. For example, a report addressed to a lawyer needs to be quite different from one address to a psychotherapist. Nevertheless for both of them, the clinician should select what is relevant to answering the questions raised at the outset from the mass of data he or she has gathered.

The report also should concentrate on each individual's differentiating characteristic – the high and low pints- rather than on traits in which the individual's standing is close to the average. A test of the effectiveness of a report is to see whether it is unique to the individual or whether it applies equally well to other persons. It is a relatively easy task to prepare a pseudo-report from general, stereotyped statements that apply to most people. A considerable body of research has demonstrated that such reports are readily accepted as "remarkably accurate" self descriptions by a large majority of persons (Goodyear, 1990; Klopfer, 1983; sny –der & Larson, 1972; Tallent, 1992, pp. 236-238). This pseudo validation has been called the " Barnum effect", after phineas T. Barnum, the famous showman who is credited with the remark that there's a sucker born every minute. Reliance on such generally applicable personality descriptions is a favourite device of fortune tellers and other charlatans.

The primary focus of the report should be on interpretations and conclusions, although

test records and other detailed data may be separately appended in some cases. Specific data, such as individual responses and subject scores, should ordinarily be cited only to illustrate or clarify a point. Reports should be carefully organized and integrated. Books on the preparation of assessment reports usually contain helpful hints for good writing as well as references to standard manuals of style. One particularly entertaining little books that should make writing less painful for both writer and reader is the Elements of Style by Strunk and White (1979)

4.8 Check your progress

1) Write down the importance of early identification and intervention programme for children with low vision.

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2) Briefly explain the clinical evaluation of low vision using the equipment in Clinic.

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3) Explain the procedure for screening of impaired vision with the commonly adapted test.

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4) What is functional vision? How do you assess the visual skills?

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5) Describe the method of selecting items/materials for the functional assessment and enumerate the points to be borne in mind while administering the test.

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6) What is vision stimulation?

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7) Common areas of difficulty in functional vision assessment is an area to be identified by the teachers- comment.

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8) What is visual tracking? Explain with an example.

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9) Write down the use of aspheric lens for vision training.

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10) Describe the concept development of the Visually Impaired Child.

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4.9 Let us sum up

- Early intervention services have significant impact on the visually impaired infants and toddlers. Early intervention plays a significant role in preventing and reducing the extent of developmental delays. It is important to identify children who have impaired vision. The children with visual problem can be identified within some eye conditions. Vision may be improved with spectacles, treatment or operation.
- A clinical low vision evaluation assesses whether or not a child will benefit from optical devices such as monocular telescopes and or magnifiers. An optometrist or ophthalmologist who specializes in low vision and the prescription of optical devices performs the clinical low vision evaluation.
- Simple but effective tests have been developed for vision screening.
- Functional vision is the used of vision for particular activities. Functional visual skills are required to carry out every day activities.
- This assessment provides information regarding a student's ability to use his vision within the learning environment. It includes acuity, colour, fields, and environmental accommodations.
- A child with low vision may be able to progress through sequential training of visual skills.
- Children who have very little vision or have not used vision need to know that they can use their vision. They may also need encouragement to do so.
- Visual efficiency is the processing ability of the brain. It is unique to each child.
- At this efficiency level those with low vision learn to distinguish patterns of visual stimuli, differentiate outlines, inner detail of objects and transfer this learning into two dimensional pictures and symbols.
- The visual efficiency can be developed by training but cannot be measured clinically.
- The visual skills to be trained are visual attention and awareness, control of eye movements, scanning. Tracking visual discriminations, visual figure-ground discrimination, visual closure, visual memory, recognition of action, form constancy, eye hand and eye foot coordination.

  Normally students with low vision may have additional visual fluctuations,

such floaters in the visual field, light sensitive, eye fatigue, degenerative condition etc. Parents and teachers must continue to provide creative and meaningful visual stimulation in order to foster the presentence. It is essential that the student understanding his or her functional vision and the best techniques for sight utilization. Assessment of the student's functional vision in the initial step in teaching or rehabilitating student how, when and under what conditions vision can be used efficiently. Assessment will provide all physical data on the eye report obtained from the eye care specialist. Secondly the information collected should be presented to each student in a vocabulary appropriated for him or her level of understanding. From this data information in the area of low vision is formulated for the student. Teachers and parents can never know what children see, only how they function. Collecting functional data over a period of years serves two important purpose. It helps students reach maturity with objective knowledge about their visual abilities and disabilities. in addition it provides a continuous record of change in their visual status.

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