B.ED. SPL. EDUCATION

CURRICULUM DESIGNING, ADAPTATION AND EVALUATION

SES VI 02

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY

CURRICULUM, ADAPTATION AND STRATEGIES FOR TEACHING EXPANDED CURRICULUM

B.Ed. Spl. Ed

(SES VI 02)

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Bachelor of Special Education

B.Ed. Spl. Ed.

A Collaborative Programme of

Madhya Pradesh Bhoj (Open) University

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SES VI -02

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SES VI – 02

CONCEPT AND TYPES OF CURRICULUM

BLOCK

1

CONCEPT AND TYPES OF CURRICULUM

BLOCK 1 : CONCEPT AND TYPES OF CURRICULUM

INTRODUCTION

Studying the anatomy and physiology of eye is important for a teacher of visually impaired children to understand how the human eye works and what can go wrong in its different parts. This knowledge helps them in early identification of visual problems in order to plan clinical and educational assessment. This block provides a comprehensive information on eye and its care, different types of refractive errors, common eye diseases, and the nature of assessment of visual impairment.

OBJECTIVES

After studying block 1, the learner will be able to

- illustrate, with a diagram, the cross sectional diagram of the human eye
- narrate different types of refractive errors
- enumerate the commonly found eye diseases among children and adults in India
- describe the functional assessment procedures in identifying visual impairment
- list the commonly used tests for the assessment of visual impairment

UNIT 1: CONCEPT, MEANING AND NEED FOR CURRICULUM

STRUCTURE

1.1 INTRODUCTION

Sight is the sense through which the brain receives approximately 75% of its information. Sight is made possible by the eye, serving as a channel through which visual information is perceived. The eye collects information about size, shape and colour and transmits it to the brain where it is interpreted. The process by which the brain interprets information received from the eye is called vision. Vision is possible only if light is present. Light rays reflected of objects are received by the eye, converted into electrical impulses and interpreted by the brain. Vision, therefore, requires light and partnership of the eye and the brain, the collector and the interpreter. This visual process can be well understood by the learners when they have the knowledge of anatomy and functions of the eye.

1.2 OBJECTIVES

After going through this unit the learners will be able to:

- state the various parts of human eye
- explain the functions of various parts of the eye
- understand the importance of eye care
- describe different visual deficits commonly affecting visual functioning.

1.3 ANATOMY AND PHYSIOLOGY OF THE EYE

Nature has taken great pains to protect the eyes. The eyes are set in bony sockets called 'orbits'. In addition, the upper and lower lids prevent flying particles from entering the eye by reflex closure. Tears keep the eye ball moist and clean. They also help in combating infection.

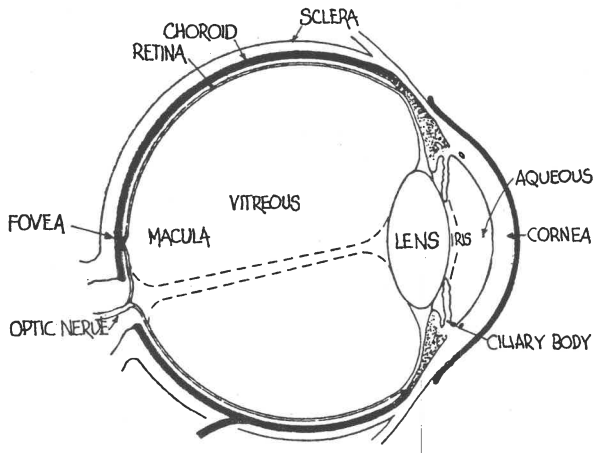

Fig : Structure of human eye

1.3.1 Structure of the Eye

The eyeball which is 23-24 mm in length has 3 coats namely outer coat, middle vascular coat, and inner nervous coat.

Outer coat

The white portion of the eye which one sees from the front is a part of *Sclera.* It forms $5/6^{th}$ portion of the outer coat of the eye ball. The remaining $1/6^{th}$ portion in front of the sclera is the *Cornea.* It is transparent and sits over the sclera like a watch glass. The anterior part of the sclera is covered by a mucous membrane – the *Conjunctiva* which is reflected over the lids and also adheres firmly around the periphery of the cornea – *Limbus.*

Middle vascular coat

It is also called as the Uveal track. It consists of:

Anterior part called iris which rests on the lens. In the centre of the Iris there is a hole called pupil which cregulates the entrance of light into the eye.

Middle part called the *ciliary body* which has ciliary muscles and ciliary processes. Ciliary muscles are responsible for accommodation and ciliary processes are responsible for secreting *aqueous humour.*

Posterior part called the *choroid* which lies on the inner side of sclera. The function of the choroid is to supply nutrition to the retina.

Inner nervous coat

Inner nervous coat is called Retina. It acts like the film of a camera. The nerve fibres arising from the retina come out of the eye ball posteriorly as the optic nerve. The cavity of the eye ball contains several spaces and structures. The anterior chamber is a chambers filled with aqueous humour. It is bounded in front by the cornea, behind by the iris and part of the anterior surface of the lens which is exposed in the pupil. Its peripheral recess is known as the angle of the anterior chamber.

Posterior Chamber

It is a triangular space between the back of the iris and the anterior surface of the lens, having its apex at the point where the pupillary margin comes in contact with lens. It is bounded on the outer side by the ciliary body. It contains aqueous humour.

Behind the lens there is the large *vitreous chamber* containing the vitreous humour. It is a transparent jelly like structure containing a few cells.

1.3.2 Different Parts and Functions of the Eye

Eyelid

The eyelids serve an important function in preserving clear vision. They act as a protective shield from injury threatening the surface of the eye. The eyelids spread and maintain the tear film and moisture covering the eye, helping to retain transparency, a vital necessity for the visual system.

Lacrimal Apparatus

The lacrimal apparatus consists of lacrimal glands and lacrimal passages. In structure, the lacrimal gland resembles the salivary glands. The gland is located in the upper, outer, and anterior areas of the orbit. The tears which are secreted by the lacrimal glands into the conjunctional sac are drained by the lacrimal passage into the nose.

Conjunctiva

The conjunctiva is the transparent membrane which covers the inner surface of the eyelids, the outer surface of the white of the eye, and bridges the angular space between. It is of necessity elastic as it must stretch when the eye and eyelids move. It is rich in blood vessels, and it is these vessels that usually result in redness of the eyes when they are stimulated to dilate by exposure to

inflammatory agents. The conjunctiva is normally smooth and glistening, permitting movement of lids and eyeball to be free of friction and pain.

Cornea

It is the clear circular transparent portion of the external coat of the eyeball which covers the anterior or front surface. It is a transparent, avascular, rigid laminated structure, elliptical in shape measuring in the normal adult 12mm in the horizontal plane and 11mm vertically. The thickness varies from slightly more than 5mm to 1mm in different areas. It has a very delicate sense of touch and pain. The nerve endings are close together and near the surface. There are five layers of the cornea. The first epithelium layer is the outer thin and fragile surface. The second layer is called Bowman's membrane. The third layer is Stroma. The fourth layer Descemet's membrance, acts as a tough, protective barrier to injury and infection. The innermost fifth layer is composed of endothelial cells. The cornea must remain intact, moist, transparent, and regular in its surface curvature for good vision to be preserved, because it is through the cornea that light from any object must initially pass. Its convex surface acts as a lens which bends, or refracts the rays of light from their course of direction so that they can form an image on the retina.

Sclera

Sclera is the posterior external protective coat of the eye ball. Anteriorly, cornea fits into anterior scleral opening like a watch glass, the junction between the two is called limbus. It is white, thick, strong and inelastic. It serves to maintain the shape of the eyeball. The structure is composed of connective tissue bundles and connective cells bound together by cement substance. It is less sensitive than the cornea. Its optical density helps to prevent excessive light penetrating the eye and distorting the image which is entering through the cornea. The main difference between connective tissue bundles and sclera is that their arrangement in sclera is irregular, while in cornea the arrangement is very regular.

Sclera varies in thickness upto 1mm. There are several weaker regions where the optic nerve exits posteriorly and at the sites of attachments of the six extraocular muscles. Blood vessels and nerves to the important inner parts of the eye penetrate the sclera. Disease processes inside the eye sometimes cause the blood vessels to become swollen and it can be seen against the white background of the sclera giving a visible indication that something is wrong within.

Uveal Tract

Uveal tract is the vascular coat of eyeball and lies between the sclera and retina. It is composed of three parts i.e. iris, ciliary body and choroid. These three portions are intimately connected and a disease in one part also affects the other portions though not necessarily to the same degree.

Iris

Iris is a delicate membrane placed in the anterior part of the eye ball and perforated in the centre i.e. pupil. It arises from the middle of anterior surface of ciliary body. It is slightly pushed forward by the lens which gives it the appearance of a truncated cone, the apex of which has been cut off.

Ciliary body

Ciliary body is continuous with the iris posteriorly. It forms a ring which is 6to 7 mm wide. It is dark because of dense pigmentation. On its surface, it has ciliary processes. These project inward from 0.5 to 0.75 mm and from these the zonular fibres are attached to the lens. They hold the lens suspended centrally behind the pupil. When the muscle of the ciliary body contracts and relaxes, the tension on these fibres is changed. This permits the lens curvature to vary, enabling the light passing through the pupil to focus or be deflected in its course of direction. This is part of the accommodation reflex referred as previously. The ciliary muscles are also supplied by branches of the third cranial nerve. The ciliary body is very vascular and from these blood vessels the transparent fluid called the aqueous humor is formed.

Choroid

Choroid is the third continuous and posterior portion of the uveal tract. It consists of varying size blood vessels lying between the sclera and the retina. It provides the important nourishment to this inner nerve layer. There are pigment cells scattered throughout the meshwork of vessels. The larger vessels are more superficial and the smaller capillaries are deeper. There is a thin basement membrane separating the choroidal vessels from the retina. When this permeability may be changed thus permitting fluid to permeate from the choroids into or beneath the retina. Inflammations, tumors, and blood vessel disorders which occur initially in the choroid usually extend into the retina and disturb the vision-perceiving elements. Systemic illnesses which spread by way of circulation most frequently enter the eye through the choroid.

The Lens

It is a biconvex transparent structure. It is normally placed in a small depression on the anterior vitreous face known as the patellar fossa. It remains suspended by the suspensory ligament. This consists of bundles of fibres which pass from the ciliary body to the capsule of the lens. This suspensory ligament is very strong in young and gradually weakens with advancing age.

The lens is formed of fibres growing from the cells at the equator. The lens thickens during life and becomes less elastic. As this occurs, its ability to change its curvature and to focus light is decreased. A young child has great focusing power while the older adult has minimal accommodation. This reduced function has a predictable time pattern, and it is possible to closely estimate an individual's age by measuring the accommodation.

Retina:

Retina is the inner layer of the eye, composed of a thin, transparent membrane of nerve structures. It is analogous to the photosensitive film in a camera. There are ten layers or subdivisions which can be identified under microscopic examination. It is also important to recognise the separation into the peripheral retina and the central or macular retina. The microscopic structure is different in these two portions and the function is different. The side vision or peripheral field of vision is seen with the peripheral retina while the macular retina is used when the sight is directed at an object. Macular region of retina is important for the maintenance of sharp central visual acuity. The peripheral retina is primarily important in scotopic vision, the ability to perceive light and dark and motion. The predominant nerve ending which serves this purpose is called the rod. Photopic vision and the ability to discriminate colour are confined to the central or macular region, and the cone nerve endings act as the recipients of these stimuli. Chemical changes occur when light enters the eye. The light sensitive nerve endings are located in the outer portion of the retina so that light must pass through the inner retina before the light reflex is initiated. The chemical changes cause electrical impulses to start in the nerves. These are transmitted along the nerve fibers or on the inner surface of the retina.

The retina consists of two types of visual receptors. These receptors are called rods and cones. Rods are long and thin; Cones are shaped like bulbous carrots. The rods are sensitive to light of any wavelength and function at very low

intensities. The cones on the other hand are quiet discriminative receptors. A small blind spot is there where the optic nerve joins the eyeball. At this junction, there are no visual receptors. The cones provide the ability to detect fine details and colour. They function best in daylight or under conditions of higher illumination. The rods provide the ability to detect gross form and movement and they function best in conditions of minimum light.

Aqueous Humour

Aqueous is secreted in the ciliary body. As the liquid is secreted, it fills the posterior chamber and through the passage between the lens and the iris, it enters into the anterior chamber. After filling the anterior chamber, the excess fluid gets out of the tiny holes at the boundary of the cornea and the sclera, the canal of schlem and lubricates the eyeball externally. The aqueous is transparent in nature and allows the light rays to enter.

Optic Nerve

The optic nerve is formed by a combination of nerve fibres as they exit from the back of the eye. It has the appearance of a light pink disc from which blood vessels emerge and spread over the surface of the retina. The optic nerve passes through the orbit and out of it by way of the opening called the optic canal. Optic nerves send the light sensations to the central nervous system.

1.4. FUNCTIONING OF EYE

The physical components of the visual system include the eye, the visual centre in the brain and the optic nerve, which connects the eye to the visual centre. The basic anatomy of the eye is illustrated in the figure 1.1. The cornea is the external covering of the eye, and in the presence of light it reflects visual stimuli. These reflected light rays pass through the pupil which is an opening in the iris. The pupil expands or contracts to control the amount of light entering the eye.

The iris is the coloured portion of the eye and consists of membranous tissue and muscles whose function is to adjust the size of the pupil. The lens focuses the light rays by changing their direction so they strike the retina directly. As in a camera lens, the lens of the eye reverses the images. The retina consists of light—sensitive cells i.e. rods and cones, that transmit the image to the brain through

optic nerves. Images from the retina remain upside down until they are flipped over in the visual centre of the brain.

1.5 EYE AND ITS CARE

A general knowledge of educational implications of the eye conditions can be helpful to the teachers and parents of visually impaired children. Eye examination report form the ophthalmologist can be used to provide information about visual acuity, prescriptive lenses, etiology, age of onset, field of vision, prognosis and educational implications for the teacher to use in the classroom. Visual evaluation could be conducted at regular intervals. The important period in which the vision assessment should be conducted, is the time just prior to the child's entering school. Visual problems must not go undetected as these children attempt to cope with the new and complex demands of the educational environment.

Optical Defects

For individuals who are low vision, use of an optical aid can vastly improve access to the visual world. Most of these aids are in the form of corrective glasses or contact lenses which are designed to magnify image on the retina. Some aids are used to improve muscle control within the eye, while others clarify the retinal image. Appropriate use of optical aids, in conjunction with regular medical examinations, not only helps the child to correct existing visual problems but may also prevent further deterioration of existing vision.

Fatigue is a common characteristic of hyperopic children because of excessive accommodation. The teachers or the parents can solve this problem by reducing the study load and arranging for frequent rest periods. The teachers can use activities requiring distant vision such as the chalkboard and projectors to these children. Periods of close work should be alternated with activities in which the eyes are used for looking at distant objects, especially in the lower classes. The teacher can encourage the farsighted child to wear glasses and to get them checked frequently. Most of the children with hyperopia do not need corrective lenses.

Cataract

Surgery may be needed if the cataracts are severe. The teacher may use variable lighting conditions depending on the location of the cataract and the nature of the

visual task. Children with central cataracts may often prefer lower levels of illumination. Children with peripheral cataract may often prefer higher levels of illumination than normal.

Albinism

Children with albinism are sensitive to light due to loss of pigment in the iris and retina of the eye. Average illumination is suitable for most children with albinism. Children must usually be placed in the front side of the class to see the blackboard.

Glaucoma

Children with glaucoma exhibit a loss of peripheral field of vision in the later stages of this disease. They may be able to read print to a limited extent.

Night blindness

The children with night blindness experience blurred vision and progressive constriction of the visual field. Closed circuit television and handheld magnifiers are often helpful when central vision is good. Braille may be needed in severe cases when the loss becomes more severe.

1.6 VISUAL DEFICITS

The following are some of the visual deficits that may occur due to various reasons such as infections in the eye, injuries, malnutrition, and other causes.

1.6.1 Scotomas

In general, scotoma is defined as a blind or a partially blind area in the visual field. Individuals with scotomas, or blind spots, generally have difficulty in doing tasks which require good visual acuity, such as reading the newspaper, writing a check, identifying people's faces across the room, reading a street sign, etc. The prescription of an optical aid is often the first step towards giving remedy to this problem.

1.6.2 Tunnel Vision

It is referred to the contraction of the visual field to such an extent that only a small area of central visual acuity remains, thus giving the affected individual the impression of looking through a tunnel

1.6.3 Visual Field

It is referred to the entire area which can be seen without shifting the gaze. Vision in the peripheral area of retina is known as visual field or field of vision.

Loss of Visual Field

Field of vision is very much limited and hence the area which can be seen without shifting eye gaze is narrowed down to a specific limit.

1.6.4 Low Vision

Low vision is defined as 'markedly reduced functional vision'. This definition is usually applied to the person with vision of legal blindness or poorer, who nevertheless has some remaining vision, which is useful for certain purposes, or which can become so with special appliances and/or training.

According to World Health Organisation, (1992), Low vision is defined as follows :

"a person with low vision is one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception or a visual field of less then 10 degrees from the points of fixations, but who uses, or is potentially able to use vision for the planning or execution of a task".

1.7 UNIT SUMMARY : THINGS TO REMEMBER

- The white portion of the eye which one sees from the front is part of sclera
- The eye lids act as a protective shield from injury threatening the surface of the eye
- The lacrimal glands are responsible for secretion of tears.
- The inner surface of the eyelids is covered by the transparent membrane called 'Conjunctiva'.
- A transparent, avascular, rigid laminated structure, elliptical shape of the external coat of the eye ball is called as Cornea.

- Uveal tract is composed of three parts namely iris, ciliary body and choroid.
- Ciliary body is responsible for secreting aqueous humour.
- Choroid consists of varying size blood vessels lying between the sclera and the retina
- Visual field is referred to the entire area which can be seen without shifting the gaze.
- Markedly reduced functional vision is called as low vision.

1.8 CHECK YOUR PROGRESS

1. A combination of nerve fibers as they exit from the back of the eye is called as.....

2. Explain the functions of the important parts of the human eye.

3. Tear is secreted by (put a tick mark)

   a. cornea
   b. lacrimal gland
   c. conjuctiva
   d. iris

4. What is meant by 'Scotoma'?

5. Explain the educational implications of visual defects.

6. Describe the process of visual functioning.

1.9 ASSIGNMENTS / ACTIVITIES

1. Draw neatly the structure of the human eye and mark the important parts of the same.
2. Collect the pictures representing visual deficits such as tunnel vision and refractive errors.

1.10 POINTS FOR DISCUSSION / CLARIFICATION

After going through the unit you may like to have further discussion on some points and clarification. Note down those points:-

1.10.1 Points for Discussion

1.10.2 Points for Clarification

1.11 REFERENCES / FURTHER READINGS

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UNIT 2: CURRICULAR APPROACHES IN SPECIAL EDUCATION – DEVELOPMENTAL, FUNCTIONAL, ECLECTIC AND UNIVERSAL DESIGN FOR LEARNING APPROACH

STRUCTURE

2.9.1 Points for discussion

2.9.2 Points for clarification

2.10 References / Further Readings

2.1 INTRODUCTION

Certain physical principles and definitions are necessary to a complete understanding of the normal way in which the eye functions as an optical instrument. The definitions of such terms related to the important areas of **'refractive errors'** and '**common eye diseases**' are explained with illustrations in unit 2.

2.2 OBJECTIVES

After going through this unit, the learners will be able to:

- state the definitions of important terms related to visual functioning
- explain the different refractive errors with illustrations
- distinguish between various refractive errors
- describe the common eye diseases and their influences upon visual functioning

2.3 DEFINITIONS OF IMPORTANT TERMINOLOGIES

As discussed in the previous unit, the eye gathers light stimuli from the environment and brings these stimuli to a focused image on the retina. This process of visual functioning is influenced by many factors such as visual acuity, refraction, fusion, and depth perception. Hence, it is necessary to know about the definitions of such factors that contribute to the assessment of optical defects to a greater extent.

2.3.1 Visual Acuity

'Visual acuity' may be defined as the ability to see or distinguish small separations between portions of the visual fields. The testing for distant visual acuity is usually set at 20 feet or 6 meters, because rays of light are practically parallel at this distance, and the muscle controlling the shape of the lens in the normal eye is believed to be in a state of rest when viewing objects at this distance.

Visual acuity is recorded in the form of a fraction in which the test distance, usually 20 feet, is recorded as the numerator. The denominator represents the distance at which the smallest letters should be read by the normal eye. A visual acuity of 20/200

indicates that the child reads at 20 feet the line which should be read by a normal eye at a distance of 200 feet. The Snellen E chart is designed in such a way that the entire letter subtends an angle of 5 minutes and the spaces between the bars subtend angles of 1 minute at the designated distance. At 200 feet, the Snellen E chart measures 3.48 inches square.

The Snellen fraction is:

$$\text{Visual Acuity} = \frac{\text{distance at which symbol is clearly seen}}{\text{distance at which the smallest symbol read subtends an angle of 5 minutes}}$$

'Visual Acuity **is also defined as "the ability of the eye to perceive the shape of objects in the direct line of vision"**

2.3.2 Fusion

'Fusion' refers to the ability to perceive two dissimilar images seen by each eye as one single mental image. In other words, the power of coordinating the images received by the two eyes into a single mental image is also called as 'Fusion'. Fusion is a relative process regardless of the alignment of the eyes, and is classified into three stages. The final stage constitutes 'stereopsis'. The process of combining two images at the brain level is called as 'stereopsis'.

Absence of fusion is not a serious handicap but affects only depth perception and estimation of distance to a limited degree.

2.3.3. Depth Perception

'Depth perception' refers to 'the ability to perceive three dimensional world through the aid of perceptual cues'. It is also referred as the 'ability to perceive the solidity of objects and their relative position in space'.

As it is mentioned in the above definition of depth perception, the perceptual cues are responsible for the formation of better depth perception about different characteristics of objects in the

environment. Among the commonly used cues, binocular vision is the most familiar one as it relates to both the concepts of fusion and depth perception.

Binocular vision is helpful in perceiving depth. Since the eyes are set two or three inches apart, each receives a slightly different view of the visual field. When we focus on a three dimensional object, both eyes receive light reflected from the front of the object and each eye can receive light from one side of the object as well. However, we do not see double images, instead, the two images are combined into a single image of perception. Hence, we experience one three dimensional sensation rather than two different images.

2.3.4 Refraction

"Refraction" refers to the state of focus of the eye. When a person is examined for refraction, the error of focus in the eye is measured and then the lenses to correct the error are prescribed. This correction brings light rays into exact focus on the retina.

Refraction is also referred to as "evaluation process of refractive status of ocular optical system and correction of errors".

2.4. REFRACTIVE ERRORS

Refractive errors is defined as "a defect in the eye that prevents light rays from being brought to a single focus exactly on the retina" (Bourgeault, S.E., 1969). Numerous variables influence upon refraction, e.g., corneal curvature, depth of the anterior chamber, shape of the lens, and length of the eye. Upon entering the eye, a ray of light passes through the cornea, the aqueous humour, the anterior and posterior surfaces of the lens, and the vitreous to focus upon the retina's fovea.

The refractive power of the eye is determined by the radius of curvature of the cornea and the lens as well as the refractive index of the aqueous and the vitreous. This power can change during life with growth, age, or changes in health or exposure to certain drugs or chemicals. A normal physiological alteration in the ability of the lens to change its convexity occurs at a predictable rate from childhood to a later adult life.

The lens of the child is very flexible and can readily change its curvature enabling the eye to focus on a very near object as well as a more distance object.

As the age of the lens increases, it grows in thickness and is less able to change its curvature. When it loses most of the adjusting mechanism or accommodation, it is termed as presbyopia.

2.4.1 Emmetropia and Ametropia

The ideal refractive condition of the normal eye is called 'Emmetropia'. This condition of 'Emmetropia' refers to the production of an image on the retina and has no relationship to the vision produced. That is, when the optical system is normal and the image is focused clearly on the retina, the condition of 'emmetropia' exists.

Despite Emmetropia there may be cataract, retinal scarring, or nerve damage that prevents normal vision. As emphasised, this is actually an ideal rather than a normal condition, since most adults have some degree of refractive disorder.

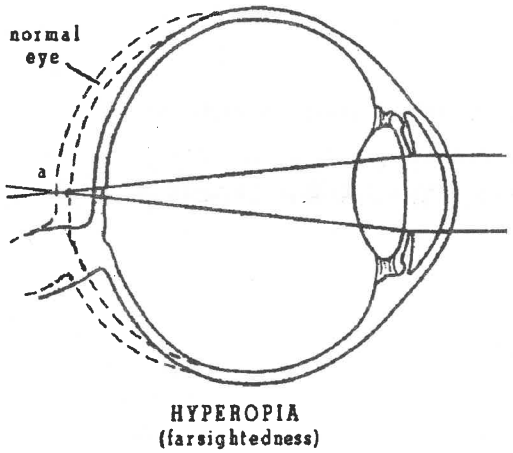
When an exact image is not formed on the retina, it is the indication that 'Ametropia' is present. Ametropia refers to all variations from the emmetropic state which are not due to opacities or disease. This can vary in severity from one which is relatively free of symptoms to one which leads to seriously affect the visual condition. The most commonly encountered variations of ametropia - **'Hyperopia', 'Myopia' and 'Presbyopia'** are discussed below:

2.4.2 Hyperopia

This condition of refractive error is also referred to as 'hypermetropia' or 'farsightedness'. In this condition parallel rays of light are brought to a focus behind the retina when accommodative powers are relaxed. Typically vision is normal beyond 20 feet, but near-vision is poor. Hyperopia may result from shortness of the antereoposterior dimension of the eyeball or weakness of the refractive power of the cornea or lens.

In brief, hyperopia is that state of refractive power of the eye which occurs when the principal focus lies behind the retina.

This can result from inadequate growth in size of the eye, from a flatter curve of



the cornea, or from a decrease in the refractive index of the lens.

Fig. 2.1 Hyperopia (Farsightedness)

Hyperopia may be corrected with the use of a convex lens. This assists the insufficient refractive ability to bring the image on the retina. The convex lens increases the angle of incidence of the light rays entering the cornea and lens and thus focusing the light rays on the surface of the retina.

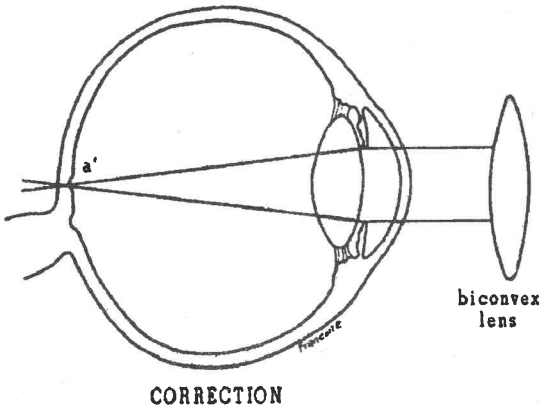


Fig. 2.2 : Correction of Hyperopia

2.4.3 Myopia:

This condition is also referred to as 'nearsightedness'. In this condition parallel rays of light are brought to a focus in front of the retina, i.e., before reaching the retinal surface. Typically near vision is normal, but distant vision is defective. Myopia is caused by an abnormally long antereoposterior dimension of the eyeball or by an increase in the strength of the refractive power of the media.

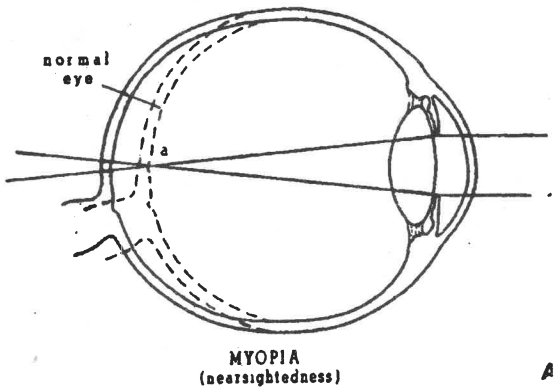


Fig 2.3 : Myopia (Nearsightedness)

In brief, Myopia is that state of refractive power of the eye that occurs when the principal focus lies in front of the retina as shown in fig. 2.2. This develops from an excessive diameter of the eye, from a greater corneal curvature or from an increase in the refractive index of the lens. The most common symptom is inability to distinguish objects clearly at a distance.

Myopia may be corrected with concave lenses which diverge the light rays so they will focus correctly on the retina as in the fig. 2.4. Myopia usually increases in the teen ages and reaches at a level at about age 25. In the 40's presbyopic symptoms develop, necessitating reading glasses or bifocals.

A myopic person can see objects clearly when they are closer to the eye because light emanating from a source closer than 20 feet is diverging. Thus near objects can be seen more easily than far objects by the myopic individual.

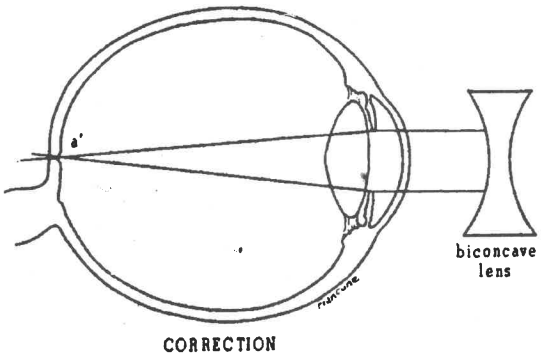


Fig. 2.4 : Correction of Myopia

2.4.4 Presbyopia

This is a condition in which the power of accommodation is reduced as a result of hardening of the lens due to the aging process. Loss of accommodation is manifested by blurring of near objects or visual fatigue when doing "close work".

Presbyopia may be corrected with a lens which corrects any basic refractive error and which also has a proper convex reading addition for close work. This lens brings the near point within suitable range for focusing on the retina. Usually first reading lenses are necessary between ages 42 and 45.

Presbyopia does not mean a worsening of hyperopia, but is merely a reduction of the power of accommodation. With increasing age, presbyopia frequently occurs and hence the lens of the eye becomes less flexible. As a result, the person loses accommodation for near vision and therefore experiences difficulty with close reading without backing away from the material.

2.5 COMMON EYE DISEASES

Eye diseases can be classified into internal diseases and external diseases. External diseases are those affecting the areas adjacent to the eyes as well as those on the surface of the eye.

Internal diseases are those affecting the structure and function of the enclosed area of the eye and the central nervous system connections.

2.5.1 Cataract

A cataract is an opacity of the lens or its capsule. The clouding may be throughout the entire lens or may involve a small localised area. If it is confined to the periphery, the vision may be normal or only slightly reduced. If it is centrally located in the direct line of vision, it can distort the sight at an early stage of formation. The greatest loss that can be sustained by a cataract is a restriction of the ability to perceive light. The vision is lost because the normal clarity of the lens is reduced and the lens cannot focus the rays of light into an image on the retina.

The lens is developed in the first three to four months of embryonic life. Defects in the lens can occur from illness in the mother during the early time of her pregnancy. German measles, viral infections causing mild symptoms in the mother can have devastating effects on the developing infant, including his/her vision. This type of cataract is called 'congenital cataract'.

Cataracts may also result from genetic deficiency. Cataracts are associated with metabolic disorders of the childhood such as diabetes, hyperthyroidism and hypocalcemia. These types of cataracts are called 'secondary cataracts'.

The lens may also become opaque when exposed to excessive heat, electrical current and irradiation.

Eye injuries can cause cataracts in patients of any age, which is called 'Traumatic cataract'.

The treatment for the cataract is to remove the clouded lens through surgery. The removed lens will be replaced by either 'cataract eye glasses' or 'Interocular lens implant (IOL).

2.5.2 Glaucoma

Glaucoma is not a disease, but rather a complex of ocular disorders, all of which share the characteristic symptom of increased intraocular pressure, resulting in

loss of visual function. If uncorrected, blindness may result. The loss of vision usually begins in the peripheral rather than the central field.

Normally, the aqueous humour fills the anterior and posterior chambers and permeates the vitreous humour. Aqueous humour is produced by the ciliary body and is crystal clear. In addition to serving as a refractive medium, the aqueous humour furnishes nutritional support to the avascular lens and cornea and contributes to the maintenance of intraocular pressure.

The intraocular pressure is determined by the rate of aqueous humour production and the resistance to outflow of aqueous humour from the eye.

Normally an almost constant balance is maintained between the rate of formation and the rate of absorption of aqueous humour. From the posterior chamber, the aqueous humour passes between the iris and lens and leaves through the pupil. Emerging from the pupil into the anterior chamber, a portion of aqueous humour then passes through the trabecular meshwork of the chamber angle into the *canal of schlemm* and out through the collector channels or aqueous veins into the anterior ciliary veins. This is the major direction of outflow of aqueous humour. Additionally, however, a portion of the aqueous humour is absorbed through the iris vessels, and some diffuses into the vitreous humour to leave the eye by posterior drainage routes.

Glaucoma [increased intraocular pressure] results from obstruction of the trabecular network and the canal of schlemm, thus interfering with the mechanism of outflow in the angle of the anterior chamber.

Glaucoma is in various types such as chronic simple glaucoma, acute congestive glaucoma and secondary glaucoma. Early diagnosis and successful treatment is essential in preventing permanent loss of vision.

2.5.3 Trachoma

Trachoma has a worldwide distribution which is estimated to affect some 15 percent of the world's population. Trachoma is a chronic infectious disease of the conjunctiva and cornea caused by an organism which appears to be an intermediate between the virus and the rickettsia. Trachoma is highly communicable and if untreated may result in blindness. Teaching regarding personal cleanliness is also important in eliminating this disorder since it is spread by direct contact.

2.5.4 Corneal Ulcer

The cornea is the front part of the eye through which light must first pass prior to forming the visual image on the retina. Two groups of corneal disorders are discussed here. The first is keratitis or inflammation of the cornea. The second is growth abnormalities, many of which are genetic in origin appearing at birth or at times later in life.

Inflammations of the cornea generally are characterised by the following symptoms: pain, photophobia, lacrimation, and interference with vision. Corneal inflammations may be divided into 1) superficial keratitis, 2) deep keratitis, 3) corneal ulcer.

Corneal ulcer will occur when the general resistance of the host or the corneal epithelium is diminished in the aged individuals during or after acute infectiou. diseases such as measles.

Some bacterias are also responsible for the cause of corneal ulcer. Due to indiscriminate use and abuse of antibiotics and steroids, the corneal ulcer is formed. Some specific viruses such as herpes simplex, etc., may also cause corneal ulcer. Contaminating bacteria, fungi, and viruses are often present and waiting for the opportunity to grow in the denuded area. If the organism is virulent , the normal defenses may be diminished and a corneal abscess develop and a dense scar in the line of vision appears. A major educational effort should constantly be made to inform everyone of the possible blinding significance of what are frequently considered unimportant ocular symptoms resulting from minor injuries or infections.

Corneal ulcer can be superficial involving only the front surface layers or deep involving the central stroma of the cornea. If only the outermost cells are destroyed the transparency is interfered with temporarily as these cells will regenerate normally. If the inflammation extends below the surface, cloudiness usually follows. The cornea has a very sensitive nerve supply to touch and pain stimuli. A slight amount of drying initiates the normal blink reflex. Airborne irritants also cause excessive blinking. When the corneal surface is removed from a small area, there is severe pain, sensitivity to light, tearing, and reflex closure of the eyelids. Small foreign bodies, slight scratches, and burns are frequent causes of superficial ulceration of the cornea. This permits removal of the eye's normal barrier to infection and exposes the cornea to such disease.

2.6 UNIT SUMMARY : THINGS TO REMEMBER.

- Refractive error is a defect in the eye that prevents light rays from being brought to a single focus exactly on the retina; can be corrected with lenses.
- Myopia is the condition in which the eye ball is excessively long and focuses light in front of the retina; nearsightedness.
- Hyperopia is the condition characterised by refractive problem in which the eyeball is excessively short and light rays are focused behind the retina; farsightedness.
- Glaucoma is the condition characterised by high pressure inside the eye ball.
- Trachoma is an infection caused by a specific virus which produces severe scarring of the eyelids and cornea.
- Corneal Ulcer is developed due to bacteria, viral infections, fungus, vitamin deficiency, etc.,
- Cataract is the condition characterised by the eye lens becoming opaque and cloudy.
- Presbyopia is a normal and gradual decrease in power of accommodation in the eye due to a physiological change that starts in the middle age.
- Visual acuity refers to the sharpness of vision.
- Fusion is the power of converting the two images received by the two eyes into a single mental image.
- Depth perception is the ability to perceive the solidity of objects and their relative position in space.

2.7 ASSIGNMENTS / ACTIVITIES

1. Identify ten individuals who wear spectacles and find out their nature of refractive errors.
2. Prepare a list of preventive measures to be taken for preventing Glaucoma and Corneal Ulcer.

2.8 CHECK YOUR PROGRESS

1. It is represented by a fraction relating to the distance of objects seen by an individual:
   a) fusion
   b) visual acuity
   c) refraction
   d) depth perception
2. Nearsightedness is referred to
   a) myopia
   b) hyperopia
   c) presbiopia
3. What is meant by depth perception?
4. The eye disease associated with intracular pressure is called .....
5. Explain any two common eye diseases found in India.

2.9 POINTS FOR DISCUSSION / CLARIFICATION

After going through the unit you may like to have further discussion on some points and clarification. Note down those points:-

2.9.1 Points for Discussion

2.9.2 Points for Clarification

2.10 REFERENCES / FURTHER READINGS

5. Jose, R.T., (1983). "Understanding Low Vision". New York: American Foundation for the Blind.
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UNIT 3: TYPES OF CURRICULUM – NEED BASED, KNOWLEDGE BASED, ACTIVITY BASED, SKILL BASED AND HIDDEN CURRICULUM

STRUCTURE

3.1 INTRODUCTION

The primary goal of the assessment process is to gather sufficient information to provide a basis for decisions about the personal and educational needs of children. This includes the determination of possible learning opportunities and the existence of related environmental factors. As such, the assessment should be process oriented rather than instrument or test-oriented. The assessment should be a collaborative effort that involves the active participation of all members of the team to determine the educational needs of visually impaired children and the impact of handicapping condition on the overall functioning of these children. In this lesson, clinical and functional assessment procedures applied for assessing visually impaired children are discussed. The importance of early identification and commonly used tests for assessment will also be discussed.

3.2 OBJECTIVES

After going through this unit the learners will be able to:

- understand the clinical and functional assessment procedures applicable for assessing visually impaired children.
- know the uses of clinical and functional assessment procedures.
- mention a few commonly used tests of assessment.
- explain the importance of early identification and intervention.

3.3 CLINICAL ASSESSMENT OF VISUAL IMPAIRMENT

Visual assessment of children requires more than the mere mechanical application of a visual screening device. The identification of visual problems requires teamwork of educational, medical, and other personnel such as volunteers and health workers. The team work consists of vision screening of all children, continuous classroom observation for behavioural and physical symptoms, and extending referral services for identified children for comprehensive eye examinations. An adequate programme of identification requires the carrying out of each step in a carefully planned systematic effort.

3.3.1 The Snellen Chart

Most visual screening procedures are based on the use of the snellen chart plus careful observation for symptoms of eye trouble in the class room. Hermann

Snellen, a Dutch Professor of Ophthalmology, developed his chart in 1862. The snellen chart is the most commonly used chart for measurement of distant, central visual acuity. The standard letter chart may be used for literate children, but the E symbol chart is especially suitable for young children.

It is important that visual acuity screening be administered under standardised conditions. The chart must be clean and properly placed according to background and eye height. Correct illumination for the chart is important to avoid glare. Insufficient lighting can alter the results of the examination. An illumination intensity of 10 to 30 footcandles on the chart is required. The child must stand or sit at the specific distance of 20 feet from the chart, and his position during the examination must be carefully observed. After both eyes are tested together, the right eye and left eye are tested individually. To pass a line the child must read a majority of all symbols on that line.

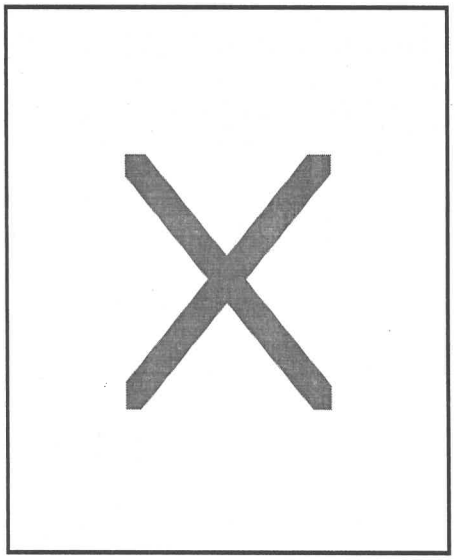

Fig 3.1. Snellen chart

In addition to a history of visual complaints and illnesses, the screening process should include careful observation of the behaviour of the child during the measurement of visual acuity from the Snellen Chart. The appearance of the eyes should be noted by the vision screening team for correlation with visual acuity before referral to an opthalmologist. For example, crusts on eyelids or among eyelashes, red or swollen eyelids, watery eyes or discharges, sensitivity to light,

reddened conjunctiva, and lack of coordination in focusing the two eyes should be noted.

In addition, the teacher may report certain complaints from the child while he is using his eyes at the desk or chalkboard. The child may rub his eyes frequently or attempt to brush away blur. He may experience headaches and/or nausea following visual closework, or he may complain of itchy, scratcy, or burning eyes. The child may have to move extremely close to the chalkboard or books to discriminate pictures, words, or diagrams. Any unusual visual behaviour or symptoms should be noted on the child's screening record.

3.3.2 Field of Vision Tests

Some children may be handicapped due to the restriction of the field vision. The field of vision is the entire area which can be seen while the eye remains fixed upon one point in straight line. When the widest angle of the central field is restricted to 20 degrees or less in the better eye with correction, the person is considered legally blind, eventhough he is usually able to read ink print materials.

The Snellen Chart is not designed to identify a child with visual field restrictions. Visual field limitations can be noted by careful observation of the child by the teacher and snellen tester. If the loss is very extreme, the individual may have difficulty in reading print or in travel. The teacher may note the child stumbling over chairs, tables, and objects which may be in his path. The child may also be retarded in reading speed because of inability to see a complete word or phrase. He may sometimes have 'tunnel vision' (or contraction of the visual field to such an extent that only central visual acuity remains) giving the affected individual the impression of looking through a tunnel.

Several of the binocular testing instruments have an accessory that can be used for lateral field screening. This accessory, sometimes called a *perimeter*, is usually attached to the binocular instrument itself. However, the screening of lateral vision is more designed for driver education or of the persons working with moving machinery. The examination of visual field by an ophthalmologist should detect the location and severity of the visual field limitation.

The commonly used tests for assessing field of vision are: 1) Lister's perimeter and
2) Bjerrum's Screen.

Lister's perimeter

This instrument is generally used for assessing the extent of visual field of an individual.

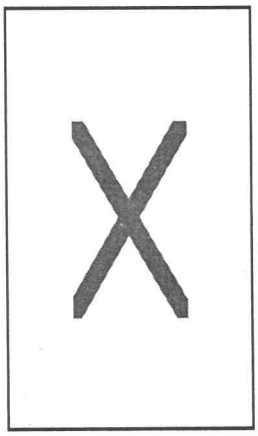

Fig. 3.2 Lister's Perimeter

In general, the extent of normal visual acuity is prescribed as:

- temporally - 100°
- superiorly - 60°
- nasally - 60°
- inferiorly - 75°

Bjerrum's Screen

It is used for more accurate detection of field defects in the central field. The visual field within a radius of 30° is said to be as 'central field'. It is particularly useful to diagnose field defects in chronic simple glaucoma, and scotomas.

3.4 FUNCTIONAL ASSESSMENT PROCEDURES

In the above paragraphs, the clinical assessment of visual functioning has explained. It is discussed that visual acuity and visual field are primarily tested through clinical devises for understanding the nature of visual process. Reduction of visual acuity or constriction of visual fields can have a profound effect on an individual's visual functioning. The reduction can be so great as to require major changes in the person's lifestyle, travel methods, work habits and overall functioning. Optical aids can be of use to solve these life skill problems. However, just an optical aid, with or without adequate training, is not the only answer. There are many functional problems, caused by the reduction of visual acuity or constricted visual fields, which cannot be totally solved with optical aids. For example, poor night vision and lack of depth perception are among the common problems which cannot be entirely managed with optical aids.

Since the Snellen test only measures visual acuity, it must be used primarily as an initial screening device that is supplemented by more in-depth assessments, such as a thorough ophthalmological examination. Parents and teachers must also carefully observe the behavior of the child, and a complete history of any presence of symptoms of visual impairment should be documented. These observable symptoms fall into three categories: **appearance, behaviour, and complaints.** The existence of symptoms does not necessarily mean a person has a visual impairment, but it does indicate that an appropriate specialist should be consulted for further examination.

Appearance of the child

The basic observable category for functional assessment is related to the physical symptoms that may be noticed with the child in a specific known environment. The responses may be obtained for the following questions and due qualitative interpretation could be drawn on the basis of the same.

- Are the eyes crossed?
- Are the eyes functioning in unison?
- Are the eyelids swollen ?
- Are the eyes overly sensitive to light ?
- Are the eyes frequently becoming reddish ?
- Are the pupils of different sizes?
- Are the eyes constantly in motion?

Observable Behaviour:

The second aspect to be considered for functional assessment include the observable behaviour of an individual. The responses need to be obtained for the following queries in order to consider them for overall assessment of visual functioning.

Does the individual:

- Blink constantly?
- Stumble frequently?
- Cover one eye when reading?
- Hold reading material either very close or far away?
- Distort the face when concentrating on something in the distance?
- Walk cautiously?
- Fail to see objects that are to one side or the other?

Complaints

pect to be carefully considered for functional assessment is concerned with complaints that may come from the individual for the specific issues as n below:

Does the individual complain of:

- Frequent dizziness?
- Frequent headaches?
- Pain in the eyes?
- Itching or burning of the eyes or eyelids?
- Double vision?

3.4.1 Recommended Procedures for Assessing Visually Impaired Children

1. Consider assessing in several short sessions rather than one long one.
2. Consider assessing in the home rather than in a strange environment.
3. Position the child so: materials can be comfortably and easily manipulated.
4. Consider effect of lighting: is it sufficient, too intense, distracting? Is glare minimised?

5. Lighting conditions which will optimise performance vary widely depending on the visual condition.
6. Give the children time: to explore materials, to familiarise himself or herself with environment, and to respond.
7. Eliminate distractions, People talking outside, a radio playing are all examples of conditions which can distract the baby and affect performance.
8. Be sensitive to the child's viewpoint. Remember that you are a stranger and this may be the most relevant thing about you at certain points in development. Use the parent whenever necessary.
9. Be familiar with behaviour and developmental patterns of children with visual impairment.
10. Use a transdisciplinary team for assessment whenever possible.

3.4.2 Educational Assessment

In the area of education, the assessment process of visually impaired is not very much different from the students who are sighted. In educational assessment, people are interested in assessing the cognitive ability, academic achievement, language skills, motor performance, and socio-emotional functioning of the student. Assessment must also focus specifically on how the student utilises any remaining vision (visual efficiency) in conjunction with other senses.

The nature and severity of the visual problem determine the assessment instruments to be used. Some assessment instruments have been developed specifically for students with visual impairment. Others are intended for sighted students but have been adapted to students with visual impairment. There are also instruments that were developed for sighted students and are used in their original form with students who are visually impaired. Regardless of the instruments employed, educational assessment, in conjunction with medical and psychological data, must provide the diagnostic information that will ensure an appropriate educational experience for the student who is visually impaired.

3.4.3 Visual Screening of Low Vision Children

Visual screening of very young children or low functioning children is sometimes difficult. Factors such as brief attention span, lack of interest in the test, anxiety in

performing before onlookers, fatigue, and difficulty in communication with the tester can impede the screening process.

Variables which influence the results of the test depend heavily on the intellectual development of the child. His sense of form, span, and visual memory coupled with his previous experience with the objects pictured on the test chart will highly influence the results. The examiner can help to overcome some of his emotional difficulties by showing patience and developing rapport with the child before the testing procedure is initiated. He can help to develop a communication system with children who have very little expressive language ability. In some cases the examiner may need to train the child to make a proper nonverbal response to sample test items.

Distance is an important factor in testing the visual acuity of low functioning children. The shorter distance is recommended in most cases in order to obtain greater rapport and attention span. Testing with exposure of a single symbol generally results in better visual acuity than when a line of symbols is exposed. The exposure of a line of symbols may cause a crowding phenomenon resulting in separation difficulty .

3.5 COMMONLY USED TESTS OF ASSESSMENT

The tests that are commonly used to measure the extent of visual functioning will be discussed in this section.

3.5.1 Snellen Test and Visual Field Tests

These tests are used to measure visual acuity and visual field and the details of which have already been discussed in the earlier sections of this lesson.

3.5.2 Muscle Balance Tests

In testing muscle balance, special instruments are used which cause fusion to be dissociated. The most common tests are: 1) Maddox Rod Test, and 2) Allied Muscle Balance Test.

Maddox Rod Test

This test is used to determine the postural position of the eyes when fusion is disrupted. This test is excellent for measurement of heterophoria and can also be used to detect heterotrophia. The procedure calls for the presentation of a different image to each eye at the same time

Allied Muscle Balance Test

This test consists of a procedure in which the child wears specialised lenses while using a projector to place a red dot within a rectangle projected on a screen. This test may be difficult to teach to some children, and it requires fine motor control and eye-hand coordination.

3.5.3 Tests for Hyperopia

The tests for distant vision will detect the child with hyperopia or far-sightedness. The hyperopic child usually sees quite well at a distance but must accommodate for near-vision tasks.

Plus Lens Test

It is a more adequate test to detect hyperopia. The child's vision is checked on the Snellen chart or on one of the binocular instruments while he is wearing plus lenses mounted in a small, inexpensive frame. If the child can see the 20-foot line at 20 feet from the chart with both eyes while wearing these lenses, he should be referred.

3.5.4 Near Vision Testing

Near visual acuity should be determined for children with low vision. Near vision information is especially important for children with pathological defects where only distance visual acuity may be inadequate. Near vision is determined with one of several reading cards which are either symbols, numerals or letters. The reading distance for low-vision children and illumination should be recorded.

Educational materials are prepared on the basis of this information.

3.5.5 Geometric and Symbol Picture Tests for Low Functioning Children

The use of the picture chart has also been found to be a successful means of vision screening of very young children. The toy test does not give a very accurate measure of visual acuity, and the children may want to keep or play with the toys. Picture tests are dependent on psychological interpretations of figures which may depend on complex form perception, emotion, and experiences.

3.5.6 Colour Discrimination Tests

The simplest type of colour-vision test is designed to detect children who have defective red-green and yellow-blue colour vision. Although such a test is not

recommended to be given in the usual vision screening programme, it is recommended that a test for colour vision be given at least once during the child's school experience.

The dichotomous vision tests, which are used for general screening purposes do not determine the kind and amount of defects. They simply separate children with colour defective vision from children with normal colour vision.

Two such tests, which have been satisfactorily used with children are Ishihara's Test of Colour Blindness and Hardy-Rand-Rittler Test.

Ishihara's Test of Colour Blindness:

This test, which is used for testing the colour blindness is available in a variety of editions and number of plates. One series is composed of digits, and another series which is designed for illiterates uses path patterns. The subject must recognise these path patterns. The plates are arranged in six groups according to the colour of the discs. The colours of discs which are used to describe the numerals or paths are carefully selected to fall within the areas where colour defectives are most likely to differ from normal.

In administering the test, the subject is seated with his eyes at a distance of 75 cm from the chart, which is illuminated with an Easel Lamp. The test is a good instrument for screening red-green defections, but it does not indicate the type or intensity of the colour defect.

Hardy-Rand-Rittler Test

It contains twenty-one plates with simple designs that can be used with children or illiterates to find types of red-yellow and red-green defects. The HRR is a saturation test, that can be used as a diagnostic test to indicate the type of defective colour vision and the intensity of the defect. The principle used in designing this saturation test is to present designs of each critical cue in increasing steps of chroma in order to rate the extent of the defect in terms of the highest chroma of designs failed.

3.6 IMPORTANCE OF EARLY IDENTIFICATION AND INTERVENTION

The review of recently conducted studies indicates that about 20 to 25 percent of school going children may have an eye difficulty which needs professional attention in our country. More assessment programmes are needed to identify

children who need eye care in general schools as well as schools meant for impaired children. A crossed or deviating eye can cause suppression of vision in one eye and leads to unnecessary loss of vision if not detected and treated in the early years. Early detection and treatment of visual problems may save the child's vision and enable him to make a better adjustment upon entering school.

The screening test should be simple, short, and inexpensive. It should be of such a nature as to be easily administered by teachers to a large population in order to determine those who need professional diagnosis and care. Screening of preschool children can be limited to the visual acuity test, but older children should obtain tests for hyperopia and heteropia.

Early visual screening should be a component of the general assessment. Early screening would include a medical examination at birth, with an emphasis not only on the physical condition of the newborn but also on a complete family history. The eyes should be carefully examined for any abnormalities, such as infection or trauma.

At 6 weeks of age, visual screening should be a component of another general assessment. This examination should include input from the parents concerning how their child is responding. The physician should check eye movements, as well as search for any infection, crusting on the eyes etc.,

The next examination should occur at about 6 months of age. A defensive blink should be present at this age, and eye movements should be full and coordinated. If there is any imbalance in eye movements, a more thorough examination should be conducted. Family history is extremely important in assessment.

Between the ages of 1 and 5, visual evaluation should be conducted at regular intervals. The most important period for visual evaluation is the time just prior to the entry of the child to school. Visual problems must not go undetected as these children attempt to cope with the new and complex demands of the educational environment.

3.7 UNIT SUMMARY : THINGS TO REMEMBER

- Clinical assessment deals with the assessment of quantitative aspects of medical nature.
- Functional assessment deals with the qualitative interpretations of factors responsible for visual impairment.

- In educational assessment, people are interested in assessing the cognitive ability, academic achievement, language skills, motor performance, and socio-emotional functioning of the student.
- Lister's perimeter is generally used for assessing the extent of visual field.
- Maddox Rod Test is used to determine the postural position of the eyes when fusion is disrupted.
- Bjerrum's Screen is used for more accurate detection of field defects in the central field.
- Ishihara's Test is commonly used for assessing Colour Blindness.
- Early screening would include a medical examination at birth, with an emphasis not only on the physical condition of the newborn but also on a complete family history.

3.8 CHECK YOUR PROGRESS

1. Distinguish between clinical assessment and functional assessment.
2. Mention the uses of snellen chart.
3. What are the standard procedures of conducting functional assessment?
4. Mention the uses of Lister's perimeter.
5. "Early assessment is mandatory for a visually impaired child". Why?

3.9 ASSIGNMENTS / ACTIVITIES

1- Select any two visually impaired children and do the functional assessment using the procedure suggested in this lesson.

2- Prepare a list of visually impaired persons who are living in your street/village and help them to utilise the services of the local school/hospital for screening.

3.10 POINTS FOR DISCUSSION / CLARIFICATION

After going through the unit you may like to have further discussion on some points and clarification. Note down those points:-

3.10.1 Points for Discussion

3.10.2 Points for Clarification

3.11 REFERENCES / FURTHER READINGS

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UNIT 4: CURRICULUM PLANNING, IMPLEMENTATION AND EVALUATION; ROLE OF SPECIAL TEACHERS OF THE VISUALLY IMPAIRED

STRUCTURE

- **Introduction**
- **Objectives**
- **Various Service Delivery Approaches**
- **Cascade System**
- **Homebound Programme**
- **Growth of Services for Visually Impaired Persons in India**
- **Pioneers in Services for Children with Visual Impairment**
  - Work of Foreign Missionaries
  - Work of Enlightened Persons with Visual Impairment
  - Work of Employed Persons with Visual Impairment
  - Work of General Educators
  - Work of Charitable Organisations
- **Residential Schools**
- **Integrated Education - Aims and Objectives**
  - Factors Contributing to Successful Integration
- **When and why Integrated Education was Introduced in India?**
- **What is the Current Status of Integrated Education in India?**
- **Models of Integrated Education**
  - Resource Model
  - Itinerant Model
  - Combined Plan

- Cooperative Plan
- Cluster Model

- **Emerging Strategies**
  - Resource model for thickly populated areas
  - Itinerant plan for scattered population
  - Dual Teaching Model
  - Cooperative plan for multi-impaired children
  - Partial Integrated Programmes
  - Cluster Model for Hilly Areas
  - Multi-skilled Teacher Plan
- **Key Issues For Adoption**
- **Advent of Technology**
- **Unit Summary: Points To Remember**
- **Check Your Progress**
- **Assignment/Activity**

- **Points for Discussion/Clarification**
  - Points for Discussion
  - Points for Clarification
- **References/Further Readings**

INTRODUCTION

In services for visually impaired children, various models are practised in India. The residential type of education was the first one introduced in the country. Before residential approach came into existence, home bound programmes for persons with disabilities were considered to be the possible alternative. The concept of integrated education emerged in the last century to expand services for more disabled children. The integrated education concept is trying to address the objectives of education for all in the case of disabled children. Integrated education in India is implemented through various context specific models. There are many tailor made models too in addition to the standard models of integration. In this unit, the characteristics of resource, itinerant, combined and cluster models of integrated education are described. The implementation procedures of these models are also enumerated in detail.

OBJECTIVES

The student teacher, with the use of this material, is expected to :

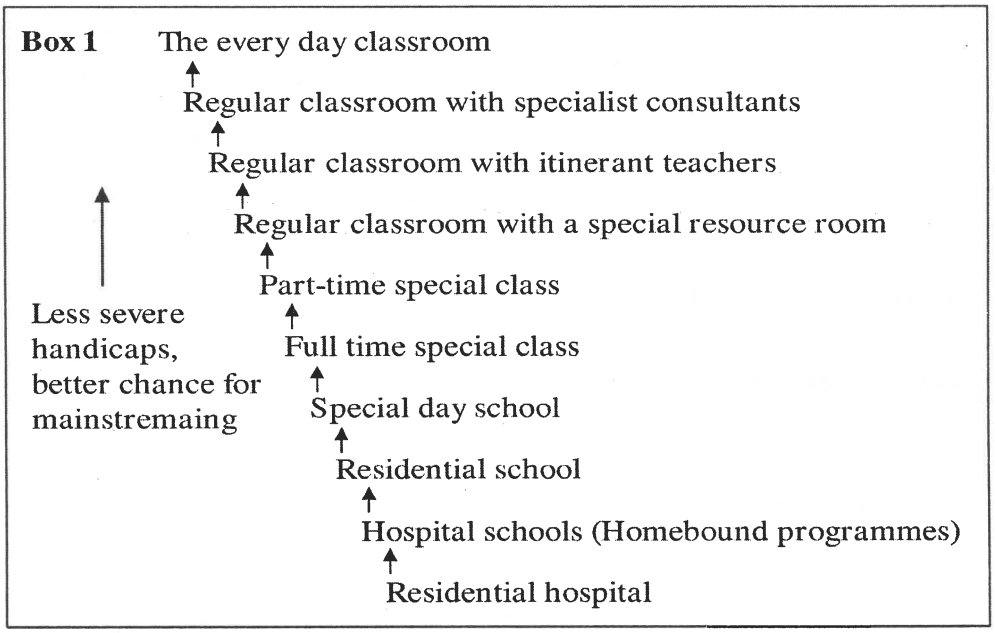
- *Explain the chronological development of the educational plans for visually impaired children.*
- *Explain the nature of residential schools.*
- *Describe the nature of integrated education programmes for visually impaired children.*
- *Compare the effectiveness of various models of integration of visually impaired children in ordinary schools.*
- *Compare the merits and limitations of the educational plans suitable for visually impaired children in the 21st century.*

VARIOUS SERVICE DELIVERY APPROACHES

Cascade System

The cascade system clearly explains the nature of educational services available for visually impaired children depending upon their extent of disability. It is very clear from the system that the children with less severe handicaps can cope up well in mainstreaming programmes.

The diagramatic representation of the Cascade System is as follows:



The visually impaired children with additional disabilities can normally get education in the lower half of the ladder whereas other children who have only visual impairment can study in total integrated system.

HOMEBOUND PROGRAMME

"This programme is meant for children who are physically handicapped also to the extent that they cannot attend a school, or who live where a school suitable for them is not available". The purpose of this school is that the physical incapacity should not and need not create a "mental vegetable". If the children are unable to attend the school, education can be brought to them.

In this approach, specialised teachers are nominated routinely to minimise interruptions in a student's education caused by short or long time confinement to home. The special teachers in this system are assigned with a caseload, and visit the student in the home on a regular basis. The major responsibility of these teachers is to assist the child's regular classroom teacher in preparing instructional plans and guidelines which can be pursued with the homebound student on one-to-one tutorial basis. It is desirable that the learning environment should be made more compatible to the child's basic physical and emotional needs in this system. The homebound programmes are rarely practised in Indian conditions.

GROWTH OF SERVICES FOR VISUALLY IMPAIRED PERSONS IN INDIA

Work for children with visual impairment in India is more than a century old. Miss Anne Sharp founded the first school for the blind in Amritsar in India in 1887. One of the largest schools for the blind in India, which is located in Palayamkottai, was started in the year 1890. Though foreign missionaries started the first two institutions, Sri Lal Behari Shah was the first Indian to start the Calcutta Blind School in 1897 (Murickan and Kareparampil, 1995). The growth of special services for disabled children in India has followed the global trends of care and help. The concept of re-birth and the theory of KARMA stimulated people to create homes for the destitute, including persons with disability. It suggests the availability of some form of education and rehabilitation of persons with disability (Jangira and Ahuja, 1993). Besides efforts from the voluntary sectors, the Government too initiated constructive activities towards the development of services for children with visual impairment. In 1942, the Government of India invited Sir Clutha Mackenzie, a World War I veteran from New Zealand to conduct a survey on blindness in India. The recommendations of his famous report on Blindness (1944) have great influence on the programmes for persons with visual impairment in the post-independent period. In 1947, a unit on blindness was set up in the Ministry of Education, which was headed by Sri Lal Advani. This unit became the focal point for expansion of services to other disability areas through the federal government. The unit was also instrumental

for the creation of the concept of separate national institutes for the handicapped in India.

The development of Bharathi braille code in India also provided a fillip to the augmentation of services for children with visual impairment. Though the Central Board of Secondary Education (CBSE) initiated the work in 1922, it took a concrete shape only during the first conference on Uniformity of Braille Codes organised in Paris in 1950. Dr. S.K. Chatterjee, Sri P.M. Advani, and Sri Lal Advani represented India at this conference. Subsequent to this workshop which resolved in favour of phonetic uniformity of braille codes, the first regional conference on the subject was held in 1951 in Beirut. The code agreed upon at this conference was modified to some extent and introduced in schools for the blind in India. The pre-independence period which witnessed the growth of only 32 schools for the blind rose to a remarkable 400 in the post-independence period. Still, the beneficiaries of the services constitute a meagre 5% or less. One of the reasons for the slow pace can be attributed to the fact that services for the blind remained a 'Welfare and Charitable' activity for decades together. In 1973, Government of India initiated effort to develop Hindi braille contractions and this effort was further strengthened with the establishment of the National Institute for the Visually Handicapped in Dehradun in 1979.

PIONEERS IN SERVICES FOR CHILDREN WITH VISUAL IMPAIRMENT

Five types of persons/organisations in India initiated services for persons with visual impairment.

Work of Foreign Missionaries

In the pre-independence India, foreign missionaries introduced services for the blind in the country. During the British rule, special schools, rehabilitation centres, work on prevention of blindness, etc., were commenced by foreign missionaries. Such missionaries are supporting a large number of present institutions for persons with visual impairment in India. Besides direct services to these persons, the missionaries also assisted the Indian counterparts in attaining skills by undergoing technical courses abroad.

Work of Enlightened Persons with Visual Impairment

The second category of persons who initiated services for the blind are blind persons themselves. For example, Dr. Nilkanthrai Chhatrapati left his medical profession after he became blind at the age of 38 and started a school for the Blind in Ahmedabad in 1900. This school was merged with the Victoria Memorial School for the Blind in 1902 (Murickan and Kareparampil, 1995). Even today, a large number of persons with visual impairment are instrumental for the growth of special education and rehabilitation services. They are serving as role models for the vast majority of persons with visual impairment and their services are recognised by both Government and private sectors in India. Some of the contemporary visionaries for the emergence of services include Sri Jagadish Patel who started the Blind People's Association in Ahmedabad, and Capt. Desai who was involved in the establishment of the National Association for the Blind. Many such personalities at the regional and state levels can also be cited.

Work of Employed Persons with Visual Impairment

The third category of people was those who were working in the government and other organisations and could influence development of services for persons with visual impairment. A classic example is Sri Lal Advani, who was working as a special officer in the Government of India and was instrumental in the formation of the National Institute for the Visually Handicapped. He then became the first Director of that Institute. Many such blind persons, such as Dr. Rajendra T. Vyas, out of their own life experiences, contributed to the development of services for blind persons in India.

Work of General Educators

Persons belonging to the fourth category are those enlightened general educators who saw a need for the development of services for persons with visual impairment. The first instance goes back to the starting of the school for the blind, Palayamkottai, in Tamil Nadu. When a blind boy was seen in front of the house begging, Ms. Askwith, the Principal of the Sarah Tucker College for Women told him that it was an educational institution and not a place for begging. Then came the reply from the blind person, "Why don't you give me education?". This reply

from the blind person prompted Ms. Askwith to start services for the blind in the college campus itself and it became independent in the year 1908.

Work of Charitable Organisations

The fifth category consists of organisations working for the downtrodden sections of the community. One such example is the Ramakrishna Mission. The Mission which basically provides services for the needy and poor of the society included services for the blind too under its fold as a result of its concern for the humanity. This resulted in the starting of the Blind Boys Academy in Narendrapur, Calcutta in 1962 and then the Resource and Development Centre in Coimbatore in 1980. The contribution of the National Association for the Blind is also commendable.

RESIDENTIAL SCHOOLS

The residential schools are meant only for disabled children who are housed there. Countries have traditionally established residential schools to provide educational experiences for visually impaired children. Just like normal schools, subject teachers are appointed in residential schools to handle various subjects.

In most of the residential schools in India, the curriculum followed is similar to the one prescribed for non-disabled children of the same age group. However, some schools exempt visual oriented concepts in mathematics and science for children with visual impairment. Music, recreation activities, and pre-vocational skills are taught to the children in residential schools in addition to curricular skills. Children with visual impairment in residential schools are provided hostel facilities too at free of cost and most of these schools are located in urban areas.

The growth of the integrated education system is redefining the role of residential schools in India. However, the transition will take a long time. At present, both integration and special school system are found relevant in context specific situations.

INTEGRATED EDUCATION - AIMS AND OBJECTIVES

Aims : Integration aims at normalising the life and education of visually impaired children in the least restrictive environment. In this system visually impaired children are educated with the seeing children in general schools.

Objectives : The major objectives of integrated education are :

- *To provide educational opportunities and educational experiences for visually impaired children equal to those provided for the sighted children.*
- *To allow visually impaired children and their families, neighbours and sighted peers - to interact socially in normal settings.*
- *To change stereo-typed responses to blindness by demonstrating that visually impaired children are children first and disabled next.*
- *To develop the personalities of visually impaired children so as to provide a natural basis for adult life experiences. In short, to allow these children to take their proper places as contributing members in all sectors of society, whatever the society may be.*

Factors Contributing to Successful Integration

The major means of attaining successful educational integration are :

- *Provision of specialised teachers to serve as resource teachers at various levels.*
- *Provision of all appropriate educational texts and selected special aids and appliances.*
- *Provision of consultations to regular classroom teachers, school administrators, families, local health authorities and the general public on matters of education of the visually impaired children and*
- *Full utilisation of local consultants, specialists and volunteers for auxiliary services such as reading service and materials preparation.*

WHEN AND WHY INTEGRATED EDUCATION WAS INTRODUCED IN INDIA?

No specific year could be cited for the introduction of integrated education in India. Special schools were adopting partial integration for disabled children at the secondary level in the beginning of 20th century itself. However, full fledged integrated education programmes emerged only in the beginning of 1980s. Since 1980, the field has witnessed a phenomenal growth of integrated education.

Integrated education emerged out of compulsion rather than option in India. In the process of bringing more disabled children under the umbrella of educational services, integration was considered as the cost-effective approach and therefore, the general education system started accepting special needs children in general schools. The implementation of integrated education programme also addressed the needs of high-risk children who were suspected to be potential dropouts and therefore, retention of such children became high.

In India all types of integrated education models are found. At present, at least 8 models of services could be noticed in India. They are listed as follows :

1. *Resource model where visually impaired children study in general schools and stay in hostels meant for non-disabled children.*
2. *Resource model where visually impaired children study in general schools and stay in hostels of the nearby special schools.*
3. *Resource model where visually impaired children study in general schools and stay in hostels exclusively created for them.*
4. *Resource model where visually impaired children study in general schools and stay with parents at home.*
5. *Semi-resource model or cooperative model where visually impaired children are taught only by the resource teacher in a separate class in a general school.*
6. *Itinerant model where a resource teacher visits the visually impaired child in his/her local school and the child stays with parents.*
7. *Multi-category resource model where disabled children of different kinds are educated in a general school by the regular teachers and a specialist teacher.*
8. *Multi-category itinerant model where one special teacher attends to the needs of visually impaired children of different categories in a particular locality.*

The growth of integrated education provided quality instruction and also enabled socialisation for visually impaired children, but failed to expand access for all.

The resource model became popular and blind children in urban areas were mostly benefited. In this model too, hostel facilities were provided in some schools and, therefore, these children had to travel from villages to cities to avail integrated education. As a result, integrated education became as costly as special schools.

WHAT IS THE CURRENT STATUS OF INTEGRATED EDUCATION IN INDIA?

The centrally sponsored scheme of integrated education which was initiated in 1974 is being implemented in various states of the country. More number of Government institutions are involved in integrated education than the non-government institutes. The enrolment pattern of disabled children at the primary, secondary and higher secondary levels in general schools, as per the Sixth All India Educational Survey (1998), is indicated in tables 1, 2 and 3.

Table 1.1 : Enrollment of Disabled Children in Schools Under Integrated Educational Programme (Stage : Primary)

Area	Management	Type of Disability					
		Visually Impaired	Hearing Impaired	Ortho-paedically Handicapped	Mentally Retarded	Othes	Total
Rural	Government	1539	1307	15168	1066	2070	21150
	Non-Government	391	354	2189	188	80	3202
	Total	1930	1661	17357	1254	1250	24352
Urban	Government	896	1420	5072	1694	1382	10464
	Non-Government	982	1877	3959	800	1538	9156
	Total	1878	3297	9031	2494	2920	19620
Total	Government	2435	2727	20240	2760	3452	31614

	Non-Government	1373	2231	6148	988	1618	12358
	Total	3808	4958	26388	3748	5070	43972

Table 1.2 : Enrollment of Disabled Children in Schools Under Integrated Educational Programme (Stage : Upper Primary)

Area	Management	Type of Disability					
		Visually Impaired	Hearing Impaired	Ortho-paedically Handi-capped	Mentally Retarded	Others	Total
Rural	Government	996	533	6734	369	926	9558
	Non-Government	262	264	1582	67	141	2316
	Total	1258	797	8316	435	1067	11874
Urban	Government	604	904	3781	271	251	5811
	Non-Government	736	581	2293	572	1467	5649
	Total	1340	1485	6074	843	1718	11460
Total	Government	1600	1437	10515	640	1177	15369
	Non-Government	998	845	3875	639	1608	7965
	Total	2598	2282	14390	1279	2785	23334

Table 1.3 : Enrollment of Disabled Children in Schools Under Integrated Educational Programme (Stage : Secondary and Higher Secondary)

Area	Management	Type of Disability					
		Visually Impaired	Hearing Impaired	Ortho-paedically Handi-capped	Mentally Retarded	Others	Total
Rural	Government	290	200	5346	137	585	6558
	Non-Government	428	213	2710	65	1283	4699
	Total	718	413	8056	202	1868	11257
Urban	Government	582	473	3416	95	542	5108
	Non-Government	927	319	3144	376	571	5337
	Total	1509	792	6560	471	1113	10445
Total	Government	872	673	8762	232	1127	11666
	Non-Government	1355	532	5854	441	1854	10036
	Total	2227	1205	14616	673	2981	21702

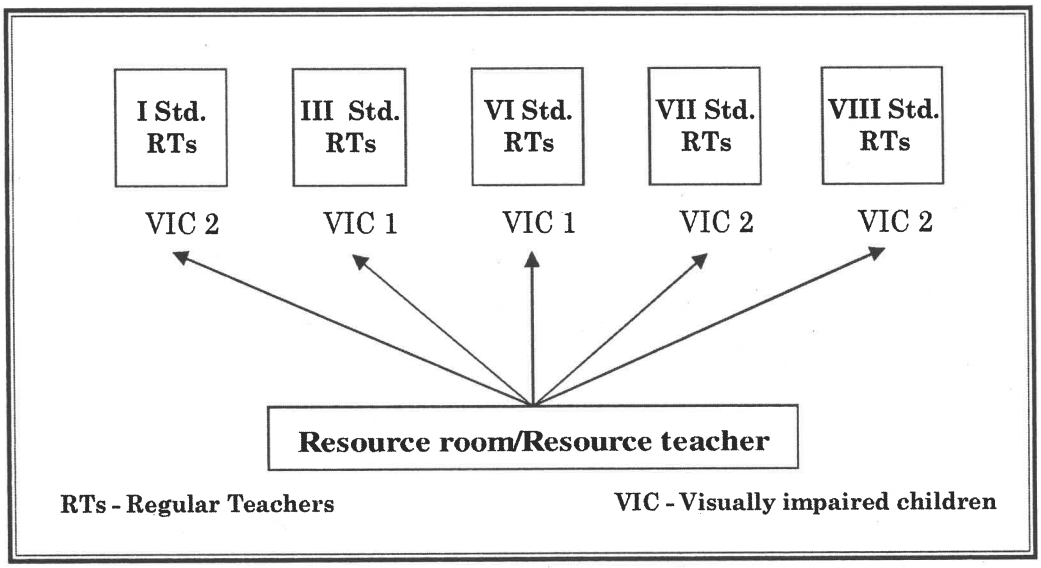
MODELS OF INTEGRATED EDUCATION

Resource Model

This is an educational plan in which a visually impaired child is enrolled in a regular class. Within the building a special teacher called resource teacher is available to the child along with his regular teacher. The regular teacher assumes major responsibility for the visually impaired child's general programme. The resource teacher is responsible for instruction in special techniques or skills required of the visually impaired child. One full time resource teacher can manage 8-10 visually impaired children in the resource programme. As far as possible, the children should be distributed in different classes/sections, preferably not more than 2 in one class/section.

MODEL PROGRAMME

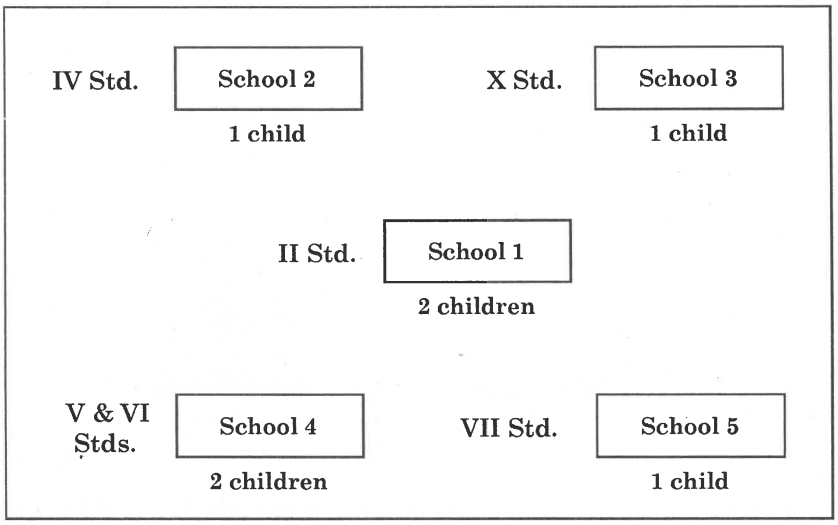
Itinerant Model



This is an educational plan in which the visually impaired child is enrolled in a regular class in his home school where his needs are met through the combined efforts of the **regular teacher** and the visiting **itinerant teacher** qualified to offer special service. The salient features of the itinerant programmes are as follows :

- The children in this programme are distributed in different schools.
- The itinerant teacher has to travel every day to reach the children.
- Each child will be visited by the teacher twice or thrice a week. However, visually impaired children of primary classes should be given frequent visits. In this case, limited number of visually impaired children should be enrolled at the primary level especially in the beginning stages of the itinerant programme.
- Each school will not be having a resource room. For the itinerant teacher, a resource kit is advisable

- The schools selected for the programme can be within a radius of 8 kms. However, this distance depends upon the topography of the locality.
- Depending upon the topography, the itinerant teacher should be provided with transportation arrangements - a bicycle or a motor cycle can be given.



Combined Plan

This is an education plan which combines several programme arrangements among teachers or within one teacher's activities. A district may have a combination in which three primary schools are under resource basis and four middle/secondary schools are on itinerant basis; or, one teacher may serve a small group of primary visually impaired children in a resource room setting in one school on a daily basis, mornings only, and serve several visually impaired children at the secondary level on an itinerant basis in the afternoons, using the resource room of the resource setting as his base. This is known as the **Resource-cum-Itinerant Programme.**

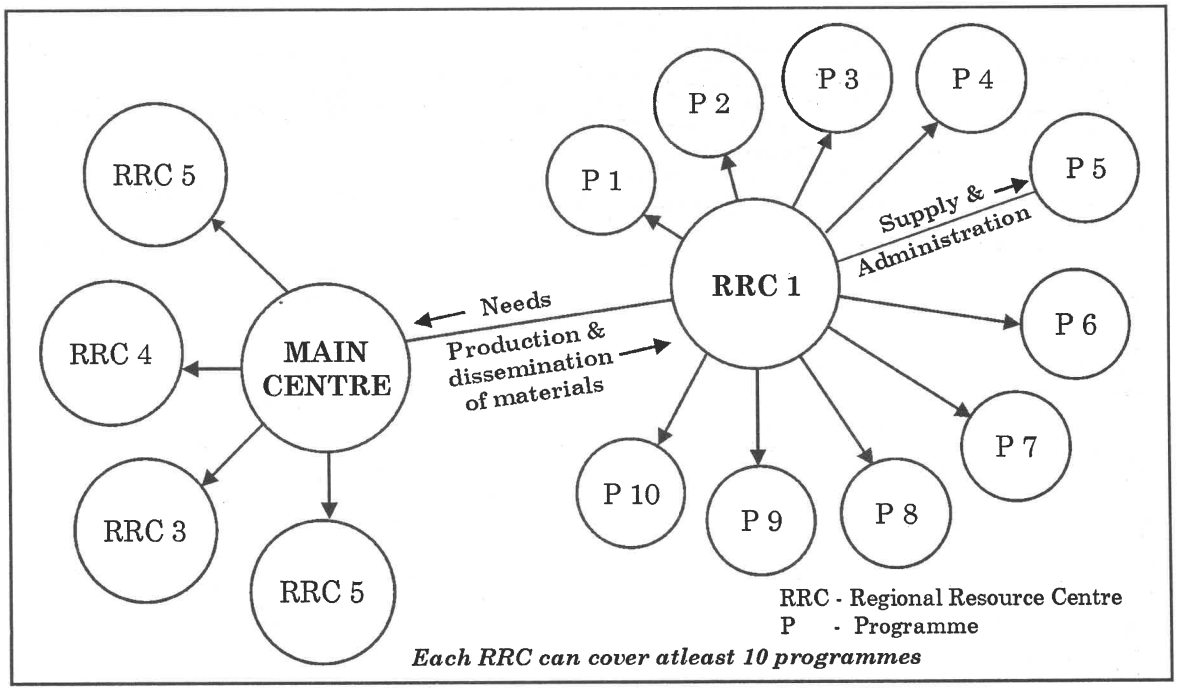
Cooperative Plan

This is an educational plan in which the visually impaired child is enrolled with a teacher of visually impaired children in a special room from which he goes to the regular classrooms for a portion of his day. In this plan, the special room

becomes his "home room". The special teacher plans and is responsible for his educational programme in cooperation with regular classroom teachers. The cooperative plan may not be a full-fledged integrated education programme for visually impaired children. This programme is suitable for the late beginners and visually impaired children with additional disabilities.

Cluster Model

There are many hilly areas in the country which have less access to transportation. Reaching from one place to another itself may take days together due to its topography. In places like this, organisation of cluster models is the only viable alternative. This model envisages satellite centres in different regions and the service delivery system is decentralised. While the regional resource centres are responsible for the administration, the main centre can provide overall supervision. The model programme is given under :



EMERGING STRATEGIES

In the wake of universalisation, a specific approach will not serve the purpose. The approach to educate all visually impaired children should not be one; but there should be many. Designing programme strategies according to the topographical structures of the States of the country would be of paramount importance. India presents a variety of environments, varied resources and various cultures.

The following strategies of integrated education emerge as the *possible alternatives for specific* local situations.

Resource model for thickly populated areas

There are many places in India where visually impaired children are thickly populated. In such places resource programmes can be organised. Regular schools with boarding facilities also can opt for resource programmes.

Itinerant plan for scattered population

Eventhough itinerant programmes look ideal, the administrative aspects are complicated to some extent. In principle, this model is useful for places where visually impaired children are scattered provided the transport facilities are adequate to reach them. Unless definite administrative procedures regarding the planning of work, supervision, work description of the itinerant teachers, administrative hierarchies, etc., are formulated, the programmes may not prosper.

Dual Teaching Model

This is the model which can make the universalisation principle, a reality. Eventhough resource and itinerant programmes can reach a huge number of visually impaired children, there are numerous places where educational services for this population are not existing. For example, an isolated village which has one or two visually impaired children can very well go for the dual-teaching plan. This plan is successful only when the number of disabled children is very limited, not more than two for ideal programming. The regular teachers with the support instructional material and limited competency oriented training can look after visually impaired children in addition to their regular classroom responsibilities. A token incentive may be provided for their additional work with disabled

children. A large number of teachers, at least one teacher per school have to be trained through crash programmes of two to three months duration to serve in the dual-teaching plan. When such arrangements are made, any visually impaired child can avail the educational facility in the local school itself.

Cooperative plan for multi-impaired children

With the growth of integrated education, residential schools for visually impaired children have scope of developing themselves as schools for multi-impaired children. The number of residential schools are very less in number for the huge population of visually impaired children and therefore, all multi-impaired children cannot be benefited by the existing residential facilities. In localities where residential schools are not available, the multi-impaired children can be placed in a separate section of the regular school under the care of a specialist teacher. This can provide educational opportunities for the multi-impaired children too who are currently being deprived of such opportunities.

Partial Integrated Programmes

In India, it could be seen that some residential schools are promoting integration at the secondary level after the preparatory studies at the residential schools. It is understandable that children attend the normal schools for their education and stay in hostels of residential schools. When no alternative is viable and possible, this partial integration programme, at least, could be followed.

Cluster Model for Hilly Areas

There are many hilly areas in the country which have less access to transportation. Travel from one place to another itself may take days together due to its topography. In places like this, organisation of cluster models is the only viable alternative. This model envisages satellite centres in different regions and the service delivery system is decentralised. While the regional resource centres are responsible for the administration, the main centre can provide overall supervision

Multi-skilled Teacher Plan

This is a very critical issue under debate and controversy. While special education demands more skills in the specialist teacher in a particular disability, circumstances are demanding the multi-skilled teachers to serve all kinds of disabled children. The genuine reasons for this plan are as follows :

- *Providing specialist resource teachers for specific disabilities would be too costly for any country.*
- *In countries like India, it is easily found in a locality, a mixture of disabled children. In case, there are two visually impaired children, two children with hard of hearing and two other slow learners, in a particular school, the natural tendency for any administrator is to insist for a single teacher for all these disabilities. This multi-skilled teacher plan is going to be a reality in the long run for the mass implementation of integrated education programmes and therefore, the teachers should have open mind to admit changing approaches in their educational plans.*

KEY ISSUES FOR ADOPTION

Out of the above mentioned plans of integrated education, the two significant approaches which are likely to take the limelight in the future will be 'dual-teaching plan' and the 'multi-skilled teacher plan'. This transition has to be instilled in the existing teachers. In order to cope up with the changes, the existing specialist teachers with one specific kind of specialisation should be trained to have expertise in other disability areas also. Another important move is to create this awareness among regular teachers who are going to be the main target group in the task of universalisation of education. For facilitating this universalisation theme and make it a reality with the regular teachers, a large amount of instructional material and improvised aids would be necessary. A number of specialist resource teachers are needed to make these materials and prepare instructional manuals to help regular teachers.

The adoption of 'dual teaching plan' and 'multi-skilled teacher plan' does not envisage elimination of all other strategies. Organisations serving visually disabled children have their own choice in selecting a particular model for delivery of services. Therefore, the existing programmes are not going to suffer by the adoption of new strategies. With the success of integration in the past two

decades, the country is ready for inclusive education. Inclusion aims at reinforcing better educational practices in the general school system so as to address the educational needs of all children.

ADVENT OF TECHNOLOGY

Another issue, the special education has to address in the future would be the application of technology. Teachers have to improve themselves in order to cope with the growth of technology. Eventhough the technological developments are not going to affect the education in the immediate future, the involvement of technology is definite. Therefore, the special education should gradually prepare itself for admitting the innovations in science and technology. Special education is undergoing changes and we have to go along with them.

UNIT SUMMARY : POINTS TO REMEMBER

- *There is a whole range of services for visually impaired children ranging from home bound programmes to totally integrated approaches.*
- *The main objective of integration is to provide equal educational opportunities as well as equal educational experiences.*
- *Resource model is providing services to children in centrally located schools.*
- *Itinerant teacher plan adopts a visiting teacher service delivery system.*
- *Combined model is a combination of resource and itinerant service delivery approaches.*
- *Cluster model aims at providing services especially in hilly areas which have clusters of schools.*
- *The objectives of universalisation of education for disabled children can be achieved with the adoption of dual-teacher plan.*

CHECK YOUR PROGRESS

1. As per cascade system,
   a) The more the handicap, integration is suggested.
   b) The less the handicap, chances are better for mainstreaming.
   c) The multi-handicapped are benefited by integrated resource model of services.
   d) The service programme for each disability area is separate.

2. In homebound programmes, the main responsibility of the special teacher is to be
   a) Assist the child's regular teacher in preparing instructional plans.
   b) Tutor the child on full time basis
   c) Take care of hospital needs only.
   d) Teach daily living skills only.

3. Integrated education aims at
   a) most restrictive environment
   b) least restrictive environment
   c) 24 hours custodial care
   d) physical placement of disabled child in the regular class.

4. One resource teacher in an integrated set-up can normally handle,
   a) 8-10 visually impaired children.
   b) 2-4 visually impaired children only.
   c) 15-20 visually disabled children.
   d) none of the above.

5. In an itinerant plan, the specialist teacher
   a) belongs to a particular school
   b) visits different schools where visually impaired children are admitted
   c) a para professional.
   d) is a voluntary worker.

6. The regular teacher teaching minimum number of visually impaired children in the normal school comes under

a) cooperative plan
b) combined plan
c) dual-teaching plan
d) cluster model

7. The residential schools are meant for
   a) very poor children
   b) disabled children who are housed there
   c) children whose residence are far away from the school
   d) very bright children

8. For the success of an integrated education programme
   a) services of the specialised teachers to serve as resource teachers is necessary
   b) the majority of the students should be disabled
   c) the total strength of the disabled children should not exceed eight
   d) hostel accommodation is to be provided

9. The cluster model is suitable
   a) where specialist teachers are not available
   b) many schools are clustered around a town
   c) for hilly areas which have less access to transportation
   d) when the school has many vehicles

10. Dual teaching model will be successful
    a) when there are two special teachers in the same school
    b) when there are two schools in the same town
    c) when the children with two types disabilities are admitted
    d) when the number of disabled children is very limited

ASSIGNMENT/ACTIVITY

1. Prepare a five minutes speech to explain any one of the integrated education models to regular classroom teachers.
1. Write an assignment under the title - "Integrated Education is not envisaging the closing down of residential schools".

2. Write an assignment on the "services of the residential schools and the integrated schools are not competitive but are complementary to each other".
3. The teacher trainee can make a through needs assessment of his/her own area and suggest the educational plan suitable for those visually impaired children (the suggestions should be supported by valid reasons).
4. Interview a Resource teacher and an Itinerant teacher and enumerate the administrative difficulties encountered by them.

POINTS FOR DISCUSSION/CLARIFICATION

Points for Discussion

Points for Clarification

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UNIT 5: CORE CURRICULUM AND EXPANDED CORE CURRICULUM- MEANING, NEED AND COMPONENTS

STRUCTURE

- **Introduction**
  - **Objectives**
  - **What is the Need for Inclusion in India?**
  - **Is Inclusive Education Concept New in India?**
  - **To what Extent the Education Documents in India Emphasis Inclusive Education?**
  - **To what Extent is Inclusion Promoted through the PED Act 1995?**
  - **What is the Role of RCI in Inclusion?**
  - **What Types of Services are a Provided in Inclusive Education?**
    - Essential Services
    - Support Services
    - Peripheral Services
  - **How is Inclusion Different from Integration?**
  - **Responsibilities of Different Functionaries in Inclusive and Integrated Setting**
    - Partnership work
    - Teacher consultations
    - Materials preparation
    - Teaching Plus Curriculum
    - Remedial teaching by Special Teacher
    - Remedial teaching by Regular Teacher

- Responsibilities of the Head

- **What will be the Role of Special Schools when Inclusion Expands?**
- **What Factors are Vital for the Success of Inclusive Education?**
  - Capacity building in general education
  - Adopting need-based instructional strategies
- **Inclusion Becomes Realistic**
  - Exchange of manpower and material resources
  - Enlisting parents' and community participation
  - Improving child-to-child learning
  - Making the programme for children with disabilities as an integral part of the general educational system :
- **India - Way Ahead In Inclusion**
- **Unit Summary : Points To Remember**
- **Check Your Progress**
- **Assignment/Activity**
- **Points for Discussion/Clarification**
  - Points for Discussion
  - Points for Clarification
- **References/Further Readings**

INTRODUCTION

The ideal system of inclusive education is that the general education itself should make education of disabled children as its integral part. This implies that the general classroom teachers should be equipped with skills to address the educational needs of children with disabilities with minimum or no assistance of specialist resource teachers. This calls for strengthening the preservice general teacher preparation programme with the inclusion of adequate component of the education of disabled children in the curriculum. Therefore, inclusive education means creating effective classrooms where the educational needs of all children are addressed irrespective of ability or disability. Most people feel that educating a child with disability in general school is inclusion but it can be treated as total inclusion only when the general classroom teachers take most of the responsibilities for the education of these children. If the disabled child's needs are taken care of only by a specialist teacher in the general school, it is not total inclusion. Composite Area Approach (CAA) was a methodology used in the Project Integrated Education for the Disabled (PIED) for providing education for all disabled children in an entire block. Mani (1994) in his evaluation report of the PIED indicates that CAA approach was nothing but the inclusive education strategy for facilitating education for all disabled children in India. In this unit, the various features of inclusive education and the responsibilities of different functionaries in this setting are described.

OBJECTIVES

After going through this unit, the student teachers are expected to

- Define inclusive education programme for visually impaired children in Indian context.
- Enumerate the responsibilities of special teachers in inclusive education programmes.
- Narrate the functions of regular classroom teachers in inclusive education setting.
- List the responsibilities of heads of institutes for the effective functioning of inclusive education.
- Describe the measures to be taken for the expansion of inclusive education for visually impaired children in India.

5.3 WHAT IS THE NEED FOR INCLUSION IN INDIA?

In addressing the issue of why inclusion, the reality in Indian context should be reviewed. Some of the important facts in the Indian scenario are as follows :

Education of visually impaired children in the country is more than 100 years old but the present service delivery systems have not covered even 5% of the clientele. This slow coverage is a serious concern especially when the general education system is aiming at education for all children. How to make education for all disabled children too possible when the present coverage is less than 5%? Inclusive education emerges out as a positive alternative to increase the coverage.

When more than 90% of disabled children are found in the rural areas, majority of special schools as well as integrated education programmes are located in the cities/urban areas. Therefore, the present coverage is benefiting urban based children only. Mani (1997) in his study on microscopic view of services for visually impaired children in the States of Andhra Pradesh, Maharashtra and Karnataka reveals that most of the existing institutes for visually impaired children are located near main railway lines or cities which have access to better transportation. Rural based children have to travel to the cities to avail education. Inclusive education tries to change this unrealistic scenario thereby disabled children get opportunities for education in their own locations.

As far as the standardised models of integration are concerned, one specialist teacher serves 8 to 10 disabled children of the same category. Resource model is a successful approach but it is not practical in rural areas. In most villages of the country, disabled children of different categories are present. Therefore, the disabled child has to depend on the general school for education. As a result, inclusion is inevitable for these children from rural areas.

The extent of disability in each category ranges from mild to severe and profound cases. The mild and moderate cases are more in number than the severe and

profound cases. Due to the lack of sensitivity of the general education to the needs of disabled children, even the mild and moderate cases are treated as high risk children who may dropout from schools. This calls for the involvement of general education so that the children who are currently left out of schools or those who are at risk can be served.

5.4 IS INCLUSIVE EDUCATION CONCEPT NEW IN INDIA?

Inclusive education in special education may be a recent concept, but it is an accepted approach in general education in the Indian context. In a general classroom in India, children of different IQ (Intelligence Quotient) levels study together. A classroom teacher usually targets the average learner in his/her teaching, but is also exposed to situations of handling slow learners as well as academically advanced learners. Therefore, inclusive education on the basis of cognitive abilities is already in vogue in general education. General classroom teachers apply this method of teaching without labelling it as 'inclusive education'. Only children at the two extremes of cognitive abilities are classified as 'mentally retarded' and 'gifted children'. Groups of 'slow learners' but not mentally retarded, and 'academically advanced learners' but not gifted children are certainly different from 'average learners' but they are taught by general classroom teachers only. Therefore, inclusion in this category is already taking place. With this philosophic background, inclusion of sensorily impaired children such as the blind and deaf can also be made in the general school system. The major similarity between non-disabled children and disabled children such as visually impaired children and hearing impaired children is their cognitive abilities. This similarity is a very supportive factor for these children to study along with non-disabled children in inclusive education. With the learning of

'plus curriculum' to cope with the particular disability, these children can also compete with non-disabled children.

5.5 TO WHAT EXTENT THE EDUCATION DOCUMENTS IN INDIA EMPHASIS INCLUSIVE EDUCATION?

Introduction of education of children with disabilities in India can be traced back to the dawn of 19th century. Special school services in the country were initiated mostly by foreign missionaries. The concept of inclusion has been finding its reference in many national education documents in the post-independent period. The article 45 of the Constitution of India is assuring better services to persons with disabilities. The Education Commission Report (1964-66) recommended placement of the disabled child, 'as far as possible' in ordinary schools. The National Policy on Education, 1986 (NPE, 1986) included a full chapter on 'Education of the Handicapped' and formulated guidelines for action. The NPE strongly emphasised the need for the expansion of integrated education programmes.

The centrally sponsored scheme of integrated education for disabled children (IEDC) which was introduced in 1974 got a fillip as a result of the NPE. Therefore, efforts for inclusion were persistently made. Though these national documents emphasised the need for services for persons with disabilities, the actual implementation of activities for the disabled was not satisfactory in the past.

5.6 TO WHAT EXTENT IS INCLUSION PROMOTED THROUGH THE PWD ACT 1995?

The issue of the services for children with disabilities is treated as human resources development with the introduction of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995. As a result of this Act, service for children with disabilities is no more considered a welfare activity; rather it is treated as the right of the disabled child.

The main purpose of the PWD Act is to define responsibilities of the central government and state governments with regard to services for disabled persons.

The Act also ensures full life to disabled individuals so as to make full contribution in accordance with their disability conditions. Blindness, Low Vision, Leprosy-Cured, Hearing Impairment, Locomotor Disability, Mental Illness, and Mental Retardation are the seven disability conditions covered under the Act. As per the Act, the central and state governments shall ensure that every child with disability has access to free and adequate education till the age of 18. It also indicates that integrated education and special schools will have to be setup to meet the educational needs of children with disabilities. Introduction of non-formal education, functional literacy schemes, provision of aids and appliances, education through open schools and universities, etc., are also stressed in the Act. It also indicates that the Government should create adequate teacher training facilities to prepare teachers for special and integrated schools. Development of research on assistive devices is also envisaged in the Act. Many schemes are being evolved at the national and state levels to implement this Act. Therefore, the PWD Act 1995 is strongly encouraging inclusive education concepts wherever possible.

5.7 WHAT IS THE ROLE OF RCI IN INCLUSION?

In 1992, the Rehabilitation Council of India (RCI) Act was passed in the Parliament. The Act was created by the then Ministry of Welfare (presently known as the Ministry of Social Justice and Empowerment) to regulate the manpower development programmes in the field of education of children with special needs. Though RCI does not deal directly with the promotion of services at the school level, it has projected the need for massive manpower for facilitating education for all disabled children. The major responsibilities of the RCI are:

- *To regulate the training policies and programmes in the field of rehabilitation of people with disabilities.*

- *To bring about standardization of training courses for rehabilitation professionals/ personnel dealing with people with disabilities.*
- *To prescribe minimum standards of education and training institutions in the field of rehabilitation uniformly throughout the country.*
- *To regulate these standards in all training institutions uniformly throughout the country.*
- *To recognise institutions/universities running degree/diploma/certificate courses in the field of rehabilitation of the disabled and to withdraw recognition, wherever facilities are not satisfactory.*
- *To recognise foreign degree/diploma/certificate in the field of rehabilitation awarded by Universities/Institutions on reciprocal basis.*
- *To maintain a Central Rehabilitation Register of persons possessing the recognised rehabilitation qualification.*
- *To collect information on regular basis, on education and training in the field of rehabilitation of people with disabilities from Institutions in India and abroad.*
- *To encourage continuing rehabilitation education by way of collaboration with organisations working in the field of rehabilitation of persons with disabilities.*

The RCI has so far developed more than 50 courses and recognised more than 100 institutions to offer special education and rehabilitation manpower development programmes in India. Institutes working in the area of disability are encouraged to develop manpower development programmes in specific categories, and recognition to the institutions is accorded when they comply with the norms prescribed by the RCI. The enactment of RCI Act 1992 goes a long way in accrediting special education manpower development programmes in the country and bringing professionalism in serving persons with disabilities. The RCI's manpower projection is made with the purpose of facilitating education to all disabled children. Therefore, the inclusive education policy is supported by the RCI too.

5.8 WHAT TYPES OF SERVICES ARE PROVIDED IN INCLUSIVE EDUCATION?

In inclusive education programmes in India, three types of services are directly or indirectly required by the disabled child.

2.8.1 Essential Services

The most essential services in an ideal inclusive setting are to be provided by the general classroom teachers, non-disabled children and parents as well. The concept of child-to-child learning, cooperative learning approaches, etc., have demonstrated that true learning can happen through interaction between the disabled child and all entities in the general school.

A sample list of essential services is as follows :

- *Planning instructional strategies for children with disabilities.*
- *Teaching content to them*
- *Maintaining attendance for curricular and plus curricular activities.*
- *General discipline in the classroom*
- *Checking home assignments*
- *Conducting examinations*
- *Evaluation*
- *Facilitating child-to-child learning*
- *Taking progress of the child*
- *Consulting with special teachers about the plus-curriculum needs of disabled children.*
- *Interacting with parents of disabled children.*

In an ideal inclusive setting, the general classroom teachers provide these services to disabled children. The terminology 'essential services' is used here because the disabled child cannot function well in inclusive setting without these vital services. When these vital services are provided by general classroom teachers, the child

would be able to get education in the local school itself even if there is no specialist teacher to attend to him/her.

2.8.2 Support Services

The second type of service required in inclusion is the support service given by the fully qualified special teachers. These teachers provide necessary material support and occasional academic support to children with disabilities and also provide the needed consultancy to regular classroom teachers. **The support materials are compulsory but providing academic support by specialist teacher need not be made mandatory.** The support services include the following :

- *Identifying children with disabilities in the community*
- *Teaching skills peculiar to disability wherever necessary*
- *Assisting general classroom teachers if needed*
- *Arranging assessment for children with disabilities*
- *Arranging learning materials for children with disabilities*
- *Arranging aids and appliances*
- *Monitoring the progress of the child through classroom teachers*

2.8.3 Peripheral Services

The third type of services are the one-time peripheral services which are adhoc in nature. Agencies such as Hospitals, Rehabilitation Centers, and Non-governmental Organizations etc., can provide one-time services such as identification, assessment, counselling, etc.

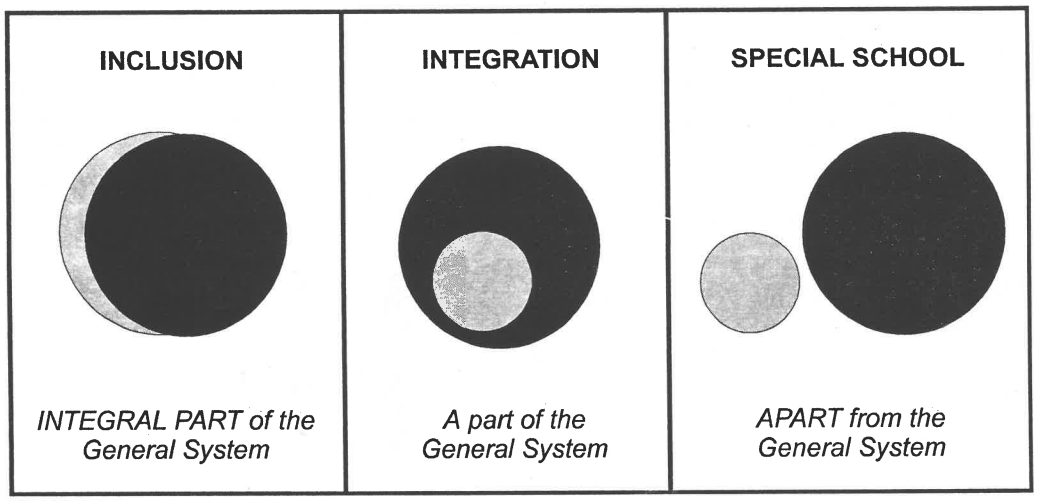
The types of peripheral services are as follows :

- *Issuing medical reports*
- *Providing social benefits*
- *Arranging sponsorship to educational activities*
- *Counselling to parents*

These peripheral services are to be arranged by the heads of institutes of inclusive education programmes.

5.9 HOW IS INCLUSION DIFFERENT FROM INTEGRATION?

The general educational system is acknowledging the fact that education of all types of children including that of children with disabilities should come under the mainstream. In special school concept, the special education component is APART from the general education system, whereas in integrated approach, it is A PART of the general education. Inclusive education goes one step further. In this approach, the special education is an INTEGRAL PART of the general education system.



Therefore, 'Special School Concept' to 'Inclusive Education' can be treated as an evolutionary process in services for children with disabilities.

2.10 RESPONSIBILITIES OF DIFFERENT FUNCTIONARIES IN INCLUSIVE AND INTEGRATED SETTING

Though the ideal system of inclusive education will depend on the general teacher, it would take another decade or two for the general education system to fully take responsibilities for education of disabled children. Therefore, special teachers are

needed at present to provide support to general classroom teachers in making inclusive education work. In the light of this approach, the responsibilities of different functionaries in inclusive education may be, enumerated as follows :

2.10.1 Partnership work

Inclusive education programme is a partnership work between the regular and the special teacher. Therefore, the question "who is responsible for what?" needs to be answered. The regular teacher is mostly responsible for teaching content areas whereas the special teacher is responsible for developing plus curricular skills.

2.10.2 Teacher consultations

Teacher consultations are very essential in the inclusive education programme for its smooth running. Periodical discussions between the regular teacher and the special teacher may include management of visually impaired child in the regular classroom, modifications needed in the content for facilitating the better learning of the child, nature of adjustment and adapted instructional materials, types of materials and teaching aids that are to be prepared as support material for the visually impaired child, etc. During these consultations, the day-to-day difficulties could be discussed for designing the most appropriate instructional strategy for the child. These consultations should be more frequent especially during the primary level in which more modifications and adaptations in the instruction are likely to happen in the content areas.

2.10.3 Materials preparation

Provision of the right materials in right time in the right form is one of the contributing factors for the success of the inclusive education programme. Considerable amount of time of the special teacher during his schedule has to be devoted to the preparation/procurement of teaching-learning materials in braille. But due to the cyclic nature of text revision and constant need of materials that are peculiar or special for a particular setting, the special teacher may find it difficult to have all braille materials as his primary mode of learning. Under these circumstances, the special teacher may have to set priority areas for the production of materials in braille. They may be as follows :

+ materials that are necessary
+ materials that are useful *and*
+ materials which are supplementary

The special teacher can also make arrangements for auxiliary services such as reader service, recording service (if necessary) etc., with the help of volunteers in order to help the children through non-tangible materials.

2.10.4 Teaching Plus Curriculum

Plus Curriculum doesn't mean **'extra'** but **'compensatory'** for the visually impaired child. Plus curriculum means the skills that are peculiar to blindness such as braille reading, braille writing, orientation and mobility, daily living skills, sensory training, use of mathematical devices such as abacus, taylor frame etc., Developing efficiency in curricular skills itself prepares the child for his effective participation in the regular classroom. The efficiency of the child in the plus curriculum builds enormous confidence in the child and help to develop a positive self-image. The acquisition of these plus curricular skills as far as possible may take place at the primary level itself.

2.10.5 Remedial teaching by Special Teacher

Remedial teaching is not necessary for all visually impaired children. Some children may take longer time for assimilating an idea and the special teacher can instruct such children on one-to-one basis and assist. Most of the remedial teaching done by the special teachers should be pertaining to the concept development.

In addition to these responsibilities, the special teacher should involve himself in the following service activities formally or informally.

- Constant guidance and counselling for the visually impaired children, parents and the community will be necessary and the special teacher is expected to provide these services too.
- During the examination time, the special teacher has to transcribe the braille answer books of the visually impaired children into print so that the regular teacher can correct and award marks.

- By maintaining the cumulative records and anecdotal records the special teacher is able to assess the periodical performance of the child.

2.10.6. Remedial teaching by the Regular Teacher

Like sighted children, visually impaired children too might be having difficulties in understanding the content area taught by the regular teacher in the classroom. In such cases, the remedial teaching can be arranged by the regular teacher himself.

Since the special teacher is not supposed to be a specialist in the content area, the regular teacher should bear this responsibility failing which the sufferer will be the disabled child.

2.10.7 Responsibilities of the Head

The head of the institution plays a vital role in the success of the inclusive and integrated education programmes. Following are some of his major responsibilities of the heads of such programmes.

- The head of institution should arrange an orientation programme for the regular teachers with the help of specialists and professionals so that the right type of awareness could be given about integrated and inclusive education programme. This can certainly overcome the apprehensions of the regular teachers to have a visually impaired child in the regular classroom.
- The head of the institution should be aware of the administration of the integrated and inclusive programme such as special teacher's work-load, teacher-pupil ratio, examination procedures for visually impaired children etc.,

In case of visually impaired children staying in the hostels along with the sighted children, the hostel wardens have to be oriented to the behaviour pattern of visually impaired children. The visually impaired children in the hostel should be

allowed to mingle with their sighted counterparts. As far as possible, visually impaired children should be encouraged to stay with parents and attend local schools.

The orientation and mobility instructor for teaching mobility skills, psychologists for assessment, a physiotherapist for assessing the physical deformity, if any, can also be involved in the programme. However, these are adhoc services and not recurring in nature. In brief, inclusive education is a joint venture of many with various delineated responsibilities.

5.11 WHAT WILL BE THE ROLE OF SPECIAL SCHOOLS WHEN INCLUSION EXPANDS?

Special school concept is still an accepted model of education for children with disabilities in India and it will continue to be so in the years to come. Presently there are about 3000 special schools addressing persons with different disabilities. It is estimated that there are 900 schools for hearing impaired, 400 schools for visually impaired, 1000 for mentally retarded and 700 for physically disabled children (UNISED Report, 1999). The exact number of special schools is not fully known as there are many NGOs who run these schools and are not yet included in the lists available. With the growth of inclusive education, the responsibilities of special schools are likely to change in the future. Some of the desire changes are :

1. *They are expected to become resource centres to facilitate inclusive education.*
2. *They are in a better position to serve children with multiple disabilities. In the growing concept of inclusion the special schools have a vital role to play. Though inclusion is open to everyone, experiences in India reveal that some children may not cope in the inclusive setting. Children with additional disabilities, orphans, etc., need some alternative settings and special schools may equip themselves to serve these children.*

5.12 WHAT FACTORS ARE VITAL FOR THE SUCCESS OF INCLUSIVE EDUCATION?

5.12.1 Capacity building in general education

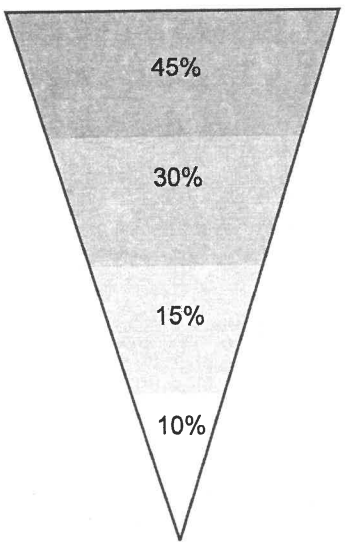
For the effective implementation of inclusive education for all types of disabled children, general classroom teachers need training on understanding the educational needs of these children. It is ideal to teach about special needs children in the pre-service teacher preparation course itself. The curriculum framework of the National Council for Teacher Education (1998) indicates that the pre-service teacher preparation course should include content on special needs children. Teachers, thus trained, will be in a position to take care of the educational needs of children special needs too in general classrooms if appropriate disability specific assistive devices are made available. The work of the general classroom teachers may be occasionally assisted by specialist teachers. The existing teachers who have no exposure to education of children with special needs can be given inservice training for a period of 5-10 days to learn the following areas.

1. *Definitions - Disabilities*
2. *Psychological implications of disabilities*
3. *Learning behaviours of children with disabilities*
4. *Plus curricular activities*
5. *Assistive devices*
6. *Preparation of teaching aids and learning materials*
7. *Adaptation of existing devices and instructional materials for children with disabilities*
8. *Teaching methods*
9. *Evaluation procedures*

The inservice courses may be offered to at least one teacher to begin with from each school and eventfully cover all general classroom teachers in a block. This initial investment on capacity building would be vital for making a strong base for inclusive education.

2.12.2 Adopting need-based instructional strategies

Inclusive education does not mean just enrolling a child with disability in the regular classroom. The child should be given help to cope in the regular classwork. Therefore, child centred approach is needed. The ideal inclusive setting would enrol disabled children of all categories and also of different levels of disability. All of them may not require the same kind of assistance. Some may require guidance rarely whereas some others need continuous help. The children in inclusive education may be classified as follows :



- *Children with mild disabilities who can be handled by general classroom teachers with minimal training.*
- *Children with mild/moderate disabilities who need counselling services.*
- *Children with moderate/severe disabilities who need resource assistance including corrective aids and periodical help in academic areas.*
- *Children with severe disabilities who require direct attention/preparatory assistance from the special teachers.*

Therefore, need-based instructional strategies are imminent in inclusive setting. The children in category D may require the assistance of special teacher to a large extent at the beginning to learn plus curriculum skills. Therefore, the extent of assistance should be decided on the basis of the instructional needs of the child.

With the proper understanding of need based instructional strategies, inclusive education will be successful.

5.13 INCLUSION BECOMES REALISTIC

2.12.2 Exchange of manpower and material resources

The success of inclusive education depends on how effectively all departments concerned can be involved in the total development of the disabled child. Inclusive education is a community involved programme and therefore, its quality depends upon the extent of interaction between the different functionaries of community development. The District Rehabilitation Centres, the ICDS workers, local hospitals, braille presses, special schools, etc., are to be closely involved in the programme implementation.

2.12.3 Enlisting parents' and community participation

Ideal inclusive education programmes strongly insist the importance of parental involvement in education. Parent-interact groups are important for augmenting the quality of inclusive education. The parental involvement not only enriches inclusion but also brings attitudinal changes about disability in the community.

2.12.4 Improving child-to-child learning

Though general classroom teachers and special teachers are available for providing services to children with disabilities in any locality, the influences of non-disabled children on the educational achievement of disabled children and the vice-versa are noteworthy. In fact, the non-disabled children are the best teachers for enabling disabled children to develop proper concepts. The child-to-child learning also becomes relevant in India where the size of the classroom is fairly

large. Inclusive settings should tap the child-to-child learning strategy effectively to improve the achievement of all children including that of disabled children.

2.12.5 Making the programme for children with disabilities as an integral part of the general educational system

As stated earlier, the ideal inclusive education in India would be possible only when all general education teachers are capable of serving children with special needs. Till then, presence of a specialist teacher for a cluster of schools is inevitable. If inclusion is to be successful, the specialist teacher should also be treated as a part and parcel of the general system. Often times, specialist resource teachers in integrated programmes are treated as additional members in the school and therefore, the assistance given by them to disabled children is treated as an add-on component to general education. This scenario should change. The specialist teacher should be treated as a teacher first and specialist next. Until and unless this happens, total inclusion may not happen. Therefore, inclusion should take place at all levels.

2.13.5 India - Way ahead in Inclusion

India can be proud that education of special needs children is finding a fitting place in the general education curriculum. The RCI prescribed curriculum recommends that a teacher should be trained to get into general education as well as special education. This implies that there would be plenty of teachers with special education background working as general teachers which is most conducive for the promotion of inclusive education. The concept of effective schools will flourish only when the general educators understand the individual learning requirements of special needs children. India has demonstrated that the inclusive curricular development is possible and the work should reach the different frontiers of the globe, especially to those developing countries which are

looking for successful models.

In many developing countries, a comprehensive policy on disability issues is missing. While many developed countries talk about human rights for persons with disabilities, many developing nations are concerned with the survival of them as their issues are not given priorities in the political agenda. The Persons with Disabilities Act 1995 may look trivial for a practitioner in India but it is certainly a landmark law aimed at the inclusion of persons with disabilities in the mainstream. As practices are the effects of sound policies, India's recognition and commitment for persons with disabilities are a priority as a result of the enactment of this Act. The mechanism for implementing the Act has also been thoroughly engineered and persons with disabilities in India are treated as human resources. In short, in the policy front, India has demonstrated its commitment. The RCI Act too is another impressive concept in maintaining quality in special education manpower development. Many countries are evincing interest in the process of enactment of these landmark Acts and it is hoped that the rich policy experiences of India would be emulated by other countries of the world.

In terms of practices too, India's achievements are breath taking. It is true that the coverage of children with disabilities in educational programmes in India is not more than 5%. However, there is a danger to compare statistics with other countries using the percentage of coverage as the criterion. In fact, the population of disabled persons in India is more than the total population of many small countries. In many countries, only a few thousands of children with disabilities are studying in inclusive setting but the figure of about 80000 children with disabilities in India integrated in over 17000 schools is mind boggling to many. In addition to this, a noteworthy aspect of inclusion in India is the variety it presents in the models of inclusive practices. For some countries, a self-contained

classroom in the general school means inclusion; for some others, a resource model with full time support of a specialist is inclusion, and still for some other countries, a visiting teacher concept is inclusion. In many developing countries, integration is a recent phenomenon, an effect initiated in the last one decade, that too with the initiative of international bodies but the origin of inclusion in India can be traced back to the last century. Voluntary efforts for integration are evident all over the country in the past three decades. All reported practices of inclusive education are working well in India. The resource models of integration are found in large members in South India, itinerant models are found in most of the integrated programmes in Maharashtra, Gujarat and Rajasthan, the dual-teaching approaches are practised in various States where the UNICEF assisted Project Integrated Education for the Disabled was implemented and cluster models are followed in hilly regions of the countries where transportation is difficult. Even special schools are sending special needs children to nearby general schools for partial inclusion. Therefore, inclusive models are plenty. In addition to these, some organisations supported by the CBM International have initiated bold attempts to provide inclusive education to children with special needs through grassroot level community based rehabilitation workers. The use of grassroot level workers becomes vital in rural areas, where difficulties are experienced to implement other forms of inclusion. As India is largely represented by rural areas, trained para teachers and field workers need to support general classroom teachers to practice inclusion.

In short, all practices of inclusion are in vogue in India and we have the expertise to help other developing nations to develop inclusive policies and practices. The problem of India in inclusion is not in policies and models but in expansion. Inclusion should become a mass movement to include all children with disabilities

who are currently excluded. Time is ripe for India to concentrate on the mass movement instead of looking for successful practices of the west or seeking technical know how to spread inclusion. There is no dearth of technical expertise in India for demonstrating inclusive practices. The need of the hour is to expand inclusion by making it a part of the national agenda. There are initiatives taken by the Government to include special categories such as scheduled castes, tribes, etc in education and welfare programmes. This initiative is successful because it is a national movement. Similar initiative is needed in the disability sector too. If inclusion becomes a national movement, all children with special needs will reap the benefits in another decade or two. As proclaimed by UN-ESCAP in 1999, let the literacy rate among the children with disability be at least on par with the literacy rate of non-disabled children.

For many countries, inclusion of various ethnic groups, and minorities is considered as a difficult problem than the inclusion of persons with disabilities. When such is the task, inclusion of persons with disability from different ethnic and minority groups is still a complicated issue. India remains as an inclusive society for centuries. 'Unity in diversity' is the strength of the country. Before the starting of special schools by foreign missionaries towards the end of 19th century, children with disabilities were in the general school setting only. It is possible that the disabled children in those days did not get proper education because of the lack of skills of the general education teachers about special education, but physical inclusion existed to a large extent in the society. Even today, the rural communities do not exclude disabled persons. In the existing schools too, children of different ability levels are studying. The mild and moderate disabled children are already absorbed in the school system and the general teachers are managing despite constraints. The purpose of sensitation to the general classroom teachers is for developing the capacity of the teachers to handle these children effectively so that they do not become dropouts because of their disabilities. Lack of quality education may be a problem of the entire system of education but disabled children find inclusion process natural in the present social and educational setting. Disabled children may not come to school, due to lack of awareness, but not certainly due to exclusion. Therefore, the 'culture' issue which is being projected as one of the barriers of inclusion in many countries is not a

major barrier as far as India is concerned. India is an inclusive society and it would continue to be so in the years to come.
In short, there is no barrier of policy for including special needs children in India. Lack of knowledge about practices too is not a barrier. The culture issue is not an hindrance for inclusion of all children in India. Therefore, India is far ahead of the countries of the world in the process of inclusive education. The problems encountered by the western world to facilitate inclusion are different from that of India. When the society in India is inclusive, education which is a small component of the society would also be inclusive. Therefore, there is no attitude barrier in the minds of people for the promotion of inclusion. The problem is with regard to expansion.

5.15 UNIT SUMMARY : POINTS TO REMEMBER :

- Inclusive education approach aims at creating effective schools where the educational needs of disabled children are addressed.
- In inclusive education, the essential services are provided by general classroom teachers whereas the specialists provide support services.
- The success of the visually impaired child in inclusive setting depends on his/her mastery over plus curricular skills.
- Inclusive education works better when there is a combination of single category and multi-category specialists.
- To make inclusive education a reality, State Governments should assume responsibility for the education of children with disabilities.
- For the success of Inclusive Education support materials are compulsory.
- Inclusive education may work out well where integrated education has not given the desired result.
- In inclusive education the responsibility of the regular teacher increases.
- PWD Act favours inclusion.
- Inclusive education concept already in practice in case of learning disabled children.

2.16 CHECK YOUR PROGRESS

1. The following are major responsibilities of the specialist resource teacher in inclusive education programmes.
   a)
   b)
   c)
   d)

2. The regular teacher of the inclusive education programme has the following responsibilities.
   a)
   b)
   c)
   d)

3. Remedial teaching on the content will be given by the.....teacher.

4. Preparation of braille materials can have the priority areas as follows :
   a)
   b)
   c)

5. Apart from the resource and regular teachers, the following personnel can be involved in the integrated education programme.
   a)
   b)
   c)
   d)
   e)
   e)
   f)

6. Inclusive education can be expand through the following strategies :

7. The new name for the Ministry of Welfare is.....

8. The essential services refined for an ideal inclusive setting are
   a)
   b)
   c)

d)

9. Plus curricular means
   a) extra-curricular activities
   b) compensatory curriculum for the disabled child
   c) training given to week students after collecting an additional fee
   d) curriculum of higher secondary school

10. Inclusive education can be successfully implemented
   a) very rich countries
   b) developing countries
   c) small countries
   d) in any country

5.17 ASSIGNMENT/ACTIVITY

5. Prepare a list of the frequently answered questions by general teachers in educating a visually impaired children in the integrated and inclusive education programmes. (The list can be prepared through an interview) and prepare the suitable answers for those questions.
6. Make a survey of how much time the special teachers of the primary and secondary inclusive education programmes spend in a week for preparing braille materials.
7. Observe how inclusive education programmes for visually impaired children are implemented.
8. Discuss the social factors which contribute to the development of inclusive education in India.
9. Discuss how inclusion can expand in the Indian context.

2.18 POINTS FOR DISCUSSION/CLARIFICATION

5.18.1 Points for Discussion

5.18.2 Points for Clarification

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BLOCK 2 : TEACHING FUNCTIONAL ACADEMICS SKILLS

INTRODUCTION

Visually impaired children normally study the regular curriculum prescribed for sighted children. However, certain curricular adaptations are needed for enabling these children to cope with visual oriented ideas. In the process, special teachers and classroom teachers have to provide some direct and indirect services to visually impaired children. They should also be taught plus curricular skills, which are peculiar to visual impairment. In the production of teaching-learning materials too, the principle of "duplication - modification - substitution - omission" must be followed. Adapted physical education and creative arts too form a part and parcel of curriculum transaction. In this block, the different types of curriculum transaction and plus curricular areas are discussed.

OBJECTIVES

After studying block 3, the learner will be able to

- describe the methods followed in adapting instructional materials for visually impaired children.
- narrate the usage of traditional aids and appliances for the education of visually impaired children
- list the types of modern equipment available for the education, mobility and rehabilitation of visually impaired persons
- illustrate the concept of plus curricular activities peculiar to visual impairment
- explain how physical education and creative arts activities can be adapted for visually impaired children

UNIT 1: LEARNING MEDIA ASSESSMENT

STRUCTURE

1.1 INTRODUCTION

The word 'adaptation' refers to the creation of a process suitable for a new use, need, situation etc. In the context of visually impaired children, adaptation refers to the adjustments in the general curriculum meant for sighted children in regular schools. It bridges the gap between sighted and visually impaired children in the process of attaining learning experiences and opportunities on par with sighted children. The emphasis of this approach is the analysis of the climacterics of visually impaired children in understanding the concepts, acquiring skills and obtaining lively experiences, which are not very different from their fellow beings. The very aim is not to change the set up already in existence, but to plan as how best the available sources through our methods, instructions and material management can be utilised for visually impaired children without changing the normal atmosphere. To quote the Encyclopaedia of Educational Research (1960), "From the very beginning of educational facilities for blind children, it was an accepted proposition that the subject matter taught to blind children should be the same as that included in the curriculum for seeing children with as few omissions and modifications as possible."

In this unit, what is curricular adaptation? what are the direct and indirect services offered for curricular transaction? What are the principles involved in the instructional methods for the curriculum of visually impaired children? Etc., are discussed.

1.2 OBJECTIVES

After going through the unit you will be able to:

- state the meaning of curriculum
- explain the aspects of good curriculum
- describe the functions of curriculum
- identify the need for curriculum adaptation for visually impaired children
- explain the curriculum for integrated schools
- describe the need and practice of "Direct" and "Indirect" services
- narrate the material development and presentation
- apply principles of instructional methods in adaptation of curriculum.

1.3 DEFINING CURRICULUM

According to the Secondary Education Commission (1952-53), "Curriculum does not mean only the academic subjects traditionally taught in the school but it includes the totality of experience that a pupil receives through the manifold activities that go on in the school, in the classroom, library, laboratory, workshop, playgrounds and in the numerous informal activities and contacts between teachers and pupils.

David Pratt (1980) says that a curriculum is an organised set of formal educational and/or training intentions.

1.3.1 What are the parameters of good curriculum?

A good curriculum should have the following aspects:

i) Curriculum exists only in the experiences of the children.

ii) Curriculum includes more than the content to be learnt. Content does not constitute the curriculum until it becomes a part of the child's total experiences.

iii) The school curriculum is an enterprise in guiding living.

iv) The curriculum is a specialised learning environment deliberately arranged to direct the interests and abilities of children towards effective participation in the life of the community and the nation.

1.3.2 What are the functions of Curriculum?

The functions of the school curriculum are determined by two factors:

1. Taking into account the varying capacities and the endless potentialities for good or evil in the life of the community and the nation (Social goals).
2. Problems encountered by the individual for living in society (Individual goals).

The curriculum is the instrument through which these two factors are brought together; it consists of experience through which children achieve self-realisation and at the same time learn to contribute to the building of better communities and a better nation.

1.4. NEED FOR CURRICULUM ADAPTATION FOR VISUALLY IMPAIRED CHILDREN

The whole gamut of the curriculum for children in school and community is centered around two significant aspects, "THE OPPORTUNITY" and "THE EXPERIENCE". Often children are provided with opportunities; but the mere provision of opportunities does not mean the acquisition of experience. The understanding of the self and the world is not a 'whole' when experience is denied.

Sighted children have an edge over visually impaired children in the acquisition of knowledge through experience. The vision, which brings an enormous amount of information in just a glimpse, enables sighted children to have rich experiences in a "NATURAL WAY". They learn the experience as a "WHOLE". But the learning of visually impaired children is not "WHOLE" but in "PIECES" of information. Thus there is a significant difference between the two groups, the sighted children having "NATURAL LEARNING" and the visually impaired children having "MEDIATED LEARNING" (Mani, M.N.G., 1987). There is, therefore, a need for adaptation in curriculum for visually impaired children.

1.4.1 Curriculum for Integrated Schools

A visually impaired child in the regular class is one among many children in that class. The curriculum meant for visually impaired children in integrated schools should be more LIKE than

UNLIKE that of sighted children. Most information is received by the visually impaired child through "TOUCH" and "HEARING". Hence these experiences must be planned to facilitate the acquisition of at least the near-normal experience acquired by other children through "VISION". ***Hence, there is no need for a special curriculum for visually impaired children who are in the general classroom but special approaches based on multi-sensory experiences are needed.*** **To learn the general curriculum, the visually impaired child should possess some skills, which are peculiar to blindness and those skills are attained through "PLUS CURRICULUM".**

1.5 DIRECT AND INDIRECT SERVICES – NEED AND NATURE

The classroom management of the integrated class involves both resource teacher and the regular teacher. By organisation, the resource teacher does not become a teacher within the context of the regular class activity; he teaches independently before or after the regular class. His responsibility is to help the regular teacher to plan an activity which is mutual benefit and perfectly appropriate for visually impaired children. Hence, within this framework, visually impaired children are benefited by the services of both the resource and the regular teacher. The education imparted by these two teachers may overlap. But the main areas of these two types of teachers in teaching the visually impaired child in the integrated framework may be given as.

1. Development of necessary skills required by the visually impaired child – resource teacher.
2. Teaching of content as for sighted children – regular teacher.

By "direct" and "indirect" services in an integrated education programme, we mean the nature of services offered by the specialist resource teacher. On some occasions, the resource teacher provides instruction to the visually impaired child on an *individual basis.* This type of assistance is known as "direct service". On other occasions, the child may not expect the teacher to pay him individual attention, but the mere provision of support would help the child to function normally in the regular classroom. These *supportive services* offered by the specialist resource teacher are known as the *"indirect services".*

Appropriate skill development in visually impaired children enables them to a great extent to get into the mainstream in academic aspects, as well as social integration. What a sighted person feels "simple" and "unimportant" may have to be taught to the visually impaired child, with clear "step-by-step" instruction. Hence, the learning of the visually impaired child may take a longer time in the initial stages. Take this example: Reading is an important skill for any child. Sighted children, after learning alphabets and word structures, read with ease by merely scanning the pages. Visually impaired children also need to read braille effectively for educational purposes. For this purpose, they should develop a good braille mechanism, which means the proper finger position and movement of the hands over the braille dots. Prior to braille teaching, development of pre-requisite skills such as the handling of books, turning of pages, recognising differences in the presentation of the material are imperative. Unless proper reading skills are developed the child may not be able to cope with his education. This type of individual-oriented skills has to be taught individually by the resource teacher. Hence, there is a need for *"direct service"* for the visually impaired child in the integrated framework.

As the visually impaired child progresses in his skills, the withdrawal of the specialist teacher in providing direct services is a must. The child should study within the framework of the regular class. The regular teacher, while teaching the class, should not let the visually impaired child do his work as he likes. The treatment should be the same for all children in the class including the visually impaired child. This is essential in the integrated setting. To create this environment, the visually impaired child should be provided with the appropriate material in the regular class. Preparation of this material and technical assistance to regular teachers have nothing to do with the visually impaired child directly,

but all these support services enrich the experiences of the visually impaired child. This helps the regular teacher to expect the same number of skills from the visually impaired child. Hence, there is a need for supportive *"indirect services"* especially after the development of appropriate skills in the child. The indirect services provided by the resource teacher will help the regular teacher to teach the content to the child in a better way.

1.5.1 Direct Services at Primary Level

Teaching of all plus curriculum activities comes under direct services at primary level. The visually impaired child has to spend his maximum time in the RESOURCE ROOM with the resource teacher to learn the necessary skills. The child's participation in the regular class will be minimal at the preparatory stages. At this stage, the child can participate in the regular class for social experience, story-telling, singing and other moral instruction. In observing the child spending the maximum time in the resource room with the resource teacher, some teachers develop the wrong impression that the resource teacher is responsible for the visually impaired child's entire learning. This misconception should be corrected. Gradual increase of the time of participation in the regular class should be emphasised by the resource teacher when the child has developed the required skills.

The following are the important directed services at primary level:

i) Introducing Braille and Braille reading of the visually impaired child.

ii) Braille writing

iii) Development of the child's tactile tolerance by introducing concepts like small, big, long, short, thin, thick, hard, soft, fast, slow.

iv) Development of auditory tolerance in the child by teaching the skills in reconstructing life situations through auditory perception.

v) Teaching of the daily living skills appropriate to different age groups. Proper eating habits, bathing, toilet, personal grooming and manners are some of the skills to be taught by the resource teacher.

vi) Teaching pre-cane mobility skills.

vii) Teaching mathematical concepts and the use of the abacus.

1.5.2 Indirect Services at Secondary Level

Visually impaired children integrated from the outset can participate in regular classroom activities for most of the time at secondary level. The participation in the regular class will increase gradually. When the child acquires the necessary skills, his dependence on the resource teacher for direct service is reduced. The child should be provided with services indirectly by the resource teacher whereas direct service are in the form of teaching by the regular teacher i.e. the teaching of content in the regular class to both the visually impaired and sighted children.

To increase his participation the following indirect services must be provided to the visually impaired child by the resource teacher:

i) Preparation and dissemination of the learning material in braille for visually impaired child.

ii) Preparation and provision of appropriate aids for visually impaired children.

iii) Transcription of the child's braille answer papers into print so that the correction is done by the regular classroom teacher.

iv) Technical assistance to the regular teacher regarding the management of visually impaired children in the regular class.

v) Provision of reader and recording services.

Even though there are more indirect services at secondary level, the resource teacher has to provide some direct services depending upon the needs of children. However, direct service at secondary level is not an ongoing process. It is to suit the needs of individuals only. Important *time-to-time direct services* at secondary level are as follows:

i) Teaching of mobility skills using the long cane.
ii) Provision of before and after classroom instructions.
iii) Teaching of certain mathematical concepts and embossed diagrams.
iv) Remedial teaching for slow-learning visually impaired children.

Graphical Representation

The following is a graphical representation of the time spent by the resource teacher in offering direct and indirect services at primary and secondary level integrated education programmes.

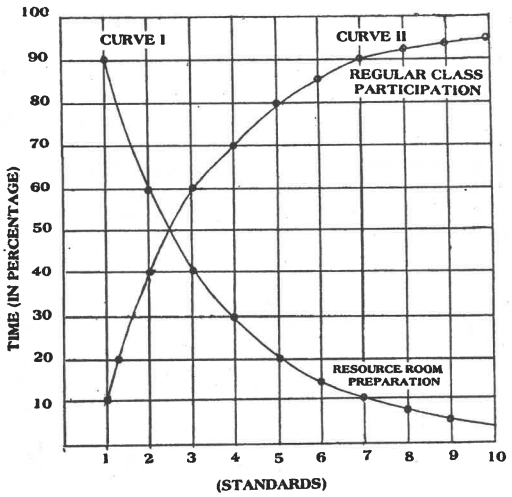

Figure:
Resource Room Utilization by Visually Impaired Child

Source:
Adopted from 'Source Book for Teachers of Visually Impaired' by Mani, M.N.G.

Note: Curve I shows the participation of the visually impaired child in the resource room. Curve II shows the participation of the child in the regular class.

From the graph, it will be observed that the visually impaired child has to spend approximately 90% of the time in the resource room and 10% in the regular class

during the first year. After standard I, there is a steady decrease in the participation in the resource room.

From standard IV onwards, the child's participation in regular classes is more than 60%. This is the stage when the resource teacher should provide more indirect services.

Though visually impaired children spend a considerable time in the resource room in the early stages, even the little time they spend with sighted peers is useful. The peer groups experience attained by the children is of enormous value. They flourish in a natural way when they are given this assistance.

1.6 MATERIAL DEVELOPMENT AND PRESENTATION

Provision of right materials in the right method at the right time makes education of visually impaired children possible on par with sighted children in general school. Preparation of materials is not an easy task because of many reasons such as limited resources, the cyclic nature of textbook revision, problems of braille production and distribution, the changing need for materials suitable to different settings. One of the basic requirements is that the teacher should prepare the materials for the day today requirement of the learners. The selection of what, and when, and the presentation of the material in the appropriate form is major task of the special teacher. Therefore, right material, right method and right time are the fundamental principles for development and presentation of materials to the children with visual defect. Let us discuss how these principles are contributing to the curriculum transaction for the visually impaired children.

1.6.1 Right Material

Visually impaired children, whether in classes for the blind or in the regular classes, differ from each other as much as or more than the sighted children in the regular class. This is prominently determined by their deficit in their eye sight. Lack of vision limits their perception and cognition. This causes knowledge gap between sighted and the children with visual impairment. The

visually impaired child becomes aware of this world through senses other than sight – this is, through the senses of hearing, touch and smell. In understanding the world around him he cannot perceive objects as much as the sighted by dint of remaining senses either because of physical inaccessibility or of social restraints. For example, Hills and Mountains, Space and relationship to one another are abstract things to the visually impaired children. Most of those are to be explained to the child orally or by the experiences to what they can hear, feel and manipulate.

So if he is to understand the reality around him, it is necessary that he be presented with concrete object which can be touched and manipulated, heard and discriminated. Tactual perception is highly helpful for him to understand the haptic world. Here we should understand that this may not be a complete substitution for the experience gained through visual perception. He should not be left incidental. When the presentation is a distortion to the child, the teacher should explain it to child. A model of a house, for example, can be easily understood by the child if its dimensions are explained to the child related to doors, windows and other parts of a house which he can touch and feel in reality.

As far as the materials are concerned, the special teacher should take special care in providing the materials which suit to the need of the visually impaired children. To provide appropriate materials for the children the selection of the materials is imperative. For the effective integration, the teacher assumes the responsibility of giving the materials which enable the child to cope with the regular classroom activities. The teacher provides the materials in three folds:

1. **Tangible Materials**
2. **Audible Materials**
3. **Special Appliances and Equipments**

The above said assistive services are offered through:

a) **Braille Text Books**

b) **Embossed Diagrams**

c) **Tactile Pictures**

d) **Models of objects (enlargements in the case of too small one and contractions if they are too large)**

e) Special device like Abacus

f) Special audible equipment like Rattle Ball

g) Special Equipment like Dictophone.

It is important for the teacher to choose among these materials:

Which is necessary?

Which is useful?

Which is supplementary?

This analysis will certainly help him to select the **Right Material** for the use of visually impaired children.

1.6.2 Right Method

The experiences over the years have shown that the visually impaired children are more like sighted children than unlike. There are more similarities than dissimilarities than dissimilarities. When this is accepted in methods of learning of visually impaired children, we should not forget to know where, when and how they differ from the learning behaviours of sighted peers. While this is highly realised, it is meaningless either to over-estimate or to under-estimate the visually impaired children.

Sighted children learn things in a natural way but the way of learning of the visually impaired child is mediatory. He

understands the concepts through step by step approach. He perceived through piece by piece information. Due to the visual loss, the visually impaired child has acquired poor or no visual imageries. As a result of this, he takes longer time to learn and needs more repetitions to understand. This naturally requires careful analysis, systematic planning and logical approach in presentation of the materials for visually impaired children. After the selection of right materials the teacher has to look on the following to decide the methods of teaching which enable the child to use his remaining senses.

1. **Readiness of the child**
2. **The academic capability of the child**
3. **The degree of blindness**
4. **The age**
5. **Time consumption for the preparation of materials**
6. **The nature of the content (For example, if it is the history of Akbar, it is meaningless to draw the diagram of Akbar as in printed book.)**

Before presenting the materials, the resource teacher should have to see as to what type of experiences to be given and what type of activities can stimulate these proposed experiences without affecting the regular system of education..

The teacher of visually impaired children must take into account the following issues in choosing right method:

1. **Individualisation**
2. **Concreteness**
3. **Unified instructions**
4. **Additional stimulation**
5. **Self activity**

1.6.3 Right Time

The right time means when to give formal learning for visually impaired children and what is the appropriate period which creates a healthy climate for visually impaired children to start learning in the way that the sighted peers do. Choosing the right time is the useful exercise for any teacher who wants to give right material by right methods. The rich material and appropriate methods may seem to be valid only when it is applied in right time. As far as the integration of visually impaired children is concerned, all the possible experiences proposed for the children should be started *'as early as possible'*. **In short, earlier is the best. This will help the child to flesh out the adjustment and readjustment problems along with the social and emotional problems caused by the visual deficit. This will help them to get along with other sighted counterparts** as total as possible.

When imparting knowledge and training to visually impaired children for their adult life practice, the very pertinent question is, When to provide? **Before giving formal learning, the teacher should see the following.**

1. **Pre-experiences of the child in the subject to be taught.**
2. **The extent of opportunities, motivation already experienced by the child.**
3. **Necessary pre-requisite skills.**
4. **Expected post-skills.**

A sheer assessment should be made which may include social and emotional problems of the child. As a matter of fact, the children suffering from additional disability in addition to visual impairment may be slow or show less progress. It means they need time to get ready for the formal learning. It

is quite obvious that teacher is the right person to decide what is the appropriate time to teach and to evaluate the performance of the child.

1.7 PRINCIPLES OF INSTRUCTIONAL METHODS

As we discussed earlier, there is no need for change of entire curriculum of the school for visually impaired children, but the curriculum should be adapted for gaining the learning experience as that of sighted peers. The general curriculum that contains more *"visual experiences"* and less *"non-visual experiences"* must be analysed to convert visual to non-visual experiences for the betterment of the concept development of the visually impaired child. In doing so, four significant steps are to be adopted and those are given in the hierarchy of preferred management of *"educational experiences"*.

1. We give **DUPLICATE** experiences
   If it is a rhyme like
   "Twinkle Twinkle little star
   How I wonder what you are",

   it can be brailled and practised without any change in the format.

   When the duplication is not possible we

2. **MODIFY** experiences sometimes:
   These modifications may be in terms of:

   - CONTENT
   - METHOD OF DISPLAY
   - TYPE OF MATERIAL USED
   - RESPONSE EXPECTATIONS FROM THE CHILD

For example, in print books different pictures may be given to the child to distinguish the difference between singular and plural.

This is dog	These are dogs
That is a pen	Those are pens

These concepts can be explained to visually impaired children by real objects and wider use of materials like buttons and sticks. The very purpose of giving pictures is just for stimulating children to learn. Hundred such concepts can best be taught

to visually impaired children by using the hand language. When there is no chance for such modification we

3. **SUBSTITUTE** one kind of lesson for visually impaired children which as closely as possible that presented to the sighted children. For example, if it is the lesson about coins, the real coins can be made available for the child. When the pictures of such things give no sense to the visually impaired child, the real objects give substituted experience to the child. But in the first year of the child, we may sometimes.

4. **OMIT** a lesson. Pictures such as moon, star and other complicated pictures may be omitted and oral explanation provided.

Recent research studies done in the above principles have revealed that the rate of duplication is very less during the early schooling of the visually impaired children. They need more modified and substituted experiences. When the standard increases, the duplication starts increasing.

These four principles are very important in giving experiences to the visually impaired child through multi-sensory material. It has been found by experience that higher the academic standard, easier it is to produce the material exactly.

This pattern shifts quickly, and in no time at all, omissions are rare, substitutions are infrequent; modifications continue to be desirable; but of the greatest importance is the fact that more and more duplicate experiences are possible.

1.8 UNIT SUMMARY: THINGS TO REMEMBER

- Adaptation refers to the adjustments in the general curriculum meant for sighted children in regular schools.
- Curriculum includes the totality of experience that a pupil receives through the manifold activities that go on in the school.
- Sighted children learn the experience in a 'natural way' as a 'whole', but visually impaired children learn in 'pieces' of information.
- Curriculum meant for visually impaired children in integrated schools is more 'like' than 'unlike' that of sighted children.

- There is no need for a special curriculum for visually impaired children who are in the general classroom but special approaches based on multisensory experiences are needed.
- The skills, which are peculiar to blindness are attained through 'plus curriculum'.
- The classroom management of the integrated class involves both resource teacher and regular teacher.
- Resource teacher provides instruction to visually impaired children on an individual basis called 'direct service'.
- The supportive services offered by the special teacher are known as 'indirect service'.
- The participation of visually impaired children in the regular class will be minimal at the preparatory stages, because the children have to spend maximum time in the resource room to learn plus curriculum.
- Provision of right materials in the right method at the right time makes education of visually impaired children possible on par with sighted children in general school.
- There are four principles such as duplication, modification, substitution, and omission involved in the instructional methods for curriculum transaction to visually impaired children.

1.9 CHECK YOUR PROGRESS

1. Curriculum means the
   (a) content taught in the classroom.
   (b) experiences acquired at home.
   (c) totality of experiences of the child in his day-to-day life.
   (d) all content and experiences deliberately planned for educational purposes.
2. Visually impaired children
   (a) learn in pieces.
   (b) learn the content as a whole.
   (c) learn like sighted children.
   (d) learn the content with more omissions.
3. Visually impaired children in integrated education programme need

(a) the same curriculum meant for sighted children.
(b) the curriculum for special schools.
(c) the same curriculum meant for sighted children with various approaches.
(d) a different curriculum.

4. More duplicated experiences may be provided for the visually impaired child at
   (a) the primary level.
   (b) the secondary level.
   (c) the pre-school level.
   (d) the college level.
5. The skills peculiar to blindness are known as
   (a) co-curriculum
   (b) extra curriculum
   (c) plus curriculum
   (d) core curriculum
6. Explain the need for adapted curriculum for visually impaired children?
7. What are the significant aspects in the curriculum for integrated schools?
8. How are the 'direct and indirect services' essential for curriculum transaction to visually impaired children.
9. What are the salient features of material development and presentation for visually impaired children?
10. What are the principles involved in the instructional methods for curriculum transaction to visually impaired children?

1.10 ASSIGNMENT / ACTIVITY

1. Take one lesson from each subject of IX or X Standard and write the instructional objectives, adaptations needed for giving necessary learning experiences with reference to the content and these instructional objectives and the learning outcomes.

2. Choose any one of the school subjects say mathematics and make an analysis for each unit or lesson on how many concepts are involved. Out of them how many are visual, how many are non-visual, how many concepts can be duplicated, how many concepts can be modified and how many concepts can be substituted and how many concepts should be omitted?

1.11 POINTS FOR DISCUSSION / CLARIFICATION

After going through the unit you may like to have further discussion on some points and clarification on other. Note down those points below:-

1.11.1 Points for Discussion

What are the outcomes of the analysis of duplication, modification, substitution and omission in a particular textbook?

1.11.2 Points for Clarification

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UNIT 2: BRAILLE READING READINESS

STRUCTURE

2.1 INTRODUCTION

Technological advancement has entered every field and increased quality of life of human beings. Education is significantly enhanced by the application of advanced technology. Technology has created an impact on the education and rehabilitation of visually impaired children as that of non-disabled children. No doubt, technology has played a very important role in mitigating the limitations imposed by a disability. The modern technology has given an amazing experience for visually impaired children to understand this unseen world through non-visual media. It includes the teaching learning materials including the modern appliances such as Computer and other appliances that are emerging. The ultimate aim of applying the high-tech which occupies the modern world in almost all the fields including education, is to explore the possibilities of making them reachable to visually impaired children. As far as the visually impaired children are concerned, the technology is useful only when it is helping them to reduce their handicapping nature due to the visual deficit. In this unit, let us deal in detail, the role of appropriate technologies in the education of visually impaired children.

2.2 OBJECTIVES

After completing this unit you will be able to:

- Define and understand the meaning of educational technology in the education of visually impaired children.
- List the use of appropriate technologies in the education of visually impaired children.
- Use locally available materials for preparation of improvised teaching aids.
- State the traditional appliances used for the education of visually impaired children.
- Discuss the modern appliances available for visually impaired children for reading, writing, mobility and mathematics.
- Be aware of the scientific graphic aids used for the learning of visually impaired children.

- Explain the role of computerisation in the education of visually impaired children.

2.3 WHAT IS EDUCATIONAL TECHNOLOGY?

"Educational technology is defined as the development, application and evaluation of systems, techniques and aids to improve the process of learning."

-National Council of Educational Technology, London (1967).

Educational technology can be defined as "any innovative educational practice"

(Mani, M.N.G., 2000).

The role of educational technology will be:

- Improving the efficiency of the teachers
- Reducing the cost of education
- Improving the quality of education
- Decreasing the duration in the realisation of educational objecttives
- Bringing more number of children under the umbrella of education
- Developing the scientific temper in the learner etc.,

As far as visually impaired children are concerned, the Educational Technology , the development of materials (devices and appliances), techniques which are useful for the visually impaired children to cope with the unseen world by using their remaining senses and thereby reducing their handicapping nature caused by the loss of eye sight. It should also help the teachers to come out the traditional way of pouring information and pave the way for teaching through multi-sensory approach.

Give your own definition in the space provided:

_____

_____

_____

_____

You might have defined technology for education of visually impaired children as one of the following or something similar:

- application of scientific knowledge about learning and conditions of learning to improve the effectiveness and efficiency of teaching and training.
- facilitation of learning by manipulation of media and methods and control of environment.
- concerning with the knowledge of what is taught, how and to whom, it should be taught.

2.4 CRITERIA OF APPROPRIATE TECHNOLOGY IN THE SELECTION OF MATERIALS

The following five criteria are important in choice of technology in the selection of materials:

i) **Availability:** It is essential that technology selected should be well established in the local environment so that sufficient trained manpower is available to facilitate the continuous reliable use of media.

ii) **Accessibility:** In principle, the selected technology should be universally available for all students.

iii) **Acceptability:** The attitude of both academic staff and students must be favourably disposed towards the use of technology. Without such a positive orientation, the success of the medium will be severely limited.

iv) **Economics:** It is evident that technologies will not be selected if they are everly expensive. The technology selected should have cost-effectiveness.

v) **Validity:** The technology selected must be appropriate for the instructional objectives and subject matter content that constitute the forms of the courses being taught by the institution.

2.5 TWO APPROACHES TO TECHNOLOGY FOR VISUALLY IMPAIRED CHILDREN

Special educationists categorise the concept of technology for visually impaired children into two approaches namely the 'Low-tech' and 'High-tech'. The high-tech is based on the application of engineering principles for developing electro-mechanical equipment for instructional purposes. Tape recorders, computers, etc are called high-tech. This high-tech is the result of impact of scientific and technological development in recent times. High-tech appliances are high priced too.

The low-tech is known as 'Traditional Technology'. Braille books, improvised aids by using of locally available materials, traditional appliances like slate and stylus, abacus, etc are coming under low-tech. Low-tech materials and appliances are low-priced and used for educational, computational, recreational, mobility and activities of daily living.

2.6 LOCALLY AVAILABLE MATERIALS

Locally available materials are used for preparation of teaching materials. The importance of locally available materials is that they are:

- easily available in the environment;
- easily purchased in the local market;
- collected within our time limit;
- used by the teacher to produce improvised teaching aids;
- low priced; and
- used by all children.

Let us now discuss how these locally available materials are used for producing teaching aids.

2.6.1 Advantages of Teaching Aids

Teaching aids are vital tools to enhance learning of basic concepts. They play a significant role in teaching – learning of visually impaired children. The difficulties encountered by the child in understanding a concept could be overcome by the correct use of teaching aids. Certain fundamental questions should be asked before the preparation of teaching aids: what is the purpose of the aid? To whom, is it useful and when? Clarifications to these questions may help the teacher to frame his specific objectives for the task.

- Teaching aids make teaching effective and simultaneously make the learning interesting and profitable.
- Aids quicken the pace of learning, foster its development and help to overcome the hurdles in learning.
- Aids provide first hand concrete experience to the child. One aid is equivalent to thousand words when a child has difficulties in forming a concept.
- Aids bring variety to the learning of the visually impaired child which is more in demand for his education. In fact, visually impaired children need varieties.
- Good collection of aids motivates the teacher for better teaching. The ideas involved in the aids evoke the creativity of the teacher.

2.6.2 Preparation of Aids for Visually Impaired Children

1. A number of aids can be prepared subject-wise. But it should be borne in mind that some of the aids are not very important and some others are very vital. Judgement regarding the selection of the aid is one of the most important skills of the teacher. The aids should be more selective.
2. A particular teaching aid should be prepared in such a way that the visually impaired child is able to explore, discriminate and recognise it without much confusion. First the child must be able to examine the aid carefully and investigate thoroughly. Secondly, he must be able to perceive the differences between the different textures, forms,

etc. used in the aid and distinguish one from another. Thirdly, he should be able to perceive details of appearances so as to identify the names for the parts of the aid or the aid itself for recognition.

3. The next important rule to be observed is that the aids, which prepared should withstand the manipulation of the little hands of the children. When the aid is prepared in a hurry the very touch of the object may dislocate the parts. Therefore, it should be strong enough to have longer durability.

4. Validity and preciseness are factors, which make the aid more effective and time saving. The aid should be tactually as attractive as possible because visually impaired children are devoid of visual attraction.

5. Innumerable hours of preparation of teaching aids must be avoided. A teacher should not spend too much of time for an aid which has very little value for visually impaired children. Appropriate use of time is very imperative as the teacher has to attend to other activities too in the educational programme for children with visual impairment.

6. The teacher should be tactful enough in preparing an aid in such a way that when it is prepared, it should be useful for teaching more than one concept. This little attention saves time, energy and cost.

7. Principle in the preparation of aid may be "Make it cheap; use it well and change it often". Newness and novelty will always attract the children. The teacher should know the art of improvising aids by using low cost materials readily available at the local markets.

2.6.3 Materials for Teaching Aids

It is hard to confine the nature of material to be used for preparing teaching aids. 'Anything and everything can be used if the teacher knows the secret of conveying the central idea through that teaching aid'. Prospective teachers of visually impaired children do not prefer sophisticated aids with less use. They prefer cheaper aids with more utility. Hence the teacher tends to judge the aids mainly from the utilitarian point of view.

2.6.4 Aids of Different Nature

1. **The readymade aids are like globe, models of animals, building etc. These take lot of time to prepare and are commercially available. It is not desirable to spend too much time and prepare these aids. If such aids are very necessary and if there is a budget, those can be procured.**
2. Some aids are helpful for a longer time. For example, the tactile maps, important diagrams, etc. may be used by more than one child. Such aids can be prepared by the teacher with the help of the carpenter. However, the materials used must as far as possible be cheaper. Then only, a teacher can opt for as many aids as needed for children.
3. There are some instant aids which are useful for teaching a particular idea in between the teachings. Most of such explanations could be explained through diagrams. For example, when the child needs explanation for the triangle, the teacher can draw series of triangles with various sizes using the tracing wheel and explain. These aids do not cost much.
4. Available objects should as far as possible be used as aids. For example, while teaching the thermos flask, a real flask can be borrowed or purchased and the concept can be developed in the child. The ability of utilising the available resources as teaching aids adds more credit to the teacher.
5. When we think of low cost materials, pebbles, marbles, sticks, small beads, coins, buttons, papers, card-board, cheap textile materials, etc, which do not need much finance can be used.

Small toys and models of different objects can be thought of in consultation with other teachers and experts in the preparation of aids. Their suggestions may be of immense value.

2.7 TRADITIONAL APPLIANCES

In India, most visually impaired children are still provided with traditional appliances only because most of these appliances are low priced. The traditional and low-tech appliances are useful for visually impaired children for their education, computation, mobility, recreation and daily living purposes. The following are some examples of such appliances:

(1) *Educational*

- Braille slate, both inter-lining and inter-pointing (wooden or plastic)
- Stylus – plastic or aluminium with different shapes like ball head, bull head, concave head, etc.
- Pocket frame
- Tactile diagram board
- Brailler

(2) *Computational*

- Taylor frame with arithmatic/algebra types
- Abacus
- Geometry set
- Measuring tape

(3) *Recreational*

- Chess board
- Draught board
- Peg board
- Playing cards
- Puzzles – cross puzzle board (scrabble board), peg in puzzle
- Audible ball (cricket, football, etc.)

(4) *Mobility*

- Folding stick
- Long cane

(5) *Other Appliances*

- Signature guide
- Needle threader
- Braille shorthand machine with paper roll.

2.8 MODERN (HIGH-TECH) APPLIANCES

Shukla, (1999) points out that the impact of modern technology, which is volatile and ever-changing, is yet to be experienced by a majority of the visually impaired in India. At times the changes are so rapid that it is really difficult to keep pace with them. High-tech aids are now available – though at a high cost, even exorbitant in certain cases. But these devices have significant impact in education and employment of the visually impaired persons.

Mani, (2000) points out, "The technology is capable of reducing the handicapping conditions. What we need today is the development of indigenous technology which is cost-effective in nature and easily affordable by a common man so that more and more visually impaired children and youth can be benefited."

Thus we must have the main aim of providing appropriate technology to visually impaired children to minimise their handicapping condition.

2.8.1 Modern Appliances for Reading and Writing

Modern high-tech devices are useful for the education and rehabilitation of visually impaired children. The following are some of the reading and writing appliances meant for visually impaired persons.

1. **OPTACON (Optical to Tactile Converter)**
   Optacon is about the size of a dictionary, weights about eight pounds, and operates on batteries. The probe performs much like a television camera, expect that instead of handling images of 2,50,000 points it handles images of only 144 points. The probe has a little window through which it can "see" an area about the size of one letter. The image received through the probe is than magnified and displayed on an array, or mosaic of 144 tactile pins. The activation of these pins produces a vibratory image of the letter from the page on about half the area of the finger. The probe is moved across the line of the print, left to right, each letter being recognised through the moving vibratory image on the tactile display. By this device, the ink-print can be changed into tactual form for the reading of visually impaired children.

2. **Text Reading Machine:** The Australian company Robotron is now selling a comprehensive, user-friendly reading machine namely 'GALILEO'. It is a combination of the computer and text reader with clear English accent and in-built hard disk and floppy disks, and floppy disk drive. It reads all sorts of printed text, books, magazines and stores 20,000 pages of scanned text, transfer the same to a floppy or records it into an audio-cassette. It has the ability to read multiple languages and Indian languages can also be introduced along with English as soon as the Indian language software is developed.

3. **Braille Operated Portable Talking Computer:** ARIA is the size of a video cassette and has features like Word-processing, Note-taking, Clock, and Calendar, Diary, Telephone directory (with tone dialler), etc. It uses a PCMCIA memory card and has serial and parallel ports for modern and printer.

4. **Electronic Brailler:** MOUNTBATTEN is the product name for electronic Brailler. In India, the integrated system of education is fast gaining momentum. The MB Brailler is an ideal solution for integrated education system for visually impaired children. Right from pre-school to higher classes this machine is useful in teaching braille, learning maps, charts and diagrams. It converts Braille to print when attached to a standard printer and print to Braille when attached to a PC. The student will now be able to type his examination papers in braille and take a normal text printout so that his teacher who generally would not know braille can access him along with the other class and also prepare braille copies of the question papers.

5. **INDEX 4X4 PRO:** In India, inadequacy of braille text books among the schools where the visually impaired children are admitted is a very common problem as the large braille houses are not able to cater to a variety of text books in different subjects and low volumes. Therefore, the visually impaired students have to wait over 5 to 6 months to receive their braille books making it extremely difficult for them and their teachers to complete and cope up with the syllabus on time. This printer takes care of this problem which is cost effective and at the time high production with automatic and easy to produce braille text books. For example, the high speed and ease of binding makes braille text books available on command. A hundred page braille text book will be ready (embossed, stapled, folded, and ready to go) in less than twenty minutes.

6. **SuperBraille:** BLACKSTEN & Associates, a U.S. Company, is now marketing a computer that has 40 – character Braille display and 8 – dot Braille. SuperBraille is designed to provide information in Braille on all the computer commands.

7. **CALL** (Computer Aided Language Learning): This software package provides drill and practice emphasizes pronunciation, reading, spelling, grammar, vocabulary and fluency. Graphics and a digitized voice that speaks the words are included as is a management system that keeps a record of student responses.

8. **SOFTWARE AUTOMATIC MOUTH (SAM):** SAM is an all-software speech synthesizer for the Apple and Atari microcomputers. The disk is capable of producing speech, and has an unlimited vocabulary and fully adjustable pitch and rate. Although SAM understands a phonetic spelling system, the disk comes with Reciter, an English text-to-speech conversion programme, so that users can type in ordinary English spellings of words. SAM also allows the user to add speech to BASIC programmes.

2.8.2 Modern Appliances for Mobility

Russell Path Sounder

It is a device, hanged on the chest near neck. It provides a beam of ultrasound on a head the user. If the beam hits an object is reflected the sound in device and it is electrically converted audible sound. This helps the visually impaired persons to locate the object.

Laser Cane

Laser Cane helps the blind traveler to find path free of obstacles, because it gives advance warning of steps down.

Bliss Passive Detector

This device converts optical images into vibrations or sound signals used like a flashlight.

Sonic Guide

Sonic guide gives three kinds of information about an object, its direction and its distance. This guide must be used with the long cane or dog guide.

Binaureal Sensory Aids

This device gives protection from below the waist to above the head.

Touch Traffic Light System

Touch traffic light system helps the blind or low vision while crossing the road. A mini receiver is fixed into the blind person's stick and the signals are felt by the blind.

Mowat Sensor

Mowat sensor is used in a particular area to locate the object. If the object is within the beam, sense of the ultrasound is reflected back and picked up by sensor which gives vibrating and if the object is on the floor it rotates until the object is located.

Mobility Assisting Software

There is a mobility assisting software (available on CD) that takes you on an auditory journey to your place of visit. You inform the program where you are and where you want to go. Later, the program maps out the best route leading to your desired destination. It prepares a detailed auditory map, speaking out important landmarks and details of the route. This system is as yet not available in our country, but it is just a matter of time.

MoBIC

The Mobility of Blind and Elderly people Interacting with Computer (MoBIC) system, developed in Birmingham in the English Midlands, is a computer programmed guide which can conduct a blind or low vision person on any journey he or she might want to undertake.

2.8.3 MODERN APPLIANCES FOR MATHEMATICS

Talking Calculator

Talking calculator is an electronic device similar to the calculators what we use, but it voices when the numbers are pressed and computation is done. This talking calculator is very much useful for visually impaired children to do mathematical calculations.

NUMBERS (Nemath Users' Mathematical Braille Effortless Reproductive System):

Both text and mathematical equations entered from a Braille device can be printed out in English on a special dot matrix printer with use of this programme.

Computer with Voice Synthesizer

Computer with voice synthesizer is useful for doing mathematics by visually impaired children. Computer with voice synthesizer is known as 'talking computer'. (Please refer to the heading 'Computerization – Talking Computer').

2.9 SCIENTIFIC GRAPHIC AIDS

2.9.1 Inch and Centimeter Graph Sheets

A set of graph sheets with distance between the coordinates as one inch and one centimeter should be prepared in tactile form and given to the visually impaired children. The purpose of providing the centimeter graph sheet is that the visually impaired child could not differentiate the points/coordinates in the graph sheets when the distance between the ordinates is too small.

In teaching, like the introduction of graphs for sighted children, the concepts of X – axis and Y – axis, ordinates etc. could be explained to the visually impaired

child. He can be asked to feel the graph sheet and understand. Afterwards, the graph sheet can be fixed upon a fibre board. For fixing the points in the graph sheet, push pins can be used. For showing a line in the graph, a small rubber band can be used to connect the two points.

Thus teaching of graphs to the visually impaired child can be made easy for them with the embossed graph sheets.

2.9.2 Fibre Base Board for Reading Graphs and Maps

This fibre base board acts as a slate for visually impaired children during the early years of his schooling. In the initial days, the reading materials such as maps, graphs and the diagrams are provided in tactile form to the child in sheets rather than the whole books. For this purpose, the plastic relief sheets are used which allow the tactile impressions tangible. Thus the child needs a flat surface where the sheet can be fixed and read. The fibreboard is a cheaper and a very handy one for such a purpose. The relief sheets with tactile impression can orient the child to the various graphical concepts. Though the child is not expected to draw the maps and graphs in the examination, this type of materials help to get clear visualisation of the scientific graphical notions.

2.9.3 Computer Base and High Technology Devices for Graphics

Indian Association for the Visually Handicapped (IAVH), Mumbai has introduced computerbase and hightechnology devices for providing education in different graphics useful for different purposes.

1. **Quantum Tactile Image Enhancer**
   This device is useful to convert the print formats of graphs, maps, charts, pictures and diagrams into tactile formats.

2. **Nomad Audio Tactile Processor Touch Pad**

The visually impaired children can touch the maps/diagrams/pictures and understand them by having the audio feedback coming from these graphics. This device is really a boon to the visually impaired children as it helps to get rid of the difficulties caused by the absence of visual stimuli.

3. Pentium P.C. and Multimedia Kit (with sound blaster).

Pentium P.C. and Multimedia Kit with sound blaster and software support are used for presenting the different types of maps and graph to the visually impaired children in the braille format along with audio directions.

- Software support such as Braille Translation software for conversion of text into braille format and also conversion of P.C. Key board into Perkins Keyboard to type a print any Indian Braille language.
- Screen reading software to facilitate audio feedback of text on screen, Picture Braille with handheld scanner for scanning of pictures, diagrams, map for easy conversion into Braille format.

2.10 COMPUTERIZATION

Visually impaired children were not able to use a computer in the past because of their absence of vision. Today, the scenario is different. There are computers that can talk back to the visually impaired person, and this facility of interaction helps the visually impaired individual to perform as much as the sighted children. The computer can uniquely enhance the curriculum and augment the communication in such a way that many more handicapped children will be able to be integrated into the mainstream and into the society at large. Green et.al. (1982) have shown

how the microcomputer can be used in special education. Let us discuss about the use of computers for the visually impaired children.

2.10.1 Microcomputers

Add-On Devices for Visually Impaired Children

There are also several add-on devices which can provide easy access to the microcomputers for the visually impaired children.

1. **Concept Keyboard and Overlay keyboard**

   The concept keyboard is a separate keyboard corrected to the micro by means of a cable and plug. In place of the normal keys it has large pressure sensitive areas. The keyboard is provided with a close fitting and clearly marked overlay, pressure on any marked area will produce an input to the computer. Concept keyboards vary in design, the best known being is either 20X28 cm. or 43X28 cm. with 128 pads. Individual layouts or overlays can be designed with letters, words and pictures. For visually impaired children, embossed overlays may be used.

2. **Microwriter**

   A hand-held keyboard with just six keys using different combinations, it is possible to type all the normal letters and numbers as well as controlling other computer functions with one hand. The microwriter is a computer in itself and can be used as a word processor on its own or in connection with other computers. There are also a number of adapted versions for people with handicaps, for example, a scanning microwriter which can be used with one switch. This is effectively

used by the children with limited vision and orthopaedically impaired children.

3. Quinkey

A completely different form of keyboard is the quinkey, which is plugged into the micro like a concept keyboard and replaces the QWARTY keyboard. It is a single hand device having only five keys (one for each finger) and a lower command key. Combinations of the keys enable the letters, numbers and punctuation of the QWARTY keyboard to be selected. This new form of keyboard is extremely simple to use and high speed can be achieved. This is very effective for children with limited vision or blind children (Obrist, 1985).

4. Touch Sensitive Screens

A special surround to the monitor screen which make it appear to be sensitive to being touched by a finger or pointer. It works by means of infra-red light rays which are broken when the screen is touched. These screens are very useful for those who find it difficult to related the activity on the screen to actions on the keyboard and for children with visual impairment, to train visual discrimination and eye tracking.

5. Alphavision

Aids are also available to enable people who are lowvision to read normal prints. 'Alphavision' is able to enlarge between 2 to 75 times. It also reverses the image, the print being white on anlank background, which makes it easier to read.

6. Versabraille and Brailink

These are both portable machines on to which the user can type and store notes, which can then be played back on refreshable braille pins. Both can be connected to a printer to produce a 'hard copy'.

7. Speech Synthesizer

NAMAL TYPE and TALK SPEECH Computers available in the Cambridge Microcomputer Centre, are speech synthesizer which can be connected to any computer with a centronic or serial interface. It offers the following features instant conversion of typed into speech, number pronouncing facility, adjustable speed of speech, unlimited vocabulary and so on. This is very useful for those involved in

teaching reading skills to handicapped and speech retarded learners. It is also of immense value to the blind when used in with a BEC Computer which has a braille keyboard.

2.10.2 Advantages of Microcomputer

A part form being an excellent teaching tool, microcomputer has following advantages:

1. It initiates motivation and sustains the interest on the task.
2. Teaching with the help of micro is based on play way method and immediate knowledge of result is provided.
3. Micro provides opportunity for one-to-one interaction.
4. It ignores failure and reinforces correct responses and encourages learning through success experiences. This enhances the self-confidence of the children.
5. It continues drill and practice lessons without loosing interest of the children.
6. Children can provide clean and perfect documents with the help of word processors.
7. Children can learn according to their own pace.

Thus, the microcomputer has immense utility as a teaching aid for visually impaired children.

2.10.3 Talking Computer

Computer spreads its charm into the lives of the visually impaired persons. Any computer of the PC family, when hooked to a voice synthesiser coupled with suitable software, transform itself into a full-fledged talking computer.

2.10.4 Talking Computer Opens Avenues

A talking computer opens up a struggle free world of opportunities for visually impaired children to interact to the sighted world as if they are seeing children. Using a word processor, one can easily take up a stenographer's job, indulge in

creative writing and put down one's thoughts in black and white, or run columns in newspapers. Students, teachers and researchers can maintain notes with it. At the work place, data can be accessed using database and spreadsheet packages. Accounts can be kept track of using financial accounting packages. A talking computer can also be very useful for professionals like lawyers, consultants, etc. Those who are really interested can even venture into designing and developing software. Everyday correspondence, phone numbers, addresses, diaries and personal organisers can be handled.

Books, periodicals, etc. can be easily read using scanners and suitable software. A scanner coupled with a talking computer acts as a reading machine, and the disability to read print is thus overcome.

2.10.5 World of Internet

Internet is accessible to the persons with visual impairment too. Information on any conceivable topic in the world can be obtained in no time. Books that have already been transcribed, popularly known as electronic books, can be effortlessly downloaded and read. One can read newspapers and periodicals, and also listen to special materials for the blind in real audio besides being able to listen to popular channels. One can be in touch with subjects of one's interest by subscribing to mailing lists and can solve one's problems by seeking advice and assistance from members of these mailing lists. The e-mail facility is very useful and one can send and receive mail to any Internet address all over the globe. The e-

commerce is one more advantage of Internet in which one can set up business and trade over the net. Blind people can work as medical and legal transcribers from their homes. Doctors and lawyers do this on a routine basis, benefiting mutually because of low transcribing costs in our country.

2.11 UNIT SUMMARY: THINGS TO REMEMBER

- **Educational technology can be defined as "any innovative educational practice".**
- **Five criteria such as Availability, Accessibility, Acceptability, Economics and Validity are the choice of technology in the selection of materials.**
- **Locally available materials are used for preparing teaching aids, which are cost-effective and teacher made improvised teaching aids.**
- **Teaching aids make teaching effective and simultaneously make the learning interesting and profitable.**
- **Teaching aids for visually impaired children should be more selective, exploratory, discriminatory and recognizable.**
- **Principle in the preparation of aid may be "Make it cheap, use it well and change it often."**
- **Anything and everything can be used if the teacher knows the secret of conveying the central idea through that teaching aid.**

- **Today's need is the development of indigenous technology which is cost-effective in nature and easily affordable by a common man so that more and more visually impaired children and youth can be benefited.**
- **There are computers that can talk back to the visually impaired person, and this facility of interaction helps the visually impaired individual to perform as much as the sighted children.**
- **Internet facilities such as e-mail, e-commerce, etc are advantageous to the visually impaired persons.**

2.12 CHECK YOUR PROGRESS

1. **Techniques which are useful for visually impaired children to cope with the unseen world by using their remaining senses and thereby reducing their handicapping nature can be called**

   a. **Educational Technology for visually impaired**
   b. **Technology of educational practice**
   c. **Technology of teaching**
   d. **Multi sensory approach for visually impaired**

2. **"The attitude of both academic staff and students must be favourably disposed towards the use of technology". This is called**

   a. **availability**
   b. **acceptability**
   c. **adaptability**
   d. **acceptability**

3. **The technology which is based on the application of engineering principles for developing electro-mechanical equipment for instructional purposes is known as**

   a. **high tech.**
   b. **Low tech.**
   c. **Teaching methods**
   d. **Instructional strategy**

4. **Optacon is a**

   a. **Reading device**
   b. **Writing device**
   c. **Mobility Aid**
   d. **Speech synthesizer**

5. **Bliss Passive Detector is used for**

   a. **converting the print text into braille**
   b. **converting optical images into sound signals**
   c. **converting ink-print into sound signals**
   d. **converting sound into tactile impressions**

II. Answer the following questions:

6. Explain the meaning of educational technology and its application to the education of visually impaired children.
7. How will you use locally available materials for preparation of improvised teaching aids.
8. The use of traditional appliances is inevitable in the education of visually impaired children today -Justify.

9. What are the modern appliances that you know for the use of visually impaired children in reading, writing, mobility and mathematics?
10. Explain the scientific graphic aids used for the learning of visually impaired children.
11. Describe the importance and accessibility of computerisation for visually impaired children.

2.13 ASSIGNMENT / ACTIVITY

1. **List the traditional appliances that are used in Indian schools for the education of visually impaired children.**
2. **List the modern appliances that are used in Indian schools for the education of visually impaired children.**
3. **List the software available for the use of visually impaired children in reading graphs, maps and pictures.**

2.14 POINTS FOR DISCUSSION / CLARIFICATION

After going through the Unit you may like to have further discussion on some points and clarification on other. Note down those points below:

2.14.1 Points for Discussion

2.14.2 Points for Clarification

2.15 REFERENCES / FURTHER READINGS

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UNIT 3:TECHNIQUES OF TEACHING BRAILLE

STRUCTURE

3.9 Assignment / Activity

3.10 Points for Discussion and Clarification

3.11 References / Further Readings

3.1 INTRODUCTION

Learning is a complex process in which a gamut of factors relating to the child, learning task, teacher-related factors and learning environment play an important role. Curriculum is the total experiences received by the student through manifold activities both inside and outside the classrooms in the innumerable formal and informal contacts between the teacher and the students. A sighted child starts learning as soon as he is born. But the environment, which he cannot see, cannot stimulate visually impaired children. His learning experiences are restricted and this loss continues to affect his learning at all ages and stages. Planned and systematic teaching and learning activities can stimulate the visually impaired child and enable him to learn nearly at the level of the sighted because they are more like the sighted children than unlike. The curriculum, which involves more compensatory skills, will provide them least restricted environment and thereby they could receive normalisation in their life and education. In providing unseeing world as seeing world, the role of the personnel involved in the integrated education programme is vital. The success of this programme does not depend upon a single factor. It is the product of joint and cooperative activities of the teachers. Systematic and planned curriculum transactions will cater to the specific requirements/special needs of the visually impaired children. In this let us see, the various aspects of curriculum transactions that occur in the integrated education programme of the visually impaired children.

3.2 OBJECTIVES

After going thorough this unit, you will be able to:

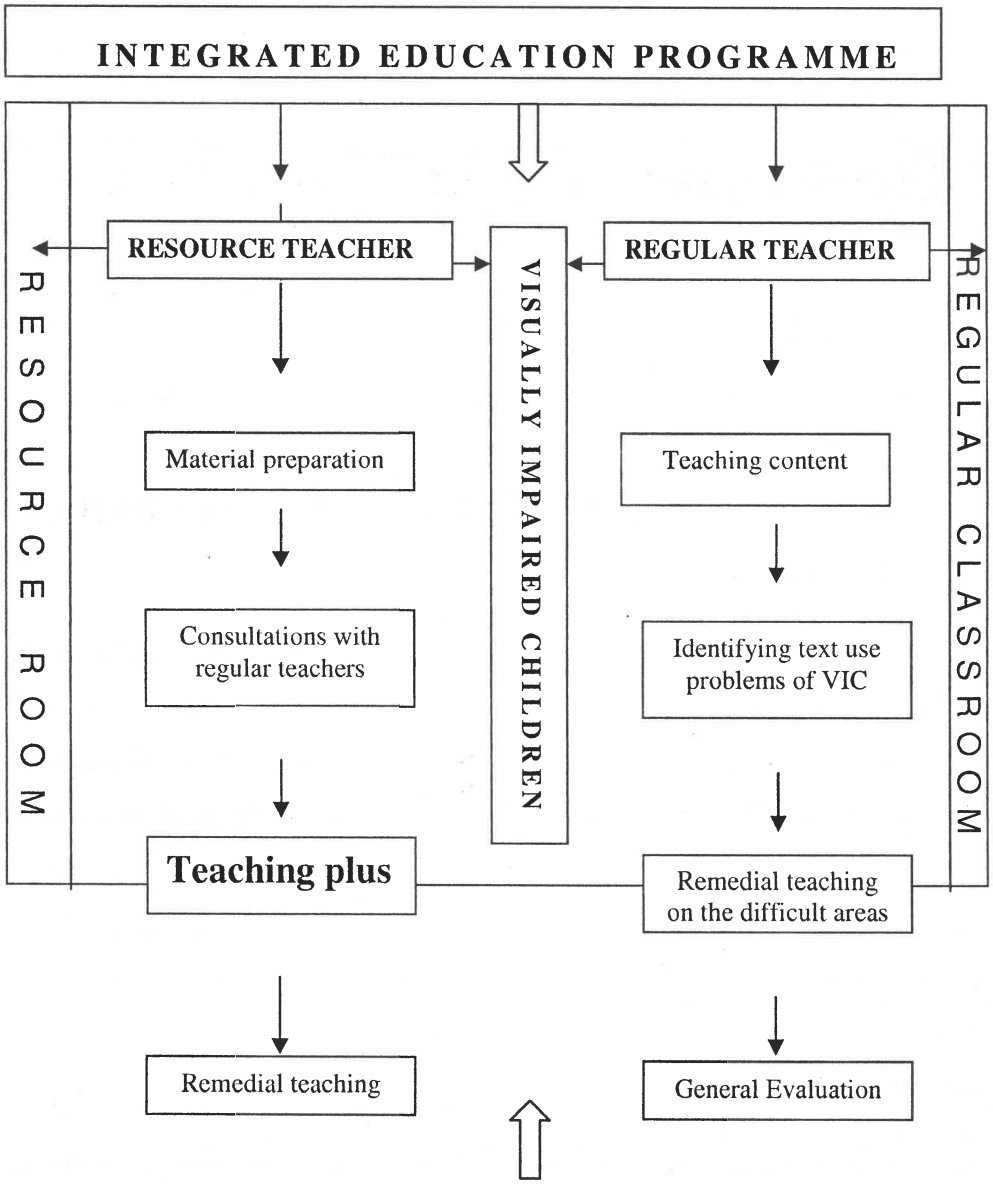
- Describe the role of researchers in curriculum transactions
- Explain the recent trends in special education researches

- Narrate the role of resource teacher in the curriculum transactions in the integrated education programme
- Narrate the role of regular teacher in the curriculum transactions in the integrated education programme
- Identify the areas of curricular adaptations for the visually impaired children
- Evaluate the textbook for the visually impaired children
- State the concept and meaning of plus curriculum
- List the curricular components of plus curriculum
- Understand the purpose and significance of plus curriculum

3.3 ROLE OF TEACHERS IN CURRICULUM TRANSACTIONS

In the integrated education programme, the role of resource and regular teachers is very important. The success of this programme largely depends on the combined and coordinated efforts of resource teachers and regular teachers. The educational needs of the visually impaired children of the integrated education programme are met by the partnership work of both regular and resource teachers. The regular teacher assumes the responsibility taking care of general programme of the child and the resource teacher assumes the responsibility of teaching the skills peculiar to blindness, which is called as *'plus curriculum'*.

The following is the diagrammatic representation of the responsibilities of resource teachers and regular teachers in the integrated education programme.



3.3.1 Material Preparation

Provision of the right material in the right time in the right method ensures the maximum participation of visually impaired children in the regular class. The resource teacher must spare considerable time in preparing the materials for

teaching and learning of the visually impaired children. Due to the paucity of time and manpower in preparing all the materials in braille, it is essential for the teacher to have a schedule of material preparation according to need assessment.

3.3.2 Teacher Consultations

A teacher consultation between the resource teacher and regular teachers is one of the important activities in the programme. Periodical discussion is very much essential for:

- analysing the content areas to be taught to visually impaired children
- managing of visually impaired children in the regular class
- modifying the content for facilitating the better learning of visually impaired children
- analysing the nature of adjustment and adapted instructional materials
- preparing the support materials such as teaching aids, embossed and tactile diagrams etc.,
- discussing the day to day difficulties of the visually impaired children and plan for a better instructional strategy.

The consultations between the resource and regular teachers are more frequent in the case of primary level visually impaired children as more modifications and adaptations are likely to happen in their learning.

3.3.3 Remedial Teaching by Resource teacher

The resource teacher offers remedial teaching when the children need it. Some children may take longer time to understand some ideas for which the resource teacher instructs them on one to one basis with the materials especially prepared for them. Most of these instructions are on the concept development of visually impaired children.

3.3.4 Teaching Content Areas by Regular Teachers

The regular teacher is responsible for teaching the content areas (subject matters) to the visually impaired children just like he takes care of sighted children in the regular class. However, he is doing this activity with the assistance of resource teacher particularly in the subject matters, which involve more visual concepts. In addition to the teaching content areas, he is also expected to give remedial teaching to the visually impaired children whenever necessary.

3.3.5 Auxiliary Services by Resource Teacher

The resource teachers should involve themselves in the following activities formally or informally.

- Constant guidance and counselling for the visually impaired children, parents and the community will be necessary and the resource teachers are expected to this service too.
- Arrangements for voluntary reader and recording service in the integrated education programme
- During examination time, the resource teacher has to transcribe the braille answer books of the visually impaired children into print so that the regular teacher can value and award marks.
- Maintaining the cumulative records and anecdotal records of the visually impaired children to assess the periodical performance of them.

3.3.6 Direct and Indirect Service by Resource Teacher

The resource teacher undertakes the direct and indirect services for the visually impaired children. When the service is offered by him on individual basis, it is termed as direct service. Teaching braille reading, braille writing,

development of tactile skills, auditory skills, daily living skills, abacus and pre-cane mobility skills come under direct services. The children at the primary level need more direct services.

The support service offered by the resource teacher is known as indirect service. The secondary level children need more support services. The indirect services include preparation of learning material for the visually impaired children, appropriate teaching aid(most of them are in tactile form), transcription of the child's braille materials to print form, providing reader and recording of talking books service and the technical assistance to the regular teacher in managing the visually impaired children in the regular class room etc.,

3.9 TEXT BOOKS – EVALUATIONS AND ADAPTATIONS IN THE LOCAL CONTEXT

Report of the Textbook committee of the Central Board of Education points out, "A modern system without textbooks is as difficult to imagine as Hamlet without the Prince of Denmark". Textbooks cannot be dropped from any sound system of education. They constitute the base from where both the teachers and the taught may start and continue to work. The efficacy of any educational system can rightly be assessed from the quality of textbooks provided to our students. The textbooks can provide the minimum essentials to be achieved by the students of all categories, without which a teacher cannot move toward a desired goal. The textbooks contain the intellectual deposit of academic experiences.

Textbooks and instructional materials play a key role in the educational system. It functions as a teaching and learning aid, an instrument for improvement and dissemination of knowledge. "The educational research indicates that the teacher and instructional materials are the two main basis for effective learning. In the teaching learning process the teacher and the learner depend upon the instructional material. Even when the teacher teaches, he/she reads out, explains and analyses textbooks. Thus, transaction of curriculum is primarily based on textbooks and hence the quality of education" (Educational Technology, News magazine from AIET, June, 1996.)

Braille textbooks play a key role in providing academic experiences as gained by the sighted children. These textbooks are in no different from the textbooks used by the sighted children except its braille form and the adapted instructions on visual ideas. Integrated education system urges the need of quality based text material in braille form for visually impaired children. One of the purposes of

integration is to give the impaired child the same curriculum, same mode of instruction and in general the same academic experience as those enjoyed his seeing classmates.

3.4.1 What is a Good Braille Textbook?

- A good braille textbook should be prepared on the basis of a through analysis of visual and non-visual concepts involved in the textbooks.
- In the case of visual concepts, necessary adaptations should be made in the braille textbook by following the principles of material preparation such as duplication, modification, substitution and omission should be followed.
- The braille text materials should be prepared as tactually attractive as possible. For example, the braille page number, print page number, the indications for the start and finish of each lesson should be given.
- The visual oriented diagrams given in the print textbooks should be transformed into tactile/embossed diagrams in the braille textbook.
- In the case of a big diagram, efforts should be taken to make it within the reach of the visually impaired children.
- When more than two pictures are involved in a page, care must be taken to see that it is not crowded with more information, which may confuse the child.

3.4.2 Adaptations in the Local Context

Depending on the need and nature of visual concepts, the resource teacher may need to have adaptations in the local context. For example, the instruction given in the print book may be supplemented by the 3D model for the visually impaired children. Similarly, in the social science textbook, single map may contain much information. Under such circumstances, the resource teacher may give same information in two maps so that the visually impaired child may not have confusions when it is given in one map in the print textbook. These types of local adaptations are always necessary for effective curriculum transactions.

3.5 TEACHING PLUS CURRICULUM

Teaching plus curriculum to the visually impaired children is the important responsibility of resource teachers. You will study the meaning and other details of plus curriculum in the final part of this unit. Developing efficiency

in curricular skills itself prepares the child for his effective participation in the regular class. The efficiency of the child in the plus curriculum builds enormous confidence in the child and helps to develop a positive self-image. The acquisition of these plus curricular skills as far as possible may take place at the primary level.

3.5.1 Plus Curriculum- Concept and meaning

Plus curriculum does not mean 'extra' but compensatory experiences for the visually impaired children in the integrated education progamme. Plus curriculum means the skills peculiar to blindness such as braille reading, braille writing, orientation and mobility, daily living skills, sensory training and the use of mathematical devices such as Abacus, Taylor frame etc.,

3.5.2 Components of Plus Curriculum

The following are the components of Plus curriculum.

Braille Reading

A. Reading Readiness

- Braille mechanics
- Turning pages
- Positional concepts
- Vocabulary development
- Use of marking system

B. Reading

- Reading for details
- Reading for general information
- Independent word-attach skills (analysis and synthesis)
- Oral reading
- Silent reading
- Speed reading
- Use of contractions at all levels

- Knowledge in the braille codes used in mathematics, science and languages.

Braille Writing

- General interest in writing
- Use of writing frame, slate and stylus
- Self-correction
- Use of writing board
- Note-taking
- Using punctuation
- Using contractions and symbols

Arithmetic

- Number awareness
- Numeral vocabulary
- Use of ordinal and cordinal numbers through 10
- Initial braille mathematics notations
- Management of linear and columnar presentations
- Initial braille frame and stylus writing of numerals to 10
- Use of number lines
- Use of Abacus for addition, subtraction, multiplication, division, decimals and fractions
- Mental arithmetic
- Measurements such as length, volume and estimating
- Set theory concepts
- Advanced use braille notations for mathematics
- Graph and chart reading

Daily Living Skills – Graded Activities

1. *Eating:*

- Holding food
- Eating with fingers

- Proper posture
- Manners and custom
- Use of utensils as appropriate
- Washing eating equipment

2. *Toileting:*

- Appropriate locations
- Positioning
- Cleaning
- Using common toilet

3. *Dressing:*

- Unbuttoning
- Unzipping
- Untying
- Folding
- Putting away in designated places
- Buttoning
- Zipping
- Tying
- Locating and putting on

4. ***Body Hygiene - Cleanliness:***

- Drawing water
- Washing hands and face
- Cleaning teeth

5. *Body Hygiene – Personal grooming:*

- Combing hair
- Personal hygiene

6. *Bathing:*

- Drawing water
- Applying soap

- Proper washing
- Total bath
- Locating and identification of clothes

7. *Washing clothes*

- Procedures in washing (washing collar first, hands next, then body etc.,)
- Applying soap
- Rinsing
- Drying the washing clothes

8. *Handling money:*

- Identification of coins
- Identification of rupee notes
- Counting money

9. *Shopping:*

- Selecting appropriate material
- Giving money
- Checking the changes
- Checking the amount of materials or the items purchased

10. *Using Electrical Appliances (if necessary)*

- Using iron box
- Tuning the radio
- Using the cassette tape recorder
- Using a table fan
- Operating the appropriate switches on the board

11. *Shaving :*

- Using blade and razor
- Clean shaving
- Avoiding cutting while shaving

12. Food preparation:

- Selection of material
- Cutting and preparing
- Using appropriate heat
- Handling cooking equipment and vessels
- Serving(if necessary)
- Cleaning up

13. Using medicines:

- **Identification of appropriate tables and capsules**
- Taking correct measure of medicines
- Getting right medicines from the shop

Orientation and Mobility

- **Identification of body parts (simple)**
  (e.g.) Hand, ear, mouth, feet etc.
- Identification of body parts (complex)
  (e.g.) wrists, thighs, shoulders
- Identification of body planes (top, bottom, side, front and back)
- Identification of body planes in relation to other objects in the surroundings
- Knowledge of directions in relation to one's own body
- Knowledge of directions in relation to objects and other persons
- Posture and gait
  - equilibrium
  - foot placement
  - head carriage
  - hand-foot coordination
  - **Posture and gait**

- Using a Sighted Guide
  - Hand grip
  - Anticipating changes in elevation
  - Door ways
  - Narrow paths and obstacles
  - **Resisting techniques for 'pushers'**

- Independent Travel in unfamiliar environment
  - Trailing(act of using the back of fingers to follow slightly over a straight surfaces) e.g. wall, desks, tables, etc.,
  - Use of gross body guard
  - Squaring off (Directing taking)
  - Elevation clues
  - **Changes in surface texture**
  - Room familiarisation
  - Whole gamut of cane techniques
  - Use of remaining senses and mental memory.

Conceptualisation

- Understanding embossed diagrams
- Translation and interpretation of learning
- Generalisation
- Transfer of learning
- Analysis and synthesis ability
- Judging and reasoning ability

In a nutshell, the above said skills are considered to be the subject matters of plus-curriculum meant for the visually impaired children in the integrated education programme.

3.6 NEED AND SIGNIFICANCE OF PLUS CURRICULUM

The nature of learning of sighted children is natural. In the case of visually impaired children, it is mediatory. They have the fragmentary way of learning; they learn through pieces of information. Because of the visual deficit, visually impaired children may miss much visual oriented information, and so their way of learning must be adjusted in such a way that the visual limitations may not deprive them from getting optimum experiences. Plus curriculum gives visually impaired children the necessary skills and abilities to gain compensatory experiences in the visual oriented areas, which will help them to cope with the

unseen world. It further ensures their full or maximum participation in the integrated education programme.

3.7 UNIT SUMMARY – THINGS TO REMEMBER

- The curriculum which involves more compensatory skills will provide them least restricted environment and thereby they could receive normalisation in their life and education
- The educational needs of the visually impaired children of the integrated education programme are met by the partnership work of regular and resource teachers.
- The regular teacher assumes the responsibility of taking care of general programme of the child and the resource teacher assumes the responsibility of teaching the skills peculiar to blindness, which is called as *'plus curriculum'*.
- The service offered by resource teachers on one to one basis is called direct service and the support service offered by him is called indirect service.
- The resource teacher provides more direct service to the primary level children and more indirect service to the secondary level children in the integrated education programme.
- The principles of material preparation are: duplication, modification, substitution and omission.
- Depending on the need and nature of visual concepts, the resource teacher may need to have adaptations in the local context.
- Plus curriculum means the skills peculiar to blindness such as braille reading, braille writing, orientation and mobility, daily living skills, sensory training and the use of mathematical devices such as Abacus, Taylor frame etc.,
- The nature of learning of sighted children is natural. In the case of visually impaired children, it is mediatory.

- Plus curriculum gives visually impaired children the necessary skills and abilities to gain compensatory experiences in the visual oriented areas, which will help them to cope with the unseen world.

3.8 CHECK YOUR PROGRESS

I. Choose the most appropriate answer from the alternatives given for each item:

1. 'inclusive education' means
   a. all children learn together
   b. education specially for impaired children
   c. including visually impaired in the general schools
   d. including the disabled in the integrated education programme

2. Curriculum means
   a. total experiences
   b. syllabus
   c. subject matters
   d. classroom teaching

3. The regular teacher is responsible for teaching
   a. skills for learning in the regular classroom
   b. content areas
   c. plus curricular skills
   d. reading and writing skills

4. The resource teacher assumes the responsibility of teaching
   a. skills peculiar to blindness
   b. daily living skills
   c. orientation and mobility
   d. subject matters

5. Plus curriculum means
   a. extra subject matters
   b. additional information
   c. skills peculiar to blindness
   d. special learning experiences

6. Braille mechanics is associated with

a. Braille writing
b. Braille reading
c. Reading speed
d. Writing speed

7. The service offered by the resource teacher on individual basis is called as

a. direct service
b. indirect service
c. support service
d. special service

8. Teaching pre-cane mobility skills comes under

a. direct service
b. indirect service
c. special delivery
d. auxiliary service

9. Visually impaired children in integrated education programme need
a. the same curriculum meant for the sighted
b. special curriculum followed in special schools
c. same curriculum with modified approaches
d. a different curriculum

10. The nature of learning of visually impaired child is mediatory. It is because of their
a. visual deficit
b. poor cognitive development
c. slow learning
d. poor memory

II. Answer the following questions:

11. Explain the role of teachers in curriculum transactions for the integrated education programme.

12. What is the importance of braille textbooks for the visually impaired children in the integrated education programme?

13. What do you mean by adapted instructional material for the visually impaired children? What are the principles of material preparation?

14. Explain the concept of adaptations in the local context. Why do we need adaptations in the local context?

15. What do you mean by plus curriculum? Explain the various components of plus curriculum.

3.9 ASSIGNMENT / ACTIVITY

Make a list of various activities of a teacher as a researcher in the education of visually impaired children.

3.9.1 The various activities of a regular teacher as a researcher of the learning problems of visually impaired children in the integrated education programme are :

3.9.2 The various activities of a resource teacher as a researcher of the learning problems of visually impaired children in the integrated education programme are :

3.9.3 Prepare a graded activities for teaching a particular daily living skill to a visually impaired child

3.9.4 Various ways of providing better curriculum transactions in the integrated education programme for the visually impaired children are :

3.9.5 Various mobility skills that can be taught by the resource teacher inside the resource room are :

3.10 POINTS FOR DISCUSSION/CLARIFICATIONS

3.10.1 Points for discussion

3.10.2 Points for Clarification

3.11 REFERENCES / FURTHER READINGS

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UNIT 4:TECHNIQUES OF TEACHING PRINT TO CHILDREN WITH LOW VISION

STRUCTURE

4.1 INTRODUCTION

The concept of 'equality' is interpreted in many ways. As far as education of visually impaired children are concerned, the equality refers to the provision of all educational experiences to the visually impaired children with modified approaches. It is a question of satisfying the need of the individuals. Now, it is widely accepted that the children with physical limitations should not be considered as the children with problems but they are the children with special needs. In this unit, let us discuss the possibilities of providing creative arts and physical education activities and the strategies for coping with stress and health related problems of visually impaired children in special schools and integrated settings.

4.2 CREATIVE ARTS FOR VISUALLY IMPAIRED CHILDREN

Every one of us either knowingly or unknowingly is creative. Some of us may get appreciation when the products come out more successfully. But in most occasions, things are not coming out because of the lack of guidance and identity. This becomes quite reasonable when the persons with sensory limitations find difficulties to know where they are, what they CAN mostly and what they CANNOT rarely. As stated by the psychologists when more than one sense is involved, the learning will be more effective and leading to a creative process which in turn helps them to have elaboration, originality in the manipulation of their ideas.

4.3 DEFINITION OF CREATIVE ARTS FOR VISUALLY IMPAIRED

Creative education is a novel idea to the visually impaired as it gives him an opportunity to bring out his latent potentialities. As far as disabled are concerned creativity is the quality which leads to production o something new and desirable. The new product may be new to the society or merely new to the individual who creates it. In this context if anything which helps to bring him social status, a sense of independence, it is the Creative Arts for the disabled. For the child with disability needs attention and appreciation more than sympathy. It is well taken if anything helps the impaired child to achieve this.

4.4 NEED FOR THE CREATIVE ARTS FOR THE DISABLED

The very aim of education to the disabled child is to give knowledge about the realities of the world, the confidence to cope with these realities and accepting him in his own capacity as a contributing member of the society. Art education is one of the desired areas, which could help to achieve the above. It finds benefits in:

- Developing self confidence in their own potentialities
- Activating the skills in the disabled child, which will induce to do socially productive work for their subsistence.
- Influencing the individual to develop the qualities and values such as co-operation, responsibility of finishing their work and self confidence.
- Creating attunement to the school atmosphere, which will naturally fit into the unseen environment when he is adaptive.

- The by-product of creative art activity is the support of the para-professionals. When the parents find their children independent by their earnings with the effective management of their learned skills and competencies, they fully recognise and accept their children. Their efficiency and interest help them not only for their rehabilitation but also to ward-off domestic stress and tension family caused by their sedentary condition of being 'handicap'.

4.5 NATURE OF CREATIVE ART ACTIVITIES

When the teacher in the educational programme helps the visually impaired children in providing optimum experiences, the skills acquired by him in course of time, will cast the vocation itself which may seem fun today for him but it will become an important source to offer him a better livelihood in future. With this aim in view, let me list out the skills and competencies that should be attained by the visually impaired child to get on with creative art activities.

4.5.1 Language Arts

Language is one of the areas where the visually impaired children come out from the environmental deprivations. In most occasions, the visually impaired child is curious to know the world around him. There are many children who are interested in writing essays, composing poems, and taking part in oratorical competitions. The teachers should identify these children and give more opportunities to bring them up. The following activities will be useful to develop the skills in language arts:

- arranging oratorical competitions
- group discussions
- organising drama

- developing appropriate verbalism

In the integrated setting, the above said arrangements are fully possible. For example, the teacher may ask the attributes of "NIGHT'. Now, let us see as how to identify the children who show a progress in creativity in the vocabularies with reference to the above example.

'Dark'
'Yellow'
'Pale yellow'

These may be the interpretations of the children. This reveals the development of vocabularies in the children. When this is the answer from many children, if anyone of them says the night appears "cool", it is highly appreciable and more opportunities to raise up such children can be designed.

4.5.2 Music

Music is, of course, the most enjoyable art. As we know, the very schooling starts with nursery rhymes, our experiences have detailed the truth that when the age increases, the attitude to sing loudly declines. However, this may not be applicable to the children with good vocal voice and most commonly, the professionals. It is also noteworthy that many visually impaired persons opt for music. Music aptitude and musicality can be developed in them through more systematic and planned approach, which require some fundamental auditory and listening skills.

After the development of these skills in a child, the following may be of prime importance. At the beginning, more opportunities can be provided to develop the

ability to reproduce the sound. This will continue to reverberate in his future attempt in developing musical aptitude. Later, this is expanded to:

- music rather than the musical reproduction
- attention to different tunes by listening to radio, music programmes which may be instrumental and vocal.
- experience of band marching, physical exercise etc. according to music.

4.5.3 Craft Work

Craft work involves many skills of manipulation of materials and handling of tools. In the case of visually impaired children, it increases the physical independence and self-satisfaction. They can shine well as it leaves more hope to the sense of touch. At present, the educational institutions having these facilities are very limited. But at the same time, we cannot keep our hands crossed by saying we have no adequate facilities. Then **what we have to do?** We have to plan our activities so as to keep them ready to learn the basic skills in manipulation of the different materials and in handling tools. The child should learn certain basic motor skills (e.g. winding, gripping, pressing, screwing, pushing, pulling etc.).

Wide use of variety of materials increases the child's manipulative skills and expands his understanding of things to do and things to use in this world. For example, card board, beads, string, paper, pebbles, cloth remnants, shells and the like can be exposed to the wide use in the tiny hands of the visually impaired children. The training in manipulation of activities may be given formally and informally. It should be started right from the kindergarten level. The children at the primary level may be given training in recognition of likeness and differences.

- In tactual recognition from gross to more refined (say from rough to smooth in paper)
- In size from large to small
- In form (regular and irregular shape)
- In kind (matching or sorting such as cloth)

The visually impaired children can be encouraged to categorise or arrange in sequence. For example, wood blocks, cloth, coins, buttons and other locally available objects. Play way method may be immense use for doing such activities.

4.6 MANUAL SKILLS IN VARIOUS CREATIVE ART ACTIVITIES

Finger manipulation and manual dexterity skills can be developed through:

- exercises to fingers and wrists
- developing hand-foot coordination
- body coordination
- developing motor abilities by physical exercises
- general orderliness of the body parts
- sensory training involving remaining senses.

4.7 CHALLENGES IN IMPLEMENTING CREATIVE ART ACTIVITIES

4.7.1 Result may change as a result of change in objectives

While addressing the immense use of creative art activities for the visually impaired children and the wide acceptance on the part of the society, how many

creative art activities can be introduced in the school? Over the years of experiences, it has been found that despite the many activities for the visually impaired children, they suffer from a serious set back from the training and delivery point of view in a school situation. Sometimes the children, who have put their efforts in academic excellence, may not show interest in creative art activities. On the other hand, the children who have shown scant attention in academic performance are placed in the training vocations like mat weaving, handloom weaving, caning etc., In such circumstances, it is better to find ways through both of them find their choices and get benefited.

4.7.2 Need for a comprehensive programme

In many occasions, the visually impaired children are dumped in different creative art activities ignoring their skills and competencies for what tasks they are suitable. When they observe no access, they are out interest. It requires a comprehensive and unique programmes, which could develop skills and competencies in a variety of activities they opt for.

4.7.3 Assessment of available facilities

Before the start of the programme, it is always necessary to assess the existing facilities. But unfortunately, many programmes suffer for the dearth of trained teachers, materials that are the base for the smooth running of the programmes. A sound programme always needs a sound input assessment before launching it.

4.7.4 Need for creating more employment opportunities

When the bread winning of the visually impaired persons is highly questioned after schooling, it is worth considering that the activities developed for the

visually impaired children should give them more employment opportunities. The research studies done in the recent past have revealed the fact, music is the most useful and remunerative creative activity for the visually impaired children. And also the creative activities such as clay modelling, paper folding, gardening and dancing offer less job opportunities for the visually impaired persons but provide a sense of satisfaction and reduces tension caused by the effect of blindness.

4.7.5 Uniformity of the programme

It is obvious that various creative art activities are now provided to the visually impaired children, more sporadically, sometimes that too with a failure to evaluate the progress more carefully and the self satisfaction of those who are left with no choice than to choose a particular activity either by his master in most occasions or by himself on several occasions.

4.7.6 Stereotypic attitude towards blindness

It is the conventional behaviour of the public towards blindness that we call it as stereotype attitude i.e. Over estimation about visually impaired children that they have extra sense , for example, all the visually impaired children are good musicians. This is because of less experience or no experience with blind children.

4.8 HOW CAN WE IMPROVE THE CREATIVE ARTS EDUCATION FOR THE DISABLED CHILDREN?

The following are some of the activities and strategies that will increase the creative art abilities of the visually impaired.

- Strategies must be framed to train the personnel who are supposed to take the task of training the disabled children in different creative activities.
- There should be more research activities for identifying the skills of visually impaired children in different areas of creative art activities. This will help to explore the possibilities of introducing many more activities for the visually impaired children.
- The following activities can be introduced in the schools after the field experimentation.
  i. Music
  ii. Chair caning
  iii. Wire bag works
  iv. Language arts
  v. Clay modeling
  vi. Paper folding
  vii. Palm leaf work
  viii. Bead work
  ix. Plastic wire bag and baskets making
  x. Wood work
  xi. Knitting
  xii. Fine arts
  xiii. Mono acting and dramatisation

- While the institutions offering vocational education are very limited, it is very reasonable for other institutions to give opportunities on developing pre-vocational skills in the school itself. This will widen their scope when they need to put up in rehabilitation centers some time later. The term "pre-vocational education' is concerned with gaining skills with varied materials and tools, but emphasising human elements of safety measures, organisation, work habits, attitudes, leading to possible vocational education choices. For example, tools like hammer, chisel, hatchet, carver etc., must be exposed to the visually impaired children in their early schooling itself, but under the supervision of a trained teacher. This will prepare him/her for the

professional training and employment in future. Helping them to handle such instruments will bring enormous utility value and self-confidence in the young minds of visually impaired children.

4.9 PHYSICAL EDUCATION FOR VISUALLY IMPAIRED CHILDREN

Physical education is considered part and parcel of education activities of pupils. It gives physical fitness, social fitness, moral fitness and emotional balance. The development in physical education not only enables him good physique but also the various educational activities. It is a very important co-curricular activity, which helps for the overall personality development of young generations.

4.10 SOME DEFINITIONS OF PHYSICAL EDUCATION

- J.F. William contends that, "physical education is the sum of man's physical activities selected as to the kind and conducted as to outcomes".
- According to J.P. Thomas " physical education is education through physical activities for the development of total personality of the child and its fulfilment and perfection in body, mind and spirit".
- To R. Cassidy "physical education is the sum of changes in the individual caused by experiences in motor activities".
- J.B. Nash says, " physical education is that phase of the whole field of education that deals with muscular activities and their related responses"

4.11 AIMS AND OBJECTIVES OF PHYSICAL EDUCATION

The following are the main aims and objectives of physical education:

- Development of the Nero-muscular system and particularly in its relation to control over certain fundamental skills.

- Providing facilities for the growth and development of body and mind.
- Development of social qualities and wholesome reactions which enable them to develop spirit of co-operation, loyalty, obedience, fellow feeling, sportsmanship, honesty, courage, leadership and proper spirit of joy and defeat.
- Development of organic system of individual through physical activities. In addition it should check bad posture and develop strength, endurance and organic vigour.
- Conservation of health and to develop resistance to diseases.
- Development of hygienic habits and importance of cleanliness.

4.12 NEED OF PHYSICAL EDUCATION FOR VISUALLY IMPAIRED CHILDREN

The physical development needs of disabled children are the same as those of non-disabled children. But the fact that visually impaired children do not see normally restricts their play activity in numerous instances. Often they are noticeably retarded in their physical development. Fear of injury and lack of confidence often reduce their interest not only their physical education activities and also their daily moving from one place to another place. As a consequence, they hesitate to run, walk, jump, and climb which are very common among the seeing children even in their early ages. The aims and objectives of physical education are the same to seeing children as well as children with physical limitations. For too long, visually impaired children have been denied access to the regular physical education programme of their schools. It is therefore, very important that the visually impaired children are provided with a suitable programme of physical education so as to enable them to derive the benefits of physical activities.

4.13 WHAT IS ADAPTED PHYSICAL EDUCATION?

Glaudine Sherill says, " The major purpose of Adapted Physical Education is the same as that of regular physical education to change psychomotor behaviour thereby facilitating self actualisation, particularly as it relates to understanding and appreciation of the body and its capacity for movement. This psychomotor behaviour may be primarily cognitive, affective or psychomotor."

Adapted Physical Education is defined as "a diversified programme of developmental activities, games, sports, and rhythm suited to the interest, capacities and limitations of students with disabilities, who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general education programme."

4.14 SOUND PROGRAMME OF ADAPTED PHYSICAL EDUCATION

A sound programme of adapted physical education should include:

- Suitable physical activities
- Essential facilities and equipment
- Suitable methods of teaching and class management
- A proper evaluation procedure
- Intramural and extramural activities

4.15 ACTIVITIES SUITABLE FOR VISUALLY IMPAIRED CHILDREN

- Developmental exercises
- Mime, story plays and singing games

- Drill and marching
- Indigenous activities – yogic exercises, dance and baithake
- Light exercise apparatus – dumbbells, Indian clubs, want and pole drills
- Rhythmics – folk dance, Kummi and Kollatam
- Gymnastics and rope activities
- Wrestling and combative contests
- Minor games and relays
- Games in athletics
- Aquatics (wherever facilities are available)

4.16 PHYSICAL EDUCATION IN RESIDENTIAL SCHOOLS

There are ample opportunities for designing specific games and sport activities for children with specific abilities. Bearing in mind, the absence of vision, many activities that are organised for sighted children can also be well organised for the visually impaired children by proper adaptation of the rules and regulations of the games. Adaptations like the provision of auditory clues instead of visual clues, adaptations in the environment, etc., are imperative for visually impaired children. In a special school setting, organised sports can be conducted with special equipment, special approaches and with special facilities. Eventhough the adapted games are always slower than that of the original games, this may not affect in principle, in the residential setting because the games are played only by visually impaired children.

4.17 PHYSICAL EDUCATION IN INTEGRATED EDUCATION PROGRAMME

As far as the physical education of the visually impaired children particularly in the integrated education programme, the following are the main issues.

Box- 1 **Common issues of physical Education for visually impaired children**
→ Can we neglect visually impaired children in physical education in the regular schools?
→ If not, to what extent they can participate?
→ If yes, to what extent they cannot?
→ What are the criteria in assessing the performance of visually impaired children?
→ Should assessment be on par with the seeing children? Or
→ Should assessment be among the visually impaired children only?

The following discussions will throw some light on the above issues of physical education for the visually impaired children in the integrated education programme.

- We cannot make visually impaired children in the integrated education to participate in all the activities of physical education and they cannot compete with the sighted children.
- It does not mean that visually impaired children have to be sedentary. There are games where they can participate satisfactorily. Weight lifting, bull ups and similar activities, which need no vision can be introduced to such children.

- Fully integration is quite possible in slow games. But for the fast games, playing among the visually impaired children is better. In such circumstances, suitable and appropriate performance assessment is possible.
- Should visually impaired child be compared with another child of the same category or with a sighted child? – The visually impaired children should not be compared with another child of the same category or with sighted children. A visually impaired children should be compared with himself.
- A visually impaired child should be compared with himself? What does it mean? – Suppose, a visually impaired child is admitted in a school in the month of June, his performance in the month of August may be compared and his progress may be taken into account.
- The physical education for the visually impaired child should not mean only the efficiency in the sports and games but it is the development of stamina and skill in visually impaired child.
- Some of the advocates of physical education programme for the visually impaired child in the integrated education programme have the opinion that attempts should be made to provide adapted devices such as sound ball. Visually impaired child can also take part in running when there is a provision for iron strings in the running track, leaving a groove on the ground, tyre swings in the trees etc., In games and competitions, where the necessary adaptations are made, visually impaired children can participate and enjoy the fruits of physical education like sighted children. "This could not be made possible for the child in integrated setting because, the ground could not be modified for the needs of a few visually disabled children in the programme" (M.N.G. Mani, 1986).
- The visually impaired children should be grouped together among themselves where the mix of sighted children and visually impaired children is found less value particularly in fast games such as cricket, foot ball, basket ball etc., The visually impaired children can be grouped with sighted children in slow games such as weight lifting, pull-ups, asanas, skipping etc.,
- The games, which have less hope for the visually impaired children, can be oriented orally to the visually impaired children and this

awareness may help them to enjoy along with the sighted peers. "The children who thoroughly understand the rules and regulations of the fame are able to take part in the discussion of the game with their sighted companions in social gatherings" M.N.G. Mani (1986).

Though the integrated education programme advocates the provision of equality and equal opportunity, in the area of physical education the visually impaired children cannot compete with sighted children. Now the question arises, Why they cannot? The reasons are:

- By nature, sighted children who are using the sight as the primary mode of information are used to the fast movements of the fame. Since the auditory clues and information on an account cannot match the visual information, the sighted children are reluctant to play with the visually impaired children. It is very vital to note that this isolation is not caused because of blindness but of the game.
- The curiosity motive, explorative motive and manipulative motive have little place in the case of visually impaired children as they are affected by the objective effects of blindness such as reduction in range and variety of experience, reduction of control over the environment and the self in relation to it and the reduction in the mobility to move about.
- In sports and games, team activity is very significant. Every individual is expected to be sensitive and alert to the situation. The coordination and the team spirit contribute to a greater extent for the success. Including visually impaired child in a group of sighted peers may cause unhappiness and naturally it reduces the tempo and rhythm of the activity. In such circumstances, full integration is not possible.

4.18 ORIENTATION AND MOBILITY TRAINING, AND PHYSICAL EDUCATION

The relation between the skills in orientation and mobility and physical education is inseparable. Many research studies have proved the mutual relationship between these two. The mobility skills such as squaring off (direction taking), clock concept, veering (the tendency to move or turn slightly to the right or left rather than to walk in straight line), visualisation (making mental picture or map of the environment by combining verbal descriptions and sensory impressions) contribute to a greater extent for the physical education activities of the visually impaired children.

4.19 TEACHING METHOD IN PHYSICAL EDUCATION ACTIVITIES

Since the visually impaired children largely depend on the auditory and tactile senses, the instructor must be cautious about the systematic planning in developing the aural and tactile skills in the children. Many a times, the child needs one to one teaching and graded activities in performing physical education activities. One of the important teaching media of visually impaired children is kinesthetic sense, which refers to the involvement of muscular activity in teaching and learning situation. Using the kinesthetic sense, the child is able to be aware of the direction of the motion of his body in the unseen environment. This is very much required by the child to perform various physical education activities, which need the motion of the bones, joints and muscles. Play way method is more suitable for the primary level children. The teachers have to develop various listening and toactile skills both in formal and informal ways.

4.20 STRATEGIES FOR COPING WITH STRESS AND HEALTH RELATED PROBLEMS

Visually impaired persons face the same emotional hazards that all persons do. In most cases the process of adapting to the unseen environment creates additional tension that when superimposed upon the normal stresses of living increased mental health risks. The emotional developments of those born blind or blind early in life in fraught with special dangers. These dangers include negative parental attitudes toward blindness, thwarted learning opportunities, in adequate stimulation and segregate treatment. This causes stress and strain on the part of visually impaired children. In adolescence, additional hazards appear at such crisis points as the development of sex curiosity, the beginning of dating interest, the emerging need for greater mobility in an automobile conscious culture and the growing concern of the blind teen ager about marriage and his future society.

The mental health problems associated with blindness tend to reduce the coping capacities of the individual at a time when he needs emotional strength and stability. He will be learning new and unfamiliar techniques of living, developing relationships with professional personnel and peers, exposing himself to possible frustration and stress and defeat in undertaking the assigned job and abandoning the comfort of dependency.

When adjustments should be viewed as the base for managing stress and health related problems, now it is a question that adjustments should be in-groups or individuals. "It is fruitless to view the adjustment of blind persons in group terms. Individual factors are the major determiners of emotional adjustment in blind persons", Minnesota Multiphasic personality Inventory (1958).

4.21 YOGA AND VISUALLY IMPAIRED CHILDREN

The meaning of the word "Yoga" is to bind together, to integrate and to make a whole. As the body, the mind and the spirit become more integrated and balanced, something happens within the person. This is because, there is an inner growth or release, and therefore, a realisation of one's self as a person takes place. This is something good for the visually impaired children.

Most of the exercises in yoga have to do with keeping the spine supple and as the central nervous system flows through the spine, the result is an improved circulation in that area. When there is improved functioning of the whole nervous system, the body will automatically have an increased feeling of well being, and energy. As the impaired children practice yoga, the pairs of opposite currents, the heating and cooling the air and the fire become harmonised. Tensions drop away and practitioners will become more tolerant, understanding and compassionate. In fact as the result of yoga practice, their nature changes and a nicer side seems to come to the fore. The beneficial effect of yoga awakens the perceptive sides of people. Yoga is helping the people with lot of ailments.

4.22 MAJOR FACTORS THAT CAUSE STRESS AND HEALTH RELATED PROBLEMS IN VISUALLY IMPAIRED CHILDREN

The major factors that cause stress and health related problems of visually impaired children can be discussed as follows:

4.22.1 Physical factors

Seeking sound and touch cues that will guide the responses of a visually impaired children and can be continuing strains and tension. So much behaviour is shaped by the stress of having to attend to non-visual stimuli, which count for little in the life of the more relaxed sighted peers.

4.22.2 Unconscious factors

In fact, the loss of sight may be perceived as a castration experience and as punishment for sinful acts. Since these reactions are not on the conscious level, the visually impaired persons may be perplexed by apparent irrational behaviour that when viewed in the context of unconscious impulses.

4.22.3 Social conformity

Visually impaired persons feel the stress and strain of social pressures towards adapting the behaviours of sighted persons in such activities as eating, walking and relating to others. Unfortunately some "socially acceptable" responses may not be personally acceptable to a disabled individual. Similarly some common behaviour standards established by the sighted society may be inappropriate, even dangerous, for the visually impaired individual. For example, when the visually impaired child tend to show his happiness by clapping and jumping, it is many times labelled as blindism.

For long, the public has the stereotype attitude towards blindness and expects every visually impaired child to be over cautious or over talented because of his extra sense. As a result of this attitude, the society may have overestimation or underestimation. Naturally this will cause stress in the minds of the persons who

are not able cope with these expectations. This type of experiences of the visually impaired individual in the unseen environment may create feelings of bitterness in him/her and may intensity not only mental health problems and also physical health problems.

4.22.4 Segregation of visually impaired Children

Social motives play an important role in shaping the behaviour of an individual. Group affiliation and group acceptance are the human motives that can be looked upon as general states that lead to many behavioural changes on the part of individuals. In many occasions, they determine much of what a person does. Every individual has a need for affiliation and a need to make friends in the society. It is not only the need of an individual and it is also the need of the living society. When the visually impaired children are segregated from mainstreaming just because they are blind, it naturally causes unnecessary strain in the minds of the visually impaired children and it will be reflected through their out-group behaviour. As a result they are unable to cope with the sighted world.

4.22.5 Lack of guidance and counselling

Many a times, the visually impaired are guided by the sighted people and they see and understand this world through them particularly during their childhood. Most of the parents are not aware of the implications of blindness and they do not know what to? and how to do? As result of either ignorance or the negligence of the parents, the children are suffering either from overprotection and no care of them. This naturally causes stress in the young minds of visually impaired children and they will not be interested in any activity. The parents and the persons working for the blind should properly be oriented about the blind people and the blindness.

4.23 STRATEGIES TO COPING WITH STRESS AND HEALTH RELATED PROBLEMS

- Coordination and uniformity between education and rehabilitation programmes.
- Coordination between the educational and health service programmes. For example, the eye camp, early intervention programme can be conducted in educational institutions so that it brings awareness to the society as well as visually impaired individuals.
- *Segregation to inclusion.* All visually impaired children who are academically capable should be given opportunities in the regular schools.
- *Protection to liberation.* Visually impaired children should be free, from over protection both in home and schools. Parents and teachers must be oriented to the various aspects of blindness and blind children.
- *Mere book learning to normalisation.* Visually impaired children should be allowed to get maximum experiences and they should be treated on par with sighted children.
- *Learning together.* All that is needed by the sighted children are needed by the visually impaired children too and so educational experiences in the least restricted environment help him to become a contributing member of the society. They should have all the opportunities to interact normally in social setting.
- *Learning to know.* Visually impaired children should have equal educational experiences through varied curricular approaches.
- *Learning to do.* Visually impaired children are shown sympathy, which they don't want but they need attention, appreciation and affection. This will make them ready for mainstreaming.
- *Orientation to personnel.* The personnel involved in the programmes of visually impaired children should be trained properly and they should have thorough knowledge in the various aspects of blindness and the blind people.
- *Guidance and Counselling.* Each educational programme should have a guidance and counselling unit so that the visually impaired children

should be guided properly in education and vocation facilities in various places.

4.24 UNIT SUMMARY – THINGS TO REMEMBER

- Creativity is the quality, which leads to production of something new and desirable. The new product may be new to the society or merely new to the individual who creates it.
- The very aim of education to the disabled child is to give knowledge about the realities of the world, the confidence to cope with these realities and accepting him in his own capacity as a contributing member of the society.
- Arranging oratorical competitions, group discussions, organising drama, and developing appropriate verbalism are the useful activities in developing language skills of visually impaired children.
- Music aptitude and musicality can be developed in them through more systematic and planned approach, which require some fundamental auditory and listening skills.
- Craft work involves many skills of manipulation of materials and handling of tools. In the case of visually impaired persons, it increases the physical independence and self-satisfaction. They can shine well as the craftwork leaves more hope to the sense of touch.
- The children at the primary level may be given training in recognition of likeness and differences.
- Finger manipulation and manual dexterity skills can be developed through: exercises to fingers and wrists, developing hand-foot coordination, body coordination, developing motor abilities by physical exercises, general orderliness of the body parts, and sensory training involving remaining senses.
- Adapted Physical Education is defined as " a diversified programme of developmental activities, games, sports, and rhythm suited to the interest, capacities and limitations of students with disabilities, who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general education programme."

- In Yoga, a realisation of one's self as a person takes place which is something good for the visually impaired children.
- In a special school setting, organised sports can be conducted with special equipment, special approaches and with special facilities.
- We cannot make visually impaired children in the integrated education to participate in all the activities of physical education and they cannot compete with the sighted children.
- The visually impaired children should be grouped together among themselves where the mix of sighted children and visually impaired children is found less value particularly in fast games such as cricket, foot ball, basket ball etc., The visually impaired children can be grouped with sighted children in slow games such as weight lifting, pull-ups, asanas, skipping etc.,
- The children who thoroughly understand the rules and regulations of the game are able to take part in the discussion of the game with their sighted companions in social gatherings.
- Many research studies have proved the mutual relationship between orientation and mobility, and physical education.
- Many a times, the child needs one to one teaching and graded activities in performing physical education activities.
- The major factors that cause stress and health related problems in visually impaired children are : physical factors, unconscious factors, social conformity, segregation of visually impaired, lack of guidance and counselling.
- Strategies to cope with stress and health related problems of visually impaired children are: coordination and uniformity between education and rehabilitation programmes, coordination between the educational and health service programmes, segregation to inclusion, protection to liberation, mere book learning to normalisation, learning together, learning to know, learning to do, orientation to personnel and guidance and counselling.

4.25 CHECK YOUR PROGRESS

I. Choose the most appropriate answer from the alternatives given for each item given below:

1. The word equality means
   a. Provision of same materials
   b. Satisfying the need of all individuals
   c. Admitting visually impaired in general schools
   d. Absence of special facilities

2. Eye-foot coordination is
   a. Academic skill
   b. Tactile skill
   c. Kinesthetic sense
   d. Manual skill
3. Stereo type attitude means
   a. Conventional behaviour
   b. Unhealthy behaviour
   c. Aggressive feeling
   d. Favourable towards blindness

4. Adapted physical education is
   a. a diversified programme of sports and games
   b. new physical education programme
   c. special programme
   d. a different physical education programme

5. Mental picture of the environment combining verbal descriptions and sensory impressions is called
   a. squaring off
   b. veering
   c. visualisation
   d. perception

II. State true or false for each of the following statements.

6. Full integration of visually impaired children is not possible in the major games such as cricket, basket ball, foot ball in the integrated education programme
7. The listening skills can be developed in visually impaired children because they have extra sense.
8. Segregation of visually impaired from mainstreaming causes stress and health problems
9. According to R. Cassidy, "physical education is the sum of changes in the individual caused by experiences in motor activities".

III. Answer the following questions:

10. What do you mean by 'creative art'? Explain the various creative art activities suitable for visually impaired children.
11. What are the challenges in implementing creative art activities for the visually impaired children?
12. Give your suggestions for the effective implementation of creative art programmes for the visually impaired children?
13. What do you mean by adapted physical education? Explain the various aspects of physical education programmes in the residential and integrated education programmes.
14. Narrate the various factors that cause stress and health related problems in visually impaired children.
15. What, according to you, are the strategies to cope with stress and health related problems of visually impaired children?

4.26 ASSIGNMENT/ACTIVITY

Make a list of various creative art activities that can be implemented in residential schools.

4.26.1 The various activities of a regular teacher as a researcher of the learning problems of visually impaired children in the integrated education programme.

4.26.2 The various creative art activities that can be introduced in the integrated education programmes.

4.26.3 Prepare graded activities for teaching listening skills to the visually impaired children.

4.26.4 Prepare a list orientation and mobility skills that contribute to the physical education activities.

4.26.5 Suggest the various activities that are helpful to develop motor skills of visually impaired children.

4.27 POINTS FOR GENERAL DISCUSSION AND CLARIFICATION

4.27.1 Points for Discussion

4.27.2 Points for Clarification

4.28 REFERENCES /FURTHER READINGS

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Unit 5: Braille aids and devices, optical devices for print reading and writing

STRUCTURE

- **Introduction**
- **Objectives**
- **Meaning of Pre-Requisite Skills**
- **Pre-Requisite Skills for Successful Rehabilitation of Visually Impaired Children**
- Stimulation
    - Daily Living Skills
    - Sensory Training
    - Orientation & Mobility
    - Communication Skills
    - Language Development
- Memory Building
- Basic Education
- Vocational Skills
- **Multi-Purpose Rehabilitation Workers and their Role**
- Multi-Purpose Rehabilitation Worker – Who?
- Role and Responsibilities of Multipurpose Rehabilitation Worker
- Role of Multi-Purpose Rehabilitation Worker for the Persons with Visual Impairment
- **Linkages between Education and Rehabilitation Professionals**
- **Unit Summary: Things to Remember**
- **Check Your Progress**
- **Assignment /Activity**
- **Points For Discussion / Clarifications**
- **References /Further Readings**

1.1 INTRODUCTION

Education, in general, changes the behaviour of an individual in a desired manner, but the education of the blind changes his own perspective in the society and social awareness about him. An appropriate education programme makes the visually impaired children academically suitable, physically fit, mentally alert and socially amicable. Education and rehabilitation are of the two sides of the same coin. Good education brings out a better rehabilitation for persons with disabilities. When we look into the broader meaning of the term 'Rehabilitation', it is a process in which the four essential needs of a disabled person is met, viz., Education – formal, non-formal, Skills encompassing mobility skills, social skills, work skills, etc., Employment and Integration.

The prime aim of any education and rehabilitation programmes for the persons with visual impairment should be to impart skills, which are suitable for their independent living in the community. Dealing with children having visual defects is a challenging task for which the role of trained personnel and professionals is very important.

In this unit, what are the pre-requisite skills for the successful rehabilitation of visually impaired? What is the role of multi-purpose rehabilitation workers? What linkages do we need between education and rehabilitation professionals, etc., are discussed.

1.2 OBJECTIVES

After thorough reading of the present unit, one can able to:

- narrate the importance of pre-requisite skills for the successful rehabilitation of visually impaired children.
- describe about each skills needed for the children with visual impairment.
- specify the role of multi-purpose rehabilitation workers.
- rationalize the need of multi-purpose rehabilitation workers.
- explain why the linkage is essential between education and rehabilitation professionals.
- focus what would be achieved by joining of education and rehabilitation professionals.

5.3 MEANING OF PRE-REQUISITE SKILLS

Pre-requisite skills refer to skills required for the visually impaired children to live in a better way in the community in terms of self-confidence, personal liberty, individuality, economic independence, family acceptance, social integration etc. Such skills are:

- stimulation
- daily living skills
- sensory training
- orientation and mobility
- communication skills

- language development
- memory building
- basic education
- vocational skills

5.4 PRE-REQUISITE SKILLS FOR SUCCESSFUL REHABILITATION OF VISUALLY IMPAIRED CHILDREN

Owing to absence of sight, the children are deprived of gaining information through eyes. Special educationists agree that about 85 percent of the information are received through our eyes and remaining 15 percent of the information are from other senses. As stated by Berthold Lowenfeld, blind faces three objective effects of blindness such as reduction in range and variety of experiences, reduction in ability to move about, and reduction in control of environment and of self in relation to it. To overcome the disability, a person with visual impairment should be trained in special skills peculiar to blindness.

The following are the pre-requisite skills for the successful rehabilitation of visually impaired children.

5.4.1 Stimulation

It is now an accepted fact that the process of learning begins much earlier in a child's life than what it is believed to be. Though in the first couple of years the child gives little indication, which may be a proof of learning, it is assimilating information from the life experiences. Though its power of action is subject to physical limitations, the child is mentally very active and receptive. The exposure given to the child in these years has a considerable impact on the learning abilities of the child in later years.

In case of blind children, it is often observed that they are kept in seclusion and given very little exposure to the day-to-day activities of the family. They may be made to sit in some corner apparently without much stimulation. A conducive environment for the education of blind children can be created in the family primarily by encouraging the parents and others to give the child sufficient exposure and experiences. It must be impressed upon them that a blind child too can assimilate information from life's experiences and hence must not excluded from any of the family activities, events and ceremonies. A blind child must

witness and be made to participate in all the festive occasions, marriages, religious ceremonies and even funerals. An older child may be asked to give a verbal description of the usual event to the blind child. It is only stimulation and exposure which can establish a strong foundation for further learning.

5.4.2 Daily Living Skills

Activities of daily living include all those things that people do every day: getting dressed, bathing, using the latrine, washing clothes, shopping, cooking, eating, cleaning the house, etc. Sighted persons learn to do these activities informally by watching other people. The basic skills involved in making beds, for instance, or sweeping the floor, shaving are usually learned by watching one's parents do these activities.

For blind people, some of these daily living skills can be difficult to learn. Because they cannot see, they cannot learn informally by watching the actions of others. They may hear someone making a bed and realize what that person is doing, but may not know the procedures involved. They may hear someone stirring food at the stove and smell the vegetables cooking, but this does not teach them how to prepare and cook vegetables. Because blind people cannot learn to do things by watching others, they must be formally taught.

Often blind people do not have to learn any special techniques for these activities of daily living. They can follow the same steps as a sighted person and need only to be taught the correct procedure. In bathing, for instance, there is no difference between the way a blind person and a sighted person wash themselves. They both must use soap and water; the procedure is the same.

Sometimes, however, a special technique may help the blind person do some activities more easily. These techniques usually make use of the other senses: touch, hearing, tasting, or smelling. To fill a glass of water, s sighted person pours water into the glass and stops when he sees that the water is almost to the top rim; a blind person must use either a tactual or a hearing clue to know when to stop. If a sighted person wants to wear a yellow shirt, he can easily pick it out by using eye sight; the blind person must have some kind of tactual clue to differentiate the yellow shirt and the white one.

It is important for blind person to master as many of these daily living skills as he can, so that he need not depend on others. If he cannot do these activities he must wait until someone else can help him. This is an inconvenience not only to others but also to blind person himself.

Remember these five rules when teaching daily living skills:

- Gather all materials and equipment before starting the activity.
- Be sure that the blind person knows where these materials are and can locate them easily.
- Be certain that the person can use each implement or piece of equipment correctly and safely.
- Have a work plan that tells you the correct procedure to use and lists each step in the proper order.
- After the activity is completed, be sure that your client cleans and returns all equipment and supplies to their correct storage space so they can be easily located later.

5.4.3 Sensory Training

If one of the senses is disfunctional, the loss of experiences will have to be compensated to the extent possible by improving the sensitivity and receptivity of the other senses. As the blind may be incapable of receiving the visual stimuli, they should be promoted to activate and channelize the remaining senses in order to perceive, comprehend and then exercise control over the environment. Parents must be given proper guidance, which would enable them to design activities for sensory training.

A normal domestic day-to-day life offers infinite scope for this purpose. Innumerable activities can be suggested which can promote sensory development with special emphasis on touch and hearing. It is only the family, which can carry out the responsibility effectively with the support from the professionals at regular intervals.

5.4.4 Orientation & Mobility

A blind child can feel at ease in a given environment only when he is oriented about different aspects, which characterize that environment. A sighted child can see his surroundings and get oriented automatically, but a blind child will require assistance. He must be taken to all rooms that comprise its home and also to be the adjoining areas. He must be made familiar with doors, windows, corners, staircase and even the furniture in different parts of the house. It should also be oriented with the kitchen, toilet, bathroom, verandah, etc.

Similarly, it should then be taken around the house in order to explore and understand the surroundings such as the courtyard, garden etc. orientation must be done with sighted assistance and gradually the child may be encouraged to move on its own within the house and also in the adjoining premises. Indoor mobility within the home and also a little in the neighbourhood will instill self-confidence. He will automatically start exploring the environment, which will facilitate learning. Orientation & mobility is the basis of self-learning and hence adequate attention and importance should be given to these areas.

With training, blind persons can learn to move safely around their villages and environment. This allows them more freedom and makes them less dependent on family and friends. Children can learn to walk to school and adults can learn to walk to work. When blind persons can travel safely in familiar surroundings, they can become more active in family and community activities.

The training that teaches blind children to move about safely and independently is called as "orientation and mobility".

- **ORIENTATION:** The ability to locate oneself in one's environment.
- **MOBILITY:** The ability to move in the environment from one place to another.

Blind persons can use three methods to travel safely: walking with a sighted guide; walking alone without a cane or sighted guide; walking by oneself with a long cane. Each of these methods has special rules and techniques that must be learned. It is important for blind people to know these special techniques and to use them every time they move place to place.

5.4.5 Communication Skills

Man is a social animal and hence the need and power to communicate with others is largely inborn. A child due to physical limitations and in the absence of any language development has access to the basic channels of communications only. It expresses most of the innate human emotions and responses by facial expressions, body language or by making monosyllable sounds. Gradually by observing and imitating those around him, he familiarizes himself with more complex channels of communication such as speech, gestures, movements of the eye etc. His communicative ability in the latter part of his life has a tremendous impact on his performance in all sectors of his life, namely academics, profession,

family and social life, etc. Early education must thus pay considerable attention to the development of communication skills.

A blind child faces the greatest handicap in his early life with respect to communication. His inability to see the expressions of friendliness and love on the faces of those around him makes him afraid of social contacts. Such a child may cling to the mother always, finding warmth, security and reassurance in her arms. Anyone else approaching the child may evoke fear and uneasiness. Even after the child begins to speak it may be put to considerable embarrassment not knowing when people are addressing him. Similarly, absence of vision may trigger facial expressions, which may seem ugly or irrelevant.

In the initial years, communication with the blind child must be through direct physical contact. Once he feels secure and perceives the environment as cordial, he will be more receptive to learning. Whereas language development can more or less follow the same course as that in sighted children, much special attention is required for training him in non-verbal communication. He should understand the correlation between a particular movement of the face or the body and what it communicates. This process requires a lot of effort and perseverance, but is indispensable for normal functioning in society.

5.4.6 Language Development

Speech is one of the most important medium of communication for all, specially so for the blind. There being limited scope for non-verbal communications, they have to rely on the verbal medium. The sighted have a number of sources for gaining information, many of which are visual, which as for the blind verbal exchange is the only source. It is thus very essential that they acquire mastery over language. Early influence can greatly boost language competency.

The family members must be encouraged to talk to the blind child, even before to comprehend words. Talking about the surroundings will offer much useful help but should be reinforced by other sensory experiences. The blind child must be closely guarded from indulging in verbalism (talking without experience). Every verbal input which relates to objects in the environment must be initially backed by concrete experiences – tactile, auditory and even olfactory. Language development and experience must go hand in hand for concept formation in early education of blind children.

5.4.7 Memory Building

In the future course of his life, a blind child may have access to several technological devices for storing and retrieving information. However, in Asian

countries, such devices are not very common and beyond the reach of rural masses. A blind person necessarily has to rely upon his memory for performing the wide range of functions at home, school and the work-place. Special training must thus be offered them right through the initial years for developing the power of memory. Recitation of songs, poems, stories, tables and a variety of memory games can serve as an effective media.

5.4.8 Basic Education

All children should go to school because with an education they are better prepared to develop their minds, learn about the world around them, and become useful members of their communities. Like other children, disabled children need education, either formal or nonformal, so they can learn to be independent, active, contributing, and self-supporting members of society.

Some blind children attend residential schools designed for blind children only. These schools have dormitories where the children stay. Other blind children go to regular schools with sighted children; this is called integrated education. They receive extra services from a specially trained teacher of the blind, who regularly visits them in their school. The special teacher trains them in the following areas:

- Reading and writing
- Arithmetic
- Science
- Language
- Sports and recreation
- Improving the remaining senses
- Improving turns, directions, and awareness of distance, etc.

5.4.9 Vocational Skills

Work is at least as important for blind people as it is for the sighted, and for much the same reasons:

- Work gives people a sense of self-satisfaction.
- Work keeps people active.
- Work allows the blind to meet other people.
- Work gives people a chance to earn money.

- Work helps the blind become independent.

Most jobs done by sighted persons can also be done by blind people, but they may have to use different techniques. Whereas sighted persons can use their vision to perform and check a work activity, the blind person must use other senses, especially the sense of touch.

A blind person will need training before he can do a job. Such kind of training should be given to blind persons in the community. Blind persons can work together in groups, either with sighted or with other disabled persons. When helping a blind person pick a vocational skill, we have to make sure that the following conditions exist:

- Client is interested in the skill.
- The skill is needed in the community.
- The person has access to the needed materials.
- The blind person has the necessary pre-skills: if the vocational requires walking, for example, the person should have good orientation and mobility skills.
- The person can learn how to use the materials correctly and safely.
- The person can be taught the correct steps to do the work activity.

We can help our client become organised if we analyse the vocational skill before we start the training. First, we have to examine each step that a sighted person would follow in undertaking the activity. Second, we have to decide which of these steps would be difficult for a blind person. Finally, we have to decide what adaptations are needed if the blind person is to do the activity safely and well:

- Write down the name of the vocational skill.
- List all materials needed. Are they available?
- Write down, in the correct order, each step needed to complete the activity.
- Put a mark by those steps that would be difficult for a blind person.
- Write down the techniques or adaptations of techniques that the blind person might use to accomplish the difficult steps.

Pre-requisite skills should be developed to overcome the limitations caused due to visual impairment and are imparted to the blind persons as early as possible with the assistance and guidance of trained personnel or professionals.

5.5 MULTI-PURPOSE REHABILITATION WORKERS AND THEIR ROLE

5.5.1 Multi-purpose Rehabilitation Worker – Who?

Multi-purpose Rehabilitation Worker is a personnel who got proper training to deal with **all categories of disabilities** in the community, works for the combined and coordinated use of medical, social, educational and vocational measures for training or retraining the individual to the highest possible level of functional ability.

5.5.2 Role and Responsibilities of Multipurpose Rehabilitation Worker

The Multi-purpose Rehabilitation Worker assumes the following role and responsibilities:

a. Door-to-door survey

b. Referral for medical inputs

c. Initial assessment

d. Extending individual need-based services to the disabled person

e. Seeking participation of community at all stages

f. Extending concessions and benefits to the individuals

g. Maintaining all the individual, joint and group records

h. Participating in the weekly review meetings

i. Sharing progress, achievements and experience in the meeting

j. Participating in the refresher courses

k. Involving the local administration in service delivery

l. Creating awareness regarding the needs of the disabled persons.

5.5.3 Role of Multi-Purpose Rehabilitation Worker for the Persons With Visual Impairment

The multi-purpose rehabilitation worker is the key functionary in the service for the visually impaired in the community. He or she has direct contact with the beneficiary. The success of the project depends upon performance, integrity, sincerity and devotion of the worker. The multi-purpose rehabilitation worker is expected to perform the following functions:

Identification: The rehabilitation worker should carryout the following aspects for the identification of persons with visual impairment by having proforma which includes all the details.

- Door-to-door survey
- Arranging vision screening by ophthalmic personnel
- Summary of vision screening
- Baseline data
  - Curable cases
  - Incurable cases
  - Summary of baseline data
- Individual case file for each case

Extension of Direct Services

The multi-purpose rehabilitation worker does the following direct services:

- Selecting and giving intensive rehabilitation training to five cases at any point of time
- Schedule services in the following sequence:
  - Individual and family counselling
  - Orientation and mobility
  - Daily living skills and home economics
  - Training in household work
  - Concessions and facilities
  - Training in rural crafts, household activities

- Monetary assistance as subsidy, launching grant, etc.
- Any other need based services

- Seeking community participation in all these activities
- Involving local administration in all the relevant activities
- Creating public awareness about the project and achievements

Referral Services

- Referring all the persons with eye ailments etc. to local eye care agency or and eye hospital.
- Referring children of school age to the educational programmes.
- Referring other categories of disabled persons to relevant organisations in the area.
- Referring all the persons with multiple-disabilities to the residential institutes or such field programmes devoted to such persons.

Establishing Contact with Beneficiaries

The rehabilitation worker should observe the following procedure of establishing contacts with the beneficiaries:

a. *Counselling*: The multi-purpose rehabilitation worker should approach the visually impaired person and his family and convince them of his or her credentials.

b. *Introduction of self & agency*: Give a brief introduction of the project, the project implementation agency, and himself or herself.

c. Explain the aims and objectives of the project and purpose of visit to the home of the person.

d. Give illustrations of successful cases of complete rehabilitation using visual aids and the print materials.

e. Convince the family that the visually impaired person can do meaningful work and be independent by demonstration of work under blind-fold and giving relevant examples and information.

f. Understand the socio-economic environment of the visually impaired.

5.6 LINKAGES BETWEEN EDUCATION AND REHABILITATION PROFESSIONALS

What do the education professionals do for the visually impaired persons?

Education professionals concentrate mainly on admission of visually impaired children in the formal school system. These professionals also involve in doing survey of the children with visual defect. After the survey, they do referral service to get medical treatment and certificate. The children who do not have adequate vision to study the book prints are taken care of by the teachers for special education service. The children who are admitted in educational programmes such as special schools, integrated education programmes and inclusive schooling, are comfortable and being in the school up to school ending. After completion of school studies, the children are left out from the service of the special teacher. The school outgoing students are having confusion where to go and what to do next? Most of the students with visual defect become the dropouts without seeking higher education due to their poverty, ignorance and helplessness. Another limitation is also there in the service of the education professional that he/she makes admission for 8 children only because the teacher pupil ratio is fixed as I:8 ratio. After getting the required strength, the special teacher is concentrating only on the admitted students but not for the students left remain in community.

What do the rehabilitation professionals do for the visually impaired persons?

Rehabilitation professionals mainly concentrate on survey, referral for ophthalmic treatment, skill development in the areas like orientation &mobility, daily living activities, sensory training, etc., and certain vocational aspects. Their botheration is to train them in some vocational skills and rehabilitate them in the community. They involve very minimum in educating the children and adult through formal and non-formal education.

Why do we need linkage between education and rehabilitation professionals?

As we understood from the introduction of this unit, education and rehabilitation are the two sides of a coin which means that each should go hand in hand to achieve the goal of enhancing the life of visually impaired persons in the community by the way of good education and proper rehabilitation measures. When these professionals unite together the following aspects can be achieved.

1. Medical intervention, preventive measures on visual impairment, awareness about visual impairment, educational programmes and future career can be carried out.

2. Early intervention programme would be designed to the needs of the visually impaired.
3. All children and adult with visual impairment would be brought under the educational systems such as formal and non-formal methods.
4. Community based education and rehabilitation (CBER) is quite practical.
5. Multi-disabled children and adult can also avail service in the community.
6. Joining hands of both the professionals will succeed parental counselling, societal awareness and involvement of community for the wellbeing of persons with visual impairment.
7. Visually impaired persons can be gained equal opportunities and equal rights as that of non-disabled by way of education and employment.

In toto, linkage of education and rehabilitation professionals makes the persons with visual impairment to become the contributing citizens by means of comprehensive rehabilitation, which includes education, social integration, family acceptance and employment.

5.7 UNIT SUMMARY: THINGS TO REMEMBER

- Education and rehabilitation are of the two sides of the same coin. Good education brings out a better rehabilitation for persons with disabilities.
- The broader meaning of the term 'Rehabilitation' is a process in which the four essential needs of a disabled person is met, viz., Education – formal, non-formal, Skills encompassing mobility skills, social skills, work skills, etc., Employment and Integration.
- Pre-requisite skills refer to skills required for the visually impaired children to live in a better way in the community in terms of self-confidence, personal liberty, individuality, economic independence, family acceptance and social integration.
- To overcome the disability, a person with visual impairment should be trained in special skills peculiar to blindness.
- A conducive environment for the education of blind children can be created in the family primarily by encouraging the parents and others to give the child sufficient exposure and experiences.

- Activities of daily living include all those things that people do every day. Sighted can learn informally all the skills by sight, but blind child can learn with the help of concrete experience and exposure.
- As the blind may be incapable of receiving the visual stimuli, they should be promoted to activate and channelize the remaining senses in order to perceive, comprehend and then exercise control over the environment.
- The training that teaches blind children to move about safely and independently is called as "orientation and mobility".
- His communicative ability in the latter part of his life has a tremendous impact on his performance in all sectors of his life, namely academics, profession, family and social life.
- Language development and experience must go hand in hand for concept formation in early education of blind children.
- Most jobs done by sighted persons can also be done by blind people, but they may have to use different techniques.
- Multi-purpose Rehabilitation Worker is a personnel who got proper training to deal with all categories of disabilities in the community, works for the combined and coordinated use of medical, social, educational and vocational measures for training or retraining the individual to the highest possible level of functional ability.
- Linkage of education and rehabilitation professionals makes the persons with visual impairment to become the contributing citizens by means of comprehensive rehabilitation, which includes education, social integration, family acceptance and employment.

5.8 CHECK YOUR PROGRESS

I. *Choose the most appropriate answer from the alternatives given for each item given below:*

1. Good education brings out for the visually impaired person

   (a) socialization.

   (b) a better rehabilitation.

   (c) family acceptance.

(d) higher studies.

2. Pre-requisite skills can be imparted for the persons with visual impairment from

(a) early days of child development.

(b) adolescent period.

(c) adulthood period.

(d) late childhood period.

3. Experience and expose are given primarily to the visually impaired child

(a) by teacher .

(b) by peer group.

(c) by parents.

(d) by siblings.

4. The ability to locate oneself in one's environment is known as

(a) orientation.

(b) daily living activity.

(c) sensory training.

(d) mobility.

5. The ability to move in the environment from one place to another is called as

(d) orientation.

(e) daily living activity.

(f) sensory training.

(g) mobility.

6. Every verbal input which relates to objects in the environment must be initially backed by

(a) concrete experiences.

(b) abstract experiences.

(c) verbal descriptions .

(d) non-visual experiences.

7. Communication with the blind child in the initial years must be through

(a) direct physical contact

(b) facial expression

(c) imitation

(d) dialogue

8. Blind children go to regular schools with sighted children which is called

(a) special school

(b) residential school

(c) integrated education

(d) day care center

9. Multi-purpose rehabilitation worker concentrates on

(a) blind children alone

(b) multi-disabilities

(c) education

(d) rehabilitation

10. Linkages between Education and Rehabilitation Professionals make the disabled persons to become

(a) educationists

(b) rehabilitation professionals

(c) contributing citizens

(d) employees

II. State true or false for each of the following statements.

11. Visually impaired child alone needs stimulation for learning:

12. Blind persons do not have to learn special techniques for all the activities of daily living.

13. 'Orientation and mobility' (O&M) is essential for independent living of the visually impaired persons.

14. Multi-purpose rehabilitation worker does very less service to single category disabled persons when compared to single category rehabilitation worker.

15. Linkage of education and rehabilitation professionals makes the persons with visual impairment to become the contributing citizens.

III. Answer the following questions:

16. What do you mean by 'Pre-requisite skills' for persons with visual impairment? Explain the various pre-requisite skills imparted for visually impaired children.

17. In what way daily living skills and orientation & mobility skills contribute for the development of visually impaired persons?

18. Who is multi-purpose rehabilitation worker? What are the responsibilities he/she can undertake for the service of the disabled persons in the community?

19. Narrate the role of Multi-Purpose Rehabilitation Worker for the persons With visual impairment.

20. Distinguish the service of education professionals and rehabilitation professionals for the service of visually impaired persons. What will they contribute when they jointed together for the service?

5.9 ASSIGNMENT/ACTIVITY

5.9.1 Prepare a list of pre-requisite skills to be taught for visually impaired children.

5.9.2 List the rules to be followed while teaching daily living activities for visually impaired children.

1.9.3 Pinpoint the role and responsibilities of multipurpose rehabilitation worker.

5.9.4 "Linkage between education and rehabilitation professionals is the need of the hour" – Justify.

1.10 POINTS FOR DISCUSSION / CLARIFICATIONS

After going through the Unit you may like to have further discussion on some points and clarification on other. Note down those points below:

1.10.1 Points for discussion

5.10.2 Points for Clarification

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1.11 REFERENCES /FURTHER READINGS

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BLOCK 3: TEACHING OF INDEPENDENT LIVING SKILLS

UNIT 1: INDEPENDENT LIVING SKILLS – MEANING, IMPORTANCE, COMPONENTS

STRUCTURE

- **Introduction**
- **Objectives**
- **Awareness about Status and Programmes on Visual Impairment in India**
- **National Initiatives for Poverty Alleviation of Persons with Visual Impairment**
  - Legislation
  - Financing
  - Tax Deduction
  - Rewards
  - Involvement of National Institutes
  - Barrier-free Environment
  - Education
  - Training and Employment
  - Prevention of the Causes of Disability
  - Rehabilitation Services
  - Assistive Devices
  - Self-help Organizations
  - Need of the Hour
- **Unit Summary: Things to Remember**
- **Check Your Progress**
- **Assignment / Activity**
- **Points for Discussion /Clarification**
- References / Further Readings

1.1 INTRODUCTION

The promotion of sustainable livelihoods for persons with visual impairment involves increasing their access to social and economic opportunities. This access is restricted by individual, social and environmental barriers. The ability of people with visual impairment to make social and economic contributions, and thus achieve sustainable livelihoods, is determined by the extent to which they are able to overcome these barriers and pass through the following three stages of physical and social integration:

- Adapting to the disabling condition and maximizing functional capacity;
- Interacting with the community and with society; and
- Gaining access to the types of social and economic activities that give life meaning and purpose (e.g. contributing to one's family and community, actively participating in society and/or obtaining employment).

To foster sustainable livelihoods for persons with visual impairment, all three types of barriers must be addressed simultaneously in ways that facilitate the passage of persons with visual impairment through all three of the stages of physical and social integration. This requires local, national and international disability strategies based upon comprehensive and integrated combinations of:

- Rehabilitation strategies that maximize the functional capabilities of people with disabilities;
- Inclusion and empowerment strategies to facilitate their active participation in their communities, societies and economies; and
- Architecture and design strategies that remove and prevent unnecessary barriers in infrastructure, including built environments, transportation systems, technology and communications.

Total rehabilitation for persons with visual impairment includes four main aspects such as Education, Family acceptance, Social integration and Employment. These aspects are interlinked like education helps for employment; employment makes them acceptable member in the family and society. When we look into the development programmes available for the disabled persons in the community, they are plenty, but due to unaware of programmes, the persons with visual impairment are unavailing optimally.

2.2 OBJECTIVES

After going through this unit, you can be able to:

- pin-point the status and incidence of blindness in India.
- describe the welfare and rehabilitation programmes of the Government.
- discuss national initiatives for poverty alleviation of persons with visual impairment.

- explain the legislation provision for empowerment of persons with disabilities with regard to education and rehabilitation.
- narrate governmental programmes and initiation with regard to poverty alleviation of persons with visual impairment.

1.3 AWARENESS ABOUT STATUS AND PROGRAMMES ON VISUAL IMPAIRMENT IN INDIA

The following points focus the present status and development programmes existing in the service of persons with visual impairment in India.

1. The number of disabled persons, in absolute terms, is quite large. The Visually Impaired number 3.63 million as per the NSSO Survey of 1991. This survey estimated that roughly 1.9% of country's total population was suffering from various disabilities viz., visual, hearing, speech etc.

2. The pattern of diseases causing blindness has shown considerable changes in the recent past. While small pox has been eradicated, blindness due to Vitamin A deficiency has declined considerably. As a result of this, the number of blind children in the country has reportedly declined. Yet, the total number of visually impaired has still shown a slight increase, as per the NSSO data, from 3.47 million persons in 1981 to 3.63 million in 1991, because of the diseases associated with longevity, causing blindness in the middle and late adulthood.

3. However, research studies in the recent past have established that a large number of visual disabilities are preventable, if attended to on time. For example, immunization against communicable diseases, supplementation of micro- nutrients and regular health check-ups of pregnant women, including screening can help prevent various disabilities including blindness. We are seeking to converge the activities of various departments at the grassroots level to minimise the incidence of such disabilities.

4. The government's concern for this section of our population has been manifested since the First Five Year Plan, when a national level apex body, the Central Social Welfare Board was set up in 1953 to take care of the welfare and rehabilitative needs of the vulnerable groups including the handicapped, children and women. A Training Centre for the Adult Blind was set up at Dehradun in 1955. The National Programme for Trachoma Control in 1963 was directed towards tackling the problem of blindness.

This was later merged with the National Programme for Control of Blindness in 1977. Yet, another National Institute was set up for the Visually Handicapped at Dehradun in 1982 to extend a wide range of services for the education, research and vocational training, besides training of the personnel to work for the blind.

5. We are aware of the special initiatives taken during the International Year of the Disabled Persons in 1981 which gave a big fillip to the already existing services for the disabled throughout the country. A number of special concessions were extended both by the Central and State Governments in the matters of education, employment, travel, etc.

6. A comprehensive legislation, viz. The Persons with Disabilities Act was enacted in 1995, which aims to empower the disabled with a right to demand 'protection of rights' 'equal opportunities' and 'full participation' in all developmental activities of the country. Enforcement of this legislation in 1996, in fact, marks the beginning of a new era in the lives of the Disabled.

7. The Ninth Five Year Plan re-affirms the commitment of 'making as many disabled as possible active, self-reliant and productive contributors' to the national economy. Also, realising the fact that the governmental efforts could cover only 5% of the disabled and the rural disabled being the most neglected, the Ninth Plan adopted a major strategy of 'Reaching the Unreached'. Systematic attempts are being made to converge the existing services available under various welfare-related sectors of health, nutrition, education, labour, rural development, urban development, science & technology, women & child development, information & broadcasting, etc.

8. Special efforts are being made to extend both welfare and rehabilitation services right up to the district level through a comprehensive programme of 'National Rehabilitation Programme for the Disabled' being launched as a State sector programme during the current year. Simultaneous efforts are also being made to strengthen the existing infra-structure by setting up of 6 Regional Composite Resource Centres in various parts of the country to cater to the needs of all categories of the Disabled. The Government is extending 3% reservation for the disabled in the Group A, B, C and D posts both in the Government and in the Public Sector Undertakings to ensure employment opportunities with justice. Similar efforts are also

being made to reserve 3% benefits under various poverty alleviation programmes including DWCRA- exclusively for disabled women. Organising Viklang Bandhus is another innovative effort to train the disabled as Self-Help Volunteers to contribute their mite to help others also to help themselves.

9. The Plan outlay has increased from Rs.47 crores in the Seventh Plan to Rs.214 crores in the Eighth Plan and to Rs.954 crores in the Ninth Plan to meet the emerging need of the disabled. The Ministry of Social Justice and Empowerment is monitoring not only the impact of various policies and programmes in terms of improving the status of the disabled, but also the progress of implementation of the PWD Act, at regular intervals.

10. The Government has been actively involving the NGO sector as their partners all along, in view of their credible achievements in reaching the un-reached and extending the most needed human touch, while serving these sensitive target groups. The nodal Ministry of Social Justice and Empowerment has been closely collaborating with a country-wide networking of more than 1500 NGOs working for the visually impaired through their grants-in-aid programme.

1.4 NATIONAL INITIATIVES FOR POVERTY ALLEVIATION OF PERSONS WITH VISUAL IMPAIRMENT

1.4.1 Legislation

The **Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act** was enacted in 1995, which is the landmark development in India in the welfare of persons with disabilities. This is a comprehensive piece of legislation which treats rehabilitation as a right and aims to eliminate discrimination and create a society which provides opportunities for development of people with disabilities to their fullest potential. Action on implementation of the Act has started in right earnest and is an ongoing process. It deals with both the prevention and promotional aspects of rehabilitation such as education, employment and vocational training; the creation of barrier-free environment; provision of rehabilitation services for people with disabilities; institution for persons with extensive disabilities and social security measures such as unemployment allowance and a grievance mechanism both at the central and state

levels. The legislation prescribes a 3 per cent reservation (1 per cent each for physically-, visually- and hearing-impaired persons) in identified posts in all government and public sector offices. The Act provides reservation of 3 per cent benefits to the people with disabilities in all poverty alleviation schemes.

The Parliament of India had earlier enacted a law for the setting up of the **Rehabilitation Council of India (RCI)**. Its main responsibility is the standardization of curriculum and training facilities of various professional courses on rehabilitation of people with disabilities and to inspect the facilities to monitor compliance. The RCI is playing an important role in ensuring the quality of services in the crucial area of manpower development. So far, a total number of 91 organizations have been recognized by the RCI for running certificate, diploma and degree courses in the area of disability.

1.4.2 Financing

In order to empower people with disabilities to cope with the new challenges and to develop the necessary entrepreneurial skills and initiatives, the **National Handicapped Finance and Development Corporation (NHFDC)** was set up to support self-employment projects for people with disabilities.

The **Ministry of Rural Areas and Employment** has already taken an initiative in 1996 by ensuring suitable amendments in the integrated rural development programme under which the groups of disabled persons will be given a revolving fund of 25,000 rupees for income-generating activities. All the ministries and departments which are operating the poverty alleviation programmes and projects shall identify the schemes under which participation of disabled persons may be ensured.

There are also various **grant-in-aid schemes of the Central Government**, in which NGOs are provided up to 90 per cent (95 per cent in the rural areas) funding for the rehabilitation services.

1.4.3 Tax Deduction

The Government of India has also given various income-tax deductions from the total income taxes from people with disabilities. The limit under Section 80-U has been raised from Rs20,000 to Rs40,000 and deduction of Rs20,000 from the taxable income of the parents or guardians of people with disabilities has been allowed provided this amount is deposited in any scheme of Life Insurance Cooperation (LIC) and United Trust of India (UTI).

1.4.4 Rewards

For the annual International Day of Disabled Persons, the President of India presents the following national awards: the most efficient disabled employee; the outstanding employer of disabled persons; the individual doing work for the cause of disabled persons; the best institution working for disabled persons; the best placement officer of disabled persons; the technology awards for inventions in the field of disability.

1.4.5 Involvement of National Institutes

The six national institutes have undertaken various public awareness measures with regard to education and rehabilitation of persons with disabilities through films, print media and radio. They are the National Institute for the Visually Handicapped, Dehradun; National Institute for the Hearing Handicapped, Mumbai; National Institute for the Orthopaedically Handicapped, Calcutta; National Institute for the Mentally Handicapped, Secunderabad; Institute for the Physically Handicapped, New Delhi; National Institute of Rehabilitation Training and Research, Cuttack.

1.4.6 Barrier-free Environment

The Ministry of Urban Affairs and Employment, in collaboration with Municipal Corporation of Delhi and ESCAP, has started the New Delhi Pilot Project. This selected project, which was inaugurated in December 1996, aims to make barrier-free all the public buildings and offices in the localities which are frequently used by people with disabilities, and situated within a kilometre radius of Indra Prastha Estate. The project is expected to have a demonstration effect and play an important role in extending technical guidance and the necessary motivation to other cities towards the promotion of non-handicapping environment. In 1996, the Ministry of Urban Affairs and Employment has also undertaken the task of formulating model building by-laws which will provide for easy access to public buildings by persons with disabilities. The model building by-laws have been circulated to all the state governments for adoption and implementation.

1.4.7 Education

The Act places a statutory obligation on the government to provide free education to disabled children in an appropriate environment till the age of eighteen. It also provides for establishment of special schools, facilities for imparting non-formal

education and education through open schools and universities to disabled children, organizing teacher training programmes, taking steps for adaptation of curriculum, reform of examination system, promoting research and providing various facilities to disabled children at the national level.

The objective is to integrate the people with disabilities with the general community at all levels as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence.

The **Scheme for Integrated Education of Disabled Children (SIEDC)** provides educational opportunities for disabled children in the general school system so as to facilitate their retention and ultimate integration in the system.

SIEDC is implemented through the education departments of the state governments, and autonomous and voluntary organizations. Over 53,000 disabled children in 13,674 schools have been covered so far. Under SIEDC, 100 per cent financial assistance is provided. These include allowances for books and stationery, uniforms, transport allowance, readers allowance for blind children, escort allowance for severely disabled children particularly those with lower extremity disability, boarding and lodging charges for disabled children residing in hostels.

In addition, the Government of India also sets up and equips resource rooms with aids and assistive devices, provides teacher support in the ratio of 1:8, pays resource teachers as applicable in the state/union territory, pays helpers and attendants and gives special pay for resource teachers.

It also funds a survey to identify disabled children in the blocks/districts and assess the children via a team comprising a doctor, a psychologist and a special educator. It also buys and produces instructional materials, pays for the training and orientation of resource teachers and the salary of an administrative cell at the state level to implement and monitor the programme.

During Ninth Five-year Plan commencing from 1997 to 1998, the Government of India proposed to expand the coverage of the SIEDC into the "unreached" areas. The total proposed allocation for SIEDC during Ninth Five-year Plan has been kept at Rs one billion with a view to expand the coverage of the programme and making it more effective.

Another programme, the **Project Integrated Education for the Disabled (PIED)** was introduced with United Nations Children's Fund assistance in 1987. PIED was started in a selected block in 10 states of Haryana, Madhya Pradesh,

Maharashtra, Mizoram, Nagaland, Orissa, Gujarat, Rajasthan, Delhi and Tamil Nadu.

Under PIED, a block is taken as a project area and all the schools in that block are converted into integrated schools. An external evaluation of PIED in 1994 showed that not only had the enrolment of disabled children increased considerably, the retention rate among disabled children was very high, about 95 per cent. The figure was even higher than that for normal children in the same block. The PIED programme, which is being run through 1,382 schools – benefiting over 6,000 children – has now been merged into the SIEDC - programme.

Under the holistic, community-based and innovative **District Primary Education Programme (DPEP)**, which was launched in 1994 and covers 60 districts, integrated education for all children with mild to moderate disabilities is being given special emphasis. The programme will eventually be introduced in 120 districts.

The project board of the National Elementary Education Mission, which is part of the Department of Education in the Ministry of Human Resource Development, has already approved the revised guidelines to incorporate integrated education for the disabled children in the DPEP. DPEP covers the areas of environment building, community mobilization and early detection, teacher training, development of innovative designs for primary schools and removal of architectural barriers in existing schools, provision of education aids and - appliances and resource support at block/district level.

The Government of India has already set up a core group comprising government officials, technical experts and voluntary organizations to examine the relevant provisions of the Act relating to pre-school education, integrated education and special education. It will give its recommendations, which are expected to be submitted and finalized by December 1997.

A workshop on the implementation of the relevant provisions of the Act was convened on 29 August 1997 in New Delhi. State Education Secretaries - participated in the workshop and worked out action plans to strengthen the existing programmes and to ensure the participation of all children with disabilities in formal and non-formal educational programmes on an equal basis.

A special scheme covering the establishment and development of special schools has been implemented since the period 1993-1994. Under the scheme, voluntary organizations are given the necessary assistance of up to 90 per cent to set up special schools.

A special scheme of manpower development has also been introduced (1991-1992) under which 100 per cent assistance is provided for running training courses for teachers in the area of cerebral palsy and mental disability.

The **Central Board of Secondary Education (CBSE)** has set up a committee to look into means of modifying the examination system so as to make it easier for disabled children to take examinations. The CBSE already allows provision of the facility of amaenuensis for blind and physically disabled children when they sit for the tenth standard and twelfth standard board examinations. It also opened a cell for parents to lodge the grievances of parents regarding placement of disabled children.

The national institutes of disabilities under the Ministry of Welfare have been organizing training programmes for special teachers. The **University Grants - Commission (UGC)** has taken an initiative by opening universities and colleges to cater to the needs of disabled children. UGC is implementing a scheme under which financial assistance will be provided to the universities for organizing special education programmes for teacher who hold Bachelor of Education and Master of Education degrees, to enable them to teach disabled children. UGC also reserves 30 research associateships every year for disabled students and scholars.

1.4.8 Training and employment

The Ministry of Labour through the **Directorate-General of Employment and Training (DGE&T)** extends its services to persons with disabilities through a number of schemes. There is a conscious effort to integrate such persons in nation building.

There is also a network of 915 employment exchanges which cater for the registration and placement of job seekers including those with disabilities. - Besides registering and placing in salaried job, the general employment exchanges also provide vocational guidance and employment counselling, organize career guidance and provide useful career information for disabled job seekers.

The employment market information programme of the employment exchanges gives basic information concerning the employment market which is used by various sponsoring agencies working for disabled persons. Thus, the employment exchanges also provide vocational guidance and help persons with disabilities take up self-employment ventures.

There are 47 special employment exchanges and 41 special cells in general employment exchanges with the specific objective of helping persons with disabi-

lities get gainful employment. About 53,000 persons with disabilities have been employed through these special employment exchanges and special cells throughout the country.

The **National Council of Vocational Training**, an apex non-statutory body set up by the Ministry of Labour, has formulated a policy of reserving 3 per cent of seats for trainees with locomotor disability in all industrial training institutes (ITIs) – in both engineering and non-engineering groups of trades. Under the Apprenticeship Act, 1961, which aims at the development of human resources through skills training based on the latest technology. Some 3 per cent of vacancies are reserved for persons with disabilities. The Ministry of Labour is also considering a scheme of incentives to encourage establishments to hire physically disabled persons as apprentices.

The DGE&T runs 17 **vocational rehabilitation centres (VRCs)**, throughout the country for the different categories of disability. The VRCs have arrangements to assess residual capacity, training, evaluation and placement of persons with disabilities. The trainings are provided free. The Indian government also lends support to the VRC training programmes by providing stipends to the trainees. This also serves as a catalyst for non-governmental agencies which assist persons with disability in vocational rehabilitation.

The government has planned to establish at least one VRC in each state and also assist the state governments and local authorities, and NGOs in establishing vocational rehabilitation centres to cater to disabled persons.

In order to implement the Agenda for Action for the Asian and Pacific Decade of Disabled Persons (hereafter referred to as Asian and Pacific Decade Agenda for Action), the Ministry of Labour has drafted very ambitious plans to strengthen the vocational rehabilitation services for disabled persons.

It is setting up 10 more VRCs with skill training workshops and rural rehabilitation extension centres. These centres will be equipped with modern and sophisticated instruments, training aids and will be housed in buildings exclusively designed for disabled persons, keeping in view the government's commitment to provide barrier-free and easily accessible structure for them.

Out of the total allocation for plan schemes of the employment directorate about 37 per cent is proposed to be provided during the Ninth Five-year Plan exclusively for rehabilitation of disabled persons.

A large number of non-governmental agencies are working in the area of training, employment and economic rehabilitation of persons with disabilities throughout

the country. There is also a conscious effort to change over to modern trades suited to new technologies and market demand.

Opportunities for training, however, are limited in the rural areas and unevenly spread in the country. The Ministry of Labour has a programme of **Rural Rehabilitation Extension Centres (RRECs)** where the services of the VRCs are extended to rural areas through mobile camps and 11 RRECs set up under the VRCs at Mumbai, Calcutta, Kanpur, Ludhiana and Chennai.

The Ministry of Labour is fully aware of the need to provide equal opportunities for vocational training and employment for women and girls with disabilities. Much effort has been made to increase the intake of women and girls with disabilities in vocational training and integrate them with the requisite support services into existing vocational training facilities.

A vocational rehabilitation centre for disabled women has been set up exclusively for rendering vocational rehabilitation services to disabled women job seekers. There are plans to turn this centre into a regional vocational rehabilitation centre. India also plans to set up nine more such centres in different parts of the country. These centres will function as integrated training centres utilizing the facilities available with the regional vocational centre for women.

The **Central Institute for Research and Training in Employment Service (CIRTES)** is responsible for training officers of the national employment service to sensitize them about the special placement needs of people with disabilities and for research-related to placement activities.

CIRTES has organized 10 training programmes, which covered the special placement needs of disabled persons, during 1996 to 1997. In addition, training programmes for personnel involved in the vocational rehabilitation of disabled persons are being organized. CIRTES has also developed career literature for disabled job seekers and their parents. The posters developed by CIRTES depicting the employability of disabled persons are being used in campaigns to assess their potentials and vocational skills.

The **Ministry of Rural Areas and Employment** recently took an initiative to help disabled rural poor to carry out suitable economic activities of their choice. Some 3 per cent of the total subsidy budget under the Integrated Rural Development Programme will be earmarked for providing revolving fund - assistance of Rs25,000 each to groups or sangams of the disabled rural poor for such activities. This will be in addition to the existing provisions of 3 per cent reservation of benefits for individual beneficiaries. The Viklang Bandhu scheme under the Ministry of Welfare will implement this proposal.

Under the ***Indira Awas Yojana,*** a housing scheme for the rural poor, 3 per cent of the benefits have been reserved for the physically disabled persons living below the poverty line in rural areas. Similarly, under the ***Jawahar Rojgar Yojna,*** a major wage employment programme for the rural poor, 3 per cent of the funds have been earmarked for the creation of barrier-free infrastructure for disabled persons in rural areas.

The **National Handicapped Finance and Development Corporation** has been incorporated in January 1997 as a non-profit company fully funded by the Ministry of Welfare. The paid up share capital of the Corporation is Rs2 billion and the authorized capital is Rs4 billion. It is envisaged that the state governments would set up such corporations of their own or identify channelling agencies for the national corporation in order to ensure that people with disabilities get full advantage of the new initiative. The main objectives of the corporation are to promote and support entrepreneurial and self-employment ventures by people with disabilities. A consultation meeting was held on 10 July 1997 with the participation of state government officials, officers from financial institutions and non-voluntary organizations to discuss the draft guidelines for disbursing the loans to the disabled entrepreneurs. The corporation is expected to begin operations by December 1997.

1.4.9 Prevention of the causes of disability

In a survey conducted in 1991, the national sample survey organization found that old age and injuries are the major causes of visual disability. Health and human development form integral components of socio-economic development of the nation. As per the Constitution of India, public health, sanitation, hospitals and dispensaries fall in the state list while the central Government of India is responsible for implementing programmes of national importance.

India is a signatory state to the Alma Alta declaration which envisages health for all by the year 2000. The national programme for control of blindness, national goitre control programme, national mental health programme, national programme on Japanese encephalitis, leprosy, nutrition, maternal and child health care programmes constitute the main plank for disability prevention services through the network of primary health centres, subcentres, district and teaching hospitals.

There are 22,229 primary health centres, 131,379 sub-centres and 1,923 community health centres. Disability prevention services, which form part of the health care scheme, are provided by 599,000 trained *dais* (mid-wives) and 417,000 health guides. Child development, nutrition, infant care and immuni-

zation form essential components of the curriculum for training *dais* and health guides.

Early detection in the field level is carried out by multi-purpose health workers attached to primary health centres, auxiliary female child minders, mid-wives attached to sub-centres, *anganwadi* workers and *balsevikas* (female child minders) of the ICDS Programme, village rehabilitation workers and community-based rehabilitation programmes of the government and NGOs. There are 290 *anganwadi* training centres for imparting training to *anganwadi* workers and helpers while there are 20 middle-level training centres for imparting training to supervisors and child development project officers. Started in 1961 to 1962, the *balsevikas* training programme implemented welfare programmes for pre-school children. There are 25 *balsevikas* training centres, each conducting one academic year training course for 50 trainees. Training programmes for each of these functionaries have adequate inputs for the early detection of childhood disabilities including mental retardation.

Also in place are early intervention services for infants at-risk and children having delayed development. With lower infant mortality rates, babies with genetic defects have greater chances of survival. The early intervention programmes, being carried out at more than 50 centres in the country over the last decade, have shown that early intervention helps improve the physical and mental functioning of the child. It also enables and encourages parents in the care and management of such babies in the home setting, with periodic consultation provided by early intervention centres. It is expected that, within a decade, such services would be available nationwide.

The major factors leading to various types of disabilities have already been identified and prevention measures initiated. Such measures are managed by Department of Women and Child Development, Ministry of Human Resource Development and Ministry of Health and Family Welfare, which initiated various programmes that provide enough micro-nutrients to the mother and child and other immunization programmes. These programmes will be strengthened during the period 1997-2002. Public education programmes through the mass media will be enhanced.

1.4.10 Rehabilitation services

There is a recent thrust towards reaching rehabilitation services to people with disabilities living in the far-flung rural areas. Here the importance of community-based rehabilitation (CBR) is well established as it is logistically difficult and expensive to provide institutional rehabilitation services. The strategy is to take a

multisectoral and decentralized approach in the provision of services within the community, with appropriate inputs from various sectors.

India has a tradition of family and community-based initiatives in rehabilitation. This provides an inherent strength and a basis on which successful community initiatives can be built upon. It is further reinforced by NGOs who have made significant contributions in the area of community-based rehabilitation, particularly in the southern areas of the country where considerable expertise and experience have been built up. Another factor is the 73rd and 74th amendments of the Indian Constitution which has conferred powers and responsibilities to elected local bodies at the rural *(panchayats)* and municipal levels which could be constructively utilized and integrated into programmes for community-based rehabilitation.

The Ministry of Welfare presently known as Ministry of Social Justice and Empowerment has proposed a national programme for rehabilitation of persons with disabilities during the Ninth Five-year Plan. It is envisaged that at the national level, a national centre for disability rehabilitation will be established. At the state level, a state institute will serve as a resource centre and also undertake manpower development, research and provide model services.

At the district level, a district rehabilitation centre will provide specialist services in rehabilitation and work in tandem with district hospitals and other bodies concerned with rehabilitation. At the block level, which comprises 50,000 people, two multi-purpose rehabilitation workers (MRW) will provide services to people with disabilities, their families, and the community. The officers will also network with education, labour, social welfare and health personnel, and NGO agencies in the area. At the *Gram Panchayat* or local government level, which comprises a cluster of villages, two CBR workers – one male and one female from the area – will be suitably trained to cater to about 50,000 people. They will be supported by elected local government as well as grass-roots functionaries of the concerned departments and non-governmental agencies. Strategies for implementation at the field level are flexible to enable state governments to utilize various methods – government, *panchayat* or non-government – suited to local conditions.

The comprehensive national rehabilitation programme thus formulated was discussed in a meeting held on 30 June 1997 where the representatives of the state governments, central government and voluntary organizations participated. The national level programme will be implemented during the next five years in a phased manner.

The Ministry of Health and Family Welfare has taken-up a pilot project of community-based rehabilitation in five states – Maharashtra, Andhra Pradesh, Madhya Pradesh, Tamil Nadu and Kerala. The all India institute of physical medicine and rehabilitation in Mumbai is acting as the main implementing agency and the training of personnel for both professionals and grass-roots level - functionaries is underway. This programme utilizes the existing infrastructure of health, women and child development, welfare and local government sectors in implementing the programme.

Persons with intellectual disabilities are at a greater risk of exploitation and physical/social abuse by the unscrupulous elements of society. It has been a major cause of worry to the parents of children with intellectual disability as to "what will happen to their children after their deaths?" A committee formed under the chairmanship of Justice Baharul Islam suggested the formation of a national trust for intellectual disability with the following objectives:

a. To provide guardianship and foster care;

b. To strengthen and support the welfare process of families, foster families, parent association, voluntary organizations and the community;

c. To provide legal aid to the mentally disabled persons and their families;

d. To receive, own and manage the bequeathed properties by parents to maintain their intellectually disabled children after their deaths.

The Government of India has decided to set up a statutory trust to achieve the above objectives. The proposed bill is being drafted with inputs from voluntary organizations and the parent associations of children with intellectual disability. Consultation meetings were held in June 1997. After the final round of discussions, the bill is expected to be formally introduced in the Lok Sabha in 1998.

The Government has set up 47 special employment exchanges and 41 special cells in the normal employment exchanges. The aim is to help disabled persons get gainful employment. Some Rs60 million has been allocated for this project under the Ninth Five-year Plan. About 53,000 disabled persons have been given placement through these special employment exchanges and cells. In addition, there are 17 vocational rehabilitation centres. Under the country's Apprentices Act, 1961, trainees are trained in various industrial establishments with 3 per cent of the vacancies reserved for people with disabilities.

About 76 per cent of disabled persons live in rural areas. The government introduced, on a pilot basis, a scheme to establish District Rehabilitation Centres

(DRC) in the country. They aim to provide rehabilitation services in rural areas, in 11 selected districts of the country. The centres have comprehensive rehabilitation responsibilities to all disabled individuals in the geographical area of the district which has a population ranging between one to two million persons. The main objectives of the scheme are:

a To devise suitable delivery systems to reach the entire population in the geographical area of the district;

b. To promote the most cost-effective technologies;

c. To restructure the present jobs of rehabilitation professionals, so that the minimum number of specialists could be utilized for the delivery of services.

For the purpose of coordination and administration, there is a Central and Coordination Unit (CACU). Four Regional Rehabilitation Training Centres (RRTCS) – one each at Chennai, Mumbai, Cuttack and Lucknow – have been set up for imparting training to DRC functionaries. A national information centre for disability and rehabilitation has been established at the central level.

State/union territory (UT) governments have rehabilitation schemes, provide various facilities and concessions. Some of the state government give pensions to disabled persons. Old age pensions are given at varying rates by almost all the state/UT governments.

A large number of NGOs have initiated a variety of CBR programmes for the different categories of disabled persons. Most of these programmes have been initiated with the assistance of leading international funding and developmental organizations. India has also developed training facilities at a number of locations for the training of the CBR field functionaries.

The Council for Advancement of People's Action and Rural Technology (CAPART) has taken initiatives to extend its services to people with disabilities. It plans to promote CBR of all categories of people with disabilities through its existing network of thousands of rural development organizations.

1.4.11 Assistive devices

The Government of India has implemented a scheme through registered societies, trusts and companies under which assistive devices are provided. They include mobility devices, wheelchairs, crutches, calipers, hearing aids and artificial limbs. Such services costing Rs2,500-3,600 are given free to those having a

monthly income of up to Rs1200; and at 50 per cent of the cost to those having a monthly income from Rs1201-2500.

The total allocation under the scheme was Rs550 million under the Eighth Five-year Plan. The proposed allocation of funds during the Ninth Five-year Plan has been projected as Rs1.25 billion. An initiative has been taken to spread the geographical coverage of the scheme so as to make the assistive devices available to the rural disabled population living in far-flung and un-reached areas. The number of organizations assisted under the scheme has increased to 140 during 1996-1997. The district level development agencies are also being encouraged to take up the responsibility of free and subsidized distribution of aids and appliances. There is a proposal to revise the scheme and raise the ceiling of the cost of aids and appliances and the income limit per month.

The science and technology project in mission mode was launched in 1988 and aims to develop suitable and cost-effective aids and appliances with the application of technology, and also to improve the mobility, employment opportunities and integration of disabled persons into mainstream society.

Suitable research and development projects are identified and funded under the scheme on a 100 per cent basis. So far, 49 projects have been identified for assistance and nine new projects identified for funding in the current year. About 37 of them are at various stages of completion, some have been put to commercial production. Among the important projects are those for the speech synthesizer, computerized Braille embosser, inter-pointing Braille writing frames, close circuit television with magnification facility, multi-functional wheelchair, feeding aids for children with cerebral palsy and safety devices for use in threshers.

Most of the appliances needed for the education of visually-disabled persons are made within the country. The National Institute for the Visually Handicapped is the main producer.

The Ministry of Finance will be asked to relax the customs duties levied on the import of assistive devices with a view to suggesting further exemption and simplification of the proceedings.

1.4.12 Self-help organizations

It has been the policy of the government to consult NGOs and self-help organizations, and eminent people with disabilities in formulation of all its policies and programmes for the welfare of disabled persons. In all the committees and advisory bodies, there is adequate representation of NGOs and

people with disabilities. Several self-help organizations have developed in the country.

Recently the Ministry of Social Justice and Empowerment undertook an initiative during 1996-1997, by starting a four-month long training programme for rural disabled volunteers in rehabilitation. The programme aims to impart the necessary inputs on disability and rehabilitation related issues along with knowledge of concessions and facilities provided by the government to disabled persons. These volunteers are also expected to form the self-help organizations of disabled persons.

Furthermore, the Ministry of Rural Areas and Employment has suggested that suitable amendments be made in the integrated rural development programme guidelines and provide an assistance of Rs25,000 to the self-help organizations of disabled persons for taking up suitable economic ventures.

A large number of volunteers are likely to be trained during the Ninth Five- year Plan period from 1997 to 2002. A large number of self-help organizations are expected to be formed during this period.

The **District Rural Development Agency (DRDA)** provides assistance for formation of Self-Help Groups for Women and Persons with disabilities.

1.4.13 Need of the Hour

With the shift in emphasis from providing welfare to ensuring the rights of disabled persons, the importance of convergence of policies and programmes in different sectors, so as to provide synergy, has emerged to the forefront. The efforts of the government, non-governmental and other agencies in the welfare sector need to be more structured and concerted in approach. India must also ensure linkages between programmes in all connected sectors such as education, vocational training and employment, rural and urban development, health, and women and child development. There must also be optimum utilization of available resources and holistic rehabilitation for people with disability.

UNIT SUMMARY – THINGS TO REMEMBER

- Immunization against communicable diseases, supplementation of micro-nutrients and regular health check-ups of pregnant women, including screening can help prevent various disabilities including blindness.
- The Ninth Five Year Plan re-affirms the commitment of 'making as many disabled as possible active, self-reliant and productive contributors' to the national economy.

- PWD Act 1995 prescribes a 3 per cent reservation (1 per cent each for physically-, visually- and hearing-impaired persons) in identified posts in all government and public sector offices. The Act provides reservation of 3 per cent benefits to the people with disabilities in all poverty alleviation schemes.
- The RCI is playing an important role in ensuring the quality of services in the crucial area of manpower development.
- National Handicapped Finance and Development Corporation (NHFDC) was set up to support self-employment projects for people with disabilities.
- The Ministry of Rural Areas and Employment has already taken an initiative in 1996 by ensuring suitable amendments in the integrated rural development programme under which the groups of disabled persons will be given a revolving fund of 25,000 rupees for income-generating activities.
- The Government of India has also given various income-tax deductions from the total income taxes from people with disabilities.
- The six national institutes have undertaken various public awareness measures with regard to education and rehabilitation of persons with disabilities through films, print media and radio.
- The Ministry of Labour through the Directorate-General of Employment and Training (DGE&T) extends its services to persons with disabilities through a number of schemes.
- The Central Institute for Research and Training in Employment Service (CIRTES) is responsible for training officers of the national employment service to sensitize them about the special placement needs of people with disabilities and for research-related to placement activities.
- Under the *Indira Awas Yojana,* a housing scheme for the rural poor, 3 per cent of the benefits have been reserved for the physically disabled persons living below the poverty line in rural areas.
- Under the *Jawahar Rojgar Yojna,* a major wage employment programme for the rural poor, 3 per cent of the funds have been earmarked for the creation of barrier-free infrastructure for disabled persons in rural areas.

- The Ministry of Social Justice and Empowerment undertook an initiative during 1996-1997, by starting a four-month long training programme for rural disabled volunteers in rehabilitation.

CHECK YOUR PROGRESS

I. Choose the most appropriate answer from the alternatives given for each item:

1. Immunization helps for
   a. curation of blindness
   b. prevention of blindness
   c. rehabilitation
   d. control of blindness
2. Reservation prescribed by PWD Act 1995 for Persons with Visual Impairment in identified posts in all government and public sector offices is
   a. 3 percent
   b. 2 percent
   c. 1 percent
   d. 4 percent
3. RCI Act 1992 regulates
   a. general education programmes
   b. professional courses
   c. special education and rehabilitation programmes
   d. education programmes for women
4. NHFDC was set up to support the people with disabilities on
   a. employment in industries
   b. employment in government sectors
   c. employment in non-government organizations
   d. self-employment

5. The national institute set for the service of persons with visual impairment on education and rehabilitation is

   a. NIHH

   b. NIMH

   c. NIVH

   d. NIOH

6. Directorate-General of Employment and Training (DGE&T) runs

   a. vocational rehabilitation centers

   b. education centers

   c. assistive device centers

   d. technical training centers

7. The scheme which has earmarked 3% funds for creation of barrier-free infrastructure for disabled persons is

   a. Indira Awas Yojana

   b. Viklang BandhuJawahar

   c. Rojgar Yojna

   d. SIEDC

II. Answer the following questions:

8. What is the status and incidence of blindness in India?

9. Describe about the welfare and rehabilitation programmes of the Government for persons with visual impairment.

10. Discuss about the national initiatives for poverty alleviation of persons with visual impairment.

11. Explain the legislation provision for empowerment of persons with disabilities with regard to education and rehabilitation.

12. Narrate governmental programmes and initiation with regard to poverty alleviation of persons with visual impairment.

ASSIGNMENT / ACTIVITY

1.7.1 Incidence and prevalence rates of visual disability in India as per the recent survey are:

List out the development programmes in community related to persons with visual impairment.

Pin-point the government schemes available for persons with visual impairment with regard to poverty alleviation.

Present the gist of legislations promote the rehabilitation of persons with disabilities.

The following general schemes can also provide service for disabled persons for their rehabilitation in the community.

POINTS FOR DISCUSSION / CLARIFICATIONS

After going through the Unit you may like to have further discussion on some points and clarification on other. Note down those points below:

1.8.1 Points for discussion

1.8.2 Points for Clarification

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UNIT 2: ORIENTATION AND MOBILITY – NEED AND IMPORTANCE, TECHNIQUES OF TEACHING MOBILITY, SIGHTED GUIDE AND PRE-CANE, CANE TECHNIQUES AND MOBILITY AIDS

- **Introduction**
- **Objectives**
- **Definitions**
- **Summary**
- **Revision**
- **Assignment/Activity**
- **Points For Discussion And Clarification**
- References / Further Readings

Introduction

Trepanier-Street (2010) describes a partnership between a university training pre-service early childhood teachers and a hospital working with children with special needs. In this study, pre-service teachers and medical professionals shared knowledge about their fields by making a commitment to teach, learn, and work together across discipline boundaries. All professionals involved took time to understand the role of different professionals, to participate in research and data dissemination together and to work together with children and families. Through this the parties were better able to prepare early childhood teachers to work with children with additional needs. Early childhood professionals also learn from one another informally, in settings where they work in partnership. The literature highlights the need for collaboration between therapists and teachers working with children with a disability, and argues that working in partnership is important to help build inclusive peer environments for all children. For example, in a case study with a four-year-old girl with cerebral palsy, Case-Smith and Holland (2009) describe the use of small-group activities as a way of encouraging interaction with peers. In this case, teachers and therapists worked together to develop a tailored learning and development program using assistive technology that reflected the child's abilities and interests. They also ensured that she was provided with opportunities to work with peers. The approach drew on the specialist knowledge of both teacher and therapist. Wesley and Buysse (2004)

describe consultation as a method of collaboration and professional development. In consultation, where expertise is transferred between professionals, the professionals achieve the goal of building knowledge about child development and optimal professional support.

- **Objectives**

Building knowledge in early childhood learning and development requires both personal and administrative commitment (Hopps, 2004; Griffin, 2010). Professionals from different fields must understand each other by using commonly understood language in order to share their expertise, and it takes time for collaborative relationships to develop (Trepanier-Street, 2010). What are the implications for achieving best outcomes for children? 1. Early childhood professionals collaborate; communicating and planning in partnership to achieve best practice. Young children and their families benefit from holistic and integrated approaches. Such approaches can only be realised where professionals communicate and plan in partnership, sharing their expertise and developing systematic and comprehensive approaches to children's 17 learning and development. When sharing information, early childhood professionals are careful to respect and preserve the privacy of children and families. Victorian privacy legislation includes the Information Privacy Act 2000, the Health Records Act 2001 and the Public Records Act 2002. The Commonwealth Privacy Act 1988 may also apply to early childhood services. 2. Early childhood professionals work together across settings to support positive transitions for children.

Transitions within and between settings can be stressful for young children and their families. Early childhood professionals understand the importance of ensuring continuity in children's education, and they work together to build upon children's prior knowledge and experience. 3. Early childhood professionals are willing to learn from one another. Knowledge and understanding of young children's learning and development is constantly growing and evolving. Early childhood professionals can benefit from sharing their diverse expertise and experience. Professionals are committed to ongoing professional learning, and look for both formal and informal opportunities to further their understanding of best practice in early childhood. 4. Early childhood professionals understand their own and others' roles, and make referrals when necessary. Effective professional partnerships are built on foundations of understanding and respect for one another's complementary expertise. Early childhood professionals recognise the need for clearly defined roles and responsibilities, in order to achieve the best use of diverse professionals' expertise and experience. 5. Early childhood professionals are committed to working in partnership to achieve the best possible outcomes for children. Early childhood professionals share a common goal: to achieve best practice in advancing children's learning and development. Achieving this goal requires commitment to professional partnerships and holistic approaches to meeting children's aspirations and needs. They use practices that enhance positive working relationships, and they commit to work in partnership to best support children's learning and development. 18 Appendix A: Methodology

The majority of resources used in this paper were found through an online database search, using the following search terms: • professional partnership • collaborative/collaboration • expertise • holistic • transitions and continuity • referral • agency cooperation • cooperative planning • integrated services • multidisciplinary approach The search terms were combined with the keywords 'early childhood' and 'children' to limit results to literature relevant to this paper. Online databases were searched using the University of Melbourne's SuperSearch. SuperSearch provides access to a wide range of online journals and papers both nationally and internationally. Within SuperSearch, databases were selected with relevance to early childhood education, with a focus on Australian settings, though international settings have also been addressed in this paper to provide a broader scope. Most of the literature used is peer-reviewed and was published within the last ten years, with several older articles included for their relevancy. The databases searched were: ERIC (CSA) A+ Education (Informit) Web of Science (ISI) Education Research Complete (EBSCO) Expanded Academic ASAP (Gale) Family & Society Studies Worldwide (EBSCO) JSTOR 19 Finally, several other texts and documents have been included in this review due to their relevance to, and impact on, Australian early childhood education and care. These include the chapter by Lumsden (2005) in Waller (ed.) An Introduction to Early Childhood; the Victorian Early Years Learning and Development Framework (DEECD, 2009), and the OECD report on early childhood education and care, Starting Strong II.

- **Definitions**

In fact, both scripted and authentic materials have a place in the language classroom and should be used at different points within it. These two same authors – Swan (1985b) and Ur (1996) – also make a case in favor of mother tongue use. For CLT, it is as if the students' native language did not exist and they had to learn everything from scratch. But it plays an essential role in language learning: it is useful for clarifying, for instructions, for awareness-raising through contrastive analysis, and even for testing. Translation is furthermore inevitable and it is precisely this continuing comparison between the FL and the mother tongue that allows students to put into use the knowledge they already possess and prevents them from having to recategorize the world all over again. Brown (1994: 78, 80) equally warns against getting lost in the numerous interpretations of this approach and against claiming adherence to CLT principles without truly grounding teaching on them. Checa Marín (2002) affirms that the latter has occurred in our Spanish teaching context. Indeed, he points out that the Communicative Approach has not had as strong an impact on language teaching in Spain as is usually claimed because it presents "serious obstacles" and "tremendous difficulties" (2002: 27) for Primary and Secondary School teachers who simply cannot match its main principles to their teaching reality. This author ascribes the failure of CLT in our country to the fact that this approach was conceived for a specific context: an English-speaking one where students learn a second rather than a foreign language. What works in such a situation cannot be extrapolated to a

foreign language one where the learners have very little contact with the target language and very few opportunities to practice it. Bearing all these caveats in mind, it is not surprising that CLT has now been largely defeated. In Swan's (1985b: 87) words: "The Communicative Approach, whatever its virtues, is not really in any sense a revolution. In retrospect, it is likely to be seen as little more than an interesting ripple on the surface of twentieth-century language teaching". At this point, we are thus living in a "post-communicative" (Ur 1996: 7) period, or perhaps it is a post-methodological one, as Ur (1996: 7) also points out, since it is now believed that no single method is optimally effective for teaching languages.

- **Summary**

Lozanov (1979) developed a teaching method based on the idea that the learner, given the appropriate conditions, is capable of prodigious feats (Nunan, 1991b). He based his ideas on Yoga, Soviet psychology and the use of music. From Yoga he took some techniques of relaxation, concentration and deep breathing. From Soviet psychology he borrowed the idea that learners can acquire anything, provided they do it in a deep state of concentration bordering hypnosis, and using the non-conscious and nonrational powers of their mind. Music is used to facilitate this relaxation and to activate the use of the left hemisphere, which is supposed to trigger holistic-global, nonanalytic- learning. Even though this method had a sound psychological basis, Lozanov did not have a linguistic theory, although he did have a notion of the language to be taught: he focused on L1-L2 pairs

(see Cerezal, 1996; Sánchez, 1997) and their memorisation, but did not attach a meaningful context to these linguistic items. 7.4.2. Features of the method The classroom, following Suggestopedia, starts with the relaxation of the students through the appropriate music, breathing techniques, classroom furniture and voice of the teacher. Then, students listen to texts and represent different roles using the L2. Translation is also used to foster comprehension. Students are flooded with oral input which they have to learn in an inductive way, and the activities are designed so that they involve the students' interests in such a way they do not provoke mental blocks. Interaction is also employed so that learners are able to use what they have unconsciously acquired. Focus on unconscious learning When relaxed, learners are capable of incredible feats Use of yoga techniques to facilitate relaxation and concentration Activation of the left brain to foster holistic learning through music Language: L1-L2 pairs Use of translation and memorisation Oral input before output Interactive activities Table 10: Features of Suggestopedia DISCUSSION 15 a) Enumerate the features of Suggestopedia and select those you think you would incorporate in your teaching approach. 7.4.3. The methods in perspective In general, the three methods in this section are learner-centred and share the importance attached to the learners' feelings and affect for acquisition. In this sense they can be termed humanistic, and they do achieve to motivate learners, lower their anxiety and foster their confidence. However, the three were created (designed) by individual people with little or no scientific support, and sometimes, without a welldefined notion of language. They were also

advertised to be designed for achieving complete success at language learning; for accomplishing miracles. Thus, the use of the term Designer method. All three have received either enthusiastic support or criticism, and, concerning their actual success, results have been poor. In addition, the three require very specific teacher training, provide insufficient material and are very demanding for teachers. Besides, they lack a clear linguistic theory, so they tend to adopt a traditional grammatical orientation, particularly in the case of the Silent Way. Community language learning, with its absence of syllabus, and the lack of conventional materials, is hard to put into practice, whereas Suggestopedia requires the same efforts because of different reasons: achieving complete relaxation in the students is no easy feat. Also, both are designed for adults, rather than children or teenagers. The Silent Way is also harder to implement with small children, who tend to need more verbal directions on the part of the teacher and are less autonomous. Besides, many teachers find it difficult to conduct a classroom without speaking. On the whole, even though as methods the three show poor results, if considered as techniques within a global program, they have many advantages, introducing very useful activities, changing the classroom routine and providing the learner with an active role, while at the same time respecting his/her feelings and reducing his/her anxiety. DISCUSSION 16 a) Enumerate the advantages and disadvantages of the three methods considered in this section. b)Would you use any of these methods in your teaching practice? c) Have you ever experienced any of these teaching methods as learner? 8. COMMUNICATIVE LANGUAGE

TEACHING The previously mentioned Designer Methods characterized the language teaching panorama in the decade of the 70s. However, if, from that point onwards there has been a recognized approach to language teaching, generally accepted as the norm and viewed as essential in order to be considered a good teacher, that is the Communicative Approach or Communicative Language Teaching (CLT). Its origins can be traced to the 60s, with the changes that occur in the British language teaching tradition. At this point, the foundations of Audiolingualism begin to be questioned, mainly as a result of Chomsky's cognitivist ideas (cf. section 5). Thus, on the one hand, CLT appears as a reaction to previous methodological principles, such as those underlying Audiolingualism or Grammar-Translation. Scholars such as Candlin or Widdowson now begin to advocate the development of communicative proficiency in the target language, rather than knowledge of its structures, basing themselves on a wide range of theories, ranging from those of the British linguists Firth and Halliday, to those of the American sociolinguists Hymes, Gumperz, and Labov, to those of the language philosophers Austin and Searle. Another strong contributor to the Communicative Approach is Wilkins, with his proposal of a notional syllabus, incorporated by the Council of Europe in its attempt to facilitate the teaching of European languages in the Common Market. However, none of these ideas would have prospered if they had not been rapidly applied by textbook writers and equally quickly accepted by language teaching specialists, curriculum developers, and even governments. This provided the impetus for CLT, or the notional-functional

approach or functional approach, as it is also termed, to become an international movement. The latter views language learning as the product of the diverse subcompetences comprised within the general concept of communicative competence; that is, not merely linguistic or grammatical competence, as in previous methods, but also sociolinguistic, discourse, and strategic competences. Hence, the primary goal of CLT is to develop communicative competence, to move "beyond grammatical and discourse elements in communication" and probe the "nature of social, cultural, and pragmatic features of language" (Brown, 1994: 77). Consequently, learners are expected, not so much to produce correct sentences or to be accurate, but to be capable of communicating and being fluent. Classroom language learning is thus linked with real-life communication outside its confines, and authentic samples of language and discourse or contextualized chunks rather than discrete items are employed. Students are hence equipped with tools for producing unrehearsed language outside the immediate classroom. This general goal of CLT can be viewed in two ways, since, as Howatt (1984: 279) points out, it has both a "weak" and a "strong" version. The weak version "stresses the importance of providing learners with opportunities to use their English for communicative purposes and, characteristically, attempts to integrate such activities into a wider program of language teaching". On the other hand, the strong version "advances the claim that language is acquired through communication", so that language ability is developed through activities simulating target performance and which require learners to do in class exactly what they will have to do

outside it. But let us characterize CLT further, beyond its central aim, by examining its theory of language and learning, its syllabus, activity types, and materials, as well as its teacher and learner roles. At the level of language theory, the Communicative Approach is based, in line with what we have already mentioned, on Hymes' and Canale and Swain's view of communicative competence, on Halliday's theory of language functions, and on Widdowson's view of the communicative acts underlying language ability. In turn, this method's theory of learning has a much less solid foundation. Nevertheless, according to Richards and Rodgers (2001), three main principles can be inferred from CLT practices: 1. The communication principle: Learning is promoted by activities involving real communication. 2. The task principle: Learning is also enhanced through the use of activities in which language is employed for carrying out meaningful tasks. 3. The meaningfulness principle: The learning process is supported by language which is meaningful to the student. Activities should consequently be selected according to how well they involve the learner in authentic and meaningful language use. Much more discussion has been devoted to syllabus design in CLT, as it is central to this method. One of the first models to be set forth is Wilkins' notional syllabus, which specifies notional or semantic-grammatical categories (such as time, sequence, quantity, notion, location, or frequency) and communicative function categories (for instance, requests, denials, offers, or complaints). The Council of Europe builds on this proposal and develops a syllabus including objectives, situations, functions, notions, and vocabulary and grammar. The

result is Van Ek and Alexander's Threshold Level English (1980). Further designs have since then been developed, such as task-based syllabuses (cf. section 10.1.) or the movement in favor of the abolition of the concept of syllabus. Such syllabus types are implemented through a series of clear-cut activities and materials. The former, according to Littlewood (1981) are of two main kinds. One of them involves functional communication activities, where the information-gap principle is the basis for comparing pictures, working out sequences of events, discovering missing features in a map or picture, giving instructions, following directions, or problem-solving. The other consists of social interaction activities, based, as Nunan (1991a: 279) puts it, on the emphasis placed by CLT on "learning to communicate through interaction in the target language". They encompass conversation and discussion sessions, dialogues and role plays, simulations, or debates. In turn, materials are, in Richards and Rodgers' view (2001), of three major types: text-based (e.g. textbooks), task-based (relying on jigsaw or information-gap principles), and realia (here, we are referring to authentic materials, taken from "real life" and brought into the classroom, such as signs, magazines, newspapers, maps, pictures, graphs, charts, or even objects). One of the teacher's roles is obviously to act as a guide during the afore-mentioned activities. But (s)he equally fulfills other extremely relevant ones. Among them, we can distinguish those of independent participant within the group; organizer of resources and resource him/herself; researcher and learner; needs analyst in order to cater adequately for the students' necessities; counselor, much in the way

advocated by Community Language Learning; or group process manager. However, perhaps the most outstanding function of the instructor is to facilitate and provide opportunities for communicative interaction between all classroom participants, always, if possible, in the target language. The learner thus becomes a central and active member in the learning process. (S)he must negotiate, interact, and cooperate with other participants and should be an important contributing element to classroom learning. In other words, teaching becomes learner-centered. How can such an influential method in the history of language teaching be appraised? For many years – even decades – CLT is considered a panacea. It appeals to those who see a more humanistic, interactive, and communicative approach to teaching. Ur (1996: 6) perfectly sums up the general feeling: "The coming of the communicative approach represented for those of us involved in teaching at the time a healthy revolution, promising a remedy to previous ills: objectives seemed more rational, classroom activity became more interesting and obviously relevant to learner needs". However, once initial enthusiasm has passed, CLT has been criticized on a number of fronts and some of its central claims have been called into question. Let us examine exactly which ones by analyzing what has come to be known as the postcommunicative or post-methodology era. DISCUSSION 17 a) Comment on the origins of CLT. b) Name the author(s) who ... - proposed the notional syllabus. - produced Threshold Level English (19080). - distinguished between functional communication and social interaction activities. c) What is the general goal of CLT? Do you agree this should be

the objective in language learning? Why or why not? d) Which version of CLT would you favour in your EFL classroom? Why? e) Enumerate the subbcompetences which CLT believes should be included within the concept of communicative competence. Can you briefly describe what you consider each one involves? f) Work with a partner. Draw up an example of a functional communication or a social interaction activity for a roughly 4th year of CSE level. Swap activities and complete them. Comment on your general impressions. Would you use activities of this type in your class? 9. THE POST-COMMUNICATIVE PERIOD: TOWARDS AN ENLIGHTENED ECLECTICISM It initially takes a great deal of courage for critics to openly express their reservations as regards the Communicative Approach. As Ur (1996: 6) explains, this is because "'communicativity' was becoming axiomatic rather than a means to an end, treated as synomymous with 'good language teaching'". However, such fear is gradually overcome and some of the key principles of this method are questioned without reserve. Perhaps one of the best-known methodologists who is among the first to voice his dissent is Swan (1985a, 1985b). While acknowledging the valuable contributions of CLT to the field of language teaching, he straightforwardly maintains that "A dogma remains a dogma, and in this respect the 'communicative revolution' is little different from its predecessors in the language teaching field". More specifically, Swan considers it presents serious deficits on both the theoretical and practical planes. Theoretically, a first aspect of CLT which Swan (1985a) criticizes concerns this method's belief in the existence of

two levels of meaning in language: "usage" and "use"; "signification" and "value"; "rules of grammar" and "rules of communication". To begin with, this author resents the use of such terminology. Secondly, he considers there is nothing new in this account of meaning. Furthermore, it is not clear what form such rules of use might take. And even if it were, what clinches his argument is that it is not necessary to teach them because they are mostly nonlanguage-specific and merely depend on the operation of experience and common sense. Another concept which Swan (1985a) challenges and which is considered the real goal of language teaching by the Communicative Approach is that of appropriacy. The latter is again nothing novel according to Swan, plus quite limited, as it applies to certain items only. The problem is that this concept has been overgeneralized as part of what he terms "the new toy effect" (1985a: 7). Brown (1994: 78) also warns against the danger of overdoing certain CLT features, advocating moderation and common sense when applying them in the classroom. What is more, this excessive focus on appropriacy obscures the necessity of teaching lexis, and enough vocabulary, in Swan's opinion, is what the learners need, not appropriacy. Much the same applies to skills and strategies, which have greatly proliferated in the Communicative Approach. Swan esteems the language learners need lexical items, not instruction in skills and strategies such as predicting, negotiating meaning, or guessing. They already know how to do all this, he argues, in their mother tongue and have been doing it all their lives. In practical terms, the setbacks of CLT are no less considerable. An initial one affects syllabus

design. Communicative teaching adopts a semantic syllabus, which awards priority to meaning over structure, something considered by its supporters to be the secret to successful language instruction. However, Swan (1985b) identifies several problems with this type of syllabus. To begin with, he points out, it groups structurally diverse items together, and, given the complexity of grammar, it is recommendable to isolate and practice difficult structures before integrating them into more realistic communicative work. Moreover, a single principle should not act as an organizing framework for a syllabus. Swan (1985b: 79) advocates taking into account functions, notions, situations, topics, phonology, structures, vocabulary, and skills. Furthermore, he highlights that semantic and formal syllabuses not only do not rule each other out, but one cannot do without the other and they must therefore be integrated. To all these arguments, we must add that there seems to be an air of unreality about functional categories, as they are abstract and do not specify exactly what must be taught. The focus should again be, in this author's opinion, on lexis, since functions without lexis are no better than structures without lexis. Zaro Vera (1995), Ur (1996), and Segalowitz and Lightbown (1999) also criticize the Communicative Approach's lack of focus on formal aspects. Zaro Vera (1995: 10) highlights how this circumstance can lead to fossilization of the students' linguistic competence and how learning could be sped up and increased in effectiveness if some attention was awarded to formal elements. In turn, Ur (1996: 6) defends the importance of accuracy, contending that students with a sound grammatical knowledge progress

beyond those who have acquired the language intuitively and that such precision increases linguistic comprehension. Finally, Segalowitz and Lightbown (1999: 54) hold that preventing students from learning the structural features of the language is a clear limitation of CLT, given the evidence which supports the effectiveness of combining focus-on-form and communicative activities. Other pedagogical practices of CLT which are critically examined by Swan (1985b) involve its activity types and materials. Although this author acknowledges that using language which is as lifelike as possible is a significant contribution of the Communicative Approach, he also claims that the language employed in the classroom cannot be 100% genuine (1985b: 82). Besides, a great deal of learning can take place in settings remote from the actual situation in which such knowledge will be used. There is hence nothing wrong with employing a battery of teaching activities which seem to be of no immediate communicative value, such as repetition, rote learning, translation, drills, or transformation and slot-filling exercises. Another activity type central to CLT and which Swan (1985b) and Zaro Vera (1995) suggest should undergo revision is the information-gap one. Its employment of imposed information can lead to student disinterest. It is therefore preferable to use communication of a more personal kind, achieved simply by asking learners to talk about themselves. As regards communicative materials, both Swan (1985b) and Ur (1996) challenge their obsession with authenticity. There is nothing wrong, they uphold, with using deliberately simplified language, provided it is included within good quality material.

POINTS FOR DISCUSSIONS / CLARIFICATION

After going through the unit you may like to have further discussion on some points and clarification. Note down those points:-

Points for Discussion

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Points for Clarification

- References / Further Readings

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UNIT 3: DAILY LIVING SKILLS – ASSESSMENT OF NEEDS AND TECHNIQUES OF TEACHING AGE APPROPRIATE DAILY LIVING SKILLS

STRUCTURE

UNIT 1 DAILY LIVING SKILLS – ASSESSMENT OF NEEDS AND TECHNIQUES OF TEACHING AGE APPROPRIATE DAILY LIVING SKILLS

INTRODUCTION

Disabilities have often been regarded as a peripheral issue in discussions on health services. In the health sector particularly, they are regarded as cases to be "cured", failing which they are referred to Welfare for "care". The denial of human rights, and the exclusion and marginalisation of disabled people is manifested in many forms.

Acton said "We must never forget that society holds a tremendous responsibility for the existence of disability in its midst. The obligation to respond is greater than that of caring for the less fortunate; it is a matter of correcting a flaw in our culture, a flaw that has denied to millions of people the human rights that we have declared for everyone".

This unit presents different models of understanding disability, and different resultant definitions. Disability in relation to poverty, development and human rights.

1.1. OBJECTIVES

After studying this unit you should be able to

- Define the term 'impairment', 'disability' and 'handicap'.

- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.2. Concepts of Disability

Classification defined	**The classification of individuals with disabilities is an important, though at times, controversial issue.**

Classification typically refers to a structured system that identifies and organises characteristics to establish order. Many disciplines, such as biology, chemistry and zoology have classification systems to be useful it must have four criteria

- **It must be reliable**
- **It must cover all relevant aspects**
- **It must be logically consistent**
- **It must have clinical utility**

In Unit 1, you were told that the terms 'impairment, disability and handicap are often used synonymously. Similarly, the word classification is interchangeably used with the word labelling. However, there is a difference between the two words. Classification organises common characteristics and attributes into sets or groups, labeling provides a name to the group.

Labeling **- Identifies individuals or groups according to a category assigned to them. For example,**

Labeling defined

a child who has been diagnosed as having little or no hearing ability, might subsequently be labeled 'hearing impaired'. Labeling can be formal and is generally imposed by an authority such as a psychologist or a diagnostician.

1.3. Definitions of Disability

Differing opinions on definitions of disability stem from the fact that "disability is relative and dependent for its definition on local attitudes and physical barriers, which change from one society to another". Notwithstanding, both WHO and the Disability Rights Movement have proposed definitions relating to disability:

The World Health Organization proposed the following distinctions:

Impairment is any loss or abnormality of psychological, physiological or anatomical structure or function (e.g. a missing or defective body part, paralysis after polio).

Disability is any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being (e.g. difficulty in speaking, hearing or walking).

A handicap is a disadvantage for a given individual resulting from an impairment or a disability that limits or prevents the fulfillment of a role that is normal (depending on age, sex and social and cultural factors) for that individual (e.g. lack of access to employment for a person with a hearing impairment due to discriminatory attitudes).

In these definitions, impairment is defined objectively in terms of observable function, while disability and handicap are seen in terms of what is "considered normal" for an individual.

UN definition of rehabilitation:

> Rehabilitation has been defined as "a process aimed at enabling persons with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychiatric and/or social functional levels, thus providing them with tools to change their lives towards a higher level of independence. It may include measures to provide and/or restore functions, or compensate for loss or absence of function or for a functional limitation. The rehabilitation process does not involve initial medical care..."

The myriad definitions and their variations in national and international literature suggest the usefulness of classifying disabilities and characterizing approaches. A review of contemporary definitions of disability suggests that definitions fall mainly into one of two categories that reflect the evolving conceptualizations of disability, which is summarized below.

1. The first category frames disability with reference to the individual and in terms of individual deficits. Within this category, definitions fall into two closely related subgroups.

The first subgroup focuses on the individual, and might be called the biological or medical model. The second subgroup focuses on the promotion of fuller functioning in the individual and is characterized by the functional or

rehabilitation approach. Most of these models assume a norm, below which a person should fall if she or he is identified as a person with a disability.

2. The second category focuses not on the individual but on the social, economic, political, institutional and legal conditions that can result in disability. This second category likewise has two subgroups. The first subgroup might be called the environmental model. In this subgroup, attention is directed to the social, cultural and economic barriers of living with a disability. The second subcategory focuses on the rights to which all individuals in a society, including those with disability, are entitled. This subcategory is termed the human rights model.

Category I **Individual as unit of analysis**		**Category II** **Society as unit of analysis**	
Biological or Medical model	Functional or Rehabilitation model	Environmental model	Human rights model
Emphasis on attributes in the individual	Emphasis on promoting or restoring fuller functioning in the individual	Attention directed to ecological barriers: social, economic, political, institutional and legal, which can result in disability	Focus is on the rights to which all people, including people with disabilities, are entitled

Historically, definitions of disability cluster largely around the bio-medical and rehabilitation models of Category I. What distinguishes this group of definitions is the view that the etiology of disability resides in the individual as a consequence of events such as disease, accident, war, genetic structure, birth trauma or other acute causes.

1.4.1. BIO-MEDICAL DEFINITIONS

In the bio-medical approach, attention is directed to the delineation or listing of what physical, intellectual or sensory impairments an individual has in order to define whether he or she is included in the legislation. For example, India and the Republic of Ireland have specific definitions of disability based on a list of diagnostic traits.

1.4.2. DEFINITION OF DISABILITY IN INDIA

Defining disability is a long-standing issue of policy, planning and academic concern. It has long been the quest of medical scientists, biologists, social scientists, policy makers, governmental officials, theologians and writers. Some participants noted that to face similar dilemmas in defining disability at the end of the twentieth century, albeit with certain changes in areas of emphasis from earlier efforts, is not surprising. Most recent attempts at definition reflect current concerns with development and globalization. Consequently, issues of universalism, economic efficiency and effectiveness and prevention underlie much of this work.

A number of distinctly different definitions of disability are found in the literature and in national and international policies and legislation. Examining how disability is defined in national and international laws, policies and

measurement tools is an important exercise, which suggests legal, social, political and economic consequences of such definitions.

This section will next consider definitions of disability found in national and international laws and conventions and will review a select group of international measures where definitions of disability are expressed or assumed.

1.4. Classification of Disabilities

Classification of Disabilities with Definition and Subgroups of Each Disability:

- Visual Impairment

  Definitions and descriptions of visual impairment tend to vary considerably depending on the purposes for which the individuals or groups are being described.

  Children with visual impairment generally need specially trained teachers, specially designed or adapted curricular materials, and specially designed educational aids in order to reach their full potential. Visual impairment is differentiated into two categories, the blind and the partially sighted. Two definitions are used for both blind and partially sighted (also known as low vision) One based on visual acuity, and one on the educational media to be used. Visual acuity describes how well a person can see at various distances.

Definitions

The American Foundation for the Blind (1961) defines blind individuals as

(i) those whose visual acuity is 20/200. * or less in the better eye with the best possible correction, or (ii) those whose field of an arc of 20 degrees or less. Partially sighted are defined as (i)those whose visual acuity is between 20/200 and 20/70 in the better eye with the best possible correction, or (ii)those need either temporary or permanent special education facilities.*

***Educationally, blind children are defined as those whose visual loss indicates that they should be educated chiefly through braille and other tactile and auditory materials. Partially sighted children are [23]those who have some remaining useful vision and can use print and other visual materials as part of the educational programmes.**

The Person with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995, of Government of India, defines blindness as a condition where a person suffers from any of the following conditions, namely

(i) total absence of sight; or

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*If a person being tested can read at 20 feet what the person with normal vision can read at 200 feet, his or her visual acuity is 20/200

*snellen chart is used to measure visual acuity. It contains letters of alphabet in varying sizes, and is used by eye specialists

(ii) **visual acuity not exceeding 6/60 or 20/200 (snellen)*; or.**

(iii) **Limitation of the field of vision subtending an angle of 20 degree or worse.**

The Act describes a person with low vision (partially sighted) as a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for planning or execution of task with appropriate assistive device.

- Hearing Impairment

There are many definitions and classification systems of hearing impairment. By far the most common division is between deaf and hard of hearing.

Accordin[4]g Hallahan & Kauffman (1991) children who cannot hear sounds at or above a certain intensity (loudness) level are classified as deaf; others with a hearing loss are considered hard of hearing.

Hearing sensitivity is measured in decibels (units of relative loudness of sounds) zero decibels (0 db) designates the point at which people with normal hearing can detect faintest sound. Each successive number of decibels indicates certain degree of hearing loss.

Brill, McNeil, & Newman (1986) have provided separate definitions for hearing impairment, deafness and hard of hearing.

Definition Of hearing Impairment

According to them hearing impairment is a generic term indicating a severity from mild to profound : it includes the subsets of deaf and hard of hearing.

A deaf person is one whose hearing disability precludes successful processing of linguistic information through audition, with or without hearing aid.

A hard of hearing person is one who, generally with the use of a hearing aid, has residual hearing sufficient to enable successful processing of linguistic information through audition.

Terminology Based on onset of hearing loss

Educators are extremely concerned about the age of onset of hearing impairment. The close relationship between hearing loss and language delay is the key here. Earlier the hearing loss at an earlier age in child's life, will lead to greater difficulty in developing language.

For this reason, professionals frequently use the terms congenitally deaf (those who were born deaf): and adventitiously deaf (those who acquire deafness at some time after birth). Two other terms that are also used to pinpoint language acquisition are prelingual deafness (deafness present at birth or occurring early in life at an age prior to the development of speech or language) and postlingual deafness

(deafness occurring at any age following the development of speech and language).

The Persons with Disability (PWD) Act 1996 defines hearing impairment as loss of 60 decibels or more in better ear in the conversational range of frequencies.

- Mental Retardation

The development of a satisfactory definition of mental retardation has proven to be difficult . Each professional group considers the problem of individuals with mental retardation from a different perspective. According to Mac Millan (1982), a definition of mental retardation should meet three criteria. First, the conditions that must be met before an individual is classified as retarded should be specifically stated. Second every retarded person must share the elements described in the definition. Third, those who are not classified as retarded must fail to exhibit at least one of the elements of the definition.

Definition

Behavioural definition of Mental Retardation

Over the years, a number of definitions of mental retardation have been proposed, of these two definitions are often discussed. These are the behavioural definition and the definition proposed by the American Association on Mental Retardation (AAMR).

The articulation of behavioural definition is generally attributed to Bijou (1966), who proposed that a retarded individual is one who has a limited repertory of behaviour shaped by events that constitute his history.

The behavioural definition of mental retardation often presents problems to special educators. The major short coming is its failure to quantify what is meant by a limited behavioural repertoire. In other words the definition does not describe the point at which the limitations in a person's repertoire of behaviours indicate that he or she is retarded.

AAMR definition of mental

The definition given by the AAMR has found to be widely accepted of all definitions has been revised frequently even the past few decades. The earliest definition was proposed by Heber in 1961. Since then revisions of the definition were made by Grossman in 1973, 1977 and 1983. The latest revision of definition was in 1992. This revised version is given below.

Mental retardation refers to substantial limitations in present functioning. It is characterised by significantly subaverage general intellectual functioning, existing concurrently with related limitations in two or more of the following applicable adaptive skill areas; communication, self care, home living, social skills, community use, self-direction, health and safety, functional academics, leisure and work. Mental retardation manifest before age 18.

The key terms used in this definition are explained as under:

Explanation of key terms in AAMR definition

Intellectual functioning means the results obtained by assessment with one or more of the individually administered standardised intelligence tests developed for that purpose.

Significantly subaverage is defined as an intelligence quotient (IQ) of 70 or below on standardised test of intelligence.

Limitations in adaptive skills are defined as impairments in individual's effectiveness in fulfilling his/her expected role (in the areas mentioned) according to age level and the norms of the socio-cultural group to which the individual belongs.

According to the PWD Act (1996) mental retardation means a condition of arrested means a condition of arrested or incomplete development of mind of a person which is specially characterised by subnormality of intelligence.

Classification of Mental Retardation

Individuals with mental retardation have been classified according to the severity of their problems. The two most common systems are that of the AAMR and the one used by educators. The AAMR system of classification is depicted in Table 1.1 It is the most acceptable system of classification, for three reasons. First, the terms used, 'mild', 'moderate' severe and profound retardation do not carry the negative meanings of earlier descriptions also classified the mentally retarded according to the level of severity of their problems, but called them 'idiot' 'moron' and feebleminded'. The derogatory

terms have been discarded now. They are adjectives commonly applied to a vast array of other things or conditions besides retardation. Second, the terms used emphasize the level of functioning of the individual. Third, the use of bands of IQ scores – for example 50-55 as the cutoff between mild and moderate retardation – leaves some room for a clinical judgement and recognises that IQ, scores are not perfect predictions of a person's level of retardation. As per the AAMR manual someone with a Full Scale IQ of 53 might be diagnosed as either mild or moderate, depending on other factors, such as the relative difference in performance and verbal IQ or results of other tests.

TABLE 1.1

Level of Retardation indicated by IQ Range obtained on Measure of General Intellectual Functioning.

Term	IQ Range for Level
Mild Mental Retardation	50 – 55 to approx. 70
Moderate Mental Retardation	35 – 40 to 50 – 55
Severe Mental Retardation	20 – 25 to 35 – 40
Profound Mental Retardation	Below 20 or 25

The Educators' system classifies the children with mental retardation as educable mentally retarded – those with IQ between 70 and 50, trainable mentally retarded – those with IQ between 50 and 25. The children with IQ below 25 are termed as severely and profoundly mentally retarded. The use

of terms educable and trainable have survived over the years among educators because they describe, though grossly, the educational needs of retarded children. In general, the educable children can learn some basic academic subjects. The curriculum for individuals classified as trainable, on the other hand, concentrates more on functional academic subjects, with emphasis on self help and vocational skills.

TABLE 1.2

Classification of Mental Retardation: Educator's System

Term	IQ Range for Level
Educable mentally retarded	70 - 50
Trainable mentally retarded	50 - 25
Severely and profoundly mentally retarded	Below 25

- Orthopeadic Disabilities

Orthopeadic disabilities are also known as locomotor disabilities or physical disabilities and health impairments. The term orthopeadic is related to a physical deformity or disability of the skeletal system and associated motor function (Deutsch Smith & Luckasson 1992).

Definitions of orthopeadic disabilities

A child with a physical disability has a problem with the structure on functioning of the body. A child with health impairment has a limitation on the body's physical well-

being that requires ongoing medical attention.

Berdine & Blackhurst (1985) define an orthopeadically disabled child as one whose physical or health problems result in an impairment of normal interaction with society to the extent that specialized services and programmes are required.

Hallahan & Kauffman (1991) define children with physical disabilities as those whose non sensory physical limitations or health problems interfere with school attendance or learning to such an extent that special services, training, equipment, materials, or facilities are required.

The Individuals with Disabilities Act (IDEA-1977) USA, provides a definition of orthopeadic disabilities as an impairment which adversely affects a child's educational performance. The term includes impairments caused by congenital anomaly (e.g. clubfoot, absence of a limb etc.), impairments caused by disease (e.g. poliomyelitis, bone tuberculosis, etc.) and impairments from other causes (e.g. cerebral palsy, amputations, and fracture or burns which cause contracture).

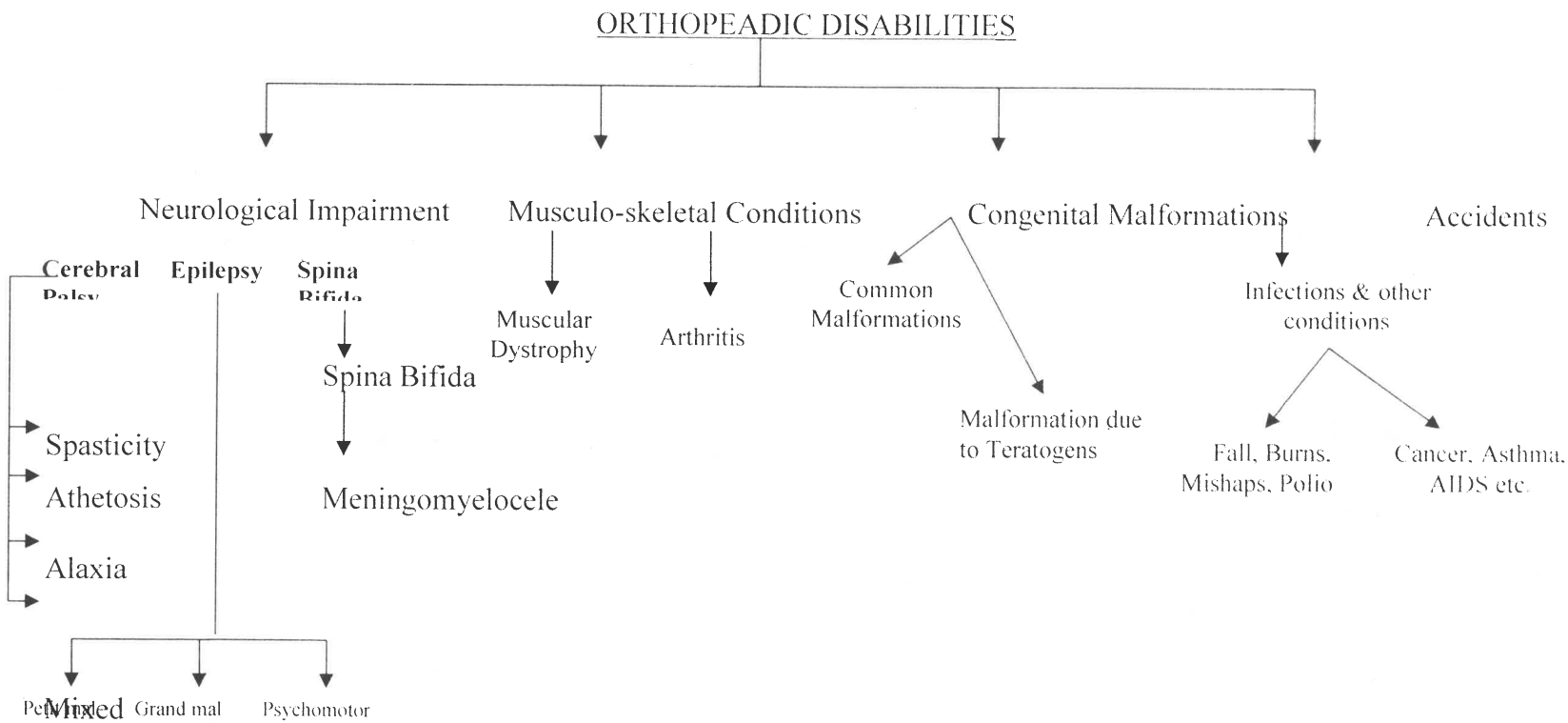
> **The PWD Act 1996 refers to orthopeadic disability as locomotor disability and defines it as disability of the bones, joints or muscles leading to substantial restriction of the movement of the limbs or any form of cerebral palsy.**

Classification of Orthopeadic Disabilities:

Orthopeadic disabilities can be broadly categorised into four sets, each including a number of impairments. A schematic description is provided in Figure 2.1

Figure 1.1

Classification of Orthopeadic Disabilities



We will now discuss the conditions mentioned within each category namely

(a) Neurological Impairments

(b) Musculeskeletal Conditions

(c) Congenital Malformation and

(d) Accidents, Trauma and Other Conditions.

(a) Neurological Impairments

Neurological impairments are problems with the structure or functioning of the central nervous system, including brain and the spinal cord. A child with neurological impairments may show a variety of symptoms including mental retardation, learning problems, perceptual problems, lack of coordination, distractibility, emotional disturbance and speech and language disorders.

Cerebral Palsy (CP):

C P is caused by damage to the brain. It is a non progressive disorder (that is, it does not become progressively more debilitating) that affects gross and fine motor coordination. It is often associated with convulsions (fits or seizurs), speech disorders, hearing effects, vision problems, deficits in intellectual abilities, or combinations of these problems. C P has been defined as a condition characterized by paralysis, weakness, in coordination, and/or other motor dysfunction because of damage to the child's brain before it has matured (Batshaw & Parret, 1986).

Persons with C P can be classified according to physiological system that is based on person's body functioning.

Spasticity is characterized by a loss of voluntary motor control. Without this control, the extensor muscles, which are used to extend arm, and the flexor muscles, which are used to pull the arms back toward the body, contract at

the same time. This causes movements to be tense, jerky and poorly coordinated. As the child grows the spastic muscles become shorter, which can cause limits deformities. Spastic characteristics are found in about 40 percent of C P population (Berdine & Blackhurst 1985).

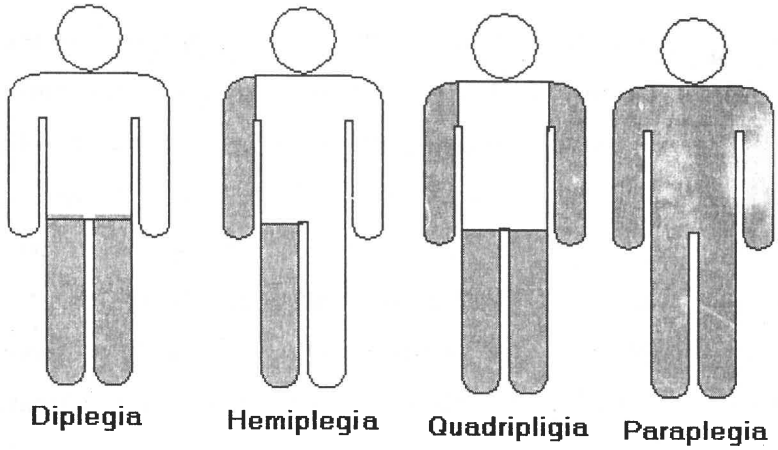
Athetosis is characterized by involuntary, purposeless movements of the limbs, especially at the extremities. Fluctuating muscle tone affects deliberate muscle exertions, which results in uncontrolled writing and irregular movements. The throat and diaphragm muscles are also affected which causes drooling and laboured speech. The hands are most frequently affected, followed by the lips and tongue, and then the feet. Excitement and concentrated efforts to control movement generally result in increased tension and spasticity. Mixed cerebral palsy is a combination of spasticity and athetosis.

Ataxia is caused by damage to the cerebellum (lower part of the brain) which results in balance problems. Ataxics have poor fine and gross motor movements, poor depth perception, slurred speech and a staggering gait. They frequently fall while walking.

C P is also classified on the basis of the limbs that are affected. This system classifies C P into Hemiplegia in which one half (right or left side) of the body is involved; Diplegia in which legs are involved to a greater extent than arms; Quadriplegia, in which all form limbs are affected; and Paraplegia where only legs are affected. Refer to Figure 1.2.

FIGURE 1.2

Areas of the Body affected by Cerebral Palsy



Epilepsy - Epilepsy is also known as convulsive disorder. Epilepsy is a disorder in which the individual has a tendency to have recurrent seizures. A person has a seizure when there is an abnormal discharge of electrical energy in certain brain cells. The discharge spreads to nearby cells, and the effect may be loss of consciousness, involuntary movements, or abnormal sensory phenomena.

Petit mal seizure generally goes unnoticed. It lasts 5 to 10 seconds, and its only visible symptoms are staring, a momentary stopping of activity and perhaps a slight fluttering of eyelids. The child may appear to be daydreaming or going to sleep. Such seizure may occur as often as 10 to 15 times a day or occur only occasionally.

Grand mal Seizure is also referred to as referred to as a fit or a convulsion. The child may fall to the ground, become stiff, begin to jerk or thrash, and

cry out or make noises. He or she may also lose bowel or bladder control momentarily.

Psychomotor Seizure is characterized by automatic, stereotyped movements, which may be purposeless and inappropriate. The seizure begins with suspension of activity, followed by repetitious automatic movements, which may be purposeless, and inappropriate, incoherent speech, and sometimes a display of rage or anger. When the seizure is over the person often feels confused.

Spina Bifida - During early fetal development the two levels of the embryo grow together or fuse at the midline. When the closure is incomplete, a congenital 'midline defect' is the result. Spina Bifida is a congenital midline defect resulting from failure of the bony spinal column to close completely during fetal development. The defect may occur anywhere on the spine. Because the spinal column is not closed, the spinal cord (nerve fibers) may protrude, causing damage to the nerves and paralysis and/or lack of sensation in the entire area below the site of the defect. This is called meningomyelocele. This condition leads to paralysis of legs, loss of anal and bladder controls because nerve impulses are not able to travel past the defect.

(b) Musculoskeletal Condition

Some children are physically disabled because of defects or diseases of the muscles or bones. Muscular and skeletal problems involve the legs, arms, joints or spine, making it difficult or impossible for the child to walk, stand, sit or use his or her hands.

Muscular Dystrophy This is a disease which voluntary muscles progressively weaken and degenerate until they can no longer function. It is a hereditary disease, for which at present there is no cure.

There are two major types of muscular dystrophy. The Duchenne muscular dystrophy is found only in boys. It is first noticed when the child learns to walk. By early adolescence the child is confined to a wheelchair. The Landouzy-Dejerine muscular dystrophy affects the child's muscles in the pelvic girdle, shoulder, legs and arms. The child appears healthy outwardly but his muscles are slowly replaced by fatty tissues. This type of muscular dystrophy is found in both girls and boys.

Individuals with muscular dystrophy rarely line beyond young adulthood.

Arthritis Pain in and around the joints can be caused by many factors, including a large number of debilitating diseases and conditions known as arthritis. Arthritis is more commonly found in adults.

Rheumatiod Arthritis **is a common form or arthritis that also affects young children. More girls than boys are affected. The symptoms range from mild inflammation and stiffness of the joints and tissues to extremely debilitating conditions accompanied by joint deformity.**

Osteoarthritis is commonly found among handicapped children. The cartilage around the joint is damaged, the space between bones become smaller, and movement is either painful or impossible.

(c) Congenital Malformations

Children can be born with a defect or malformation of anybody part or organ system. We will discuss only some of the more common or obvious malformation. Some congenital anomalies are not noticed at birth, but are discovered later. Not all of these anomalies are debilitating.

Common Malformations

Congenital malformations of the heart and/or blood vessels leading to and from the heart are serious conditions. However many children with congenital heart defects

Survive with advance medical treatments available now.

Congenital dislocation of the hip_is a fairly common genetic problem affecting more females than males. All can be corrected with use of casts/braces until the hip socket grows properly.

Other malformations include abnormalities of hand or foot (webbing of fingers or extra toe), and those of head and face (cranio facial abnormalities).

Malformations due to Teratogens

Some children are born with malformations due to genetic defects, others are damaged at some time during fetal development. Teratogens are viruses, bacteria, radiation, or chemical substances that damage the chromosomes of the parents or interfere with normal fetal development.

The baby born to a mother, who contracted German measles (rubella) during the first 3 months of pregnancy, would have a deformity.

Thalidomide is a well known teratogenic drug. Many pregnant woman who were given this drug in late 1950s and early 1960s, to control nausea and vomiting, gave birth to babies with extremely deformed or missing limbs. The "thalidomide babies" typically had limbs where hands and feet were directly attached to the torso.

(d) Accidents Infections & Other Conditions

Fall, burns, poisoning and accidents caused by automobiles and motorbikes can lead to neurological impairments and disfigurement. Poliomyelitis, caused by a viral infection that destroys the anterior horn cells in the spinal cord, is a serious debilitating condition which leas to paralysis of the limbs.

Diseases such as asthma (a chronic respiratory condition) cancer (that may lead to amputation of body parts) and AIDS (virus that interferes with body's immune system) can result in serious physical disabilities and health impairments.

- Learning Disabilities

When a child displays an educationally significant discrepancy between his/her estimated intellectual potential and actual school performance that cannot be explained in terms of intellectual, experiential, sensory or physical problems he/she may be labelled as having a learning disability (L.D.)

Many definitions of learning disabilities have been proposed since the early 1960s when Dr.Samuel Kerk first coined this term to describe children who experienced learning problems inspite of having normal or above normal intelligence. However, two definitions of L.D. are used most often. The first definition is given by IDEA (1977) of USA.

"Specific learning disability" – means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, read or write or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. The term does not include children who have learning problems, which are primarily the result of visual, hearing or motor handicaps, of mental retardation or emotional disturbance, or of environmental, cultural or economic disadvantage.

The second definition provided by the National Joint Committee on Learning Disabilities (1988), USA, is as follows:

Learning disabilities is a general term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities. These disorders are intrinsic to the individual, presumed to be due to central nervous system dysfunction and may occur across the life span. Problems in

self-regulatory behaviours social perception and social interaction may exist with learning disabilities but do not by themselves constitute a learning disability. Although learning disabilities may occur concomitantly with other handicapping conditions (for example, sensory impairment, mental retardation, serious emotional disturbance) or with extrinsic influences (such as cultural differences or insufficient or inappropriate instruction), they are not the result of those conditions or influences.

Basically, the difference between the two definitions rests in orientation about the causes of the disability. The IDEA definition reflects a medical orientation that was based on the earliest work done in this field by doctors who worked with people with brain injuries. The Joint Committee's definition states that an individual's learning disability may be due to central nervous system dysfunction, but allows for inclusion of persons who do not have such a dysfunction.

In order to be labelled as having a learning disability, a child must have an IQ score within the normal range, manifest academic difficulties resulting in discrepancy between expected and actual academic performance, and the disability must be the main cause for learning and school related problems.

A child classified as L.D. may have dyslexia, which is a severely impaired ability to read; disgraphia – an extreme difficulty in ability to write or discalculia, in which the ability to calculate or perform mathematical functions are seriously affected. Central nervous system dysfunction is believed to be the causative factor for dyslexia, disgraphia and discalculia.

- Attention Deficit Disorders

Central nervous system dysfunction can also lead to problems in attention. Children who do not focus on the task to be learned or who pay attention to the wrong features of the task are often said to have deficits in attention.

Definitions of a Attention Deficit Disorder

Children with attention deficit disorder are described as overactive, restless, impulsive, inattentive, distractible, easily frustrated, aggressive and unpredictable (Berdine and Blackhurst,1985)

Children with attention deficit disorder do not pay attention to the task or the correct features of the task to learn how to perform it well (Deutsch Smith & Luckasson 1992)

Attention deficit disorders occurs in association with learning disabilities some professionals infact consider it as a subgroup of learning disabilities.

- Attention Deficit and Hyperactivity Disorders

Hyperactivity is an impaired ability to it or concentrate for long periods of time.

Definitions of Attention Deficit/ Hyperactivity

Some children with central nervous system dysfunction display behavioural problems along with poor academic performance. They are hyperactive or impulsive (unable to control own behaviour) and display excessive movement. This condition is known as Attention Deficit/ Hyperactive Disorder.

According to American Psychiatric Association (1987), children, with Attention Deficit/Hyperactive Disorder have attentional problems and hyperactivity and impulsivity.

The American Psychiatric Association has also listed 14 behaviours that indicate attention deficit /hyperactivity disorder. The threads of inattention, hyperactivity and impulsivity are woven through out these diagnostic criteria.

To be diagnosed as having this disorder, a child must display at least 8 of the listed 14 behaviours, exhibit these behaviours more than most people of the same mental age, show the onset of these behaviours before seven years of age, and have had the behaviours for at least six months.

1.5. Summary

In order to understand children with special needs we must know the different adjectives or terms by which they are often described. Impairment, Disability and Handicap are terms, which are frequently used interchangeably. However, there are conceptual differences among the terms. The differences have been clearly outlined in the definitions of each of the terms by WHO in the International Classification of Impairment, Disability and Handicaps.

Impairment represents exteriorization of a pathological state and occurs at tissue level.

Disability refers to excesses or deficiencies of customarily expected activity, performance and behavior, and is located at the level of the person.

Handicap reflects the consequences for the individual - cultural, social, economic and environmental - that stem from the presence of impairment and disability.

1.6. Check Your Progress

[A] Fill in the Blanks

1. Inability to perform functional activities is called _____.
2. _____ is denoted by anomalies on organ, tissues, or functioning of body systems.
3. Limitations is fulfilling one's age appropriate socio-cultural role is known as _____.
4. Whereas _____ situation specific, _____ is an aspect of life.

[B] Match each of the disabilities with ensuing handicaps

Disability	**Handicap**
a) Loss of sight	i) Mobility
b) loss of hearing	ii) employment
c) loss of arms	iii) schooling
d) loss of legs	iv) communication
e) mental deficiency	v) self care

Answer

[A] Fill in the Blanks

1. Disability
2. Impairment
3. Handicap
4. Handicap, disability

[B] Match the following

A - I

B - iv

C - v

D - ii

E - iii

[C] Fill in the blanks

1. ---------- organises common characteristics into group and ---------- provides a name to the group

2. The commonly used approaches for classification of disabilities are --------- -and ----------.

3. Two advantages of classification are :

----

4. A partially sighted person is also known as a person with ---------- -----

5. Blind children should be educated through ---------- and other ------- -------

---------- aids.

6. We can measure hearing sensitivity is ----------.
7. Hearing impairment can be classified into ----------and ----------.
8. AAMR stands for ----------
9. In order to classified as mentally retarded an individual's IQ should be ---------- or ----------.
10. Orthopeadic disabilities are termed as ----------in the PWD Act.
11. Cerebral Palsy is a ---------- disorder.
12. Learning Disabilities is caused by the dysfunction of the ----------
13. ---------- , ---------- and ---------- are three categories of learning disabilities.
14. Two characteristics of Attention Deficit Disorder are ---------- & ----------
15. ----------, ---------- and ---------- are the major features of Attention Deficit/Hyperactivity Disorder.

[D] Match the following:

(a)	Visual Impairment	(i)	Petit mal
(b)	Hearing Impairment	(ii)	Academic difficulties
(c)	Mental Retardation	(iii)	Thalidomide
(d)	Cerebral Palsy	(iv)	Damage to anterior horn cells
(e)	Epilepsy	(v)	Deficits in adaptive behaviour
(f)	Poliomyelitis	(vii)	Problem
(g)	Teratogen	(viii)	Problems in processing linguistic information
(h)	Learning disabilities	(viiii)	Spasticity

ANSWER KEY

[C] Fill in the blanks

1. **Classification, label**
2. **Categorical, non-categorical**
3. **Any two of the following :**
   - **Helps in naming & differentiating between disabilities**
   - **Essential for research**
   - **Promotes formation of support groups**
   - **Helps development of treatments & therapies**
4. **Low vision**
5. **Braille, tactile / auditory**
6. **Decibels**
7. **Deaf, hard of hearing**
8. **American Association on Mental Retardation**
9. **70, below**
10. **locomotor disability**
11. **non.progressive**
12. **Central nervous system**
13. **Dyslexia, dysgraphia, dyscalculia**
14. **Any two of the following :**
    - **Over activity**
    - **Restlessness**
    - **Impulsivity**
    - **Aggressiveness**
    - **Unpredictability**
15. **Inattention, hyperactivity, impulsivity**

[D] Match following

A -- (vi) **E -- (i)**

B	**--**	**(vii)**		**F**	**--**	**(iv)**
C	**--**	**(v)**		**G**	**--**	**(iii)**
D	**--**	**(viii)**	**H**	**--**	**(ii)**	

1.7. Assignment/Activity

1.7.1. Select any one kind of disability and study 5 such disabled children. Subdivide in to subgroups on the basis of features observed.

1.8. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.8.1. Points for discussion

1.8.2. Points for clarification

1.10 References / Further Readings

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UNIT 4:SENSORY EFFICIENCY – IMPORTANCE AND PROCEDURES FOR TRAINING AUDITORY, TACTILE, OLFACTORY, GUSTATORY, KINAESTHETIC SENSES AND RESIDUAL VISION

STRUCTURE

UNIT 4:SENSORY EFFICIENCY – IMPORTANCE AND PROCEDURES FOR TRAINING AUDITORY, TACTILE, OLFACTORY, GUSTATORY, KINAESTHETIC SENSES AND RESIDUAL VISION

1.2. Introduction

This unit presents different models of understanding disability, and different resultant definitions. Disability in relation to poverty, development and human rights.

If you stand and observe the crowds in any big city in the world, you would be amazed to find the physical and psychological similarities and differences that exist across the members of the human species. Your observations will show that similarity goes hand in hand with diversity. Just as people wear unusual clothes or choose hairstyles to conform with fashion, their choice also display originality. Notwithstanding the unique character of each person, there is a tendency for us to classify people according to our expectation of type. We stereotype the Dhoti-Kurta clad man either as a traditional conservative Indian or a political figure, and long haired man in jeans and T.shirt as a college going city dweller youth.

It seems as through it is human nature to classify and categorise much of what appears in our environment. Classification is useful in that it helps us to reduce the complexity of our world by putting similar things together we classify animals, forms of transport, major and minor cities and towns things we like and don't like.

1.3. Objectives

To understand many social factors of disability and poverty.

To association of poverty and disability.

To Various models of disability etc…

1.4. DISABILITY AND POVERTY

The link between poverty and disability has been well documented. Poverty-related factors lead to many preventable impairments (e.g. malnutrition leading to stunting) and the social disadvantage of poverty feeds into that of impairment (e.g. making it almost impossible for a child with lower limb paralysis to get access to education). This leads to a perpetuation of the poverty cycle, as disability entrenches poverty.

Prevention programmes form part of the backbone of PHC. Such programmes often entail medical interventions and initiatives - such as immunization campaigns. However, this is only one dimension that needs to be addressed, and programmes must also include recognition of poverty-related factors that contribute to impairment, and recognition of factors in society (such as attitudinal and physical barriers) that discriminate against people with disabilities.

Prevention programmes need to be developed in conjunction with those for early identification and intervention, particularly for young

children. This is a priority where effective therapy can be provided for conditions for which definitive treatment is available (e.g. meningitis and TB), and for conditions that cannot be reversed, it improves the outcomes. A fundamental premise of early intervention programmes is that the disabling effects of impairments can be reduced, thus enabling children to live fuller lives.

1.5. CAUSES OF DISABILITY

The conservative estimate that 10 per cent of the world population was disabled needs to be reviewed. Three factors have led to a downward revision of the calculations. The first one concerns malnutrition.

The experts saw protein-caloric malnutrition as causing disability in about 100 million people, mostly children. Their views have changed, and this condition is now seen as a reversible impairment. It is not considered to cause chronic disability, except for some less frequent conditions such as xerophthalmia and cretinism, which affect some seven to ten million people. This change of view alone would have reduced the global prevalence rate; calculated now, it is about 4 to 7.5 per cent.

The second factor is that the duration of life after the occurrence of a disability (for a person in a developing country) was overestimated, and this reduces the estimated prevalence further.

The third factor is that the 10 percent estimate included a certain proportion of slightly disabled people. In view of the sometimes-unclear borderline between ability and disability, and the fact that slight disabilities less often lead to needs for rehabilitation services, it is proposed that we confine ourselves to identifying those who are moderately and severely disabled.

Current estimates based on causes of moderate and severe disability can be seen in Table 1.1 (Prejudice and Dignity, E Helander).The figure draws on a series of inquiries made in all relevant divisions and units of WHO. It is based on a large number of data and estimates from scientific publications,

professional observations and field studies. The Table and Fig illustrate an attempt to account for the causes of disability on a worldwide basis. There are four major contributors to disability: congenital or perinatal disturbances (15-20 percent), communicable diseases (about 20 per cent), non-communicable somatic and mental conditions (40 - 45 per cent), and trauma/injury (about 15 per cent). Some trauma is related to violence, and this may result in later physical and mental disability (Box). These numbers should be taken with caution. Many derive from limited studies on the prevalence of various chronic conditions, from extrapolations and from educated guesses. They do, however, give an idea of the large number of factors that contribute to disability.

1.6. Historical Developments

MEDICAL MODEL:

To date, services for disabled people have been based on an understanding of disability as individual pathology, the disabled person being seen as a problem to be corrected. Its development can be traced to the great strides in medical science and technology, which led many to believe that dysfunction could be explained through rational scientific argument; the cause of any condition regarded as abnormal being attributed to the malfunction of a physiological system. Pathology thus provided the means by which "dis"-ability could be distinguished from able-bodiedness, "ab"normality from normality. Disability as a malfunction has since grown to be seen as a specialised health problem, at the heart of which is an emphasis on clinical diagnosis. Consequently, the aim of medical rehabilitation is to assist the individual to be "as normal as possible".

Without a doubt, the contribution of modern medicine has led to increased survival rates and prolonged life expectancy for many disabled people, as well as the eradication of some disabling conditions. "But the issue for the late twentieth century is not one of life-expectancy but expectation of life and it is here that the negative and partial view prompted by the medicalisation of disability is most open to criticism." One of the implications of the medical model of disability is that it reduces problems of disabled people to their own personal inadequacies or functional limitations.

In addition, by focusing primarily on the impairment, secondarily on the individual who bears it and only minimally on the social and physical impairment, it contributes to the exclusion of disabled people from society.

Services for disabled people, based on this approach, tend to foster dependency. The very professional-client relationship "enshrines the professional in a world of exclusive and privileged knowledge and consequently entombs the disabled individual in a fundamentally dependent role". The services tend to be welfare-oriented, reflecting the perception of "looking after" or "providing for", and promote an attitude of dependence. Finally, the medical model provides the framework in which medical experts decide what they think disabled people need.

SOCIAL MODEL:

In contrast to the medical model, the social model of disability views the medical condition as only part of the so-called problem. Instead, it is realised that the problems that disabled people face are caused not primarily by their impairments, but by the way that society is organized to meet the needs of non-disabled (so-called "normal") people. In this view,

the focus of the problem is the disabling world. The result is that disabled people are unnecessarily segregated and excluded because of a badly designed built environment, inaccessible public transport and discriminatory attitudes and practices. By virtue of this, disabled people are an oppressed and marginalised group in society. It could be regarded as "apartheid of disabled people", as people do not have access to the same opportunities as others simply on the basis of a physiological characteristic.

Based on this view, intervention is not primarily focused on the individual disabled person, trying to bring about "normalisation", cure or care. Instead, it involves removing the barriers that prevent disabled people from exercising their right to participate in society; in other words, it involves challenging the disabling world.

1.7. Summary

1.8. Check Your Progress

1.9. Assignment/Activity

- **What are the different approaches used to derive definitions of disability?**
- **What is the difference between the functional and medical definitions of disability?**
- **According to Disability ACT 1995 passed by the government of India in the winter session of the Parliament, what is the definition of disabilities?**
- **What are the recent updates on the definition of disabilities in your country?**
- **Debate the issues concerning the definition of disability in your**

country.

1.10. Points For Discussion And Clarification

1.11. References / Further Readings

UNIT 5:TECHNIQUES OF TEACHING SOCIAL INTERACTION SKILLS, LEISURE AND RECREATION SKILLS AND SELF - DETERMINATION

STRUCTURE

UNIT 5: TECHNIQUES OF TEACHING SOCIAL INTERACTION SKILLS, LEISURE AND RECREATION SKILLS AND SELF - DETERMINATION STRUCTURE

3.1. Introduction

It is estimated that over 600 million people, or approximately 10 per cent of the world's population, have a disability of one form or another. Developing countries have around two thirds of the disabled. Only 2 per cent of children with disabilities in the developing world receive any education or rehabilitation. In India we have 2.1 percent population with disability. In India we have moved from charity to welfare and finally to rights based approach for persons with disabilities. We have also moved from the medical model of disability to social model which emphasizes that the society has to change in order to mainstream the persons with disability and provide them equal opportunities. In essence, this perspective on disability means viewing people with disabilities as subjects and not as objects. It entails moving away from viewing people with disabilities as problems towards viewing them as holders of rights. Importantly, it means locating problems outside the persons with disabilities. The disability rights debate is not so much about the enjoyment of specific rights as it is about ensuring the equal effective enjoyment of all human rights, without discrimination, by people with disabilities. The non-discrimination principle helps to make human rights in general relevant in the specific context of disability, just as it does in the contexts of age, sex and children. Nondiscrimination and the equal effective enjoyment of all human rights by people with disabilities, is therefore the dominant theme of the long-overdue reform in the way disability and the disabled are viewed throughout the world. The primary responsibility for ensuring respect for the rights of persons with disabilities rests with the government. Our government has taken various steps to provide equal opportunities to persons with disabilities by

enacting several Acts and implementing various policies and schemes for the empowerment of persons with disabilities. Our constitution guarantees equal rights to each individual. India is one of the first signatory to United Nations Convention on the Rights of Persons with Disabilities which means we have to adopt it in its full spirit. Let us have an overview of various legislations and policies related to persons with disabilities

3.2. Objectives

- To study about various legislations in India and others countries for medical disability.
- To learn about Constitutional remedy of disabilities
- To analysis other legislation remedy for medically disabilities.
- To analysis about various policies for disability and rehabilitation.
- To understand the why could we require to establishment of Rehabilitation Council of India.

3.3. A CRITICALANALYSIS OF VARIOUS LEGISLATIONS AND POLICIES ON DISABILITY IN INDIA

It is estimated that over 600 million people, or approximately 10 per cent of the world's population, have a disability of one form or another. Developing countries have around two thirds of the disabled. Only 2 per cent of children with disabilities in the developing world receive any education or rehabilitation. In India we have 2.1 percent population with disability. In India we have moved from charity to welfare and finally to rights based approach for persons with disabilities. We have also moved from the medical model of disability to social model which emphasizes that the society has to

change in order to mainstream the persons with disability and provide them equal opportunities. In essence, this perspective on disability means viewing people with disabilities as subjects and not as objects. It entails moving away from viewing people with disabilities as problems towards viewing them as holders of rights. Importantly, it means locating problems outside the persons with disabilities. The disability rights debate is not so much about the enjoyment of specific rights as it is about ensuring the equal effective enjoyment of all human rights, without discrimination, by people with disabilities. The non-discrimination principle helps to make human rights in general relevant in the specific context of disability, just as it does in the contexts of age, sex and children. Nondiscrimination and the equal effective enjoyment of all human rights by people with disabilities, is therefore the dominant theme of the long-overdue reform in the way disability and the disabled are viewed throughout the world. The primary responsibility for ensuring respect for the rights of persons with disabilities rests with the government. Our government has taken various steps to provide equal opportunities to persons with disabilities by enacting several Acts and implementing various policies and schemes for the empowerment of persons with disabilities. Our constitution guarantees equal rights to each individual. India is one of the first signatory to United Nations Convention on the Rights of Persons with Disabilities which means we have to adopt it in its full spirit.

Let us have an overview of various legislations and policies related to persons with disabilities.

3.3.1. AN OVERVIEW OF THE LEGISLATIONS AND POLICIES

3.3.1.1. CONSTITUTIONAL PROVISIONS

As per the Constitution of India, under right to equality, Article 14 guarantees equality for all its citizens before law and equal protection of law and similarly, Article 15 and 16 require the States to afford real equality, prohibits discrimination on the grounds of "religion, race, caste, sex, place of birth or any of them. Further, to ensure equality in the outcome, the Constitution of India in Article 16 (3 & 4) encourages the State to frame any law, make provision for the reservation of appointments or posts in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services. Disabled persons have the same fundamental rights as the non-disabled enjoy. Directive Principles of State Policy have to secure a social order in promotion of the welfare of the people. The State Policy has to be directed to minimize inequalities, secure right to an adequate means of livelihood and also secure that the operation of legal system promotes justice. The State shall make provisions for ensuring the right to work, education and public assistance in case of unemployment, old age, sickness and disablement and in other cases of under-served want. The State shall endeavour to provide for free and compulsory education for all children until they complete the age of 14 years. The State has also the responsibility of promoting with special care the educational and economic interests of the weaker sections of the people. All these provisions are equally applicable to the persons with disabilities.

3.3.2. MENTAL HEALTH ACT, 1987

The laws relating to treatment and care of persons with mental illness was earlier regulated by the Lunacy Act, 1912. This Act was replaced by the Mental Health Act 1987, with the objective that no stigma should be attached to such illness as it is curable, particularly when diagnosed at an early stage. Persons with mental illness are a part of the inclusive society and the state shall remove all barriers to ensure that persons with mental illness have full and equal opportunities to receive treatment, care and support and live a life of dignity.

The Mental Health Act ensures that:

- Persons with mental illness gain timely admission to psychiatric hospitals or nursing homes to receive treatment.
- Persons with mental illness live in a society that is inclusive and supportive to both persons with mental illness and non-disabled persons.
- To protect persons with mental illness against abuse from others and prevent them from committing abuse.
- Persons with mental illness exercise their right to receive care and maintenance during their time of stay in psychiatric hospitals and nursing homes.
- Persons with mental illness have access to guardianship if they seek assistance in taking care or managing their own affairs.
- Stringent systems are in place to establish psychiatric hospital and nursing homes and regulate the quality of services delivered.

- The Act also creates a central authority and state authorities for mental health services. These authorities have the responsibility to ensure the implementation of the act at the central and respective state levels.

3.3.3. THE REHABILITATION COUNCIL OF INDIA ACT, 1992

The Rehabilitation Council of India (RCI) Act came into force on 22nd June, 1993. The RCI Act was amended in 2000. The Act came into force in response to the need to have uniformity and ensure minimum standards and quality of education and training in the disability field. The RCI is entrusted with the responsibility to develop standardized syllabi for various rehabilitation courses, and to regulate and monitor services given to persons with disability. It also aims to maintain a Central Rehabilitation Register of all qualified professionals and personnel working in the field of Rehabilitation and Special Education. The Act also prescribes punitive action against unqualified persons delivering services to persons with disability. The Rehabilitation Council of India Act has the twin responsibilities of Standardizing and regulating the training of personnel and professionals in the field of Rehabilitation and Special Education and maintaining a Central Rehabilitation Register for registration of professionals and personnel working in the field.

Some of the objectives of the RCI are:

- To regulate the training policies and programmes in the field of Rehabilitation of people with disabilities;

- To prescribe minimum standards of education and training of various categories of professionals dealing with people with disabilities;
- To regulate these standards in all training institutions to !bring about uniformity throughout the country;
- To recognise institutions/universities running degree/diploma / certificate courses in the field of rehabilitation of the disabled and to withdraw recognition, wherever facilities are not satisfactory;
- To recognise foreign degrees/diplomas/certificates awarded by universities / institutions on a reciprocal basis;
- To maintain Central Rehabilitation Register of persons possessing the recognised Rehabilitation qualification;
- To encourage Continuing Rehabilitation Education (CRE) for professionals trained and working in the field, in collaboration with organisations working in the field of disability;
- To promote research in rehabilitation and special education;
- To recognise Vocational Rehabilitation Centres as human resource development centres.

Various Universities, Training Institutes and NGOs conduct training programmes recognized by the Rehabilitation Council of India. These training courses range from being Foundation Course and Certificate Course to Diploma, Degree and Post Graduate Diploma courses. Training Courses are launched by both distance education

and traditional face to face modes. Currently there are nearly 340 Institutions recognised by the council who are conducting 56 types of training programmes. Learners successfully completing their courses are eligible to register in the Central Rehabilitation Register maintained by the RCI. Successful learners are registered either under the 'Personnel' or the 'Professional' category depending upon the nature of training they have undergone. As a matter of fact, any rehabilitation professional wanting to practice in India in the field of disability rehabilitation must be registered by RCI. Professionals and personnel must also at specific times undergo re-training by attending various training courses in order to renew their registration.

3.3.4. THE PERSONS WITH DISABILITIES (EQUAL OPPORTUNITIES, PROTECTION OF RIGHTS AND FULL PARTICIPATION) ACT, 1995

A comprehensive legislation was passed by the Indian government in the winter session of the Parliament in the year 1995.

In this Act, the definition is as follows:

...

"(b) 'Blindness' refers to a condition where a person suffers from any of the following:

Conditions, namely

"(i) Total absence of sight;

"(ii) Visual acuity not exceeding 6/60 or 20/200 (snellen) in the better eye with correcting lenses; or

"(iii) Limitation of the field of vision subtending an angle of 20 degree or worse; ...

"(c) 'Cerebral palsy' means a group of non-progressive conditions of a person characterized by abnormal motor control posture resulting from brain insult or injuries occurring in the pre-natal or infant period of development;

"(d) "Disability" means:

"(i) Blindness;
"(ii) Low vision;
"(iii) Leprosy-cured;
"(iv) Hearing Impairment;
"(v) Locomotion Disability;
"(vi) Mental Retardation;
"(vii) Mental Illness;

"(l) 'Hearing impairment', means loss of sixty decibels or more in the better ear in the conversational range of frequencies;

"(n) ' Leprosy cured person,' means any person who has been cured of leprosy but is suffering from:

"(i) Loss of sensation in hands or feet as well as loss of sensation and paresis in the eye and eye-lid but with no manifest deformity;

"(ii) Manifest deformity and paresis but having sufficient mobility in their hands and feet to enable them to engage in normal economic activity;

"(iii) Extreme physical deformity as well as advanced age which prevents him from undertaking any gainful occupation, and the expression "leprosy cured" shall be constructed accordingly;

"(o) 'Locomotion disability' means disability of the bones, joints or muscles leading to substantial restriction of the limbs or any form of cerebral palsy;

"(q) 'Mental Illness' means any mental disorder other than mental retardation;

"(r) 'Mental Retardation' means a condition of arrested or incomplete development of mind of a person which is specially characterized by sub-normality of intelligence;

"(t) 'Person with disability' means a person suffering from not less than forty percent of any disability as certified by a medical authority;

> "(u) 'Person with low vision' means a person with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assertive device ...".

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995 (PwD Act) is the most important piece of legislation enacted by the Parliament in the history of disability movement in India. The Persons with Disabilities Act was passed in December 1995, and became enforceable on Wednesday, 7 February 1996. The passing of this Act gave effect to the proclamation on the full participation and equality of people with disabilities in the Asian and Pacific Regions.

The ESCAP (Economic and Social Commission for Asia and Pacific) declared the period 1993-2002 as the Asian and Pacific Decade of Disabled Persons. India, being a signatory to this proclamation, started the process for drafting and enacting a specific legislation that ensures equal opportunities and full participation and protects the rights of persons with disabilities. The drafting of the PwD Act was primarily led by persons with disabilities themselves with support from many like- minded professionals spanning both government and non-government organisations.

The Act puts the responsibility on society to provide equal opportunities to persons with disabilities for their full participation in everyday life. It prohibits discrimination on the ground of disability in every sphere of life and strives to create a society where persons with disability lead a life of equality and dignity.

The main objectives of the Persons with Disabilities Act are summarised as below:

a) To ensure that the government takes responsibility for prevention of disabilities, protection of the rights of persons with disabilities, provision of medical care, education, training, employment and rehabilitation of persons with disabilities.

b) To create a barrier- free environment for persons with disabilities.

c) To remove any discrimination against persons with disabilities in the sharing of development benefits

d) To protect persons with disabilities against abuses and exploitation. e) To lay down strategies that will ensure

comprehensive programmes and services and equal opportunities for persons with disabilities.

f) To make special provisions for including persons with disabilities in mainstream society.

g) To establish Co-ordination Committees and Executive Committees at the Central and State levels in order to ensure the full implementation of the provisions under the Act.

The PwD Act recognises the following seven disabilities:

1. Blindness,

2. Low vision,

3. Leprosy – cured,

4. Hearing impairment,

5. Locomotor Disability,

6. Mental retardation and

7. Mental Illness

3.3.5. NATIONAL POLICY FOR PERSONS WITH DISABILITIES, 2006

The National Policy for Persons with Disabilities was released in February 2006. The policy was developed in response to the need to have a comprehensive document that will inform all our decisions and actions in relation to provisions for persons with disabilities. The National Policy recognizes that persons with disabilities are valuable human resource for the country and seeks to create an environment

that provides them equal opportunities, protection of their rights and full participation in society. The policy is committed to ensure that persons with disabilities exercise their rights through a range of equal opportunities provided through provisions in early identification and support, education, rehabilitation programmes, employment, social security, barrier- free environment, trained human resources, recreation and cultural options, and access to appropriate aids and appliances. The policy emphasizes that children will receive education right from preschool years to primary education, secondary, post secondary and vocational training. Children will receive this education through a continuum of educational options ranging from regular schools, community based rehabilitation programmes to home- based programmes for children with severe disabilities, who choose to receive education in this mode. Education is to be always provided by trained and qualified persons. The policy makes a special mention of protecting the rights of young children with disabilities to access care, protection and security. It also highlights the need to ensure that children with all levels of ability are included in accessing education, recreation, rehabilitation, health and other specialized services. Women with disabilities get a special recognition in this policy. The policy focuses on supporting programmes which will provide education, employment and rehabilitation, developed for the unique needs of women with disabilities. The policy also highlights the need to protect women with disabilities against abuse and exploitation. The Ministry of Social Justice and Empowerment is the nodal agency to implement the provisions included in the National Policy. The Ministry coordinates the implementation of the policy in collaboration with many agencies including other related government agencies, disabled

people's organizations, NGOs working in the area of disability, representatives of family or parent associations and experts and professionals.

3.3.6. THE NATIONAL TRUST ACT (FOR THE WELFARE OF PERSONS WITH AUTISM, CEREBRAL PALSY, MENTAL RETARDATION AND MULTIPLE DISABILITIES) ACT 1999

3.3.6.1. INTRODUCTION

The National Trust is a statutory body under the Ministry of Social Justice and Empowerment, Government of India, setup under the "National Trust for the welfare of persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities" Act (Act 44 of 1999).

3.3.6.2. OBJECTIVES

- To enable and empower persons with disability to live as independently and as fully as possible within and as close to the community to which they live.
- To strengthen facilities to provide support to persons with disability.
- To extend support to registered organisations to provide needbased services during the period of crisis in the family of persons with disability.

- To deal with problems of persons with disability who do not have family support.
- To promote measures for the care and protection of persons with disability in the event of death of their parent or guardian;
- To evolve procedure for the appointment of guardians and trustees for persons with disability requiring such protection.
- To facilitate the realization of equal opportunities, protection of rights and full participation of persons with disability; and

3.3.6.3. THRUSTAREAS

- Campaign for effecting positive attitudinal change
- Programme which foster inclusion and independence by
  - Creating barrier
    - free environment
    - Developing skills.
    - Promoting self-help groups.
- Training and Support of Care givers and community members.
- Formation of local level committees to grant approval for guardianship.

- Development of sustainable models for Day Care, Home Based, Respite and Residential Care.
- Research in the four areas of Disabilities.
- Advocacy for the rights of persons with four disabilities.
- Programme for persons with severe disabilities and women with disabilities.

3.3.6.4. RESOURCEMOBILIZATION

- One-time contribution from Central Government
- Donations, Gifts, Grants.
- Benefactions, bequests or transfers from individuals and organisations.
- Funds in any other manner or from any other source.

3.3.6.5. PROGRAMMES

- Registration of Associations (of Parents and Non-Government Organisations).
- Formation of Local Level Committees.
- Appointment of Guardians.
- Support for a range of services including residential facilities
- Home Visiting/ Care Givers Programme.

- Development of Awareness and Training Material Community Participation Programme for Reach and Relief.
- Such other programmes which promote the objectives of the Trust.

3.3.6.6. COORDINATING AND IMPLEMENTING AGENCIES

- National Trust
- District level local committees.
- Registered Parents Associations and Non-Governmental Organisations.

3.4. UN CONVENTION ON THE RIGHTS OF THE PERSONS WITH DISABILITIES (UNCRPD) 2008

The Convention sets out the human rights of persons with disabilities and the obligations on States to promote protect and ensure those rights as well as mechanisms to support implementation and monitoring.

Article 3 sets out the General Principles that apply to the enjoyment of the rights of persons with disabilities. These are:

- Respect for inherent dignity, individual autonomy, including the freedom to make one's own choices and independence of persons
- Non-discrimination
- Full and effective participation and inclusion in society
- Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity

- Equality of opportunity
- Accessibility
- One-time contribution from Central Government Policies on Disability in India
- Equality between men and women Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities.

Article 4 provides that States Parties undertake to ensure and promote the full realization of all human rights and fundamental freedoms for all persons with disabilities without discrimination of any kind on the basis of disability. To this end some of the points for consideration by States are as below:

- To adopt all appropriate legislative, administrative and other measures for the implementation of the rights recognized in the present convention;
- To take all appropriate measures, including legislation, to modify or abolish existing laws, regulations, customs and practices that constitute discrimination against persons with disabilities;
- To take all appropriate measures to eliminate discrimination on the basis of disability by any person, organization or private enterprise;
- To undertake or promote research and development of universally designed goods, services, equipment and facilities, as defined in Article 2 of the present convention, which should require the minimum possible adaptation and the least cost to meet the

specific needs of a person with disabilities, to promote their availability and use, and to promote universal design in the !development of standards and guidelines;

- To provide accessible information to persons with disabilities about mobility aids, devices and assistive technologies, including new technologies, as well as other forms of assistance, support services and facilities;

- To promote the training of professionals and staff working with persons with disabilities in the rights recognized in this convention so as to better provide the assistance and services guaranteed by those rights.

There are other provisions in this Article covering economic, social and cultural rights, consultation with the persons with disabilities including children with disabilities through their representative organizations, better services already in existence to continue and no limitations and exceptions on the basis of region.

Article 24 of the convention is about the Rights on Education which highlights that the States Parties recognize the rights of persons with disabilities to education. With a view to realizing this right without discrimination and on the basis of equal opportunity, States Parties shall ensure an inclusive education system at all levels and lifelong learning directed to:

a) The full development of human potential and sense of dignity and self-worth, and the strengthening of respect for human rights, fundamental freedoms and human diversity;

b) The development by persons with disabilities of their personality, talents and creativity, as well as their mental and physical abilities, to their fullest potential;

c) Enabling persons with disabilities to participate effectively in a free society.

The ratification of the UNCRPD sets a major challenge as to how to bridge the huge gap that exists between the standards set by this international convention and the actual position of existing services, systems and policies, in our country. India needs now to undertake a massive exercise to bring all its domestic laws, policies, rules and regulations in harmony with this international treaty called the UNCRPD.

3.5. RIGHT TO EDUCATION ACT, 2008

Right to Education is very significant for children with disabilities as this fundamental right guarantees free and compulsory education to all children from age **six to fourteen years.** Inclusive education for children with disabilities has received the much needed attention, resources and opportunities under this Fundamental Right. The recently enacted Right to Education Bill promotes inclusive education for children with disabilities and reaffirms its commitment to ensuring that good quality education, with the appropriate levels of support is provided by skilled teachers in a healthy school environment situated close to a child's house. The Act lays down guidelines for bringing about positive changes in the education system that will enable all children who remain excluded from schools such as poor children, street children, migrant children, children with disabilities, girl child and so on to be an equal part of the school system and receive quality education. The Act underlines the focus on

including all children into the education system without giving consideration to their challenges, difficulties, academic achievement levels and other differences. It reaffirms that the system will make necessary changes, adaptations and creates support systems that will welcome all children into schools. The Act also emphasizes on the need to train teachers who will be competent to manage a wide range of needs of children coming from diverse backgrounds. Children with disabilities will receive adequate and appropriate support that will enable them to move around, gather information, make friends, learn from a curriculum that responds to their needs, read and write and take examinations, participate in social and extracurricular activities at school. The provisions of the Act will be implemented by the government at central level right through the States to the districts, blocks and villages of India. Both government and non-government agencies will work in close coordination to ensure that provisions under the Act reach every child between 6 to 14 years of age.

3.6. Summary

The legislations related to disabilities are being modified as per the recommendations of the UNCRPD. We need to actualize the concept of thinking globally and acting locally by making these legislations relevant to the actual needs of the persons with disabilities.

We need to focus on the overall mainstreaming of persons with disabilities by adopting the social model which is more inclusive and comprehensive. We need to take the spirit of UNCRPD in true sense which takes a more positive approach towards working with disability by embodying the principles of equality and the fulfillment of basic and fundamental human rights and freedoms. It calls for governments to

ensure that reasonable accommodations are made for persons with disabilities to carry on their activities at par with others. The Convention also encourages governments to oblige private parties and organizations to ensure that their services are accessible to all. It further recognizes the importance of all round development of disabled individuals and calls for accommodations and accessibility in areas like recreation and sports as well in addition to the general ones like education, employment.

We as a country need to implement the UNCRPD in its true spirit. Our Government is taking various initiatives in this direction. But still the services are not reaching the persons with disabilities. They are often excluded from mainstream, denied of their human rights; face various forms of discrimination ranging from denial of educational opportunities, to segregation and isolation because of the imposition of physical and social barriers. Despite progress in terms of legislation over the past decade, violations of the rights have not been systematically addressed.

3.7. Check Your Progress

True/False:

1. Right To Education Act, passed in year 2008 [ ]
2. According to RTE Act every children get free educatio [ ]
3. Article 24 of the convention is about the Rights on Education which highlights that the States Parties recognize the rights of persons with disabilities to education [ ]
4. RTE Act is Right to Equality Act, 2005
   [ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

3.8. Assignment/Activity

To do any other act this is incident to the aforesaid objects in given Acts.

3.9. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

3.9.1. Points for discussion

3.9.2. Points for clarification

3.10. References / Further Readings

- Government of India. Handbook on Disability Rehabilitation. New Delhi: National Information Centre on Disability Rehabilitation, Ministry of Social Justice and Empowerment.
- NCPED and NAB (1998). Role of NGOs vis-à-vis the employment scenario in India with reference to disabilities, New Delhi. Ray, D. (1987). Human Rights and Education: an overview.
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BLOCK 4: CURRICULAR ADAPTATION

UNIT 1:CURRICULAR ADAPTATION – NEED, IMPORTANCE AND PROCESS

STRUCTURE

UNIT 1: CURRICULAR ADAPTATION – NEED, IMPORTANCE AND PROCESS

1.1. Introduction

The Rehabilitation Council of India (RCI) was set up as a registered society in 1986. On September, 1992 the RCI Act was enacted by Parliament and it became a Statutory Body on 22 June 1993. The Act was amended by Parliament in 2000 to make it more broadbased. The mandate given to RCI is to regulate and monitor services given to persons with disability, to standardise syllabi and to maintain a Central Rehabilitation Register of all qualified professionals and personnel working in the field of Rehabilitation and Special Education. The Act also prescribes punitive action against unqualified persons delivering services to persons with disability.

1.2. Objectives

- To study of Rehabilitation In India
- To identify main function of Rehabilitation Council of India (RCI)
- Professionals who can apply for RCI accreditation

1.3. Rehabilitation Council of India (RCI)

The **Rehabilitation Council of India** (RCI) is the apex government body, set up under an Act of Parliament, to regulate training programmes and courses targeted at disabled, disadvantaged, and special education requirement communities. It is the only statutory council in India that is required to maintain the Central Rehabilitation Register which mainly documents details of all qualified professionals who operate and deliver training and educational programmes for the targeted communities. In the year 2000, the Rehabilitation Council of India (Amendment) Act, 2000, was introduced and notified consequently by the government of India. The amendment brought definitions and discussions provided within the earlier Rehabilitation Council of India

Act, 1992, under the ambit of a larger act, namely, Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995

Professionals who can apply for RCI accreditation

As per RCI, the following categories of professionals can apply for RCI's accreditation process. (To apply, the requirement is specifically that the professionals be providing services targeted towards communities for which RCI has been set up).

- Prosthetists and Orthotists
- Audiologists and Speech Therapists
- Clinical Psychologists
- Rehabilitation Counsellors, Administrators
- Rehabilitation Workshop Managers
- Rehabilitation Psychologists
- Rehabilitation Social Workers
- Rehabilitation Practitioners in Mental Retardation
- Speech Pathologists
- Special Teachers for Educating and Training the Handicapped
- Vocational Counsellors, Employment Officers and Placement Officers
- Multi-purpose Rehabilitation Therapists, Technicians
- Orientation and Mobility Specialists
- Community Based Rehabilitation Professionals

- Hearing and Ear Mould Technicians
- Rehabilitation Engineers and Technicians

The council has reportedly registered around 12,000 such professionals across India.

1.4. Summary

The **Rehabilitation Council of India** (RCI) is the apex government body, set up under an Act of Parliament, to regulate training programmes and courses targeted at disabled, disadvantaged, and special education requirement communities. It is the only statutory council in India that is required to maintain the Central Rehabilitation Register which mainly documents details of all qualified professionals who operate and deliver training and educational programmes for the targeted communities

1.5. Check Your Progress

True/False:

1. The **Rehabilitation Council of India** (RCI) passed in 20 [ ]
2. The council has reportedly registered around 12,000 such professionals across India
   [ ]
3. Article 24 of the convention is about the Rights on Education which highlights that the States Parties recognize the rights of persons with disabilities to education [ ]
4. RTE Act is Right to Equality Act, 2005
   [ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

1.6. Assignment/Activity

To study about Rehabilitation history in other countries like US, UK, and Ireland.

1.7. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.7.1. Points for discussion

1.7.2.

1.9 References / Further Readings

- Government of India. Handbook on Disability Rehabilitation. New Delhi: National Information Centre on Disability Rehabilitation, Ministry of Social Justice and Empowerment.
- NCPED and NAB (1998). Role of NGOs vis-à-vis the employment scenario in India with reference to disabilities, New Delhi. Ray, D. (1987). Human Rights and Education: an overview.
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UNIT 2:REASONABLE ACCOMMODATION – NEED AND PLANNING

STRUCTURE

INTRODUCTION

Every human society expects its future generation to be healthy. This depends on the birth and rearing of healthy children. To this end, preventive screening for genetic disorders, including developmental disabilities, is an essential component in uncovering possible disorders early, thus enabling timely medical intervention.

1.9. OBJECTIVES

After studying this unit you should be able to

- To Identify the various difference between incidence and prevalence of disability
- Understand the basic principles used in the development of incidence and prevalence of disability
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.10. PREVALENCE, INCIDENCE AND CAUSES OF DISABILITY

DISABILITY PREVENTION

Primary prevention involves action taken to reduce the occurrence of conditions likely to cause disability, for example, provision of proper water and sanitation facilities; vaccination against communicable diseases; health education; proper child-rearing; improved nutrition, hygiene and physical fitness; limitation of the availability and use of alcohol, drugs and tobacco; legislation to reduce accidents and diminish occupational health hazards; better roads and vehicles; better training of drivers; effective control of drugs and toxic products that have disabling effects; education of the public aimed at diminishing trauma/injury

caused by accidents; improved distribution and preparation of food; improved general level of education; measures to combat gross child neglect and abuse.

Secondary prevention takes place once a disabling disease or other condition is apparent, and interventions can be directed towards preventing the development of disability. Examples are early treatment of trachoma; use of effective drugs for communicable diseases such as leprosy, tuberculosis, onchocerciasis, meningitis, eye and ear infections, and for psychiatric disease and epilepsy; early ambulation after severe disease or surgery; elimination or reduction of risk factors or of continued exposure to hazardous agents or, if disabilities are already present, towards attempts at reversing these through curative treatment, e.g. surgical treatment of cataract, of contractures and deformities and so on. The action listed above under primary prevention is more or less equivalent to an entire community health development programme supplemented by multi-sectoral interventions at all levels. Secondary prevention is one of the roles of the health sectors. Disability prevention should be seen as a concept that applies to a large number of sectors. Rehabilitation is sometimes said to be tertiary level prevention, its objective being to overcome the difficulties experienced by a disabled person. This term will not be used here. Table 1.1 shows that the group of moderately and severely disabled children (aged 0 to 14) increases by not more than 3 million or about 9 percent; that of young people (15 to 29) by 29 percent, the adults (30 to 64) by 112 percent; and the group aged 65 and over by 236 percent. The average estimated increase from year 2000 to 2035 is 124 percent, i.e. from some 234 million to 524 million moderately and severely disabled people. At that time the prevalence of moderate and severe disability will be very close to what it is now in the industrialised countries.

Changes are also seen in the more developed regions. Projections for these countries (under the same assumptions) show that the prevalence in 2035 of "moderate and severe disability" will be 11.8 percent.

The third factor concerns the influences of the environment. . The environment in the developing countries will undergo a variety of changes in the future. These will include increased urbanization, more traffic, industrial development (causing pollution and injuries), and increased use of hazardous chemical substances and of machinery in agriculture, deterioration of air, water and sanitation systems. All these are likely to contribute to an increased incidence of disability.

On the other hand, it is likely that some other changes may decrease the occurrence or severity of disability; e.g. better education and health, a lower pregnancy rate, improved child-rearing, less poverty, improved housing, shorter working hours and better communications. Based on these three factors, we may now make a forecast for the next 35 years. In the less developed regions, where in 2000 we have about 4.8 percent moderately or severely disabled people, we will some 35 years later have 7.0 percent.

To sum up the positive effects of prevention will be more than offset by many other factors that will influence the incidence, and as people live longer the prevalence will tend to go up. If one combines the effects of prevention (for communicable diseases and malnutrition) with the effects of a changed age distribution, it is very likely that the number of disabled people in the age groups under 30 will remain largely unchanged. The increase of such people in the age groups above 30 will be considerable, and in the group above 65 it will be dramatic. By the year 2035, there will be at least 540 million moderately and

severely disabled people in the developing countries. Compared with today, the prevalence will more than double in one generation.

It is understood that it is difficult to estimate the prevalence, the incidence and the causes of disability. The fact that there are few reliable studies and facts reflect the low priority given to people with disabilities in all sectors. Estimates like those made above are to a large extent based on educated guesses and experience. To better plan for the future, a clear set of internationally agreed disability definitions is needed, the survey technology has to be standardized, and more adequate scientific studies should be done.

When this has been achieved, the above predictions should be revised. In the meantime, it would be reasonable to assume that the prevalence of moderately and severely disabled people in the less developed regions is about 234 million in 2000, to increase by 2035 to about 525 million. The corresponding global numbers are about 335 million in 2000, to increase by 2035 to about 667 million. Close to ten million severely or moderately disabled people are added each year to the total global figure - or about 25,000 a day.

These figures point to the urgency of seeking solutions as to how best to provide the necessary services for disabled people, in a system that also gives them adequate representation and equal opportunities, and that promotes their human rights.

Table 1.1: Expected increase in the prevalence of moderately and severely disabled people, on the assumption of no change other than in age composition.

AGE GROUP	LESS DEVELOPED REGIONS MILLION DISABLED PEOPLE 2000 2035		CHANGE %	MORE DEVELOPED REGIONS MILLION DISABLED PEOPLE 2000	2035	CHANGE %
0 - 4	7,2	7,6	+ 5	0.86	0.85	- 1
5 - 14	27,4	30,4	+ 11	3.93	3.40	- 14
15 - 29	27,3	35,1	+ 29	5.11	4.41	- 14
30 - 64	101,4	214,8	+ 112	36.94	38,99	+6
65+	70,6	237,0	+ 236	54.28	94,26	+74
TOTAL/AVG	233,9	524,9	+ 124	101.08	141,91	+40
% of total Population	4.8	7,0	+ 46	8.5	11.8	+ 39

1.11. Early Recognition And Intervention For Prevention Of Disability And Its Complications

1.11.1. Introduction

Birth defects, i.e. congenital disorders present at birth, occur in 2%-4% of all neonates. These abnormalities may be caused by environmental factors that affect the mother, or are inherited via abnormal genes from the carrier or affected parent. Such disorders account for about 20% of deaths during the neonatal period and a higher percentage of morbidity in infancy and childhood. With the dramatic decrease in infant mortality due to

improvement in the control of infections and malnutrition-related disorders, chronic disabling conditions are an emerging challenge facing developing and industrialized nations.

1.11.2. Occurrence and prevalence

Occurrence and prevalence: Prevalence rates of the various types of disability vary in different populations. Although only a limited number of national surveys have been conducted to identify the etiological factors in the development of disability, it is generally believed that 76% of disability is caused by genetic factors. In one survey, it was shown that 21.9% of cases of disability resulted from prenatal damage; 3.0% arose from perinatal factors; 29.0% were acquired during infancy and early childhood and 47.0% had no known cause. The overall prevalence rate of disabled children was 2.7% and age-specific prevalence rates showed an increase with age.

1.11.3. Etiological factors

Etiological factors: Disability may be developmental or acquired and may arise from prenatal damage, perinatal factors, acquired neonatal factors and early childhood factors. These may include genetic factors, infections, traumatic or toxic exposure or nutritional factors that result in perinatal or postnatal damage.

Etiological factors of disability among children at different stages are:

• Prenatal: genetic factors, genetic diseases, developmental malformation, maternal age, maternal diseases, drugs/medicines/chemicals/radiation, consanguinity, and ethnic group.

• Perinatal: low birth weight/prematurity, obstetric complications, and trauma during labour, asphyxia, and intracranial haemorrhage.

• Postnatal: infections (poliomyelitis, tuberculosis, meningitis, encephalitis), endemic diseases (goitre, cretinism), accidents, malnutrition, poisoning, tumours, environmental factors, and psychosocial problems.

The causative factors leading to disability are heterogeneous and complex, and their contribution in producing disability may differ in different populations. Furthermore, the etiology of a substantial percentage of disability remains unknown.

1.11.4. Prevention

Prevention

Every human society expects its future generation to be healthy. This depends on the birth and rearing of healthy children. To this end, preventive screening for genetic disorders, including developmental disabilities, is an essential component in uncovering possible disorders early, thus enabling timely medical intervention.

Such efforts are also required in order to reduce the expression and severity of disability. The ability of a physically or mentally disabled child to cope with and adapt to everyday life may be minimal compared to that of a normal child, and the disabled child may continuously suffer from trying to perform the functions so normal to others. This can have a major influence on the personality of the child that in turn can affect normal growth and development. Of particular distress is the fact that some disabled children never reach adulthood and some are at risk of developing other associated complications that may further disrupt their social and emotional development. These children and their families are under continuous mental and physical stress and require comprehensive services in order to help the children have a near normal life.

In addition, many disabled people require a continuous health care system, home help and other supportive services, which makes care programmes very costly. The management of childhood disabilities requires substantial medical, educational, social and rehabilitative care. The cost of preventive efforts is substantially lower and thus cost-effectiveness favours the prevention approach.

Stages of prevention

Endeavors for controlling disability can be categorized as primary, secondary and tertiary prevention.

Primary prevention

This involves the prevention of the manifestation of the disability. It may be universal (i.e. prevention desirable for everyone), or be restricted to a selected population (i.e. prevention recommended for high-risk groups) or to an indicated population (i.e. prevention in individuals with an identified risk).

Primary efforts are directed toward reducing the actual occurrence of disabilities and they employ measures that prevent the conception of a disabled individual or delay the disabling process. Primary prevention efforts include:

- Genetic counseling,
- Immunization programmes,
- Improved prenatal, perinatal and postnatal care,
- Regulations and legislation, and
- Other related means.

1.11.5. Genetic counseling

Genetic counseling

Genetic counseling is an essential part of primary prevention strategies. It is the process of providing information on genetic (recurrence) risk, the nature and consequence of genetic disorders and the means available for the prevention of transmission of defective genes. Within this framework, there are three major aspects essential to effective counseling, which are:

- Diagnostic aspects, where an accurate diagnosis is required for a secure foundation for advice,
- Estimation of risk, and
- Preventive or ameliorative measures to ensure that those who are advised will benefit.

One of the prime requirements of an effective genetic counseling programme is to ascertain which individuals are at risk of having an affected child so that they can be offered advice. Genetic screening and counseling prior to conception is important for the control of genetically determined disabilities. Many studies have shown that genetic counseling of carriers, premarital couples, couples with a disabled child and other family members produces better understanding of the issues involved and hence has an impact on the subsequent reproductive decision. Several studies have shown that the number of children born with a serious genetic disorder leading to disability decreases significantly following genetic counseling.

The best example of the successful application of this prevention strategy to prevent the birth of homozygotes for a certain disorder is the thalassaemia control programme in Cyprus. Through health education, together with population screening and genetic counseling of carriers and prevention of carrier marriages, it was possible to reduce the homozygous affected births from 53 per 8594 births in 1974 to 0 per 10,752 in 1988 and 2 per 10,830 in 1990. The percentage of

prevention achieved was 1.8% in 1974, 100% in 1988 and 97% in 1990. A similar approach when applied to other disorders could be equally successful.

Immunization programmes

Programmes of general immunization during infancy have led to a remarkable decrease in, or in a few cases a complete absence of, several infectious diseases that used to be a major cause of disability. These include poliomyelitis, tuberculosis, meningitis and encephalitis.

Improved prenatal, perinatal and postnatal health care

This aspect of prevention concentrates on the management of maternal risk, factors at the time of delivery and support for the premature or compromised neonate.

Regulations and legislation

Certain health regulations and legislation, such as mandating immunization of infants, also play an important role in primary prevention.

Secondary prevention

Secondary prevention strategies aim at reducing the duration or severity of disability. These activities provide early identification of the disabling condition followed by prompt treatment and intervention to minimize the development of disability. These strategies can be applied at either the prenatal or neonatal level. Some of the conditions that can be diagnosed during the prenatal and neonatal stages are listed in Table.

Neonatal screening (organized examination of all neonates in order to diagnose specific disorders so that they can be treated) is a well-established preventive approach and includes both clinical and biochemical screening. In

some countries, such information is available but in others, there is no information on detection frequency at birth of genetic disorders.

At the neonatal level, screening of neonates and proper intervention in those affected has been successful in reducing disability. Examples of the usefulness of such action are shown in Table 2. [?] The best-known example of secondary intervention is that of neonatal screening for phenylketonuria (PKU), other aminoacidurias, hypothyroidism, the thalassaemias and other haemoglobinopathies. In PKU and other aminoacidurias, once the baby is diagnosed as having an abnormality, proper measures are taken by providing special diets.

Biochemical screening was first introduced for PKU in 1966 when it was shown that a low phenylalanine diet started in the first week of life prevents severe mental retardation. To screen for PKU, blood samples are usually taken by heel prick between 5 and 10 days after birth, when the body's metabolism has stabilized sufficiently for the results to be reliable. Screening for PKU is now established in several countries and screening for other abnormalities is also carried out, particularly since the advent of recombinent DNA technology. Hypothyroidism diagnosed during the neonatal period is treated by hormone replacement therapy, which encourages normal development and prevents complications such as mental retardation. In sickle-cell disease and thalassaemia patients, early detection enables better development and growth.

New forms of secondary prevention, such as genetic or surgical manipulation of an affected fetus to eradicate the biochemical or anatomical abnormality, are being tried, some with a high degree of success. This is true for congenital heart disease, cleft lip and cleft palate, congenital dislocation of the hip and others.

1.11.6. Tertiary prevention

Tertiary prevention

Tertiary prevention aims at limiting or reducing the effects of a disorder or disability that is already present. It involves long-term care and management of a chronic condition, e.g. rehabilitation or correction of the disability by surgical measures or by adopting strategies by which the disabled person can lead a normal or near normal life. The main aims of rehabilitation of the disabled are:

- to increase awareness of disabilities and the needs of disabled people;
- to encourage their full integration in society; and
- to improve prevention and stimulate a more sensitive and understanding attitude.

These measures also include special education programmes. Only 50 years ago, the majority of disabled people were left illiterate. However, during the past three or four decades, considerable efforts have been made to develop special education programmes to educate blind-deaf-mute, deaf-mute, blind and mentally retarded patients. Special schools with specially trained teachers have provided excellent education programmes that have helped disabled people achieve goals that, in many ways, are similar to those of normal individuals.

Early recognition of disability

To apply any of the previously mentioned preventive measures successfully, the first step is an accurate and early recognition of the disability. Some impairment features are physical and obvious during clinical examination. These include skeletal abnormalities, blindness, hearing and speech disorders, some mental disorders and the chromosomal anomalies such as trisomy 18 or 21, Klinefelter syndrome and Turner syndrome. However, several other disorders do not become evident until later in life, although diagnosis may be made prior to the appearance of the disability or its complications. This has been possible using biochemical tests and, more recently, by applying recombinant DNA technology

to the identification of the molecular basis of genetic disability. The family in general and the mother in particular play a significant role in the early detection of disability. Abnormalities in development, both physical and others, and in learning ability, may become obvious to the diligent eyes of the mother much earlier than a clinical diagnosis can be made. Early detection and early intervention can avoid the precipitation of several of the disabilities and can reduce the impact the disability may have on the family.

Once a diagnosis of genetic disorder is made in the carrier parents, proper counseling and premarital testing can prevent pregnancy with a child with an abnormality. If conception has taken place, then prenatal diagnosis can be used; if the fetus is found to be abnormal, appropriate measures can be adopted and the parents can prepare themselves to look after a disabled child. If the child is diagnosed as having a disease that may lead to a disability, then proper intervention programmes can be started at an early stage and can help ameliorate the effect of the disabling condition. Some examples of the usefulness of early detection and intervention are presented in Table.

Medical and/or surgical approaches to preventive intervention provide whatever is necessary to overcome or correct disabilities and strengthen the family unit in order to enhance the abilities of disabled children and their families to cope.

Injuries

Worldwide, injury is a leading cause of death in childhood and a major cause of morbidity and long-term disability. The implementation of prevention strategies of proven efficacy is of major public health importance. Finding out "what works" in injury control is of tremendous public health importance. Systematic literature reviews and meta-analyses are invaluable methods of synthesizing the existing evidence from evaluation studies. Health care providers, policy makers and injury

control professionals are faced with large amounts of information, distributed in a large number of sources, and need systematic reviews to provide a basis for rational decision making. It is quite likely that when currently available evidence on the efficacy of injury prevention interventions is thoroughly synthesized, many interventions believed to be effective will be shown to be ineffective and vice versa. In addition, systematic reviews are likely to show that some proposals for future research are redundant because intervention efficacy can already be established from existing evidence. Most importantly, such reviews will clarify which programs are appropriate to implement on a broader scale.

Hundreds of childhood injury prevention programs have been implemented; many have been evaluated in controlled trials. Injury prevention professionals in health departments, community agencies and other organizations need to have data on which interventions are effective and which make sense to replicate in their community. Most importantly, our hope is that it will reduce morbidity and mortality from injuries to children and adolescents.

1.11.7. Infections and causes

Infections and causes

Diphtheria

Description	**A respiratory disease caused by bacteria**
Symptoms	**Gradual onset of a sore throat and low-grade fever**
Complications	**Airway obstruction, coma, and death if not treated**
Transmission	**Spread by coughing and sneezing**
Vaccine	**Diphtheria toxoid (contained in DTP, DTaP, DT or Td vaccines) can prevent this disease.**

Haemophilus influenzae type b (Hib)

Description	**A severe bacterial infection, occurring primarily in infants**

Symptoms	Skin and throat infections, meningitis, pneumonia, sepsis, and arthritis (Can be serious in children under age 1, but there is little risk of getting the disease after age 5)
Complications	Hib meningitis (death in one out of 20 children, and permanent brain damage in 10% - 30% of the survivors)
Transmission	Spread by coughing and sneezing
Vaccine	Hib vaccine can prevent this disease.

Hepatitis A

Description	A disease of the liver caused by hepatitis A virus
Symptoms	Potentially none (likelihood of symptoms increases with the person's age) If present: yellow skin or eyes, tiredness, stomach ache, loss of appetite, or nausea
Complications	Because young children might not have symptoms, the disease is often not recognized until the child's caregiver becomes ill with hepatitis A.
Transmission	Most often: spread by the fecal-oral route (An object contaminated with the stool of a person with hepatitis A is put into another person's mouth.) Less often: spread by swallowing food or water that contains the virus
Vaccine	Hepatitis A vaccine will prevent this disease.

Hepatitis B

Description	A disease of the liver caused by hepatitis B virus
Symptoms	Potentially none when first infected (likelihood of early symptoms increases with the person's age) If present: yellow skin or eyes, tiredness, stomach ache, loss of appetite, nausea, or joint pain
Complications	The younger the person, the greater the likelihood of staying infected and having life-long liver problems, such as scarring of the liver and liver cancer
Transmission	Spread through contact with the blood of an infected person or by having sex with an infected person

Vaccine	Hepatitis B vaccine is will prevent this disease.

Measles

Description	A respiratory disease caused by a virus
Symptoms	Measles virus causes rash, high fever, cough, runny nose, and red, watery eyes, lasting about a week.
Complications	Diarrhea, ear infections, pneumonia, encephalitis, seizures, and death
Transmission	Spread by coughing and sneezing (highly contagious)
Vaccine	Measles vaccine (contained in MMR, MR and measles vaccines) can prevent this disease.
Details	Related pages on measles

Mumps

Description	A disease of the lymph nodes caused by a virus
Symptoms	Fever, headache, muscle ache, and swelling of the lymph nodes close to the jaw
Complications	Meningitis, inflammation of the testicles or ovaries, inflammation of the pancreas and deafness (usually permanent)
Transmission	Spread by coughing and sneezing
Vaccine	Mumps vaccine (contained in MMR) can prevent this disease.
Details	Related pages on mumps

Pertussis (whooping cough)

Description	A respiratory disease caused by bacteria
Symptoms	Severe spasms of coughing that can interfere with eating, drinking, and breathing
Complications	Pneumonia, encephalitis (due to lack of oxygen), and death, especially in infants.
Transmission	Spread by coughing and sneezing (highly contagious)
Vaccine	Pertussis vaccine (contained in DTP and DTaP) can prevent this disease.

Polio

Description	A disease of the lymphatic and nervous systems
Symptoms	Fever, sore throat, nausea, headaches, stomach aches, and stiffness in the neck, back, and legs
Complications	Paralysis that can lead to permanent disability and death
Transmission	Contact with an infected person
Vaccine	Polio vaccine (IPV) can prevent this disease.

Rubella (German measles)

Description	A respiratory disease caused by a virus
Symptoms	Rash and fever for two to three days (mild disease in children and young adults)
Complications	Birth defects if acquired by a pregnant woman: deafness, cataracts, heart defects, mental retardation, and liver and spleen damage (at least a 20% chance of damage to the fetus if a woman is infected early in pregnancy)
Transmission	Spread by coughing and sneezing
Vaccine	Rubella vaccine (contained in MMR vaccine) can prevent this disease.
Details	Related pages on rubella

Tetanus (lockjaw)

Description	A disease of the nervous system caused by a bacteria
Symptoms	Early symptoms: lockjaw, stiffness in the neck and abdomen, and difficulty swallowing Later symptoms: fever, elevated blood pressure, and severe muscle spasms
Complications	Death in one third of the cases, especially people over age 50
Transmission	Enters the body through a break in the skin
Vaccine	Tetanus toxoid (contained in DTP, DT, DTaP & Td vaccines) can prevent this disease.
Details	Related pages on tetanus

Varicella (chickenpox)

Description	A virus of the herpes family
Symptoms	A skin rash of blister-like lesions, usually on the face, scalp, or trunk
Complications	Bacterial infection of the skin, swelling of the brain, and pneumonia (usually more severe in children 13 or older and adults)
Transmission	Spread by coughing and sneezing (highly contagious)
Vaccine	Varicella vaccine can prevent this disease.

1.11.8. Prevalence calculation

Prevalence calculation: The calculations in this unit of the prevalence, incidence, and causes of disability have been limited to those disabling conditions for which there is a known effective technology. The statistics are translated into requirements for services, interventions, activities and opportunities concerning disabled people in the developing countries. The requirements thus quantified can be used for resource planning e.g. budgets and personnel.

In the past, many organizations have used the estimated numbers of disabled people in developing countries for the purposes of raising awareness of a large-scale problem and as justification for fund-raising. The numbers given here can also be used for such aims, with the understanding that at each turn of the calculations, certain qualifications are added. This means they are to be used with a great deal of caution. As we have noted, disability is not a well-defined condition, and there are many terminological and conceptual difficulties. Moreover, the available statistics from the developing countries are not very reliable, and more "hard data" are required before more accurate conclusions can be drawn. Also, to the same extent as health conditions vary from country to country, disabled people's needs will differ from one country to the next.

1.12. Summary

The emotional pressures of living with disability can be immense. Sometimes, the feeling can be overwhelming. Talking to a counsellor give families with a child with disability or persons with a disability a chance to talk about what it really feels like.

1.13. Check Your Progress

Q.1 Define given terms:

1. **Tertiary prevention**
2. **Immunization programmes**
3. **Genetic counseling**

1.14. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.14.1. Points for discussion

1.14.2. Points for clarification

1.8 References / Further Readings

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UNIT 3:PLANNING OF LESSONS FOR TEACHING EXPANDED CORE CURRICULUM – INDIVIDUALIZED EDUCATION PROGRAM WRITING

STRUCTURE

3.1. INTRODUCTION

One of the most frequent questions asked is how did Portage get its name. The original Portage model was developed in Portage, Wisconsin in the United States. That is only coincidental to the name. The main reason is the definition of the word Portage. Webster's New World Dictionary defines Portage as "The act of carrying or transporting". This definition is the true reason that we chose to call it the Portage project. It wasn't because of where it was located, but instead it was because it signified that we were developing a home based intervention model where we carried or transported the information and intervention into the home, in the child's and family's natural environment and carried it from professional to parents.

3.2. Objectives

- The key components of the Projected Growth of The World Population
- To calculate a database on the prevalence of disability using UNDP
- The key components of the original Portage model

3.3. Projected Growth Of The World Population

Disability is a global phenomenon of huge proportions. Before estimating its magnitude, an account will be given of the projected development of the world population (Table 2.1). The world population is growing rapidly by about 40 per cent from 2000 to 2035. The growth, however, is uneven. In the more developed regions, there will be no increase, whereas in the less developed regions it is forecast at about 50 per cent. The increase is most pronounced in the older age groups. (Table 2.3).

As disability is more common among the elderly, this rapid increase of the population aged 65 and above will have clear implications for the future prevalence of disability.

How to calculate a database on the prevalence of disability using UNDP rate and population census data?

Several global estimates of the prevalence of disability have been made in the past. The most often cited is the one made by the author in 1974, which was published by WHO in 1976. This estimate - 10 percent of the world population – was based on calculations of disability rates resulting from diseases, trauma, malnutrition, genetic causes, etc., available at that time. These included a high proportion of people with slight and/or reversible disabilities, such as those caused by malnutrition. Since then, a large number of surveys and studies have been made. The results of these surveys from 55 different countries vary dramatically, ranging from 0.2 per cent of the population to 21 per cent.

There are a number of problems related to these studies. The magnitude of the variance is more a reflection of survey methods used than the actual number of disabled in the various countries. It illustrates the urgency of standardizing disability definitions and survey technology. A more detailed study of disability surveys is published elsewhere. In this context I have chosen to reproduce a few data taken from some interesting surveys, one African, one American, one Asian, and one European. The results are shown in Table 2.4. The British study was carried out on a representative sample of the population in 1985. The Canadian one similarly builds on a representative sample and took place in 1986. The Chinese study has a sample of 1.5 million people, and it was carried out in 1987. For comparison, I am also reproducing the results of a population census in Mali in 1976.

Table 2. 2: World population, as projected (medium-variant) by United Nations, 2000-2035

POPULATION IN MILLIONS			
Year	**In more developed regions**	**In less developed regions**	**Total**
2000	1,187	4,904	6,091
2005	1,197	5,293	6,491
2010	1,206	5,684	6,890
2015	1,214	6,072	7,286
2020	1,219	6,458	7,672
2025	1,221	6,819	8,039
2030	1,212	7,159	8,371
2035	1,201	7,468	8,669

Table 2. 3: Population in less developed regions. Projection by age groups.

AGE GROUP	POPULATION IN MILLIONS 2000	2035	GROWTH
0 - 4	555	583	+ 5%
5 - 14	1,052	1,170	+ 11%
15 - 29	1,326	1,704	+ 29%
30 - 64	1,724	3,211	+ 86%
65+	247	800	+ 224%
TOTAL	4,904	7,468	+ 52%

As seen from Table 2.4, there appear to be large differences in the "all disability" prevalence rates between Canada and Great Britain on the one hand and China and Mali on the other. This is not surprising, one reason being that different survey methods were used. But there are also large discrepancies regarding age composition and health situation. For instance, the China data mainly include people with moderate and severe disability and underestimate some large groups of people with chronic non-communicable somatic diseases, such as rheumatic back pain and joint conditions. Half of the disability seen in Canada is mild or slight. If we compare the rate of the moderate and severe disability in Canada with the one observed in China, the differences in each five-year group are small.

The total disability prevalence in China is 4.8 per cent. This relatively low figure is partly due to the present age composition of the population. If we were to

simulate a situation where the Chinese population had the same age distribution as the one we find in the industrialised countries, the average total prevalence in China would come to 7.7 per cent.

The British study is based on a questionnaire and types of examinations that are different from (Prevalence, incidence and causes of disability those applied in the Canada and China surveys. The prevalence is 11.6 per cent; one quarter represents slight disability. Moderate and severe disability (severity categories 3-10) total 8.6 percent. In this study, as in the others, the prevalence decreases from age group 10 to 14 to group 15 to 19. This might be attributed to a change of disability recognition at the end of school age. In the age groups 30 - 69, the Chinese rates are the lowest of the three countries shown in the table. This could be explained by a higher mortality rate before the age of 30. In the groups aged 70 and above, differences are small.

Comparing the Mali census (1976) with the others, one notices some differences. The prevalence of disability in children is lower; this can be explained by the fact that disability is not a "diagnosis" made early in life in Mali. Parents believe their child to be sick and to recover sooner or later, which is why the label "disabled" is not used. Another likely reason for this low prevalence is an excessive mortality. In 1976, the under-five mortality rate was estimated to be about 32 percent, and it is likely that a large proportion of disabled children had died early. In the age group 15 to 64, the prevalence numbers do not differ much from those for moderate and severe disability in the other countries. After age 65, few disabled Malians survive, and disabling symptoms are seen as "normal in elderly people." Hence an elderly family member is not always perceived as disabled, even if afflicted with severe functional limitations and activity restrictions leading to total dependence on others.

In the last column of Table 2.4, see the "global operative prevalence rate of moderate and severe disability." The rate shown is based on observations and attempts to identify a compromise among the individual prevalence rates of the four countries. The justification is that the differences are not great, looking at the prevalence in each 5-year group. This assumed rate will be used for all the calculations of prevalence of disability and needs of rehabilitation. For each country, this prevalence can be calculated individually, based on the age composition. This technique may be called "rapid calculation of disability prevalence".

Using this assumed rate and the UN population statistics for 2000, we will arrive at a global estimate of the prevalence rate of moderate and severe disability of 5.5 per cent as shown in Table 2.5. This is an aggregate of prevalence of 8.5 per cent for the more developed regions and of 4.8 per cent for the less developed regions.

This brings us to the total estimate for 2000 of 335 million moderately and severely disabled people in the world, of whom about 101 million (30%) live in the more developed regions and 234 million (70%) live in the less developed ones. For age composition see Table 2.6.

It would be reasonable to assume that most of the moderately and severely disabled people are dependent on others physically, psychologically, socially, or economically. Most of them live below the poverty level.

The figures above obviously do not include temporary or short-term disability caused by curable diseases or reversible conditions, or terminal disability associated with severe disease (unless such disease is slow and

degenerative). If such disability had been included, the prevalence of disabled people would increase considerably.

In the developing countries, there are large numbers of people who have a long lasting or recurrent disability resulting, for instance, from bacterial or parasitic diseases, cancer or HIV infection. These people need care, but only a limited number of them could be expected to join a rehabilitation programme. It is for this reason that they have not been included in the above calculations. In most of the cases indicated in Table 10, the underlying condition is chronic, long lasting or even lifelong. This does not mean that the dependency associated with the given disability must remain lifelong. For a large proportion of disabled people we are able, through rehabilitation, to eliminate or reduce the dependency. It is clear that more accurate estimates would have been possible had there been access to more high quality surveys.

Table 2.4: Disability prevalence rates by age groups, in Canada (1986), China (1987), Great Britain (1985) and Mali (1976), and a proposed global operative rate for calculating the prevalence of persons with moderate and severe disability.

PREVALENCE OF DISABILITY, PER CENT OF POPULATION

AGE GROUPS	CANADA		CHINA	GREAT BRITAIN		MALI	GLOBAL OPERATIVE RATE, MODERATE & SEVERE DISABILITY
	Total	Moderate & Severe	Moderate & Severe	Total	Moderate & Severe	Moderate & Severe	
0 - 4	3.3	0.7	1.5	2.1	1.6	0.2	1.3
5 - 9	5.7	1.7	2.9	3.5	3.2	0.9	2.5
10 - 14	6.4	1.8	3.5	3.5	3.3	1.2	2.7
15 - 19	4.0	1.4	2.3	2.1	1.6	1.5	1.9
20 - 24	4.7	1.6	2.3	2.7	2.1	2.2	2.0
25 - 29	5.4	2.0	2.5	3.1		2.6	2.3
30 - 34	7.8	3.4	2.9	4.0	2.8	3.5	3.2
35 - 39	8.6	3.8	3.6	4.4		4.2	3.7
40 - 44	10.5	4.5	4.3	5.9	4.3	5.4	4.4
45 - 49	12.7	6.8	4.8	7.9		6.4	5.8
50 - 54	17.3	9.3	6.0	10.6		7.7	7.7

55 - 59	22.6	13.2	8.4	15.5	8.1	9.0	10.8
60 - 64	30.5	18.0	12.1	20.5		11.0	15.1
65 - 69	34.1	19.0	17.6	27.5	13.9	13.0	18.3
70 - 74	40.9	25.2	25.8	34.2		15.2	25.5
75 - 79	49.1	37.7	37.5	46.6	25.3	17.4	37.6
80 - 84	73.7	58.5	49.3	61.6		17.8	
					51.6		56.0
85+			58.6	77.9		20.5	
Average for the entire population	13.3	7.4	4.8	11.6	8.6	3.0	

Table 2.5: Global estimate of prevalence of moderately and severely disabled people based on the UN population projections for 2000, and on the rapid calculation of disability prevalence method.

	MORE DEVELOPED REGIONS	LESS DEVELOPED REGIONS	TOTAL
Total population (millions)	1,187	4,904	6,091
Prevalence of moderate & severe disability	8.5%	4.8%	5.5%
Number of moderately & severely disabled people (millions)	101	234	335

Before concluding this part of the estimations, it is important to add that people with slight disabilities too may need the help of a rehabilitation programme, particularly ability/vocational training and jobs. In fact, most such rehabilitation is targeted at this group of disabled people. For the purposes of calculating such needs, I will assume that those with slight disability are equivalent to half of the group with moderate and severe disability.

Table 2.6: Estimated age-related annual incidence of moderate and severe disability in the less developed regions, based on data available from China

ANNUAL INCIDENCE			
AGE GROUP YEARS	INCIDENCE RATE (CHINA, 1987)	CORRESPONDING ANNUAL INCIDENCE (MILLIONS)	
		2000	2035
0 - 4	0.28	1.6	1.7
5 - 9	0.51	2.8	3.2
10 - 14	0.64	3.4	3.9
15 - 19	0.44	2.1	2.7
20 - 24	0.43	1.8	2.5
25 - 29	0.49	2.1	2.9
30 - 34	0.57	2.3	3.2
35 - 39	0.73	2.5	4.1
40 - 44	0.88	2.5	4.6

45 - 49	1.03	2.5	5.1
50 - 54	1.32	2.5	5.8
55 - 59	1.89	2.8	7.3
60 - 64	2.81	3.6	10.2
65 - 69	4.25	4.3	13.2
70 - 74	6.59	4.7	15.2
75 - 79	10.23	4.5	15.4
80+	21.00	6.7	26.5
TOTAL		49.7	126.5

2.4. Summary

It is important to add that people with slight disabilities too may need the help of a rehabilitation programme, particularly ability/vocational training and jobs. In fact, most such rehabilitation is targeted at this group of disabled

people. For the purposes of calculating such needs, I will assume that those with slight disability are equivalent to half of the group with moderate and severe disability.

2.5. Check Your Progress

Q.1 How to calculate a database on the prevalence of disability using UNDP rate and population census data?

2.6. Assignment/Activity

Sl. No.	Assignments
A4.	To conduct mapping of a community with population of 1000 and report the magnitude of disability.
A5.	To visit one primary health care centre and document the programmes initiated for the prevention of disability and the number of people benefited under these programmes.
A6.	To critically document the cultural factors in a given community on various issues concerning prevention of disability such as child rearing practices, consanguineous marriages, faiths and beliefs in managing early childhood illness, age of marriage of girls, and attitudes towards safe motherhood practices etc.

2.7. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

2.7.1. Points for discussion

2.7.2. Points for clarification

2.8 References / Further Readings

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UNIT 4:PEDAGOGICAL STRATEGIC – COOPERATIVE LEARNING, PEER TUTORING, REFLECTIVE TEACHING, MULTISENSORY TEACHING

STRUCTURE

4.1. Introduction

There are no wide-range studies or research regarding directly observed incidence of disability. This is easy to understand. Among children, for example, it might be difficult to identify a disability such as cerebral palsy, deafness, or mental retardation before the child is at least a few months old. Many disabled infants and children die young, without having been recognised as disabled by the family, or by a medically competent person. Even if a diagnosis has been made, the family may not have been told. In some developing countries in which the infant mortality rate has been very high, parents do not give their child a name until it is one year old. This makes inquiries into incidence and mortality among disabled infants and children even more difficult.

4.2. Objectives

- To study about functional training of Self-Care
- To Identify Children Using Training and behavior
- To Learn about Special Needs Education Of Children With Disabilities
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

4.3. INCIDENCE OF DISABILITY

There are no wide-range studies or research regarding directly observed incidence of disability. This is easy to understand. Among children, for example, it might be difficult to identify a disability such as cerebral palsy, deafness, or mental retardation before the child is at least a few months old. Many disabled infants and children die young, without having been recognised as disabled by the

family, or by a medically competent person. Even if a diagnosis has been made, the family may not have been told. In some developing countries in which the infant mortality rate has been very high, parents do not give their child a name until it is one year old. This makes inquiries into incidence and mortality among disabled infants and children even more difficult.

At old age, many people suffering from a terminal disease have activity restrictions during a period before they die. For some, this disability period lasts only a few days or weeks, but for others it is longer. It is not easy to draw a line and to decide who will be counted as a "newly disabled" person and will consequently be included in the annual incidence. For other people, the experience is that disability sets in gradually and may be seen as "normal ageing" or "wear and tear," and the point at which a person enters the group of moderately and severely disabled people is not easy to determine.

This explains why the estimates of annual incidence of disability are based on indirect methods. Relevant data have been derived only from prevalence rates and calculations of active (disability-free) life expectancy. Table 2.5; data reproduced from China. Projecting these data to all developing countries, we estimate that the number of people who became moderately or severely disabled during 2000 should be about 50 million. This "annual incidence" is estimated to increase to about 126 million in 2035. The total annual incidence estimates made most likely under-represent the truth. Research is needed to establish reliable data. However, the calculations made here serve the purpose of setting targets for the provision of rehabilitation services in developing countries. A certain proportion of the newly disabled will need such services. Most of the others will need care, help and support.

4.4. GENDER AND DISABILITY

The incidence of disability is not the same in males and females. Certain health conditions are more frequent in one of the sexes. For instance, there is a slightly higher incidence of mental retardation in males; they have more accidents, certain genetic disorders, etc. Females have disabilities caused by motherhood (see Box 3.2), osteoporosis, etc. In many countries where women survive longer than men do, the total prevalence of disability is most often higher in women. But for most major causes of disability, there is no significant difference in disability incidence. Examples are polio, cataract, and ear and eye infections.

The survival of girls and women who are disabled may be influenced by neglect. Studies in several countries in South Asia indicate a large gender difference in disability prevalence; Table 3.1 shows an example.

Table 3.1: Gender differences in disability Prevalence

Type of disability	Male	Female	Total
Blind	142	97	239
Vision impairment	163	98	261
Orthop. impairment	1086	518	1604
Deaf	371	177	548
Mental retardation	116	62	178
Total	1878	952	2830

This Table reflects the degree of neglect of disabled females and the excessive mortality that is the result.

4.5. CENSUS OF INDIA 2001

On 1st March 2001 the population of India stood at 1,027,015,247, comprised of 531,277,078 males and 495,738,169 females. Thus, India became the second country in the world after China to cross the one billion mark.

India added about 181 million persons between 1991-2001, which is more than the estimated population of Brazil, the fifth most populous country in the world. India's share of the world population is 16.7 percent. The percentage decadal growth of the country as a whole has declined from 23.86 during 1981-1991 to 21.34 during 1991-2001. Thus, India has registered a fall in its decadal growth rate by 2.52 percent, which is the sharpest decline since independence. Among the major states, Bihar has recorded the highest increase in the percentage decadal growth from 28.47 during 1981-91 to 28.43 during 1991-2001. During 1991-2001, the lowest growth rate was recorded in Kerala (9.42 percent) followed by Tamil Nadu (11.19) and Andhra Pradesh (13.86). Andhra Pradesh has shown the sharpest decline among all the major states (10.34 percent). The average annual exponential growth rate has declined from 2.14 percent in 1981-91 to 1.93 percent during 1991-2001.

Uttar Pradesh continues to be the most populous state in the country with 16.17 percent of India's population followed by Maharashtra (9.42 percent) and Bihar (8.07 percent). In fact, the population of Uttar Pradesh (166 million) is more than the estimated population of Pakistan. It is interesting to note that almost two

thirds of India's population lives in States and Union territories that show a decline in growth rate during the decade 1991-2001, as compared to the previous decade.

India now has 57 more persons per sq. km than in 1991. West Bengal is the most densely populated state in the country with 904 persons living per sq. km, followed by Bihar with 880.

The sex ratio (the number of females per 1000 males) for India is 933, which is an improvement of 6 points over the 927 recorded in the 1991 Census. Like the 1991 Census, the highest sex ratio (1058) has been reported in Kerala. Haryana has reported the lowest sex ratio of 861 among the major states. One of the interesting facts that has emerged is that the sex ratio of the child population in age group 0-6 is 927. The child sex ratio in 1991 was 945. The sharpest decline in sex ratio of the child population has been observed in Himachal Pradesh, Punjab, Haryana, Gujarat, Uttranchal, Maharashtra and the Union territory of Chandigarh.

The literacy rates among the population seven years and above for the country stands at 65.38 percent. The corresponding figures for males and females are 75.85 and 54.16 percent respectively. In other words, three-fourths of the male population and more than half of the female population in the country are literate today.

Thus, the literacy recorded an impressive jump of 13.17 percentage points from 52.21 in 1991 to 65.38 in 2001. The increase in literacy rates among males and females is 11.72 and 14.87 percentage points respectively. It is heartening to observe that the gap in the male and female literacy rates has decreased from 28.84 in the 1991 Census to 21.70 percentage points in 2001.

One of the most significant aspects of literacy data thrown up by the Provisional Population Totals of Census of India, 2001, is that for the first time since independence the absolute number of illiterates has shown a decline. The decline is as large as 31.96 million during 1991-2001. This decline among males was 21.45 million and 10.51 million among females. Kerala continues its lead in the literacy race with 90.92 percent, followed by Mizoram, 88.49, and Lakshadweep, 87.52 percent. Bihar has recorded the lowest literacy rate of 47.53 percent in the country.

4.6. A MODEL DATABASE

Here you will see examples of a database on prevalence of disability calculated using general census in India and UNDP rate. This database gives the following information:

1. National data on disability prevalence
2. Rural and urban distribution of disability prevalence
3. State-wise disability prevalence (all states including Jammu and Kashmir)
4. State-wise and district-wise data on disability (based 2001 census figures)
5. Age-wise disability prevalence data—state-wise/ district/ age-wise
6. State-wise/ district-wise/ degree-wise/ (severe/profound/moderate and mild) data
7. State-wise/ disability-wise/ district-wise data
8. State-wise/ district-wise/ gender-wise data

Sources for data calculations

a. 2001 census government of India

b. UN statistical library data for India age classification

c. UNDP formula for the calculation of disability prevalence - (Dr Helander, Prejudice and Dignity).

d. WHO classification for disability analysis (Former classification)

Table 3.2: The 1995 prevalence of severe and moderate disability in India. Estimations based on international data

Age groups	Prevalence percent	Population in India, Lakhs	Disabled population in India, Lakhs	
0-4	1.3	1174	15.3	
5-9	2.5	1092	27.3	70.3
10-14	2.7	1029	27.7	
15-19	1.9	909	17.3	
20-24	2.0	862	17.2	55.4
25-29	2.3	777	17.9	
30-34	3.2	689	22.0	
35-39	3.7	601	22.3	
40-44	4.4	501	22.0	148.7
45-49	5.8	410	23.8	
50-54	7.7	345	26.6	
55-59	10.8	296	32.0	
60-64	15.1	244	36.8	
65-69	18.3	182	33.3	
70-74	25.5	122	31.1	158.3
75-79	37.6	73	27.4	
80+	56.0	53	29.7	
	Total	9357	432.7	
			4.6%	

Table 3.3: The 2020 prevalence of severe and moderate disability in India Estimations based on international data

Age groups	Prevalence percent	Population in India, Lakhs	**Disabled population in India, Lakhs**	
0-4	1.3	1031	13.4	
5-9	2.5	1104	27.6	72.0
10-14	2.7	1147	31.0	
15-19	1.9	1161	22.1	
20-24	2.0	1154	23.1	71.0
25-29	2.3	1123	25.8	
30-34	3.2	1063	34.0	
35-39	3.7	998	36.9	
40-44	4.4	874	38.4	279.5
45-49	5.8	820	47.6	
50-54	7.7	725	55.8	
55-59	10.8	619	66.8	
60-64	15.1	505	76.2	
65-69	18.3	377	69.0	
70-74	25.5	259	66.0	354.2
75-79	37.6	166	62.4	
80+	56.0	144	80.6	
	Total	13270	776.7	
			5.85%	

There are several accepted political goals such as the universalisation of elementary education, mass literacy programmes, poverty eradication programmes, health for needy people, and other developmental programmes.

These are aimed at improving the quality of life of under-privileged groups such as people with disabilities. India has participated in almost all international conventions and conferences on special need education and has been a signatory to all the important declarations made by UN agencies. Though there have been many such declarations and statements issued from time to time in more than two decades, three very important declarations have to be mentioned.

The conventional approaches in rehabilitation such as special schools, social and vocational training centers, special employment schemes, residential schools, hostels, etc. are expensive models.

It is important to develop a rehabilitation plan for persons with disabilities that aims at a large coverage with good quality services in a sustainable manner by optimal utilization of existing resources available.

It has been half a decade since the People with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act of 1995 passed, yet the concept of rehabilitation services for all differently-abled persons has yet to take root.

It is an accepted fact that people with disabilities constitute nearly 4-5 percent of our population and it is estimated that people with moderate to severe disabilities constitute 2-4 percent. Having mentioned this, it is necessary to state that there is no authentic data on disabilities.

Therefore there is a need for database, which can be used for planning purposes.

This data is developed using the following statistics, formulas, and rates:

1. India's 2001 census actual figures

2. UN Statistical library data on age group classification of India's population based on the 2001 census

3. UNDP rate of disability calculations (Dr Helander, Prejudice and Dignity)

Use and limitations of this database

1. Data can be used for planning rehabilitation services at district, state and national levels.

2. This data helps to know the size of the problem state-wise, district-wise, gender-wise, age-wise, disability-wise, and degree-wise. The formulas help to calculate block-wise data if the actual population is available for each tehshil. Block/s or gram panchayths.

This data is based on population figures; therefore, you will find variations based on socio-cultural factors and economic conditions.

4. This data is not incidence data. Incidence data need to be studies in each district.

The prevalence of disability in the future will be affected by a multitude of factors. The first factor to consider is disability prevention. With improved health care, interventions in the environment, etc., it is likely that the incidence of disability, especially among infants, children and adolescents, will be prevented or delayed. Such preventive efforts will take place at two levels. Re-examining Table 10, one would expect a decrease in communicable diseases and malnutrition in developing countries – similar to the experience in the industrialised world.

A reduction of the incidence by 50 percent over, let us say, the next 20 years, would bring down the present number of disabled people (resulting from these causes) from an estimated 73 (63-84) million to about 50 million, factoring in a 36 per cent increase in population in the developing countries. Thus,

prevention at this level of success concerns about 10-15 million people in a decade. Primary or secondary prevention will have minor effects on the other causes of disability mentioned in Table 10. Disability as a result of congenital or hereditary conditions and non-communicable diseases as well as mental health conditions will most likely remain at that level. Disability caused by trauma/injury is on the rise. Interventions to "cure" disability are on the rise. These include cataract surgery, drug treatment of leprosy, onchocerciasis and other diseases, and new techniques to correct genetic deficiencies.

The conclusion is that disability prevention will slowly change the "disability panorama" in developing countries. The results of effective prevention will not lead to a reduction in total prevalence rates, as other and more dominating causes (such as non-communicable disease and trauma) will cause an increase. The second factor is related to the changes in the age composition. It is likely that the expected survival rate will continue to increase quite considerably in the less developed regions. Fewer young people will die, and the proportion of elderly (+65 years) will more than triple between 2000 and 2035. Children and young disabled people, who now have an excessive mortality rate, will live much longer and so will the elderly disabled. This will eventually increase the prevalence of disability quite considerably, as illustrated in Table 6 and fig 1.

Table 3.4: Causes of disability and estimated prevalence of moderately and severely disabled people in the world, estimates for 1998:

CAUSES OF DISABILITY	GLOBAL SUGGESTED RANGES OF ESTIMATES OF THE PREVALENCE OF MODERATELY & SEVERELY DISABLED PEOPLE (WORLD POPULATION 6,000 MILLION) MILLIONS
Congenital or perinatal disturbances	
Mental retardation	20 - 30
Somatic hereditary defects	10 - 25
Non-genetic disorders	15 - 20
Communicable diseases	
Poliomyelitis	5 - 10
Trachoma	8 - 10
Leprosy	3 - 4
Other communicable diseases	40 - 50
Non-communicable somatic disease	80 - 100
Functional psychiatric disturbances	20 - 25
Alcoholism and drug abuse	30 - 35
Trauma/Injury	
Traffic accidents	20 - 25
Occupational accidents	10 - 12
Home accidents	15 - 20
Other	2 - 3
Malnutrition	7 - 10
Other	2 - 3
ESTIMATED TOTAL	300 - 350

Expected increase in the prevalence of moderately and severely disabled people from 2000 to 203

4.7. VIOLENCE AS A CAUSE OF DISABILITY

Many countries have experienced long periods of independence and civil wars, unrest, tribal/clan wars, etc. These have resulted in casualties, many suffering a lifelong physical disability, such as an estimated 30,000 amputated soldiers in Angola. But mental health complications caused by violence are even more common. Severe psychiatric diseases and disturbances are seen among many that have either participated in or lived through a war. Examples to include are the systematic rapes of women in Bosnia.

Violence in the post-war years tends to remain elevated, often for 30 to 40 years. Also common in many countries is violence within the community: murder, attempted murder, and armed fights (guns, knives, other weapons) are frequent. Some of this is related to family conflicts combined with alcohol and drug abuse. In many countries, 20 to 75 percent of women report being regularly battered by their husbands. Incest and rape are common causes of pregnancy among girls aged 12 to 16. In a maternity ward in a Latin American capital, 95 percent of the girls admitted were pregnant for these reasons; a study from another capital on the same continent showed the proportion to be 90 percent. Though under-diagnosed or hidden, child abuse is frequent. According to some reports, between 10 and 30 percent of all children are exposed to intense, continuous battering. Severe, but less frequent abuse affects another 50 percent of children in a number of studies undertaken. Added to the violence experienced in the family and the community is that organised by states through their police, army or security units. A UNICEF study from Somalia undertaken in 1988 covered four district hospitals in a particular region. Each hospital served about 100,000 people. The author of the report states that "it was surprising to find that in the hospital records dating two years back, the only patients admitted for treatment in the hospital consisted of hundreds of cases listed as 'wounds' (dhawac). The hospital staff described these 'wounds' as resulting from domestic violence and other forms of community

fighting. Other patients coming to the hospital for various health conditions had not been admitted as in-patients".

4.8. Summary

Violence often leads to severe injuries and/or loss of consciousness; the resultant physical and mental symptoms are often life-long and disabling. No systematic studies have been made to assess fully the extent to which violence contributes to disability.

4.9. Check Your Progress

True/False

A. 2001 census government of India [ ]

B. UN statistical library data for India age classification [ ]

C. UNDP formula for the calculation of disability prevalence - (Dr Helander, Prejudice and Dignity). [ ]

D. WHO classification for disability analysis (Former classification) [ ]

4.10. Assignment/Activity

A.1 To perform all activities which has be mentioned in Form A and Form B, in section 3.7 Common Screening forms.

A.2 To conduct mapping of a community with population of 1000 and report the magnitude of disability.

2.11 Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

2.11.1 Points for discussion

2.11.2 Points for clarification

References / Further Readings

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UNIT 5:PREPARATION OF TEACHING LEARNING MATERIAL FOR ECC – READING READINESS KIT, FLASH CARDS, SENSORY KITS, AND MOBILITY MAPS

STRUCTURE

5.1. Introduction

Many countries have experienced long periods of independence and civil wars, unrest, tribal/clan wars, etc. These have resulted in casualties, many suffering a lifelong physical disability, such as an estimated 30,000 amputated soldiers in Angola. But mental health complications caused by violence are even more common. Severe psychiatric diseases and disturbances are seen among many that have either participated in or lived through a war. Examples to include are the systematic rapes of women in Bosnia.

5.2. Objectives

- To study of violence as a cause of disability
- To identify factors affecting disability
- To discus about Weapons Designed To Disable
- To identify Unfair Social and Economic Policies

5.3. VIOLENCE AS A CAUSE OF DISABILITY

Violence in the post-war years tends to remain elevated, often for 30 to 40 years. Also common in many countries is violence within the community: murder, attempted murder, and armed fights (guns, knives, other weapons) are frequent. Some of this is related to family conflicts combined with alcohol and drug abuse. In many countries, 20 to 75 percent of women report being regularly battered by their husbands. Incest and rape are common causes of pregnancy among girls aged 12 to 16. In a maternity ward in a Latin American capital, 95 percent of the girls admitted were pregnant for these reasons; a study from another capital on the

same continent showed the proportion to be 90 percent. Though under-diagnosed or hidden, child abuse is frequent. According to some reports, between 10 and 30 percent of all children are exposed to intense, continuous battering. Severe, but less frequent abuse affects another 50 percent of children in a number of studies undertaken. Added to the violence experienced in the family and the community is that organised by states through their police, army or security units. A UNICEF study from Somalia undertaken in 1988 covered four district hospitals in a particular region. Each hospital served about 100,000 people. The author of the report states that "it was surprising to find that in the hospital records dating two years back, the only patients admitted for treatment in the hospital consisted of hundreds of cases listed as 'wounds' (dhawac). The hospital staff described these 'wounds' as resulting from domestic violence and other forms of community fighting. Other patients coming to the hospital for various health conditions had not been admitted as in-patients".

Violence often leads to severe injuries and/or loss of consciousness; the resultant physical and mental symptoms are often life-long and disabling. No systematic studies have been made to assess fully the extent to which violence contributes to disability.

5.4. FACTORS AFFECTING DISABILITY

Prevalence and patterns of disability are affected by health, environmental, social, and economic trends. Poverty and socio-economic inequality significantly increase disability.

In recent decades, the physical, economic and ecological well being of people at the local or "micro" level has been increasingly influenced by far-reaching decisions at the global or "macro" level. Concurrently, the gap between the rich and the poor, both within countries and between them, has been widening at an alarming rate.

Meanwhile, environmental resources are being drastically plundered - by the poor for survival and by the rich for unlimited profits - at rates that increasingly threaten the ecological balance and even the sustainability of life on our planet. This pervasive imbalance has a drastic impact on patterns, prevalence and hence, on the long-term management of disability.

5.5. WEAPONS DESIGNED TO DISABLE

Landmines are a frequent cause of disability. In the last 20 years, the production, sales and deployment of landmines have escalated. Although the military-industrial complex calls the smaller ones "anti-personnel mines," the vast majority of mine victims are civilians - mostly women and children.

In Cambodia, Afghanistan, and scores of beleaguered nations, thousands of children continue to lose their limbs to landmines. Millions of mines from wars long since ended lie in fields and forests for decades, waiting for hapless victims. The money presently being spent to defuse these mines is a small fraction of the current expenditure on production and sale of new landmines.

5.6. UNFAIR SOCIAL AND ECONOMIC POLICIES

Landmines are the tip of the iceberg when it comes to the way profit-hungry market forces contribute to the emerging patterns of disability resulting from structural violence. Public assistance to families in need - which had been government policy until a few years ago - has been drastically reduced, just as it has been in most countries, rich and poor, during the last decade.

A handful of giant transnational corporations and the governments, whose politicians *they buy largely control today's* a globalized economy. This elite minority has imposed on humanity a shortsighted paradigm of development designed, above all else, to make the rich richer. To this end, structural adjustment policies have forced poor countries to replace food crops with export crops.

They have slashed the budgets for health and education and privatized public services, making them unaffordable to the poor. They have frozen wages and increased prices, making it harder for the poor to feed their children and meet basic needs. And in response to the resulting social unrest, they have marketed the rubber bullets, tear-gas, and other weapons of repression needed to keep popular protest under control.

This rollback in social progress drastically affects the incidence and severity of both primary disability related to violence and secondary disability due to growing hardships and the decline in services. Therefore, in planning to meet disability-related needs in future decades, it is essential to consider the reversals in social progress, locally and globally, and to explore ways to help society restore a participatory democratic process in which the rights, needs and dignity of all people are paramount.

5.7. BLINDNESS PREVENTION

The main issues in relation to blindness in children relate to a better understanding of the epidemiology, which has led to improved priority settings. In this article, the most recent epidemiological data will be presented, the consequences for the Mission 2020 programme will be discussed, and research priorities considered.

5.7.1. DEFINITIONS

A blind child is an individual aged less than 16 years, who has a visual acuity in the better eye of <3/60. However, many studies do not use this definition, which makes it difficult to compare the findings of different studies.

5.7.2. PREVALENCE AND INCIDENCE

The prevalence of blindness in children (i.e., the proportion of the child population who are blind), varies from approximately 0.3/1,000 children in

wealthy regions of the world, to 1.2/1,000 in the poorer countries / regions.[1] Blindness in children is more common in poor regions for two main reasons: first, there are diseases and risk factors which can lead to blindness from causes that do not now occur in industrialised countries (e.g. measles, vitamin A deficiency, ophthalmia neonatorum, malaria), and second, there are fewer well-equipped eye departments with ophthalmologists, nurses and ophthalmic paramedics trained in managing treatable causes of blindness (e.g. cataract and glaucoma). The incidence is therefore higher, and fewer blind children have their sight restored.

Incidence data are very difficult to obtain, but it has been estimated that there are eight newly blind children for every 100,000 children each year in industrialised countries. The figures are likely to be higher in developing countries.

5.7.3. MAGNITUDE OF BLINDNESS

Globally, there are estimated to be 1.4 million children who are blind, and around three quarters live in developing countries. Although the actual number of children who are blind is much smaller than the number of adults blind, e.g., from cataract, the number of years lived with blindness by blind children is almost the same as the total number of 'blind years' due to age-related cataract. The high number of blind years resulting from blindness during childhood is one of the reasons why the control of childhood blindness is a priority of the WHO/IAPB Vision 2020: The Right to Sight programme.

5.7.4. CAUSES OF BLINDNESS IN CHILDREN

The available data suggest that there is a wide regional variation in the major causes of blindness in children. Tables 11 and 12 show the causes of blindness obtained from examining over 10,000 blind children, with the causes classified using the World Health Organization's

classification system.[3] These data do not take account of children who are 'blind' from refractive errors.

In wealthy parts of the world lesions of the central nervous system predominate, while in poorer countries *corneal scarring as a result of acquired diseases are the most important causes.* [? – is one of the most important causes] Table 13 shows estimates of the number of blind

Table 11: Regional Variation in the Causes of Blindness in Children: Descriptive Classification by World Bank Region (%)

	Wealthiest Region →							Poorest Region
Region	EME	FSE	LAC	MEC	China	India	OAI	SSA
Number examined:	*	*504*	*1,007*	*866*	*1,131*	*2,283*	*850*	*1,702*
Globe	10	12	12	14	26	25	21	9
Cornea	1	2	8	8	4	27	21	36
Lens	8	11	7	20	19	11	19	9
Uvea	2	5	2	4	1	5	3	5
Retina	25	44	47	38	25	22	21	20
Optic nerve	25	15	12	8	14	6	7	10
Glaucoma	1	3	8	5	9	3	6	6
Other (incl. CNS)	28	8	4	3	2	1	2	5
Total:	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* *data from published studies*

EME = Established Market Economies; FSE = Former Socialist Economies;
LAC = Latin America and Caribbean; MEC = Middle East Crescent;
OAI = Other Asia and Islands; SSA = Sub-Saharan Africa.

children by anatomical site, and by underlying cause.

Regional Variation in the Magnitude and Major Causes of Blindness in Children

It is possible to combine what we know about the prevalence of blindness in children with data on causes, and apply this to a total population of one million people. This information is perhaps more useful for planning.

5.7.5. AVOIDABLE CAUSES

In all regions of the world there are causes that are amenable to primary, secondary and tertiary prevention, but the proportions vary from region to region.

5.7.6. VISION 2020 PRIORITIES

Given these findings, the following conditions are priorities for control:

- Corneal scarring, due to measles, vitamin A deficiency, harmful traditional eye medicines, and ophthalmia neonatorum: priorities in poor and very poor regions
- Cataract and glaucoma: important treatable causes in all regions
- Retinopathy of prematurity, a condition which is preventable and treatable: important in middle income countries, and in urban centres in developing countries
- Refractive errors: treatable cause in all regions
- Low vision: services need to be expanded or developed in all regions.

5.7.7. TARGETS FOR DISEASE CONTROL

The following targets have been agreed for disease control:

1. Reduce the global prevalence of childhood blindness from 0.75/1,000 children to 0.4/1,000 children.

2. Elimination of corneal scarring caused by vitamin A deficiency, measles, or ophthalmia neonatorum.

3. Elimination of new cases of congenital rubella syndrome.

4. All children with congenital cataract to receive appropriate surgery, with immediate and effective optical correction, in suitably equipped specialist centres.

5. All babies at risk of retinopathy of prematurity to have fundus examination, by a trained observer, 6-7 weeks after birth. Cryotherapy or laser treatment to be provided for all those with treatable disease.

   All school children to receive a simple vision screening examination, with glasses provided for all those with significant refractive error. This should be integrated into the school health programme.

5.7.8. HUMAN RESOURCE DEVELOPMENT

The implications and recommendations for human resources development are as follows:

1. Ensure that prevention of childhood blindness is an explicit aim of all primary health care programmes.

2. Ensure that all secondary level eye clinics have facilities to provide appropriate spectacles for children with refractive errors.

3. Train one refraction per population of 100,000 by 2010.

4. Train at least one low vision worker for every 20 million children by 2010, and for every 5 million by 2020.

5. Train one paediatric-oriented ophthalmologist for every 50 million children by 2010, and one per 10 million children by 2020.

Table 13: Estimates of Number of Blind Children by Anatomical Site, and Underlying Etiology

Anatomical site	Number affected	Examples	Aetiological category	Number affected	Examples
Retina	381,000	Dystrophies	Hereditary	423,000	Cataract
Cornea	231,000	Scarring	Childhood	260,000	Measles
Whole eye	230,000	Microphthalmos	Perinatal	151,000	Ophthalmia neonatorum
Lens	170,000	Cataract	Intrauterine	50,000	Rubella
Optic nerve	167,000	Optic atrophy	Unknown	516,000	Phthisis
Glaucoma	68,000	Glaucoma			
Uvea	50,000	Anindia			
Other	103,000	Cortical blindness			
Total:	**1,400,000**			**1,400,000**	

5.8. Summary

In the developing countries, it is common to find children sick over long periods of time, in particular in the age group under five. Infectious diseases, malnutrition, asthma, diarrhoea and intestinal parasitosis, alone or in combination, have the effect of making the child weak and feverish for weeks or months. Such a child often lags behind in his or her development milestones.

Check Your Progress

True/False:

6. All babies at risk of retinopathy of prematurity to have fundus examination, by a trained observer, 6-7 weeks after birth. [ ]

7. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

8. Infectious diseases, malnutrition, asthma, diarrhoea and intestinal parasitosis, alone or in combination, have the effect of making the child weak and feverish for weeks or months.
   [ ]

9. In all regions of the world there are causes that are amenable to primary, secondary and tertiary prevention, but the proportions vary from region to region.
   [ ]

5.9. Assignment/Activity

To study about Rehabilitation history in other countries like US, UK, and Ireland.

Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

5.9.1. Points for discussion

5.9.2. Points to Clarification

5.12 References / Further Readings

- Government of India. Handbook on Disability Rehabilitation. New Delhi: National Information Centre on Disability Rehabilitation, Ministry of Social Justice and Empowerment.
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BLOCK 5: CURRICULAR ACTIVITIES

UNIT 1:CURRICULAR ACTIVITIES – MEANING AND NEED FOR ADAPTATION.

STRUCTURE

1.1. Introduction

In this edition of the Journal of Community Eye Health there are articles that address some of the priority causes of blindness in children. The article on cataract discusses the relative merits of intraocular lens implantation in children, as a means of correcting their aphakia. The article on retinopathy of prematurity from Brazil highlights how screening programmes need to be expanded in Latin America if blindness from ROP is to be brought under control.

1.2. Objectives

- To study about TALC and its functionalities
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.3. APPROPRIATE TECHNOLOGY & INFRASTRUCTURE

There is the following need for appropriate technology and infrastructure development:

1. Development of low-cost, high-quality, low vision devices, which should be widely available, even in low-income countries.
2. Establish a network of specialist 'childhood blindness' tertiary centres.

In this edition of the Journal of Community Eye Health there are articles that address some of the priority causes of blindness in children. The article on cataract discusses the relative merits of intraocular lens implantation in children, as a means of correcting their aphakia. The article on retinopathy of prematurity from Brazil highlights how screening programmes need to be expanded in Latin America if blindness from ROP is to be brought under control.

Table 14: Estimates of the Magnitude and Major Causes of Blindness in Children per Million Total Population

	High income		Middle income		Low income		Very low incom	
% population children	20%		30%		40%		50%	
Number of children	200,000		300,000		400,000		500,000	
Blindness prevalence	0.3/1000		0.6/1,000		0.9/1,000		1.2/1,000	
No. of blind children	60		180		360		600	
	Cause	%	Cause	%	Cause	%	Cause	%
	CNS/Other	80	CNS/Other	55	CNS/Other	60	CNS/Other	3
	ROP	10	ROP	25	ROP	0	ROP	(
	Cat/glaucoma	10	Cat/glaucoma	20	Cat/glaucoma	20	Cat/glaucoma	1
	Scarring	0	Scarring	0	Scarring	20	Scarring	5

CNS = central nervous system ROP = retinopathy of prematurity Cat = catara

1.4. Research Issues

Corneal scarring. The control of diseases that cause corneal scarring lies in primary health care, public health interventions, and child survival programmes. However, there is still a need to develop cost-effective, sustainable interventions at the community and household levels for the control of Vitamin A deficiency, interventions that do not depend on vitamin A supplementation.

Cataract. Cataract surgery is much more difficult in children, and very few clinical trials have been undertaken to explore the optimum management. Further research is also needed into the etiology of cataract in different parts of the world, as well as qualitative research to investigate barriers to the uptake of cataract surgery.

Table 15: Regional Variation in Avoidable Causes of Blindness

High income Blind = 90,000		Middle income Blind = 290,000		Low income Blind = 1,020,000	
ROP	9,000 (10%)	Cataract	45,000 (15%)	Corneal scar	200,000 (20%
Teratogens	5,400 (6%)	ROP	29,000 (10%)	Cataract	133,000 (13%
Cataract	5,400 (6%)	Glaucoma	17,000 (6%)	Glaucoma	60,000 (6%
Glaucoma	2,000 (2%)	Teratogens	12,000 (4%)	Optic atrophy*	60,000 (6%
Total avoidable:	**21,800 (24%)**	**Total avoidable:**	**103,000 (35%)**	**Total avoidable:**	**453,000 (45%**

* due to infections, trauma and tumours

Retinopathy of prematurity. The pattern of disease in middle-income countries seems to be different from that currently seen in industrialised countries. There is a need for research into risk factors in different settings, and the validity of different methods of screening for threshold disease needs to be investigated.

Low vision. There are very few studies of low vision in children. It is not really known how common it is, or what the major causes are at the population level. There are virtually no studies that have addressed the issue of the best low vision devices for children.

Diseases of unknown cause. There are many blinding eye diseases of which the underlying causes are not known, e.g. congenital anomalies of the eye. Research is needed to clarify the relative contributions of genetic and environmental risk factors.

1.5. INNER EAR DISEASE

Hearing is the transduction of sound (mechanical energy) into neural impulses and the interpretation of those impulses by the central nervous system. Hearing loss can result from a defect at any level in this system. The proper

management of patients with hearing loss requires an understanding of the normal mechanisms.

I. NATURE OF SOUND: VIBRATION OF AIR

- Loudness is determined by the amplitude of pressure changes in the alternating compression and rarefaction of air, and expressed in units called decibels (dB).
- Pitch is determined by the frequency of cycles of vibration and is expressed in cycles per second or Hertz (Hz).

II. CONVERSION OF SOUND INTO NEURAL ENERGY

- The external ear shelters the eardrum and plays a role in the localization of sound.
- The middle ear transmits the vibration of air into vibrations of the fluid in the inner ear. The difference in impedance (resistance to vibration) of air and water causes much sound energy to be reflected from an air-fluid interface. The middle ear compensates for this impedance mismatch.
    - **Transmission of sound**
        - **Eardrum (tympanic membrane, or TM) vibrates in response to sound**
        - **Malleus, embedded in the TM, transmits vibrations to incus and stapes.**
        - **Stapes, in the oval window, transmits vibrations to fluid investibula.**
    - **Impedance mismatch compensation**

- **Area of eardrum is 10 times that of oval window**
- **Mechanical advantage of 2 to 1 due to leverage of ossicles.**

Middle ear transformer system. Note in the diagram above [*DIAGRAM MISSING*] that the handle of the malleus (1) compared to the long process of the incus (2) adds an advantage of 3-to-1, allowing a gain in sound energy of only 2.5 decibels. However, the area ratio of the tympanic membrane footplate is much greater. The effective ratio is 14:1 and corresponds to a 23-decibel gain.

□ The inner ear transduces sound waves of inner ear fluid into *afferent* [?] impulses in the auditory nerve by stimulation of the hair cells in the cochlea.

- **Anatomy of cochlea**

□ Physiology

- **Motion of stapes sets perilymphatic fluid in vestibule into motion.**
- **Vibrations travel through Reissner's membrane to endolymphatic fluid, and produce a traveling wave in the basilar membrane.**
- **As fluid is non-compressible, there must be another mobile wall to permit vibration. The round window serves this function.**

□ Hair cells transform mechanical energy to electrical energy.

- **Intensity coding: Perceived "loudness" is a function of the number of auditory nerve fibers firing and their discharge rate**
- **Frequency coding:**

- **Place coding - hair cells at maximal displacement of basilar membrane are maximally stimulated.**

□ Volley coding - hair cells fire at same frequency as sound

□ Telephone place coding - currently most popular theory: Low-frequency sounds are volley coded; high frequency, place coded; and at mid-frequency, both mechanisms are operative.

□ Impulses transmitted to brain via acoustic nerve with projections to both sides

□ Central perception and interpretation

III. EVALUATION OF HEARING LOSS

- **History**
  - **Age of patient**
  - **Severity of loss**
  - **Duration**
  - **Onset - rapid vs. gradual (sudden hearing loss is an emergency), constant vs. fluctuating.**
  - **Precipitating or exacerbating factors: trauma, noise, drugs, prenatal infection, etc.**
  - **Associated symptoms: Vertigo, tinnitus, pain or fullness in the ear, headache**
  - **Family history**
- **Physical - emphasize the following:**

- **Otologic exam**
  - **Systematic otoscopy**
  - **Tuning forks to grossly assess hearing and to differentiate conductive vs. sensorineural**
- **Exam of nasopharynx**
- **Neurologic exam**
- **Inspection, palpation, and auscultation of neck**
- **Look for associated anomalies**

- **Tests**
  - **Basic audiogram - all patients**
  - **Diagnostic audio, ENG, internal auditory canal, x-rays, and/or CT scan if vertigo present or neural lesion suspected**
  - **Electrocochleography if Meniere's suspected**
  - **Appropriate blood tests. All patients with sensorineural hearing loss should have VDRL and FTA-ABS.**

IV. DIFFERENTIAL DIAGNOSIS

- **External ear:**
  - **Cerumen impaction**
    - **One of the common causes of sudden hearing loss**
    - **Treat by removing wax**
  - **External otitis - inflammation and swelling of canal skin**

- **Tumors of external canal**
- **Congenital aural atresia**

- **Middle ear - some further discussion in chapter on external and middle ear disorders**
  - **Otitis media**
    - **Acute - infectious or serous**
    - **Chronic - serous**
    - **Must always rule out possibility of nasopharyngeal carcinoma**
  - **Tympanic membrane perforation or cholesteatoma**
  - **Normal tympanic membrane with conductive hearing loss - suspect ossicular abnormality: otosclerosis, ossicular dislocation, etc.**

- **Sensorineural hearing loss - often associated with poor discrimination out of proportion to degree of pure tone sensitivity loss - this is due to distortion of sound by cochlea or nerve**
  - **Congenital**
    - **Hereditary**
      - **Isolated sensorineural hearing loss**
        - **Normal inner ear**
        - **Abnormal inner ear (Scheibe, Mondini-Michelle, etc.)**

- Hearing loss with associated anomalies

- Acquired
  - Prenatal infection, especially syphilis, rubella, CMV
  - Prenatal drugs
  - Birth trauma
  - Developmental anomaly
- Hereditary but delayed onset
  - Dominant or recessive
  - Numerous syndromes, some with associated anomalies (example: Waardenburg's syndrome with white forelock, hypertelorism, etc.)

- Acquired
  - Noise induced - very common
    - Due to single blast or repeated or prolonged exposure to loud noise (hunting, rock music)
    - Affects high frequencies first (4 kHz); often progressive
    - Frequently associated with tinnitus
    - No known treatment. Counsel patient to avoid noise in future
    - PREVENTION is key to reducing incidence

- **Presbycusis - hearing loss of old age**
  - **Not universal, etiology not known**
  - **Central interpretation deficit complicates peripheral sensitivity loss**
  - **No known cure**
  - **Amplification can help, but hearing aids must be carefully fitted. Cochlear distortion and central processing may preclude us**
- **Head trauma - temporal bone fracture, labyrinthine concussion, central damage**
- **Meniere's disease or syndrome**
  - **Fluctuating hearing loss**
  - **Characteristically associated with bouts of vertigo**
  - **Anatomically correlated with endolymphatic hydrops**
  - **Electrocochleograph (ECOG) frequently shows elevated summating potential**
  - **In active phase, glycerol may improve hearing**
  - **Treatment**
    - **Medical: low-salt diet, diuretics, avoidance of caffeine, anti-vertigo medication, psychological support**

- **Surgical: for selected patients with progressive disease**

- **Luetic hearing loss (syphilis)**
  - **Usually a fluctuating hearing loss - may mimic Meniere's**
  - **Treponemas may remain in endolymph after eradicated from other sites in the body.**
  - **Treatment - steroids and antibiotics (penicillin)**
- **Ototoxic drugs**
  - **Reversible: aspirin - associated with tinnitus**
  - **Permanent: aminoglycosides, anti-neoplastic drugs, etc.**
  - **Treat by prevention:**
    - **Careful monitoring of blood levels of toxic drugs**
    - **Monitor hearing and vestibular function**
- **Oval or round window rupture**
  - **Sudden onset of hearing loss, usually fluctuating, often accompanied by vertigo. Definitive diagnosis can only be made by surgical exploration.**

- **Usually associated with sudden pressure change: flying, Valsalva, scuba diving, sneeze, etc.; but may be idiopathic**
- **Treatment - initially, bed rest for suspected patients. If no recovery, explore and repair leak if found**

- **Idiopathic sudden sensorineural hearing loss**
  - **Sudden hearing loss with no apparent cause**
  - **Etiology obscure, could be viral, autoimmune, vascular, or allergic, to name a few suspected causes**
  - **Diagnostic evaluation - should be extensive to rule out other causes**
  - **Treatment - many therapies suggested - few are statistically proven except for bed rest and possibly 95% O_2: 5% CO_2 inhalation and steroid therapies. Patient is usually admitted to the hospital for treatment.**

- **Acoustic nerve tumor**
  - **Uncommon tumor. Usually arises in vestibular nerve and is schwannoma, or less often, neurilemmoma.**
  - **Usually present with hearing loss. Progression of vestibular nerve involvement is so slow that patient does not notice it.**

- **Characteristic audiometric results with abnormal acoustic reflex, poor discrimination, and/or abnormal ABR.**
- **X-rays or CT show flaring of IAC in large tumors. Small tumors are seen with air contrast CT**
- **Treatment - surgical excision**

- **Infections**
  - **Viral infection**
  - **Bacterial infection - labyrinthitis, meningitis, etc.**
- **Otosclerosis**

  Sensorineural hearing loss often seen in association with otosclerosis of footplate, but occurrence of pure sensorineural hearing loss is controversial.
  - **Treatment with fluoride may be helpful**
- **Surgical trauma**

- **Central hearing loss - normal basic tone audiogram and impedance, impaired understanding and processing**

SIGNIFICANCE OF HEARING LOSS

- **Acquired in adulthood**
  - **Social and occupational handicap**
  - **Loss of monitoring of environmental warning sounds**

- **Loss of pleasure of music, etc.**

- **Congenital**
  - **Severe language development handicap**
  - **Early recognition, prompt amplification, and/or special early management vital for normal development. Therefore, high-risk infants should be screened.**

- **Acquired in childhood**
  - **Can cause language delay or learning problems**
  - **Audiometric evaluation is mandatory in all children with speech delay and/or learning problems**
  - **Frequent screening of school children is advised.**

This statement endorses the implementation of a universal newborn hearing screening. In addition, the statement reviews the primary objectives, important components, and recommended screening parameters that characterize an effective universal newborn hearing-screening program.

Significant hearing loss is one of the most common major abnormalities present at birth and, if undetected, will impede speech, language, and cognitive development. Significant bilateral hearing loss is present in ~1 to 3 per 1000 newborn infants in the well-baby nursery population, and in ~2 to 4 per *100* [100 or 1000?] infants in the intensive care unit population. Currently, the average age of detection of significant hearing loss is ~14 months. The American Academy of Pediatrics supports the statement of the Joint Committee on Infant Hearing (1994), which endorses the goal of universal detection of hearing loss in infants before 3 months of age, with appropriate intervention no later than 6 months of age. Universal detection of infant hearing loss requires universal screening of all infants. Screening by high-risk registry alone (e.g. family history of deafness) can

only identify ~50% of newborns with significant congenital hearing loss. Reliance on physician observation and/or parental recognition has not been successful in the past in detecting significant hearing loss in the first year of life.

To justify universal screening, at least five criteria must be met:

1. **An easy-to-use test that possesses a high degree of sensitivity and specificity to minimize referral for additional assessment is available.**
2. **The condition being screened for is otherwise not detectable by clinical parameters.**
3. **Interventions are available to correct the conditions detected by screening.**
4. **Early screening, detection, and intervention result in improved outcome.**

The screening program is documented to be in an acceptable cost-effective range.

1.6. Summary

This statement endorses the implementation of a universal newborn hearing screening. In addition, the statement reviews the primary objectives, important components, and recommended screening parameters that characterize an effective universal newborn hearing-screening program.

6.5. Check Your Progress

True/False:

1. To teach the person stay away from poisonous substances []
2. Do not enable the person to be Aware of danger in his/her environment and avoid it

[ ]

3. Do not enable the person to safeguard himself from machines, tools and other equipment in a work situation [ ]

4. To enable the person to be Aware of the potential danger while he/she is on the street and avoid it [ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

6.6. Assignment/Activity

To do survey near about your surroundings area on TALC.

Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

6.6.1. Points for discussion

6.6.2. Points to Clarification

5.8 References / Further Readings

- Government of India. Handbook on Disability Rehabilitation. New Delhi: National Information Centre on Disability Rehabilitation, Ministry of Social Justice and Empowerment.
- NCPED and NAB (1998). Role of NGOs vis-à-vis the employment scenario in India with reference to disabilities, New Delhi. Ray, D. (1987). Human Rights and Education: an overview.
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UNIT 2:ADAPTATION OF PHYSICAL EDUCATION ACTIVITIES AND YOGA

STRUCTURE

1.7. Introduction

In this edition of the Journal of Community Eye Health there are articles that address some of the priority causes of blindness in children. The article on cataract discusses the relative merits of intraocular lens implantation in children, as a means of correcting their aphakia. The article on retinopathy of prematurity from Brazil highlights how screening programmes need to be expanded in Latin America if blindness from ROP is to be brought under control.

1.8. Objectives

- To study about TALC and its functionalities
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.9. CAUSES OF MENTAL RETARDATION

1.10. NUTRITION AND DISABILITY ISSUES

Nutrition and disability issues

Infant and young child feeding practices

More than 90% of infants in about half of the countries in the region are initially breast-fed. Rates of exclusive breast-feeding in the first four to six months and continuation of breast-feeding during the first and second year of life, however, are usually much lower. In 23 of the 34 countries reporting, less than 75% of women are said to practice exclusive

breast-feeding in the first four months. Inappropriate food and unbalanced diets in later years contribute to childhood malnutrition.

WHO aims to improve the nutritional status of all sectors of the population, especially that of mothers and children and other vulnerable groups, by promoting appropriate and balanced diets. It also aims to significantly reduce the prevalence of specific nutritional deficiencies, with particular emphasis on iron deficiency and the elimination of iodine and vitamin A deficiencies as public health problems.

The nutrition programme intervenes through four main "focuses":

- Child and Adolescent Health and Development, with regard to the micronutrient interventions and the improvement of feeding practices and dietary habits in infancy, childhood and adolescence;
- Healthy Settings and Environment in implementing the inter-sectoral approach of national plans of action for nutrition as well as food safety activities, aiming at improving the environment;
- Reproductive Health, for the interventions aimed at improving the nutritional status of women of reproductive age (including non-pregnant, pregnant and lactating women) as well as newborns, and
- Non-communicable Diseases, with regards to the prevention and control of diseases caused by over-nutrition and sedentary lifestyles, like obesity and related diseases.

1.11. INFANT AND YOUNG CHILD FEEDING PRACTICES

Infant and young child feeding practices

WHO promotes breast-milk as the best food for infants up to four to six months. Appropriate infant feeding practices are promoted through baby-friendly hospitals and the implementation of the International Code of Marketing of Breast-milk Substitutes, which helps to ensure that baby formulas are used only when breast-milk cannot be provided.

It is estimated that in developing countries more than 50% of deaths of children under five years old are associated with malnutrition, the majority being attributed to greater susceptibility of malnourished children to infectious and parasitic diseases. In countries in Asia and the Pacific, excluding China and India, it is estimated that child malnutrition alone is responsible for 12.3% of total deaths, 20.1% of all years of life lost due to premature mortality and 14.5% of all disability life years, according to a 1996 WHO study. These estimates indicate the magnitude of health gains that might be achieved if no child had a weight-for-age below normal.

A new approach to the prevention and control of iron and folate deficiency

The most common strategy for the control of iron deficiency anaemia (IDA) is daily supplementation with iron or iron and folic acid for pregnant women [and], in some countries, for preschool children. A pregnant woman would need approximately a total of 250 daily iron/folate tablets to meet the iron requirements during the second half of pregnancy and the first two months after delivery. However, this approach has generally not been successful. Women do not come to antenatal clinics until well into the second trimester of pregnancy, hence the fact that treatment of anaemia often starts too late. Side effects are experienced, generated by reduced absorption of iron when supplements are given daily, so there is a tendency for women to discontinue treatment. Finally, health

workers still do not have adequate knowledge and skills to motivate women to take the supplements regularly.

A new strategy, preventive supplementation with weekly iron and folic acid supplements for women of reproductive age, starting before they conceive, is being tested. Since intestinal cells are renewed every five to six days, weekly doses of iron are more easily absorbed and cause almost no side effects. Compliance in taking the supplements thus tends to be greater. This new approach aims to persuade women of reproductive age to purchase and take iron/folate tablets once a week, to prevent anaemia, before and during pregnancy. Neural tube defects may thus also be prevented. Social marketing and community mobilization are being used to promote the new product, in collaboration with government health services and a pharmaceutical company.

1.12. Summary

The considerable achievements by the government on promoting the baby-friendly hospital initiative must be completed by making private hospitals baby-friendly. In addition, existing baby-friendly hospitals need to be monitored and re-assessed to sustain their baby-friendliness.

7.5. Check Your Progress

True/False:

1. To teach the person stay away from poisonous substances [ ]

2. Do not enable the person to be Aware of danger in his/her environment and avoid it

   [ ]

3. Do not enable the person to safeguard himself from machines, tools and other equipment in a work situation [ ]

4. To enable the person to be Aware of the potential danger while he/she is on the street and avoid it [ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

7.6. Assignment/Activity

Sl. No.	Assignments
A4.	**To conduct mapping of a community with population of 1000 and report the magnitude of disability.**
A5.	**To visit one primary health care centre and document the programmes initiated for the prevention of disability and the number of people benefited under these programmes.**
A6.	**To critically document the cultural factors in a given community on various issues concerning prevention of disability such as child rearing practices, consanguineous marriages, faiths and beliefs in managing early childhood illness, age of marriage of girls, and attitudes towards safe motherhood practices etc.**

7.7. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

7.7.1. Points for discussion

7.7.2. Points to Clarification

6.8 References / Further Readings

- Government of India. Handbook on Disability Rehabilitation. New Delhi: National Information Centre on Disability Rehabilitation, Ministry of Social Justice and Empowerment.
- NCPED and NAB (1998). Role of NGOs vis-à-vis the employment scenario in India with reference to disabilities, New Delhi. Ray, D. (1987). Human Rights and Education: an overview.
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UNIT 3:ADAPTATION OF GAMES AND SPORTS – BOTH INDOOR AND OUTDOOR

STRUCTURE

1.13. Introduction

Maternal prenatal alcohol use is one of the leading preventable causes of birth defects and developmental disabilities. Children exposed to alcohol during fetal development can suffer a wide array of disorders, from subtle changes in I.Q. to profound mental retardation. They can also suffer growth retardation in varying degrees and be born with birth defects of major organ systems.

1.14. Objectives

- To observer what is genetics?
- To Identify a person's genes cause mental retardation
- To identify what causes genetic disorders?

1.15. CAUSES OF MENTAL RETARDATION

What is genetics?

Genetics is "the science that studies the principles and mechanics of heredity, or the means by which traits are passed from parents to offspring" (Glanze, 1996). Through genetics a number of specific disorders have been identified as being genetically caused. One example is fragile X syndrome, a common genetic cause of mental retardation, which is caused by the presence of a single non-working gene (called the FMR-1 gene) on a child's X chromosome.

Genetics originated in the mid-19th century when Gregor Mendel discovered over a ten-year period of experimenting with pea plants that certain traits are inherited. His discoveries provided the foundation for the science of genetics. Mendel's findings continue to spur the work and hopes of scientists to uncover the mystery behind how our genes work and what they can reveal to us

about the possibility of having certain diseases and conditions. The scientific field of genetics can help families affected by genetic disorders to have a better understanding about heredity, what causes various genetic disorders to occur, and what possible prevention strategies can be used to decrease the incidence of genetic disorders.

Can a person's genes cause mental retardation?

Some genetic disorders are associated with mental retardation, chronic health problems and developmental delay. Because of the complexity of the human body, there are no easy answers to the question of what causes mental retardation. Mental retardation is attributable to any condition that impairs development of the brain before birth, during birth or in the childhood years (The Arc, 1993). As many as 50 percent of people with mental retardation have been found to possess more than one causal factor (AAMR, 1992). Some research has determined that in 75 percent of children with mild mental retardation the cause is unknown (Kozma & Stock, 1993).

The field of genetics has important implications for people with mental retardation. Over 350 inborn errors of metabolism have been identified, most of which lead to mental retardation (Scriver, 1995). Yet the possibility of being born with mental retardation or developing the condition later in life can be caused by multiple factors unrelated to our genetic make-up. It is caused not only by the genotype (or genetic make-up) of the individual, but also by the possible influences of environmental factors. Those factors can range from drug use or nutritional deficiencies to poverty and cultural deprivation.

How often is mental retardation inherited?

Since the brain is such a complex organ, there are a number of genes involved in its development. Consequently, there are a number of genetic causes of mental retardation. Most identifiable causes of severe mental retardation (defined as an IQ of 50 or less) originate from genetic disorders. Up to 60 percent of severe mental retardation can be attributed to genetic causes making it the most

common cause in cases of severe mental retardation (Moser, 1995). People with mild mental retardation (defined as an IQ between 50 and 70-75) are not as likely to inherit mental retardation due to their genetic make-up, as are people with severe mental retardation. People with mild mental retardation are more likely to have the condition due to environmental factors, such as nutritional state, personal health habits, socioeconomic level, access to health care and exposure to pollutants and chemicals, rather than acquiring the condition genetically (Nelson-Anderson & Waters, 1995). Two of the most common genetically transmitted forms of mental retardation include Down syndrome (a chromosomal disorder) and fragile X syndrome (a single-gene disorder).

What causes genetic disorders?

Over 7,000 genetic disorders have been identified and catalogued, with up to five new disorders being discovered every year (McKusick, 1994). Genetic disorders are typically broken down into three types: Chromosomal, single-gene and multifactorial.

Chromosomal disorders affect approximately seven out of every 1,000 infants. The disorder results when a person has too many or too few chromosomes, or when there is a change in the structure of a chromosome. Half of all first-trimester miscarriages or spontaneous abortions occur as a result of a chromosome abnormality. If the child is born, he or she usually has multiple birth defects and mental retardation.

Most chromosomal disorders happen sporadically. They are not necessarily inherited (even though they are considered to be genetic disorders). In order for a genetic condition to be inherited, the disease-causing gene must be present within one of the parent's genetic code. In most chromosomal disorders, each of the parent's genes is normal. However, during cell division an error in separation, recombination or distribution of chromosomes occurs. Examples of

chromosomal disorders include Down syndrome, Trisomy 13, Trisomy 18 and Cri du chat.

Single-gene disorders (sometimes called inborn errors of metabolism or Mendelian disorders) are caused by non-working genes. Disorders of metabolism occur when cells are unable to produce proteins or enzymes needed to change certain chemicals into others, or to carry substances from one place to another. The cell's inability to carry out these vital internal functions often results in mental retardation. Approximately one in 5,000 children is born with defective enzymes resulting in inborn errors of metabolism (Batshaw, 1992). Although many conditions are generally referred to as "genetic disorders," single-gene disorders are the easiest to identify as true genetic disorders since they are caused by a mutation (or a change) within a single gene or gene pair.

Combinations of multiple gene and environmental factors leading to mental retardation are called multifactorial disorders. They are inherited but do not share the same inheritance patterns typically found in single-gene disorders. It is unclear exactly why they occur. Their inheritance patterns are usually much more complex than those of single gene disorders because their existence depends on the simultaneous presence of heredity and environmental factors. For example, weight and intelligence are traits inherited in this way (Batshaw, 1992). Other common disorders, including cancer and hypertension, are examples of health problems caused by the environment and heredity. Multifactorial disorders are very common and cause a majority of birth defects. Examples of multifactorial disorders include heart disease, diabetes, spina bifida, anencephaly, cleft lip and cleft palate, clubfoot and congenital heart defects.

How are genetic disorders inherited?

Genetic disorders can be inherited in much the same way a person can inherit other characteristics such as eye and hair color, height and intelligence. Children inherit genetic or hereditary information by obtaining genes from each

parent. There are three common types or modes of inheritance: dominant, recessive and X-linked (or sex-linked).

Dominant inheritance occurs when one parent has a dominant, disease-causing gene which causes abnormalities even if coupled with a healthy gene from the other parent. Dominant inheritance means that each child has a 50 percent chance of inheriting the disease-causing gene. An example of dominant inheritance associated with mental retardation is tuberous sclerosis.

Recessive inheritance occurs when both parents carry a disease-causing gene but outwardly show no signs of disease. Parents of children with recessive conditions are called "carriers" since each parent carries one copy of a disease gene. They show no symptoms of having a disease gene and remain unaware of having the gene until having an affected child. When parents who are carriers give birth, each child has a 25 percent chance of inheriting both disease genes and being affected. Each child also has a 25 percent chance of inheriting two healthy genes and not being affected, and a 50 percent chance of being a carrier of the disorder, like his parents. Examples of disorders that are inherited recessively and are also associated with mental retardation include phenylketonuria (PKU) and galactosemia.

X-linked or sex-linked inheritance affects those genes located on the X chromosome and can be either X-linked recessive or X-linked dominant. The X-linked recessive disorder, which is much more common compared to X-linked dominant inheritance, is referred to as a sex-linked disorder since it involves genes located on the X chromosome. It occurs when an unaffected mother carries a disease-causing gene on at least one of her X chromosomes. Since females have two X chromosomes, they are usually unaffected carriers because the X chromosome that does not have the disease-causing gene compensates for the X chromosome that does. Therefore, they are less likely than males to show any symptoms of the disorder unless both X chromosomes have the disease-causing gene.

If a mother has a female child, the child has a 50 percent chance to inherit the disease gene and be a carrier and pass the disease gene on to her sons (March of Dimes, 1995). On the other hand, if a mother has a male child, he has a 50 percent chance of inheriting the disease-causing gene since he has only one X chromosome. Consequently, males cannot be carriers of X-linked recessive disorders. If a male inherits an X-linked recessive disorder, he is affected. Some examples of X-linked inheritance associated with mental retardation include fragile X syndrome, Hunter syndrome, Lesch Nyhan syndrome and Duchenne muscular dystrophy.

Can genetic disorders that cause mental retardation be fixed?

In the past, only a few genetic disorders could be detected and treated early enough to prevent disease. However, the Human Genome Project, an international project among scientists to identify all the 60,000 to 100,000 genes within the human body, is significantly increasing our ability to discover more effective therapies and prevent inherited disease (National Center for Human Genome Research, 1995). As more disease-causing genes are identified, scientists can begin developing genetic therapies to alter or replace a defective gene. However, the development of gene therapies is still in the infancy stage.

Gene therapy (also called somatic-cell gene therapy) is a procedure in which "healthy genes" are inserted into individuals to cure or treat an inherited disease or illness. Although there is a role for gene therapy in the prevention of mental retardation, it will most likely benefit only those people who have single-gene disorders, such as Lesch-Nyhan disease, Gaucher disease and phenylketonuria (PKU) that cause severe mental retardation (Moser, 1995). Gene therapy is far less likely to provide treatment of mild mental retardation that accounts for 87 percent of all cases of mental retardation (The Arc, 1993).

Maternal prenatal alcohol use is one of the leading preventable causes of birth defects and developmental disabilities. Children exposed to alcohol during

fetal development can suffer a wide array of disorders, from subtle changes in I.Q. to profound mental retardation. They can also suffer growth retardation in varying degrees and be born with birth defects of major organ systems.

One of the most severe outcomes is Fetal Alcohol Syndrome (FAS), which includes abnormalities in three domains at the same time – disorders of the brain, growth retardation, and facial malformations. FAS and other alcohol-related conditions can be prevented by avoiding alcohol use during pregnancy. Birth defects associated with prenatal alcohol exposure can occur in the first 3 to 8 weeks of pregnancy, before a woman even knows she is pregnant. The prevalence of FAS is not known. Children with FAS often suffer lifelong consequences from "in utero alcohol exposure," such as mental retardation, learning disabilities, and serious behavioral problems.

1.16. CAUSES OF CEREBRAL PALSY

1.16.1. During Pregnancy

- **Multiple births (twins or triplets)**
- **Damaged placenta**
- **Poor nutrition**
- **Infections**
- **Biochemical genetic disorders**
- **Exposure to toxic substances such as: nicotine, drugs, and alcohol**
- **Rh or ABO blood type incompatibility between mother and infant**
- **Chance malformations**

1.16.2. During Labour

- **Too long or abrupt**
- **Poor oxygen supply**
- **Premature babies**
- **Any trauma to the baby's brain**

1.16.3. During Early Childhood

- **Infections like meningitis**
- **Brain hemorrhages**
- **Head injuries**
- **Car accidents**
- **Drowning accidents**

1.16.4. Preventing Cerebral Palsy

- **Some measures of prevention are possible today**
- **Pregnant women are tested for the Rh factor and, if Rh negative, they can be immunized within 72 hrs of giving birth.**
- **Reducing exposure to infections, x-rays, drugs and medications.**
- **Education programs stress the importance of optimal well being prior to conception and adequate prenatal care.**
- **Safety campaigns give advice on protecting children from accidents and injury.**

1.17. Summary

One of the most severe outcomes is Fetal Alcohol Syndrome (FAS), which includes abnormalities in three domains at the same time – disorders of the brain, growth retardation, and facial malformations.

7.12. Check Your Progress

- ❖ **What is genetics?**
- ❖ **Can a person's genes cause mental retardation?**
- ❖ **How often is mental retardation inherited?**
- ❖ **What causes genetic disorders?**
- ❖ **How are genetic disorders inherited?**
- ❖ **Can genetic disorders that cause mental retardation be fixed?**

7.13. Assignment/Activity

Sl. No.	Assignments
A4.	To conduct mapping of a community with population of 1000 and report the magnitude of disability.
A5.	To visit one primary health care centre and document the programmes initiated for the prevention of disability and the number of people benefited under these programmes.
A6.	To critically document the cultural factors in a given community on various issues concerning prevention of disability such as child rearing practices, consanguineous marriages, faiths and beliefs in managing early childhood illness, age of marriage of girls, and attitudes towards safe motherhood practices etc.

7.14. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

7.14.1. Points for discussion

7.14.2. Points to Clarification

7.8 References / Further Readings

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UNIT 4:CREATIVE ARTS FOR THE CHILDREN WITH VISUAL IMPAIRMENT

STRUCTURE

- **Introduction**
- **Objectives**
- **Assumptions of the social model**
- **Assumptions and their outcomes**
- **The debate over modeling disability**
- **Summary**
- **Check Your Progress**
- **Assignment/Activity**
- **Points For Discussion And Clarification**
- **References / Further Readings**

2.1. Introduction

This was devised by disabled people, whose experience of the health and welfare system, as well as society's general reaction to them, made them feel socially isolated and oppressed. The denial of opportunity, the restriction of choice and self-determination, and the lack of control over the support systems in their lives led them to question the assumptions underlying the dominance of the medical model. They therefore set out to develop an alternative, which has now grown in ascendancy.

The Social Model of Disability describes the restrictions and limitations in the lives of disabled people as resulting from environmental, attitudinal and organizational barriers within society.

2.2. Assumptions of the social model

The social model, which comes directly from disabled people's own personal experiences, sees disability as something totally distinct from impairment. It states:

"IMPAIRMENT" is lacking part or all of a limb, or having a defective limb, or other part of the body.

"DISABILITY" is the disadvantage, or restriction, caused by a contemporary social organization, which takes no, or little, account of people who have impairments and therefore excludes them from participation in the mainstream of social activities. "DISABILITY" is, therefore, a particular form of social discrimination.

So, according to the social model, for someone with neurological damage:

Their "IMPAIRMENT" may still be cerebral palsy.

But their "DISABILITY" is society, with its physical, psychological and organizational barriers.

2.3. Assumptions and their outcomes

The assumptions behind the different models and the outcomes, which ensue from them in effect, express different sets of expectations about disabled people's roles and responsibilities within society.

First, what are the assumptions of the medical model?

The person is in a tragic situation. S/he has a loss and is disadvantaged. The disability is part of the individual - it belongs to her/him. The disabled person's decision-making functions are inevitably impaired. Successful rehabilitation is seen in terms of the number of tasks that can be done without help, rather than the number of tasks that can be organized and directed with help.

The expectation is that the status quo of society is fixed, and the person has to adapt to fit society.

The medical model sees the person as being deviant and in need. It depersonalizes and disempowers her/ him. In addition, segregating the disabled person from society minimizes society's motivation to promote equality and inclusion.

Second, what are the outcomes of the medical model?

A philosophy of 'cure or care' permeates service delivery.

The uncured persons are segregated from the rest of society, and from each other.

An industry of professionals and volunteers develops around the disabled person with her/him being seen as the commodity.

Professionals and administrators manage allocated resources designed to overcome disability.

The social control mechanisms of welfare services make sure that changes to the structure of society do not take place, because those who do not 'fit-in' are dealt with elsewhere.

Now, what are the assumptions of the social model?

The disabled person is seen as an oppressed group within society. Disability is not part of the individual - it is part of society's physical structures, its psychological make-up and its sociological organization. The disabled person can make her/his decisions, or can be supported in her/his own decision-making process.

Independence is seen as the ability to organize and direct support to accomplish tasks rather than as being able to do them oneself. Society can change to be more accommodating to all minority groups.

Disabled people and their allies have the power to change society.

Therefore, the social model empowers disabled people to identify barriers within society that inhibit their full and equal participation. It also empowers disabled people to put forward their own solutions to overcome those barriers. It offers hope and motivation, allowing disabled people to seek allies among other oppressed groups who may face similar barriers.

Finally, what are the outcomes of the social model?

Disabled people can unite with one identity. A philosophy of enabling the socio-economic involvement of disabled people in society drives service delivery. An

industry of advice and support workers develops around the disabled person with her/ him at the helm. The disabled person controls allocated resources designed to overcome disability. Disabled people can integrate into society on their own terms rather than adapt to it on other people's terms.

2.4. THE DEBATE OVER MODELING DISABILITY

The debate over modeling disability continues. The culture and working practices that have grown up around the medical model still too often predominate among both professionals and, sometimes, disabled people themselves. It can be all too easy to believe that you are needy and helpless if professionals and others continually treat you that way. Disabled people who have believed the image of themselves as passive and needy often find this reflected by the professionals they encounter. This creates practical problems for, or barriers and challenges to, promoting the widespread adoption of the social model.

The main criticism of the social model is that, taken to an extreme, it suggests that disability would be eradicated if society were changed in the appropriate ways. For example, disabled people could do any job if only attitudes changed, the environment was accessible and work was organized appropriately. It also does not acknowledge the limitations, which may result from impairment (e.g. pain) that no amount of change to the social context could remove.

Community ownership of CBR from planning level to Evaluation

Many people find ideas about evaluation confusing and are unsure of what methods will give them the best results. Unfortunately, there are few resources that compare different ways of carrying out evaluations, or that offer practical suggestions for people without experience of evaluation. One of the biggest debates is whether evaluations should use objective or participatory methods. An objective evaluation is carried out by an evaluator from outside the programme. A

participatory approach involves staff, volunteers, parents, disabled people, teachers and community members in the evaluation process. The methods or tools used in an evaluation reflect the approach chosen. In practice, there is no right or wrong approach and most evaluations use a combination of methods. We will always have to experiment – to try various methods and combinations of methods.

The objective approach

Objective methods claim to be based on an impartial, methodological approach developed by social scientists and to draw on the results of previous evaluations. They depend on good data collection and record-keeping, cross-checking information and statistical analysis. Objective methods are judged in terms of their lack of bias, reliability and validity, both to the project being evaluated and in comparison to other projects. An outside evaluator plans and supervises the evaluation and writes the evaluation report. The final report may be turned into an academic paper or journal article. Objective evaluation has many advantages. If the outcomes are well documented, they can be communicated to a wide range of people. They can help to convince professionals and decision-makers of the value of CBR programmes.

However, evaluation reports or summaries may not be available to CBR workers in developing countries. If evaluation outcomes are not communicated to local people using language and concepts they understand, then the evaluation is likely to be seen as a failure.

The participatory approach

Participatory methods have been developed mainly by activists and community development workers. They

focus on listening to many different groups, drawing on their views through skilful questioning and situations such as role play and exercises. Participatory methods are judged in terms of their success in involving people. A participatory evaluation is intended to form part of the learning process and to improve the project. It is not usually intended to provide a model for other projects, or to extend specialised knowledge, although some reports appear in books and journals. Participatory evaluation can reveal where the project is meeting, and failing to meet, its goals and objectives, and which individuals and groups feel they are benefiting or not benefiting. By using participatory methods, an evaluation can obtain more detailed information and can support better relationships between project staff and beneficiaries. However, participatory approaches also have shortcomings. Many of the methods used depend on

interviews, questionnaires or reporting from local people rather than using tested and standardised objective tools used in other evaluations. There are sometimes problems in writing up and checking data when people report on their own projects – people may unknowingly give reports a favourable bias, whereas an outsider would be more objective. People may not always recall events accurately. It is difficult to build equal relationships in an unequal society. Poorer and less educated people may feel obliged to highlight positive aspects and conceal negative aspects to show that they are grateful for the services provided and to impress outsiders, particularly foreign visitors.

A common participatory method is the focus group discussion . While this may work well in some situations, in some cultures people find it difficult to discuss ideas and opinions frankly, particularly when the topic is sensitive or controversial (for example, sex or finance). A skilled facilitator can help bridge these gaps.

Despite the problems, a participatory approach has many advantages. It can:

- provide greater insight and value to an evaluation
- provide views and information not easily gained through objective methods
- be a learning exercise for the project and the community
- be a management tool for local people
- empower participants to take greater ownership of the project.

Some of these factors are considered to be the most important aspects of evaluation.

Dr Alaa Sebeh

Summary

A philosophy of enabling the socio-economic involvement of disabled people in society drives service delivery. An industry of advice and support workers develops around the disabled person with her/ him at the helm. The disabled person controls allocated resources designed to overcome disability. Disabled people can integrate into society on their own terms rather than adapt to it on other people's terms.

8.5. Check Your Progress

True/False:

1. To teach the person stay away from poisonous substances

[ ]

2. Do not enable the person to be Aware of danger in his/her environment and avoid it

[ ]

3. Do not enable the person to safeguard himself from machines, tools and other equipment in a work situation [ ]

4. To enable the person to be Aware of the potential danger while he/she is on the street and avoid it

[ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals

[ ]

8.6. Assignment/Activity

8.7. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

8.7.1. Points for discussion

8.7.2. Points to Clarification

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UNIT 5:AGENCIES/ORGANISATIONS PROMOTING – SPORTS, CULTURE AND RECREATION ACTIVITIES FOR THE VISUALLY IMPAIRED IN INDIA – INDIAN BLIND SPORTS ASSOCIATION, CHESS FEDERATION OF INDIA, PARALYMPIC COMMITTEE OF INDIA, ABILYMPICS, WORLD BLIND CRICKET

UNIT 1

TO UNDERSTAND THE BASIC PRINCIPLES OF COMMUNITY BASED REHABILITATION

STRUCTURE

UNIT 1

TO UNDERSTAND THE BASIC PRINCIPLES OF COMMUNITY BASED REHABILITATION

1.15. INTRODUCTION

Rehabilitation includes all measures aimed at reducing the impact of disability for an individual, enabling him or her to achieve independence, social integration, a better quality of life and self-actualisation. Rehabilitation includes not only the training of disabled people but also interventions in the general systems of society, adaptations of the environment, protection of human rights and empowerment. Protection of human rights is an obligation for the authorities of each country, for its communities and for every citizen. Disabled people shall have the same rights to a life in dignity as others, and there must be no exceptions.

1.16. OBJECTIVES

Special attention may be needed to ensure the following:

- Access to health and social services;
- Access to education:
- Ability training and income generation opportunities:
- Access to housing, transportation and to buildings;
- Access to information;
- Access to cultural and social life, including sports and recreational facilities;
- Access to representation and full political involvement in all matters of concern to them.

1.17. Community-Based Rehabilitation (CBR)

Community-based rehabilitation (CBR) is a common-sense strategy for enhancing the quality of life of people with disabilities by improving service delivery in order to reach all in need, by providing more equitable opportunities and by promoting and protecting their rights. CBR builds on the full and coordinated involvement of people with disabilities and their families. It should be supported all levels of society: community, intermediate and national. It seeks the integration of the interventions of all relevant sectors - educational, health, legislative, social and vocational - and it aims at the full representation and empowerment of disabled people and promotes interventions in the general systems of society and adaptations of the physical and psychological environment that will facilitate the inclusion and the self-actualisation of disabled people.

The goal of CBR is to bring about a change - to develop a system capable of reaching all disabled people in need and to educate and involve governments and the public. CBR should be sustained in each country by using a level of resources that is realistic and maintainable. Suggestions for appropriate action at different levels are as follows:

At the community level, CBR is seen as a component of an integrated community development programme. It should be based on decisions taken by its members. It will rely as much as possible on the mobilization of local resources. The family of the disabled person is the most important resource. Adequate training and supervision should promote its skills and knowledge, using a technology closely related to local experience. The community should support the basic necessities of life and help the families who carry out rehabilitation at home. It should further open up all local opportunities for education, functional and ability training, jobs, etc. The community needs to protect its disabled members to ensure that they are not deprived of their human rights. Disabled community

members and their families should be involved in all discussions and decisions regarding services and opportunities provided for them.

The community will need to select one or more of its members to undergo training in order to implement the programme. A community structure (committee) should be set up to provide the local management.

At the intermediate level, the government should provide a network of support services. Its personnel should be involved in the training and technical guidance of community personnel, should provide services and managerial support, and should liaise with referral services. Referral services are needed to receive those disabled people who need more specialised interventions than the community can provide. The CBR system should seek to draw on the resources available in both the governmental and non-governmental sectors.

At the national level, CBR seeks the involvement of the government in the leading managerial role. This concerns policy-making and planning, implementing, coordinating, and evaluating the CBR system. This should be done in co-operation with the communities, the intermediate level and the non-governmental sector, including organisations of disabled people. CBR is not a blueprint or ready-made solution. It calls for flexibility, taking into consideration the social, cultural and economic situation, the daily realities as experienced by persons with disabilities, the country's existing services and personnel, and its phase of development, priorities and policies. Projects or programmes that do not apply the basic principles of CBR, on the other hand, should use another term to describe their activities.

1.18. Basic principles of CBR

Community-based rehabilitation is founded on set of principles described below. To establish principles that are totally consistent and free from contradictions is not easy to do. There is nothing new or eccentric about the five ideas of equality, social justice, solidarity, integration and dignity highlighted here. We should, however, note that these principles, for example, the one concerning equality, are not always part of the local or national culture. In others, nobody will object to them. However, they may not be applied.

1.18.1. Equality

All human beings are of inherently equal worth, are entitled to equal rights and share the same responsibilities. Human beings are born each a unique individual. Each develops along different lines. Each has different abilities. These differences do not make us unequal in worth. It is a fact that disabled people in most or all societies are denied equality in rights. This reflects the prevailing social attitudes of our societies, which are biased toward admiring and rewarding certain abilities while disregarding many other qualities. Disabled people face a situation similar to that of women in some societies, who, until recently, were denied the right to vote and earned lower salaries than men for doing the same work. Some countries still will not let disabled people participate in political functions or give them a vote. Disabled people are responsible neither for their situation nor for such attitudes. They are the victims. Disability is caused primarily by environmental factors, such as disease, trauma and lack of prenatal care. Involuntarily affected by such factors, people with disabilities may see their hope for a better life deteriorate in the face of social insensitivity to their needs for equality. They may be denied the right to rehabilitation, education, employment and social integration. Insensitivity may lead to their rejection or even to the questioning of their right to life.

One of the most fundamental questions relative to equality is "Who has the power over a disabled person?" Is it the authorities and experts, or is it the disabled individual himself or herself? If there is one characteristic that is common to the group of disabled people - standing out over and above such others as poverty, lack of services, and lack of access to education and employment - certainly that characteristic is powerlessness.

1.18.2. Social justice

Social justice implies that services and opportunities provided fo disabled people should be at the disposal of all and not be reserved for a numerically small group among them. It stands to reason that the ultimate goal is to make individualized care, training, schooling, and access to employment and income-generation available to all disabled people. These are vital contributory factors to integration, independence and self-actualisation. Achievement of this objective is, however, many years away. In the meantime, guided by the principle of social justice, we should endeavour to build programmes that will eventually give all disabled people at least the essential services.

1.19. Summary

One of the aims of a rehabilitation programme should be to stress the abilities and competence of disabled people, to increase their responsibilities and rights, to apply more equal and more human standards to these fellow human beings, and to strengthen the process of empowerment. In order to achieve this we have to overcome prejudice and reject arbitrary concepts of difference concerning disabled people, which have been reinforced over many centuries by tradition and dominant power structures, and which today represent formidable roadblocks on their way.

1.20. Check Your Progress

Q.1

1.21. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.21.1. Points for discussion

1.21.2. Points for clarification

1.9 References / Further Readings

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