B.ED. SPL. EDUCATION

INTERVENTION AND TEACHING STRATEGIES

SES VI 03

MADHYA PRADESH BHOJ (OPEN) UNIVERSITY

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B.Ed. Spl. Ed

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MADHYA PRADESH BHOJ (OPEN) UNIVERSITY,
Bhopal

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Bachelor of Special Education

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A Collaborative Programme of

Madhya Pradesh Bhoj (Open) University

&

Rehabilitation Council of India

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SES VI – 03

INTERVENTION AND TEACHING STRATEGIES

BLOCK

1

THEORETICAL PERSPECTIVES

BLOCK – 1 : THEORETICAL PERSPECTIVES

INTRODUCTION

Blindness is a disability caused by absence of sight. It is well known that more than 80% of the knowledge about the world is gained through the sense of seeing (vision). This means that those who can not see are deprived of the opportunity of gaining this knowledge. But, the shining stars on the horizon in the history of education of the blind who were themselves visually impaired achieved great heights in scholarship in all the field despite their visual impairment. For example Homer, the Greek poet, Milton, an English poet, Nicholas Saunderson, the great mathematician and Helen Keller who was both deaf & blind attained name and fame in literature and mathematics. Surdas from India and Abdul Allam Ul Almaria from Baghdad are also well known for their contribution to human development. There are several others who have made their contribution.

The absence of sight requires an individual to develop and sharpen other senses like hearing (audition), touch (tactile), smell and taste, and movement (kinesthetic) so that they may compensate the loss of sight.

In this Block an attempt has been made to help you to understand the implications of blindness in acquiring concepts, learning various techniques of adapting teaching learning material (TLM), cognitive development and the need for learning plus curricular skills like Braille, Activities of Daily Living (ADL), Orientation Mobility, Sensory training and the need for learning special equipment.

OBJECTIVES

After having studied this block, you will be able to :

- understand the process of providing non visual experience to visual ideas/concepts.
- explain the process of concept development among visually impaired children.
- apply principle of preparing instructional material in designing teaching learning aids.

- understand the Piagitian stages of cognitive development.
- describe the implications of loss of sight in the cognitive development.
- use need based strategy for promoting cognitive development.
- understand the concept of plus curriculum, mechanics of Braille reading, method of teaching Braille, activities of daily living, orientation and mobility and the need and importance of sensory training.

UNIT 1: DIFFERENCE AMONG METHODS, APPROACHES AND STRATEGIES

STRUCTURE

- Introduction
- Objectives.
- Process of providing non- visual experiences to visual idea.
- Supplementary instruction for concept development.
- Principles of using instructional materials.
- Objectives.
- Adaptation of instructional materials for children with visual impairment.
- Adaptation of instructional materials and methods in teaching visually impaired children and the use of special appliances.
- Objective effects of blindness.
- Subjective effects of blindness.
- Use of special appliances
- Unit Summary
- Check your answer.
- Assignment.
- Points for discussion and Clarification
- References.

1.1 INTRODUCTION

Vision is an important sense. It is a gateway of all knowledge. Visionserves the purpose of integrating the information received by other modalities and is important in the formation and refinement of concepts, absence of vision deprives of such privilege. It is often said that 80% of knowledge is gained through vision and 95% knowledge is received through vision and hearing. This implies that in the absence of vision and hearing, learning may not take

place at all. It is considered to be a myth as many people in the absence of sight have acquired a great degree of success in all spheres of human learning. But to taste this success, an additional effort is required.

Information can be gained in several ways and many a times we can learn one thing in more than one ways. What is needed is that a teacher teaching children with visual impairment, should acquire an understanding of providing non- visual experiences to visual ideas, strengths and limitations of various senses and principles of teaching the visually impaired children. An attempt in this lesson also has been made to discuss implications of blindness and visual impairment in teaching.

1.2 OVERALL OBJECTIVES

After going through this lesson, the teacher trainees will be able to :

- explain the need for visual idea to translate into auditory and tactile experiences
- explain the process of providing non-visual experiences to visual ideas.
- Explain the strengths and limitations of various senses.
- Define concept and explain the process of concept development. Describe the principles to be followed for teaching various concepts to visually impaired children.
- Describe various instructional strategies to be followed in teaching the visually handicapped children.
- Deacribe the meaning of adapted instructions.
- Explain the effects of blindness and visual impairment.
- Describe techniques of material adaptations.
- Describe the specific uses of various special appliances.

1.3 PROCESS OF PROVIDING NON-VISUAL EXPERIENCE TO VISUAL IDEA.

OBJECTIVES

The teacher trainee, with the help of this material is expected to

a. Explain the need for visual idea to translate into auditory and tactile experience.

b. Define and list the direct services.

c. Define and list the indirect services offered by the regular and resource teachers.

d. Classify the activities on the basis of skills development and content development.

When a sighted person is not fully making use of his sense due to the dominance of the sight over other senses, a visually impaired person ought to use them optimally. In fact, blindness reduces the confidence in the remaining senses and therefore, adequate training would be necessary to orient the children to the use of other sense organs. The important areas required for sensory training could be essential to compensate the experiences which is based on the visual ideas. In addition to this, the discussion of the non-visual experience to visual idea should consider the following implications towards blindness.

- The visual impaired child may need to be given direct assistance to learn systematically even the easy skills that the sighted child learns almost spontaneously through imitation and contact with the world.
- The visually impaired child may show deficiencies in some subjects when he is untaught. Predictions should bot be made that he is unteachable. Efforts are necessary to teach difficult concepts too to the child.
- A misconception that visually impaired children posses extra power in their auditory and tactile ability should be overcome. They need sufficient practice for developing these skills in them. Unless these skills are developed systematically, there is no way if learning them.
- Due to lack of visual feedback, a visually impaired child may have to skip a number of intervening steps of an activity which have visual orientation.
- There are some areas which the visual impaired child must fail. He needs guidance to accept these failures graciously and accept help in these areas.
- It is not only the disability which creates all difficulties, but the child should learn to live with that disability by not allowing it to affect his social life adversely.
- Some times, visually impaired child may not show improvement in his studies. Teachers should not suspect his cognition only on the basis of poor performance, it has implications on the basis of family assistance, socio-economic status etc.

- The functional vision and light perception in the children may result in the child a different type of behaviour. Teachers should be aware of this fact and guide them properly.
- The visually impaired children with additional disabilities may need special support based on their particular disability condition.
- The ides the utmost compensation to the visual loss.

2. Sense of Touch: Since exploration of an object in worth to thousand words used for explanation, this area becomes very vital. Objects perceived through touch determines the definiteness of the object and helps the individual to form a neat conception of that.
3. Sense of Smell: A good nose voluntarily offers the information of the objects which could be smelt. Smell is a sensible clue for a traveler. During his travel, the smell of a gutter, the smell of smoke from a chemical industry, smell of flowers of a garden, smell of kitchen etc., are sources of information for him to locate where he is.
4. Sense of Taste: This skill helps the visually disabled person to associated the names of substances with the taste. For example, sweet, sour, hot etc. could be associated with the substances which provide such experiences.
5. Kinesthetic sense: The felling of the body is responding to the external stimuli, which is other wise, the kinesthetic sense enables the child to get certain information like cold, heat, breeze, elevation of surface etc.

The mode through visual ideas n can be transmitted and education can be imparted to the blind auditory and tactual.Sounds are constant in the environment, and although some are loud enough to startle ,when repeated consistently and paired with visual or tactile stimuli conveys meaning.The sequence of learning to understand and give meaning to sounds seems to follow a pattern.

- awareness and attention to sounds
- response to specific sounds
- sound discrimination and recognition
- recognition of words and interpretation of connected speech
- selective listening to verbal instructions
- auditory processing and listening for learning

The last stage is the ultimate level and is a skill essential for academic and information seeking and continued cognitive development of visually impaired.

Often referred to as th skin senses, the tactual and kinesthetic system involves touch, movement and body positions in space. These senses assume paramount importance in development in relation to reduction in visual ability, and are the primary learning for blind children. This sense also follows a pattern.

- Awareness and attention to differences in textures, temperatures, vibrating surfaces and materials of varied consistencies.
- Structure and shape perceived through hands.
- Relation of parts to the whole through blocks, toys and objects
- Graphic representations in two dimensional to three dimensional forms
- Braille symbology

1.5 PRINCIPLES OF USING INSTRUCTIONAL MATERIALS

The education for visually impaired children is the same as the non-disabled but the mode through which it is transmitted is somewhat different. The instructional material to be used to explain a concept needed modification and most of all its selection is important.

Ever since formal education of blind children began, enlightened teachers of the blind have practiced certain principles, mostly without being theoretically aware of them. To what extent they can be applied in the actual process of teaching depends somewhat on whether visually handicapped children receive their education as a group in an environment geared to their needs, as residential schools are, or as single individuals in public school facilities where they may have an understanding general classroom teacher and should have a resource or itinerant teacher who is aware of and knows how to meet their special needs.

1. In order to give the blind child a knowledge of the realities around him, the teacher must aim at providing him with a wide variety of **concrete experiences**, thus making up to a certain extent for the limitation in the range and variety of his experiences. Concreteness in teaching can be achieved in essentially two ways : by having the children observe the object or situation itself, or by providing them with a model of the object. In all the cases if there is any possibility, reality is to be preferred. Children must be given sufficient time for observation. Diagrams and

embossed maps are most valuable from the early school years on in developing spatial concepts and basic relationships needed for orientation and other purposes.

2. Blind children are at a serious disadvantage in experiencing things and situations in their totality. Touch permits observation of objects that can be embraced by hands or body. Vision permits a unification of observations and it structures and organizes discrete impressions received by other sensory organs. The lack of unifying integrative experiences, of gestalt formation, must be counteracted by teachers who give blind children opportunities to experience situations in their totality and to **unify part- experiences into meaningful wholes.** The teaching by study units is an important means of achieving this end.

3. As a result of their blindness and because of the environmental reactions to this handicap, blind children have in significantly less opportunities for **self- activity.** Therefore special attention must be given at home and in school to encouraging blind children to do as many things for themselves as are desirable and compatible with a well conceived time economy. The general approach of teachers should be to encourage blind children to learn to do things themselves with as little assistance as possible. The teacher will need to distinguish between tasks and skills that are essential for the child to perform at a given stage of his development and those which must be left for later or need not be mastered at all. They will need to assist him in his learning by finding a progression toward accomplishment by which each step is within the child's capability and still poses a challenge to him. This requires sensitivity and identification on the part of the educator and inserts an art element into teaching which is challenging to pursue and satisfying in its results. As regards, the creative activities of blind children, educators should not impose their 'seeing taste' on blind children, but let them create things according to their own concepts and emotions.

1.6 INSTRUCTIONAL OBJECTIVES

Cognitive domain: is concerned with ability to do a task (The recall or recognition of knowledge and the development intellectual abilities and skills).

Affective domain: is concerned with the will or desire or attitude to do the task. Hence cognitive and affective domains are theoretical aspects of human behaviour. (Changes in interests and values and the development appreciation and attitudes.

Psychomotor domain : is concerned with the practical aspect. (Development of manipulative or motor – skills).

Nature of Adapted instruction : The general curriculum which contains more "visual experience to non-visual" and less "non-visual experiences" must be analysed to convert the visual experience to non-visual experience for the betterment of concept development for the visually impaired children. The visual oriented diagrams should be converted as tactile oriented.

To achieve the above the following four steps may be followed.

a. We should try to DUPLICATE experiences; but can't always, so we have to.

b. Modify experiences some times; these modifications may be in terms of

- Content
- Method of display
- Type of material used
- Response expectations from the child etc.

c. Some times, there is no suitable means of modifications and we must therefore SUBSTITUTE one kind of lesson for the visually impaired children which as closely as possible approximates that presented to his sighted peers. But even then, and especially in the early days, we may sometimes

d. OMIT a lesson.

These four steps are very important in giving the same kind of experience to the Visually Impaired Children through the tactile material. This pattern shifts quickly, and is no time at all, omissions are rare, substitutions are frequent; modifications - especially in the page layout continues to be desirable; but of greatest importance, and more duplicate experiences are possible.

1.7 ADAPTATION OF INSTRUCTIONAL MATERIALS FOR CHILDREN WITH VISUAL IMPAIRMENT - GENERAL PRINCIPLES

- There is no change in the content of the lesson.
- The basic format of the lesson is not changed.
- The visual oriented information is adapted wherever necessary.

- While presenting the pictures, finer visual details are omitted without compromising the thrust of the concept.
- When the finer visual details are omitted from the diagram, supplementary verbal description is given along with the tactile diagram.
- Wherever concept is important and not the diagram, it is modified suitable. For example, in teaching a number concept, the actual picture given in the print book is modified in tactile formats, which are understandable.
- The format of the tables is retained whenever desirable. In all other cases, contents given in the tables have been described row-wise.
- Wherever the actual duplication of a picture is not presentable in tactile form, the characters in the diagram are labeled.
- As Braille version of a print page will run into approximately 2-3 Braille pages, the print page is indicated on the left side of the Braille page and the Braille page on its right side. Whenever a print page in over, a horizontal line is given to mark the end of the page.
- If a box is given in the text to highlight the importance of the content given there, the same is provided within a box it is too small. Wherever, the box is too big for tactile closure, the content given in the box presented within square parenthesis.
  * Whenever small mathematics and scientific notations are used in the Braille text, they are listed at the beginning of the Braille book along with illustrations on how to use them.
- Along with the Braille copy of the text, the diagrams in the print form are also enclosed at the end so as to enable to teacher to provide verbal description of the diagram while teaching. Reference to these diagrams is also made in the Braille text wherever needed.

1.8 ADAPTATION OF INSTRUCTIONAL MATERIAL AND METHODS IN TEACHING VISUALLY IMPAIRED CHILDREN AND THE USE OF SPECIAL APPLIANCES

The guidelines for teaching method should be developed based on the special characteristics of learning behaviours of the visually impaired children. Sighted child can easily learn many things just by seeing what is happening around him. But for the visually impaired children it is very difficult. A mere sight will bring lot of information in a fraction of second. So their way of learning of NATURAL where as learning of the visually impaired in MEDIATED

LEARNING. Therefore activities designed for the visually impaired must be LOGICAL, SEQUENTIAL and SYSTEMATIC.

Most learning takes place quiet apart from teachers and formal teaching situations. It is a well known fact that teaching and learning are unavoidable aspects of human growth. Very often learning in strengthened by "REINFORCEMENT" visual feedback plays a significant role in the reinforcement of varied experiences. Since the tactile, auditory, olfactory sensory may not be the complete substitute for the vision the visually impaired children may take a longer time to learn and more repetitions to understand because of the limitation in vision. The concepts are visualized by the visually impaired children through pieces of information (i.e.) they explore, identify, discriminate and generalize by step by step approach but sighted children learn as a WHOLE become of the quick visual process.

The enemy of learning is primarily other learning. Freedom and discipline are essential conditions for learning. Learning is an active continuous process. Purpose action is better than repeated motions. Human learn many things they don't need to know. The functional learning is determined by knowledge, understanding and interpretations. When the knowledge is controlled by recall and recognition careful decision must be made for the new learning should not confuse the things that may already be learnt by the visually impaired children. For example the word "DARKNESS" may not be confused with LIGHTLESSNESS. To know the difference the child must be explained the attributes of darkness and lightness.

While seeing the learning stages of the children irrespectives of normalities and abnormalities, concrete experiences and then to abstract learning. When looking at the visually impaired, every teachers should try to give as many concrete experiences as possible. This is because of the very reason that their reduction in range and varieties of experiences due to the lack of vision. It is also noted that concrete objects can not give concrete ideas to the Visually Impaired Children. It is necessary for the teacher to see such things are not left incidental. It must be planned and systematic.

It is also observed that most of us have the wrong notion that the Visually Impaired Children have superior learning power. But this is not practically true. In practice the visually impaired children may be less in making use of remaining senses. They must be properly oriented and trained by the personnels involved in the programme. In case that parents involvement is needed for this purpose all possibilities of exploring the available services of the parents and other para professionals could be made workable.

The restrictions imposed by the absence of vision has implication for the teaching learning process while implementing the adapted instructional methods and materials. The following may be some of them.

1.9 OBJECTIVE EFFECTS OF BLINDNESS

- Reduction in range and variety of experience.
- Reduction in ability to move about.
- Control of environment and self in relation to it.

1.10 OBJECTIVE EFFECTS OF BLINDNESS

1. Stability
2. Etiology
3. Extent (amount)
4. Utility (residual vision)
5. Social impact
6. Need
7. All mitigated by intelligence and guidance.

In addition to above objective and subjective effects of blindness, the discussion of the teaching / learning methodologies in detail should consider appropriate measures to study the implication of blindness for education.

- The visually disabled child may need to be given direct assistance to learn systematically even the easy skills that the sighted child learns almost spontaneously through imitation and contact with the world.
- Some problems shown by the Visually Impaired Children are not related to blindness. For example home sick, adjustment to group living.
- Adults and children do not understand each other as well as both assume, since they often use the same word with quite different meaning.
- A child may be impressed by the concrete existence then it's essential features. He cannot always distinguish between his own feelings and outside events.
- A misconception that Visually Impaired Children posses extra power in their auditory and tactile ability should be over come. They need

sufficient practice for developing these skills in them. Unless these skills are developed systematically, there is no way of learning them.

- In working with the Visually Impaired Children we must try to remember that we describe things using verbal oriented terms which most of the times they have no meaning for then.

Association is an important aspect of learning. Identifying, grouping and sequencing assist learning. Due to the lack of visual feedback, a visually impaired child may have to skip a number of intervening steps of an activity which have visual orientation.

It is very important to take the teachable moment and use it to the childs advantage. Let the child initiate the activity in learning.

Progress in learning is not uniform, but frequently reaches plateaus where the rate of learning shows appreciably. Some time Visually Impaired Children may not show improvement in his studies. Teacher should not suspect his cognition only on the basis of poor performance; it has implication on the basis of family assistance, socio-economic status etc.

Some times blindness add additional problems if the defective eye continues to give pain. Proper treatment is necessary at this stage, other wise this may affect the education of the child directly.

The functional vision and light perception in the children may result in the child a different type of behaviour. Teachers should be aware of this fact and guide them properly.

The Visually Impaired Children with additional disabilities may need special support based on their particular disability condition.

The Visually Impaired Children may have difficulty in forming exact concepts as they have to manipulate form parts to whole.

The Visually Impaired Children may develop many verbal skills without associating the proper meaning. Due considerations have to be given for the development of appropriate languages skills in them.

Regarding teaching curricular subjects both methods and in using of instructional material needs modifications like

MATHEMATICS : Adaptation of mathematical text materials is essential to keep the learning outcomes on par with sighted children.Preparation and dissemination of mathematics Braille text material is vital for the teaching-learning of maths. Since maths is an abstract subject that includes concrete, pictorial and abstract concepts, the principles of material production should be

duplication as far as possible, modifications when necessary, substitution whenever appropriate and even omission of some inevitable topics.

Teaching concept of length, breadth, volume, temperature, etc. is very important for V.H. children.In teaching such concepts the teacher should move from

- large 3 dimensinal objects to
- small 3 dimensinal objects to
- 2 dimensional figures such as tracing wheel lines, to
- child model familiar objects in clay to
- tactual concept books and materials to
- identifying two dimensional forms.

SCIENCE : Research indicates that tactiles and embossed maps for geographical features.

1.11 USE OF SPECIAL APPLIANCES

Advances in technology have brought in revolutionary changes in the quality of life and patterns of work and leisure. The 20th century has witnessed phenomenal advancement in technology in almost every sphere. These developments have brought in revolutionary changes in the quality of lives of human beings. It has played a very important role in mitigating the limitations imposed by a disability. Assistive devices have helped the visually impaired to achieve better levels of independence through more access to information. Technology has tremendous potentialities for facilitating economic rehabilitation of the visually impaired and there is a need to improvise technology in the absence of universal designs. The following are some examples of devices.

EDUCATIONAL DEVICES

Educational devices can be classified as

- Braille duplicators and writers
- Writing devices
- Braille paper
- Talking books and tape recorders
- Reading machines

- Braille computers
- Mathematical devices
- Science devices
- Geography devices

1. Teaching orientation and mobility through aids and appliances

The systems which is widely accepted for the independent travelling of the Visually Impaired Children in the use of the long cane. Orientation and mobility is one of the most important areas in the training of the Visually Impaired Children. Before introducing the mobility device to the visually impaired children, the skills like orientation skills, mobility skills, sighted guide technique and safety technique should be introduced. A Visually Impaired Children with excellent orientation skills and graceful mobility skills is said to have attained physical independence and such students are easily acceptable to the society. When a sighted person is not fully making use of his sense due to the dominance of the sight over the sense, a Visually Impaired Children should be trained to use sense of hearing, sense of touch, sense of smell, sense of taste and kinesthetic same.

MOBILITY DEVICES

Canes:

a. Symbol canes: It is made up of light metal tubing, generally alluminium or its alloys. These canes folded up conveniently for carrying. This cane is popularly known as Braille folding stick.

b. Guide canes: A stronger version of the symbol cane and intended to be more of a mobility aid.

c. Long canes: A wooden or alluminium stick of 85 to 90 cms. This alluminium cane is generally sleeved with PVC material, having a rubber grip and a nylon tip with or without a crook.

d. Electronic Travel Devices: An ETA is described as a device that sends out signals to sense the environment within a certain range or distance, processes the information received and furnishes the person with relevant information about the environment. Most of these devices are based on integrated circuits and emit or tactile signals. The electronic travel devices are not available and prevented in India. Some of these devices are listed below.

    - Lind say Russel E-model path sounder

- C5 Laser cane
- Ultrasonic Torch
- Sonic guide
- Light probes
- Mowat sonar sensor
- Nottingham obstacle sensor
- Electro-cortical prosthesis
- Electro Roftalm
- AFB's Computerized travel aid
- Polaroid ultrasonic travel aid.

e. Mobility show card: A plastic show card to help visually impaired persons to cross busy roads and to hail a taxi.

f. Mini Beeper: A battery operated, hand-held electronic gadget having application in mobility, recreation, sports and obstacle location.

2. BRAILLE DUPLICATORS AND WRITERS

Thermoform Machine

'Indutherm' is an indigenous duplicating machine. Generally this machine is useful to take Xerox copies of the master copy with the help of Braillon sheets. It is mostly useful to take copies of tactile diagrams.

Braille writers

It is an upward writing machine for writing on one side of the paper, enabling the Braille to be read as it is written. The most popular Braillers are

- Stensby Braille writers
- Perkins Braillers
- Taj Braillers
- Worth perkins Brailler
- Minal Brailler

Writing Devices

- Interline Braille frame

- Taylor postcard frame
- Pocket Braille frame
- Stylii
- Braille kit
- Pragnya sketching device
- Product design.

3. MATHEMATICAL DEVICES

* Taylor Arithmetic frame
* Arithmetic and Braille writing slate
* Abacus
* Talking calculator
* Mathematics kit
* Spur wheel
* Compass set
* Geometry mat
* Opisometer

4 . LOW VISION AIDS

- VTS link
- Visual tek
- Schmidt reader
- Magnifying lenses:
- Mounted magnifying lens
- Flexible arm illuminated magnifies
- Magnifying binoculars
- Book magnifies
- Illuminated magnifies
- Paper weight magnifies
- Super loupe
- Eye loupe
- Head loupe
- Flashlight magnifies
- Pocket magnifies
- Rayner recumbent spectacles
- Super scan reading glasses
- Windsor spherical magnifies
- stand magnifier and
- Hand-held magnifier.

Braille Reading

- Students being taught Braille must have an understanding of the spoken language.
- The children should use both the hands.
- Placing both hands at the beginning of a line is important.
- The left hand should move in the opposite direction and locates the beginning of the next line.

- The students should touch the dots lightly.
- Good two handed readers need to acquire a light touch.
- Clean and warm hands are important for rapid and correct Braille reading.
- Never tell a child that there are reversible pairs of letters in Braille.

Braille writing

Special appliances are used by the child to write braille. Braille slate and stylus, pocket frame and brailler is commonly used by the children. Those children who can afford a mechanical braille writer can use it but due to its cost, all children cannot be benefited by this equipment. While the impressions of braille dots will be downward in the slate and stylus, the impressions in the mechanical braille writer are upward. Braille writing through the slate and stylus in typical. While writing the child has to punch the dots from the right to left side of the slate. After this, the child should reverse the paper and read it from left to right.

Skills necessary for writing with slate and stylus

Pre-requisite skills are most important for using slate and stylus effectively. The six dots 1, 2, 3, 4, 5 & 6 are punched in the respective cells of the braille state. It is important to make sure that children understand what is meant by a cell or cells of the braille slate. In order to write braille effectively, the child should posses the following skills.

- Finger manipulation skills.
- Fine motor co-ordination and control of muscles.
- Competency to read familiar braille words.

Technology has not solved all our problems, but it has dramatically reduced many. It has opened up avenues for the disabled hitherto thought to be completely closed.

Inspite of the initiatives, technological developments do not seem to have made full impact on the rehabilitation of the visually impired. Some of the reasons are:

1. Information dissemination about technological developments is meagre.

2. Adequate training facilities in the use and maintenance of specialised equipment are not available.
3. Affordability has to be ensured either through subsides or financial assistance on easy repayment terms.
4. A policy to popularise and market the indigenous products, especially in view of low markets demands for such devices, is required.
5. Many of the technological developments have not gone out of the laboratories and the fruit of such wonderful innovations has not been experienced by the users.

SUPPLEMENTARY INSTRUCTION FOR CONCEPT DEVELOPMENT

Concept

Concepts have been described as "verbally identifiable and more-or-less stable abstractions (constructed from experience) which serve man in his psychological adjustment to a particular environment" (Bruner et. al., 1960) concept is defined as (a) an accumulation of all that is conveyed to one's mind by a situation, symbol or object. Sometimes used to refer to a thought, opinion or general idea of what something should be. (b) the set of characteristics common to a class of objects; e.g. triangularity includes all three sided figures (Kully and Vergason, 1978). Concept is "an idea or thought especially a generalized idea of a class of objects; abstract notion" (Webster's new world dictionary, 1986).

The visually impaired children due to absence of vision failed to develop basic concepts and its integral components in their environment. Concepts should be taught properly and systematically to the Visually Impaired Children so that they can participate in all the academic activities equally with the sighted children. We have to asses concepts with individual children and adopt the verbal and manipulative procedures. Then we have to reinforce and generalize conceptual understanding once a concept is learned in a specific instructional setting.

- Learning of "concepts" in day to day life is very vital for the individual to interact with the world. The specific instruction in the following areas are very crucial in the concept development for the Visually Impaired Children.
- Body awareness (concepts pertaining to the body), top-bottom, back-front, left-right, names of major body parts, relationship of body parts, Lower part of the body, Upper part of the body
- Environmental awareness

- Awareness of object / situational characteristics.
- Time awareness
- Spatial awareness
- Actions
- Quantity
- Symbol awareness
- Emotional and social awareness
- Reasoning.

TEACHING GUIDELINES REGARDING CONCEPTS

1. One should use a consistent terminology, in teaching a concept.
2. Some essential concepts need to be taught deliberately while many other concepts are taught as part of daily experiences, play etc. It is always prferred to teach a concept through an activity, and in a safe environment for exploration. Parents should be part of the team in developing concepts.
3. Make use of toys, aids, materials to teach the concepts.
4. Use of field experiences, personal life experiences, toys, aids and materials etc. as well as parental participation is always recommended for concept development in children.

Assessment of Conceptual understanding

It is necessary to asses the students concept development in a systematic manner by examining the list of concepts in related to the curricular needs. Mostly in the primary level due to lack of language ability their performance may not be good. So their language ability skills may be assessed through the use of their available skills. The assessment should be based on their understanding and performance. Generally the judgement should be based on their past experience and instruction, language ability, visual functioning and general developmental level. The following are some of the models for the assessment of concept development.

Table – 1

Concepts of Actions

	Familiar Object Exemplifying Concepts	Unfamiliar Object Exemplifying Concepts
1. Identification Indicate an object named by teacher Name an object indicated by teacher 2. Describe function of named / Indicated object 3. Describe relationship of named / Indicated object to other objects		

Table – 2

Concepts of Body Parts that can be Touched

	Self	Other Persons
1. Identification Indicate part named by teacher Name part indicated by teacher 2. Describe function of named / indicated part 3. Describe relationship of named / Indicated part to other body parts.		

Table – 3

Concepts of Object Characteritics

	Clear-cut Examples	Finer Discrimination
1. Identification Indicate characteristic of an object or indicate object with a specific characteristic named by teacher Name an object characteristic indicated by teacher		

Table – 4

Concepts of Actions

	Self	Other Persons
1. Identification Imitate movement performed by teacher Perform movement by teacher 2. Describe function of an action, if appropriate.		

Table – 5

Concepts of Positions

	Own body parts only	Other persons or object and own body parts	Other persons or objects only
1. Identification Move to position named by teacher Name a position indicated by teacher			

Table – 6

Abstract Concepts

1. Describe function

2. Name class category, if appropriate

3. Describe similarity or analogy to other Known concepts

1.12 UNIT SUMMARY

1. The meaning of providing non-visual experience to visual ideas is to enable a child to gain knowledge of concepts through his remaining senses i.e. audition, tactile, all factory, gustatory and kinesthetic.

2. Human being is endowed with five major senses. Each of these senses namely, vision, audition, tactual, alfactory, gustatory and kinesthetic are employed for specific purpose for gaining knowledge about the environment. For example vision can provide information about the space, distance, colour, size and shape, but it cannot give any information about hardness, smoothness, softness, roughness, heat and cold. Similarly, audition which is also a distance sense like vision can give some idea about direction, eco-location, but it cannot give any information about the size or shape and colour. Tactual senses can give information about the hardness, softness, smoothness, heat, cold, elasticity and rigidity. But to gain these information, the actual tactile contact with the object is essential. Hence, it is not a distance sense. Kinesthetic can give information about movement. Alfactory i.e. sense of smell is also a sense of direction, but it cannot provide any information about exact location of the fragrant object.

3. Concept development involves sensation, perception, classification and image formation. Concepts are said to have been developed or formed when an individual can name or describe an object or event or place in its absence. For example the description of table even though the table is not there is the concept of a table.

4. Four basic principles namely duplication, modification, substitution and omission are employed for teaching the visually handicapped children. Duplication means providing a number of experiences for the same learning outcome. Modification means making changes in the teaching learning material without compromising with the learning outcome. Substitution means providing experiences through different senses for compensating the loss of sight. Omission means (which should be used when it is absolutely essential rather unavoidable) the droping out a particular activity from a given subject.

5. A number of strategies can be successfully employed for teaching the visually impaired children. For example giving as far as possible concrete and real experiences, giving opportunities to a child to explore an object bit by bit and then forming a meaningful whole by establishing relationship.

6. The instruction like teaching learning material also needs to be adapted for teaching the visually handicapped children. For example a teacher while explaining a concept by writing on blackboard should also speak out what she is writing on blackboard.

1.13 CHECK YOUR ANSWER

1. The four principles that are suggested in the management of educational experience for visually impaired children as follows.

   a. b. c. d.

2. Visually impaired children have more auditory and tactile abilities.

   a. Yes b. No c. Con't say

   d. totally blind children have more abilities

3. The objective effects of blindness

   a.

   b.

   c.

4. The subjective effects of blindness are .

   a. b. c. d.

   e. f. g.

5. The use of special appliances in teaching orientations and mobility.

   a. b. c. d.

   e. f. g. h.

6. The following are the devices meant for Braille writing.

   a. b. c. d.

1.14 ASSIGNMENT

1. Prepare a list of visual and non-visual ideas involved in the social science text book at the secondary level.

2. What do your mean by concept development. Write down the different types of concept development for the primary level visually impaired children.

3. Discusses the general guidelines should be followed while preparing the braille text book.

4. The trainee can visit both integrated education programmes and special school programmes to know about the special appliances involved in teaching plus curricular activities.

1.15 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:

1.15.1 Points for Discussion

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1.15.2 Points for Clarification

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UNIT 2: INTERVENTION – CONCEPT, SCOPE AND IMPORTANCE

STRUCTURE

- **Introduction**
- **Objectives**
- **Defining Cognitive Development**
  - What is Cognitive Development?
  - Characteristics of Cognitive Development
- **Piagetian Stages of Cognitive Development**
  - Sensory Motor Stage
  - Concrete Operation
  - Formal Operation
  - Abstract Thinking (Logical Operation)
- **Objective Effects of Blindness**
  - Restriction in the range and variety of experiences
  - Restriction in the ability to move about
  - Restriction in the control of environment In relation to one's own self
- **Implications in Cognitive Development**
  - Implication in concept formation/development
  - Implication in language development
  - Intellectual development
  - Role of play in Cognitive Development
- **Strategies for promoting cognitive development of Visually Impaired Child**
- **Unit Summary: Things to remember**
- **Check your progress**

- **Assignments/Activities**
- **Points for Discussion/Clarification**
- **Reference/Further Readings**

2.1 INTRODUCTION

We study various aspects of a given subject to understand the same clearly. In the field of special education, each area of disabilities has its own implications. For example, in the case of Hearing Impairment, we study what hearing impairment is? How does it occur? How can it be prevented? What are the ways of communication? Which the hearing impaired children need to learn for communication? and so on. Similarly, in the area of Visual Impairment, it's etiology, its impact on various aspects of development, the methods and techniques that need to be employed by a teacher in educating the visually impaired children and so on.

You may have studies many of these things else where in your course. We will try to learn in this unit what is cognitive development? What are various stages of cognitive development? And other issues relating to the cognitive development in visually impaired children. An attempt to understand the role of a teacher in promoting cognitive development in visually impaired children will also be made.

2.2 OBJECTIVES

After studying this unit you will be able to:

- Understand and Define Cognitive Development,
- Describe various stages of Cognitive Development as propounded by Piaget;
- Describe various effects of Blindness;
- Describe implications of Blindness in Cognitive Development,
- Explain various strategies for promoting Cognitive development of Visually Impaired Children.

2.3 DEFINING COGNITIVE DEVELOPMENT

In the discipline of Psychology, we need to understand various terms like Growth, Development and the impact of heredity and environment on the growth and development.

These terms are used by many of us without understanding their psychological meaning. In the area of development of an individual too terms like physical development, social development, cognitive development and emotional development are used without understanding their proper meaning and definition.

Before we try to learn to define cognitive development and describe various stages of cognitive development, why don't you attempt to describe your views about it?

2.3.1 What is cognitive development?

Describe your own views about the definition of cognitive development in the space given below:

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You may have included any/some/all of the following in cognitive development in your description, while attempting to define cognitive development:

- Sharpening of abilities to learn and understand.,
- Development of various senses'.
- Development of perceptual abilities'.
- Development of abilities to interpret sensorial experiences;
- Development of abilities to use languages.

Your attempt is in the right direction. Cognitive development includes all of these and many others, we may also define cognitive developments as -

- A rather closely defined area that of embraces the whole complex area of human mental development focusing on perception, attention, learning and memory, the comprehension and use of language and reasoning. Perception depends on sensation, attention depends on need of acquiring knowledge, learning depends on motivation and memory is based on result of repetitive exercise and practice.
- Cognitive development implies the development of an information processing system in which a given stimulus is received by an organism as a result of sensorial experience and proceeds through sequence of processing stages until it either drops out of the system or is stored in long-term memory.
- This is done through the process of 'assimilation' and 'accommodation' through which 'adaptation' is attained resulting in further cognitive development.
- Cognitive development is the development of ways and capabilities of understanding one's world, representing it and dealing with it; it is, therefore, at the very core of one's functioning as a person.
- Thus cognitive development is a process by which the child's knowledge and understanding of the world expand.

We also can say that cognitive development is synonymous with changes in cognitive structure. The major cognitive

functions are organization and adaptation, the former making for integration, and the latter comprising of two principles, assimilation and accommodation.

Thus, in short what we mean by cognitive development is given here in the box for your understanding.

The Cognitive development is a complex system of human mental perception, attentions, learning and memory, by which knowledge and understanding of a person increase through assimilation and accommodation.

we also can say that

Cognitive development is the result of sensory development, perceptual development in the way in which the child interprets sensory impulses received by him, as well as the ability to form concepts, exercise, judgment, reason and solve problems.

2.3.2 Characteristics of Cognitive Development.

Cognitive development is a long term process involving continuous and dynamic interaction between the organism and the environment expressed in identifiable stages or period which follows an invariant sequence. Cognitive development results essentially from an interaction between the subject and the environment. Being cognitively active does not mean that the child merely manipulates a given type of material; he can be mentally active without physical manipulation. Just as he can be mentally passive while actually manipulating objects. Intellectual activity is stimulated if the opportunities for acting on objects or observing other people's actions or for discussing corresponding to the subject's level of development.

Cognitive development proceeds in a certain direction-through irreversible, invariant and sequential stages. The cognitive development can only be nourished and fastened through a careful designed programme - both spontaneous and structured experiences and exercise.

We have some more characteristics of cognitive development and they are:

- Cognitive development is development of general ideas standing for a general class.
- Cognitive development is directly related to our thoughts.

- Cognitive development is based on experiences.

2.4 PIAGETIAN STATES OF COGNITIVE DEVELOPMENT

A number of theories of cognitive development have been formulated. Among these, the most systematic and comprehensive is that of Jean Piaget and his collaborators. Piaget's work has been extremely stimulating and influential. Piaget regards intelligence, as a specific instance of adaptive behaviour of coping with the environment and organizing (and reorganizing) thought and action. Adaptation begins with the random, diffuse, mass reflexes of the neonate state and progress through stages, to the formal, logical reasoning of adulthood. The transition from one stage to another are gradual and results from continuous creative ability of the child and interaction between him and his environment. At each stage, the child's knowledge and understanding of the world expands. Reorganization of information and the development of new capabilities immerse and make possible more complex type of intelligent behaviour, thinking and reasoning.

The growth of intelligence or adaptation always involves two complementary process, assimilation and accommodation. In assimilation, a child incorporate and utilizes stimuli from the environment, interpreting new situations in terms of familiar ones, fitting the unfamiliar into his available 'organization' and reacting as he has in past situations. Accommodation occurs when environment stimuli demand new reactions in familiar situation.

Piaget believes that, while physical and perceptual development seem to be continuous, intellectual development progresses in step like ways in discrete stages. According to Piaget, in the earliest stage of cognitive development, orienting responses and curiosity play a critical role in adaptation.

Piaget divided cognitive development into several stages. Most important stages are:

a) Sensory Motor stage.

b) Concrete Operation.

c) Formal Operation.

d) Abstract thinking (Logical Operation)

2.4.1 Sensory Motor Stage

According to Piaget's theory, the first stage in the development of adaptive behaviour, the sensory-motor, extends from birth to about two years of age, and is divided into six sub stages.

For the first month, an infant only exercise the reflexes present at birth, but the second sub stage from roughly one to four months, involves coordination of reflexes and responses. Hand movements become coordinated with eye movements; what he hears he looks at; he reaches for objects, grasps and sucks them. In the third sub stage approximately four to eight months, an infant beings to anticipate the consequence of his actions and can intentionally repeat responses that have produced interesting results. For example, at four months of age, a baby will kick his legs in order to make a toy suspended over his crib swing. Moreover, becoming interested in the objective would he begins to look for objects he has lost sight of.

In the fourth sub stage, eight to eleven months, the child begins to differentiate means from ends, using established responses to attain goals. Thus, if a desirable toy is hidden, he will actively search for it and he will remove an obstacle in order to get it.

The fifth sub stage, beginning at 1 1 or 12 months to 18 months of age, is characterized by active experimentation, exploration, variation and modification of behaviour. The child appears to be genuinely interested in novelty and manifests a great deal of curiosity.

Between 18 months and two years of age the child is in the sixth and final sub stage of the sensory motor period. This represents an important advancement into the other stages, for, it is characterized by the emergence of the capacity to respond to, or think about objects and events that are not immediately observable, and to invent new means of accomplishing goals through 'mental combinations', that is, imagination and ideas.

Some degree of problem solving, remembering, planning, imagining, and pretending are also possible at this stage, which most children have achieved by the age of two years.

2.4.2 Concrete Operations

The emergence of real symbolic activity occurs during the second broad period of development, the stage of concrete operations which extends from about 1 8 months or two years until the age of 11 or 12.

During the first part of this period, the preconceptual stage ages (two to four), a child begins to regard stimuli as representatives of other objects. Imagery, or "symbolic function" develops during this stage and, at the same time, the child acquire more facility in language, and he begins to engage in symbolic play.

His tricycle may be used as a racing car, a tree stump as a castle, and a twig as a machine gun.

During the next part of the stage of concrete operations, the period of initiative thought (appx. age four to age seven), the child conceptualizes more, elaborates his concepts, and constructs more complex thoughts and images. Moreover, he becomes able to group objects together into classes, according to his own perceptions of similarity. This is undoubtedly due to improvement in the child's language ability, which is of paramount importance m verbal medication, concept formation, abstraction and problem solving.

At this period, the child's concepts and his understanding of situations are likely to be determined by whatever he happens to perceive, often a single, salient aspect of a particular object or event. Ordinarily he will not relate different aspects or dimensions of a situation to one another. For example, in one experiment, a child is given two equal balls of clay and asked to roll one of them into a long sequence, to flatten it into a kancabe, or to break it into small pieces. Than he is asked whether the quantity of matter has increased, decreased, or remain equal. Most five and six years olds think that a change in form necessarily produces a change in amount. Being able to take account of only one dimension; such as the length, at a time, a child of this age is likely to report that the sausage contains more clay than the ball because it is longer.

At about seven years of age, the youngster beings to relate different aspects or dimension of a situation to one another and finally arrives at the notion of conservation, or what Piaget labels the "principle of invariance". At this age the child is now aware of the fact that the amount of clay remains constant in spite of changes in shape. Furthermore, he acquires the concept of reversibility - the idea that, in thought, steps can be retraced, actions can be canceled, and the original situation can be restored. Using the concept of reversibility, the child can interrupt a sequence of steps in problem solving if he sees that he is not succeeding; and he can then return mentally to the beginning and start again. It should be noted that this concept of reversibility is related to reversal at learning which, as we have seen, depends on abstraction and concept

formation. This kind of learning becomes easier as children grow older and, according to experimental findings, a considerable proportion of sever-year-olds can deal efficiently with reversal problems. In the stage of concrete operations, a child uses logic and reasoning in an elementary way, but he applies them only in the manipulation of concrete objects, not to verbal preposition.

The ability to deal with verbal expression of logical relationship requires the use of "formal operations" as distinct from "concrete operations", and the child does not ordinarily use these until the age of 11 or 12 years.

2.4.3 Formal Operations

The formal operations stage of cognitive development begins early in adolescence. While in the stage of concrete operations, a child can only classify, count, and put into series the various objects and events he perceives. An adolescent in the stage of formal operations can "operate with the operations", that is, by means of symbolic propositions. A child's concrete thought operations occurs in response to real situation. An adolescent can consider general laws, and his thoughts concern what is hypothetically possible as well as what is real. (Hunt, Intelligence and experience.)

A Soviet psychologist mentioned that, much of the preadolescent's language becomes abbreviated, contracted, and more internalized. Extensive use of covert speech is undoubtedly related to many advances in cognitive functions during adolescence. The adolescent can reason deductively, making hypotheses about problem and their solution keeping in mind many variables simultaneously. He is capable of scientific reasoning and of formal logic in verbal argument. Moreover, at this stage, he reflects about, evaluates, and criticizes the logic and quality of his own thinking. His dependence on the perception or manipulation concrete objects is reduced, he no longer confine his attention to the immediate situation. An adolescent reasons scientifically, forming hypotheses and testing them in reality or in thought. Although a younger child's thought involves only concrete objects, the adolescent can imagine what might be possible. He can speculate and his speculations are governed by logical rules.

2.4.4. Abstract thinking (Logical Operations)

The final stage of cognitive development is stage of logical operations. By the time is 15, a person is able to use logical operations and formal logic in an adult manner in solving problem. He has reached the critical stage in cognitive development. At this stage a child (abstract thinker) can deal with possibilities.

He acquires abilities to organize data systematically, apply combinatorial reasoning, and formulate hypotheses and evaluate their validity. His thinking is internalized, reversible and coordinated into operations which can be applied to abstract entities and propositions.

The following table summarize the stages and their substages along with marked changes.

S N	State	Sub stage	Marked Changes
1	Sensory Motor Stage	i. Reflexes	Reflexive responses to his own body
		ii. Primary circular reaction	Repeat those actions that are interesting to him
		iii. Secondary circular reaction	Reproduces behaviour that produce effects in external world
		iv. Coordination of secondary circular reaction	Begins to coordinate his behaviour with respect to external world in more complex way
		v. Tertiary circular reaction	Behaviour clearly involves active trial and error action on the external
		vi. Internalization of thought	Begins to be able to imagine behaviours and their consequences.
2	Concrete operation state	i. Pre-conceptual	Concept of conservation relations
		ii. Initiative thought	Temporal-spatial representations

3	Formal operation stage		Advanced logical and mathematical scheme, comprehension of abstract or symbolic contents. Reduced need for objectives for thinking.
4	Abstract thinking (logical operation stage)		Use logical operations and formal logic in an adult manner in solving problem.

2.5 OBJECTIVE EFFECTS OF BLINDNESS

Visual impairment results in several educational, social and psychological effects. The effects are both objective and subjective depending on the type and degree of visual impairment. For educational purposes, it is considered desirable to classify the nature of effects.

The objective effects of blindness are cognitive. As senses are the gateway to knowledge, sensory deficit in vision reduces the range and quality of cognition. Moreover, vision is the most actively used sense. Lots of knowledge grows out of the visual experiences. The resulting effects of the loss of vision are therefore severe.

Berthold Lowenfeld, a noted educator of blind and visually handicapped pupils, presents a moderate position. He says that blindness "imposes three basic limitations" on the individual:

1. Restriction in the range and variety of experiences.
2. Restriction in the ability to move about.
3. Restriction in the control of environment in relation to one's own self.

These are described in the following paragraph.

2.5.1 Restriction in Range and Variety of Experience

A visually handicapped person can gain knowledge of the spatial qualities of objects only by touch observations. In this type of knowledge kinesthetic experiences play an important role. In order to perform any touch observations, direct contact must be had with the object to be observed.

Herein lies some like sun, the horizon, many things are too large like mountains, large buildings, many things are too small like a fly, and ant or many things are too fragile like a butterfly, snowflakes to be observed by touch. Also some objects in certain conditions cannot be directly observed tactually like moving objects (airplanes), burning objects, boiling objects and the objects which have no shape of their own like mercury. One aspect of vision, colour perception, cannot be performed by any other sensory organ because it is a function of retina. Blind children often gain only a partial knowledge of objects because touch requires direct contact with the object to be observed. There is one more cause for this restriction, the sense of touch generally functions only if it is actively employed for the purpose of cognition, whereas vision is active as long as the eyes are open and the bearing functions continually unless its organ is obstructed.

2.5.2 Restriction in ability to get about.

The visually handicapped child are severely handicapped in their ability to move around by themselves. The total loss of vision makes the person dependent on his other senses, which even at best result in increased difficulties and deceleration in getting about. Many regard this restriction as the most severe single effect of blindness. This limitation of a visually handicapped person effects the person in two different spheres of his life. His opportunities for experiences and his social relations. The exposure of new experiences is deprived of an important avenue of acquiring knowledge and stimulation because of his restriction in move about. He is limited in his spontaneous decision to engage in or follow up on various pursuits of knowledge and happiness.

In the social area, Cutsforth (1983) has forcefully pointed out that

"Since the blind live in a world of the seeing, it is necessary to procure visual aid and information. Whether this be volunteered or solicited, it represents a curtailment of self-expression and is registered emotionally' as such. Thus, the act of inferiority for which there must be compensation. And the thoughtful, blindhearted guide through a traffic jam must be pleasantly thanked for his assistance - society demands it - while the emotion demands that he be cursed or struck down with the cane. (P. 73).

Rather than ask for the accept assistance, a blind persons may decide to forego participation in an activity or, in the extreme case, he may fall into a pattern of withdrawal. Thus, it must be recognized that visually handicapped person, besides being restricted in his cognitive activities, is also form early

infancy on limited in his ability to expose himself to experiences and opportunities.

According to Lowenfeld (1948) Mobility is the capacity or facility of movement, consists of two components: physical locomotion and mental orientation. These two components are not separate functions but are coordinated in the actual process of getting about. Locomotion may be defined as "the movement of an organism from place to place by means of its organic mechanism," and mental orientation may be defused as, "ability of an individual to recognize his surroundings and their Temporal or spatial relations to himself." (Warren 1934).

2.5.3 Restriction in the control of the environment in relation to one's own self

Visual experiences permits control of the environment and of the self in relation to it for more effective than that achieved by the other senses, either singly or in combination. Because of this reason, lack of right causes a detachment from the physical and to some extent from the social environment. The visually handicapped persons cannot inform himself at a lance of his situation within a given environment as the seeing persons can. Lack of visual continuity responsible for the blind child's retardation in the process of turning from the self to the outer world. In the social aspects of an individual's life, blindness does not essentially interference with communication but it does affect expressive movements, whether frontal expressions or gestural behaviour, because most of them are acquired by visual imitation. The limitation in interaction with the environment shows itself also in the blind person's inability to determine whether he is observed at any time by others. Therefore, the visually handicapped person are often apprehensive and even fearful of being watched. The detachment from the environment has many effects on children. For example, the visually handicapped children are not visually stimulated to reach out for the source of sound, tendency to immobility in young blind children etc.

2.6 IMPLICATIONS OF BLINDNESS IN COGNITIVE DEVELOPMENT

The cognitive development of visually handicapped child is affected by visual impairment. Visual impairment has either direct or indirect influence on cognitive development of visually handicapped children. Direct influence are those which result immediately from the visual impairment in a cause effect relationship and which generally have a handicapping effect on the development of the individual. The indirect influences plays a vital role in cognitive development. The loss of vision tends to restrict the process of gathering, storing, retrieving and organizing information. According to Lowenfeld the three general restrictions because of blindness may effects on cognitive development. Visual experiences is extremely useful in building concepts and since vision plays a dominant role in cognition, the blind child's position and needs in this area will show specific differences as compared with sighted children. Blind child gains knowledge of the realities around him in a different way. In developing the conception the totally blind persons must rely upon the use of his remaining senses. Touch kinesthetic and audition are the most important sensory avenues.

2.6.1 Implication in concept formation

A concept is a network of significant influence by which one goes beyond a set of observed criterial properties exhibited by an object or event to the class identity of the object or event in question, and thence to additional inferences about other unobserved properties. (Bruner, Goodnow, Austin P244 1956)

The process of concept formation is based on classification means noting similarities and disregarding insignificant differences. Classification depends on sensory experiences. And in lack of this sensory experiences cannot fail to produce a lack in concept formation. The visually handicapped child receives information through other senses like touch, smell, hearing etc. This is observed that the concepts received by remaining senses are defective. The information received by sight and touch are different. A sighted child can see anything to make his/her concept formation at a glance. But a visually handicapped child cannot do the same for making his/her concept formation. Visually Handicapped child make his/her concept through part to whole. So visually handicapped children have some difficulty in formation of concepts.

2.6.2 Implication in language development.

Language development is the most important way of communication for the visually handicapped child as well as sighted child. A sighted child can communicate through his/her gestures, but a visually handicapped child cannot do so. Because of this language development is more necessary for visually handicapped child in comparison to sighted child. There is a very little difference from sighted child in some areas of language development of visually handicapped child. This is due to medial learning. A sighted child can see the movement of lips while others saying something and also can understand the said word using in which context, but a blind child can not see and cannot understand the meaning of the said word. So the visually handicapped child use the word without knowing its meaning. (verbalism) Most of parent are not trying to teach vocabulary do development that is based on visual experience and thus they confuse the child. It is not clear whether any such differences does not have implications for the adequacy of thought.

2.6.3 Intellectual development.

This is assumed that intellectual development develop more slowly in a visually handicapped child than in sighted child. This is due to three basic restrictions on visually handicapped child. The blind child build tip concepts of his/her surrounding environment through remaining sense, but the information received by visual sense is extremely useful in building concepts. By the sense of touch a visually handicapped child cannot make concepts of distant (building), very large (mountains), very small (ant), fragile (butterfly) and dangerous thing (flame). Any one can not make his/her concepts of these things without visual sense. Hence, these limitations make the total experience of the visually handicapped child more restricted. And Foulke (1962) also noted that the nature of the concept that an individual acquires depend on his/her range of experience. So the concepts of the visually handicapped child are in some ways more restricted than those of sighted child. Foulke also noted that the visually handicapped are more dependent on second-hand-experiences that is conveyed by verbally transmitted information by other people.

2.6.4 Role of play in cognitive development

Cognitive development is the product of an interaction between individual and the environment. In lack of sensory data needed for proper cognitive development there is some difficulty for the visually handicapped child. For a good type of concept formation such sensory data must be given to visually handicapped child by contriving new and imaginative play situation. The

visually handicapped child has all the equipment for storing processing and retrieving sense data gathered from experience. All cognitive development including the concepts formation is experience of interaction with the environment so take the visually handicapped child to experiences that he can not have at home or m class room. And for making more and more interaction with the environment organize visits to Museums, Post Officers, Railway Stations and other public places.

2.7 STRATEGIES FOR PROMOTING COGNITIVE DEVELOPMENT IN VISUALLY IMPAIRED CHILD

For promoting cognitive development in visually handicapped child, stress is placed on speed of performance rather than quality of learning through all the remaining senses. In the process of cognitive development teachers, parents and other members of society may play a positive role. Cognitive development in a good manner can take place by the major steps.

(a) Need for concrete experiences. - In order to give the blind child a knowledge of realities around him, the teacher/parents must aim at providing him with a wide variety of concrete experiences, thus making up to a certain extent for the limitation in the range and variety of his experiences. For the visually handicapped child it is not important to learn concretely about exotic things; his primary concertinas m teaching can be achieved in essentially two ways: by having the children observe the object or situation itself, or by providing them with a model of object. In all cases if there is any possibility, reality is to be preferred and children must be given sufficient time for the observation.

(b) Need for unifying experiences. - It has already been stressed that blind children are at a serious disadvantage in experiencing things and situation in their totally. Touch permits remultineous observation only of objects that can be embraced by either hands or the body. Larger objects must be observed by consecutive touch motions and in many instances, only parts of them are observed in this way. Vision permits a unification of observations and it structures and organizes discrete impressions received by other sensory organs. The lack of unifying integrative experiences of gaslalt formation must be counteracted by teachers / parents who give visually handicapped child opportunities to experience situation in their totality and to unify part-experiences into meaningful whole.

(c) Need for learning by doing. - As a result of their visual disability and because of the environmental reactions to this handicap, blind children have in general significantly less opportunities for self-activity. Therefore, special attention must be given at home and in school to encouraging visually handicapped child to do as many thins for themselves as are desirable and compatible with a well conceived time economy. The visually handicapped child need to learn many of the routine daily activities by having them shown to them in their way, and this tasks effort, time and patience.

2.8 UNIT SUMMARY/THINGS TO REMEMBER

- Cognitive development is the result of sensory development, perceptual development in the way in which the child interprets sensory impulses received by him, as well as the ability to form concepts, exercise judgment, reason and solve problems.
- Thus cognitive development is a process by which the child's knowledge and understanding of the world expand.
- Cognitive development proceeds in a certain direction-through irreversible, invariant and sequential stages. The cognitive development can only be nourished and fastened through a careful designed programme.
- A number of theories of cognitive development have been formulated. Among these, the most systematic and comprehensive is that of Jean Piaget and his collaborators.

Piaget divided cognitive development into several stages. Most important stages are:

a) Sensory Motor stage.
b) Concrete Operation.
C) Formal Operation.
d) Abstract thinking (Logical Operation)

- Blindness restricts the individual in three basic ways: in his range and variety of experience, in his ability to move about and, in control of environment in relation to one's own self.
- Since vision plays a positive role in cognition, the visually handicapped child's position and needs in this area will show specific differences as

compared with other sighted child. There is no question that the blind child can gain knowledge of the realities around him, but he gains it in a different way and the knowledge itself is in some respects of a different nature.

- The actual process of teaching of visually handicapped child depends somewhat on whether visually handicapped children receive their education as a group in an environment geared to their needs, as residential schools are, or as single individuals in public school facilities where they may have an understanding general class room teacher and should have a resource or itinerant teacher who is aware of an knows how to meet their special needs.

2.9 CHECK YOUR PROGRESS

1. Write all the stages of Piaget's cognitive development theory and characterization of each stage.
2. Define cognitive development.
3. What are the main characteristics of cognitive development?
4. What are the main objective effects of visual disability?
5. As a teacher of a visually handicapped child what strategies will you prefer for promoting cognitive development in visually handicapped child?
6. In what way the sensory motor stage of a visually handicapped child in differ from the sighted child?

2.10 ASSIGNMENTIACTIVITIES

1. Observe a visually handicapped infant under the age of 2 years. Describe his present level of cognitive development.
2. Observe a child with a visual impairment and a child of approximately the same age who does not have a visual impairment. How do they differ in their cognitive development.

2.11 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:

2.11.1 Points for discussion

Points for clarification

2.12 REFERENCES / FURTHER READINGS

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3. Lowenfeld, Bertheld: Our Blind Children, AFB, New York 1956.

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5. Handbook for the teachers of the visually handicapped, NIVH, Dehradun, 1992.

UNIT 3: INTERVENTION FOR LATELY BLINDED STUDENTS – ROLE OF SPECIAL TEACHERS/EDUCATORS

STRUCTURE

- **Introduction**
- **Objectives**
- **The Development Braille:**
  - Invention of Braille
  - Development of Bharati Braille
- **Factors affecting learning of Braille**
- **Sensory Training**
- **Reading Readiness:**
  - Preparation of Reading Readiness material
  - Activities for Developing Reading Readiness skills
  - Motivation
- **Teaching Braille Reading:**
  - Traditional Method of Learning Braille
  - Word Method
  - Sentence Method
- **Teaching Braille Writing**
  - Introduction to Braille writing devices
  - Teaching writing on Braille slate
  - Teaching writing on Brailler
- **Teaching & Reading Writing to low vision Children**
  - Need & importance
  - Developing tactile and Auditory sense
- **Summary & Points to Remember**

- **Check your Progress**
- **Points for Discussion and Clarification**
- **References**

3.1 INTRODUCTION

Touch is the major modality for acquiring information about the

Environment used by blind severely visually impaired person. This was realized ever since the Blind people started receiving education. This realization resulted into the development of various systems of reading & writing used by blind people in their education. Some of them are engraved letters and making alphabets with the help of wire knots etc.

These systems did not succeed for two major reasons. Firstly, preparation of reading material was very cumbersome and secondly gaining independence by Blind people in writing was not possible-Lowenfeld (1973). People were in search of a suitable method, which could make blind people independent in both in reading and writing.

This search led to the development of a tactile script known as Braille. An attempt in this lesson is made to discuss the historical aspects of the development of Braille, various techniques of teaching, reading & writing Braille and the material preparation for the same.

3.2 OBJECTIVES

On the completion of this lesson, you will be able to:

- Describe the historical development of Braille,
- Prepare reading readiness material,
- Prepare Teaching reading material,
- Describe the role of sensory training in reading Braille,
- Make a list of Braille writing devices,
- Develop Braille writing skills,
- Acquire skills to teach – writing to low vision children
-

3.3 THE DEVELOPMENT OF BRAILLE

3.3.1 Invention of Braille

A French man, named Louis Braille (1809-1852), who was himself Blind, on the inspiration of Capt. Charlse Barbier, developed a system of touch reading in 1829. This system was named Braille because he invented it. This is based on six dots arranged in two vertical lines of three dots each in one cell of the size of 6 mm x 3.6 mm. The top two dots from left to right are numbered 1 and 4, the middle ones 2 & 5 and the lower 3 & 6. Thus, 1,2,3 on the left and 4,5,6, on the right. On the basis of permutation and combination, a maximum of 63 combinations can be formed. Each combination forms a particular shape.

This script traveled from France to Europe and then to America and other parts of the world. But it was not accepted better than the previously used tactile scripts. Although, the time proved that the Braille's script opened the gateway of knowledge for all the blind in the world ever since it was invented, Farrell (1956)

3.3.2 Development Of Bharati Braille

After the establishment of the first school for the blind in India by Miss. Annie Sharp at Amritsar in 1887, Braille started to be used in Indian schools too, but prior to the independence, different schools for the blind had prepared their own code to be used in different languages in the country. Consequently, there were many codes in use. This caused great difficulties in facilitating and promoting the education of the blind on one hand and the production of Braille material on the other as material produced in Braille in one school could not be read by others school, Adwani (1991)

This problem was addressed first time in 1941 by the then central Govt., which set up a committee to review the existing codes and to develop a uniform Braille code for Indian languages. Since this effort did not succeed. Therefore, Govt. of India after the independence referred this matter to UNESCO. UNESCO conducted several meetings of experts to discuss this issue. On the basis of an in-depth discussion, a uniform Braille code called " Bharati Braille" based on principle of phonetics was adopted. According to this principle, letters producing same sounds in different languages will be written by a single combination. For example: - dots 1,2 will be (b) in English, () in Hindi and similarly the letter giving () sound of Tamil, Bangla, Kannada, Marathi etc.

3.4 FACTORS AFFECTING LEARNING OF BRAILLE

You have been studying this course for some time. You may have also been involved in teaching Braille. Would you like to try to enlist a couple of factors that can promote or retard learning Braille? Try and write what you think about this in the space provided below:

You are thinking in the right direction. All those factors that affect learning like individual differences, age, reading readiness, level of intelligence etc. play a crucial role in learning of Braille also.

(1) First latest try to understand how does individual differences can affect learning of Braille. No to individuals are alike intellectually, socially, capability wise etc. Each one of us has our own way to learning and doing things.

In Individual differences, Age, Intelligence, Sensory perceptual ability etc. can be included. Some people can learn at a faster pace certain concepts whereas some others would learn the same at a little slower pace due to environmental or some other reasons.

Those who have higher level of intellectual abilities would acquire knowledge at a faster pace than those who have average abilities. This is true in regard to learning of Braille. Experience of several specialists in the field of education of the Blind show that the blind children of the age of seven with average I.Q. should be taught Braille. But, this should be done after a careful consideration of another factor.

(2) Tactile tolerance and tactile perceptual ability are the two factors that need to be considered and examined thoroughly. Tactile tolerance means that any object, which is given to touch, should not be sharp or

hurting. That is the surface of the object should not damage the skin. Tactile perceptual ability means to be able to derive meaning of tactile sensation. That is skill, which enables an individual to identify differences in shapes that are touched. This is very important as Braille script is based on different shapes and the relation-ship between the two or more combinations of dots arranged horizontally in a line. Thus, development and sharpening of tactile sense is crucial.

(3) Knowledge of language: -

Another important factor is the knowledge of language. It would be easier for a blind child to learn to read Braille, if his/her language development is comparable to a seeing counterpart who has learnt to read print. For example: - if a child knows what is a tomato or potato it would be easier for him/her to learn to read these words. This is true both for blind and seeing children Lowenfeld (1965 & 1969), Chapmann (1988)

In view of the foregoing, teaching of Braille would involve two stages: - First stage at which the child tactile sense would need to be developed and sharpened. Once, the tactile sense is developed enough to differentiate between surfaces of different texture, counting of dots. Identifying dots on the left & right, up & down etc. then only in the second stage actual teaching of Braille reading can be introduced.

3.5 SENSORY TRAINING

Sensory training refers the training of various senses for experiencing & transmitting the information to the brain where experienced feelings are interpreted and meaning given. The purpose of sensory training is to help a child to increase the use of different senses for giving information about the environment. The stimulation, available resources, interest and the opportunities play an important role in developing and sharpening of the senses.

3.5.1 Need and importance

Sensory training plays an important role in the educational development of a blind child. The blind child has to learn to use his remaining sensory as well as residual vision (if any) effectively in order to compensate the loss of vision. Much information that an individual gains can be received by two or more senses. Hence, the absence of one type of sensorial channel can be compensated by the increase & efficient use of the other senses. For example:

- The shape and size of a chair or a table or a bird can be understood by vision and also by touch. But, it is necessary for one to be able to use the sense of touch effectively for gaining the knowledge about the shape & size of these objects. Two things are necessary to understand: firstly, the child must be able to make efficient use of his tactile sense. Secondly, he must explore the object in such a way that he can understand all the characteristics of the object.

The blind child has not only to learn to use his renaming senses for primary functions of those senses but also for compensating the loss of vision (Schol 1986). The more he is efficient in the use of touch, audition, smell, taste and movement sense. The greater amount of success he can achieve in his educational endeavor.

3.5.2 Developing tactile sense:

Touch helps a child to gain information about roughness, smoothness, hardness and softness, hot & cold, flexibility & rigidity and elasticity etc. It also helps to understand the shape of an object what is necessary to be able to gain this information is to develop and sharpen the tactile sense. This is an important activity, which need to be included in the programmed of a school where blind children are enrolled. A teacher can organize a number of activities for sensory training. She can provide objects of different texture to help a child to understand the characteristics through textural differences of the object. Another activity can be shorting and matching exercises. Arranging things in order of big to small or vice versa can also be an activity, which can help to develop manual dexterity and tactual ability. The teacher must bear in mind that the activities must be interesting for a child then only he would participate in them. This is the basic principle on which "Montessori" method of teaching is the based. Madam Montessori, who was a doctors worked with disabled and problem children. She for the first time demonstrated that sensory training could help improve educational achievement. In the education of the blind this is more true and effective.

3.6 READING READINESS

Reading readiness in our context means to be able to attach

Meaning to tactile experience. As the Braille is based on touched reading involving fingertips for tactual experience. They need to be developed and sharpened enough to do so. As a teacher we must know what type of material would help in developing and sharpening tactile sense. Give your views on the

type of material you would like to use for this purpose in the space provided below: -

---

3.6.1 Preparation of Reading Readiness Material

Lowenfeld et al. (1969) suggest that teacher –made materials are particularly suitable as they can be tailored to meet the needs of individual children.

The incidental exposure to learning Braille may well be very much less for the blind child in the pre-school years than it is for the sighted. Sighted children see words and letters in various types and in different settings by means of books, papers, labels, hoardings and television. Most blind children, however, have no access to Braille in their early years. They may gave encountered Brailled labels which show them that toys and objects have names that can be written. Such learning, however, requires deliberate intervention from another person and cannot be the same as the ongoing environmental learning that takes place for sighted people. Blind children need enriching experiences, which introduce the meaning and pleasures of the written word before formal reading skills are introduced. He mechanics of reading- finding the top of the page, page numbers turning over pages and learning how to handle a Braille book – are also necessary skills which required specific teaching.

Since, counting of beads, threading of beads, objects of different textures etc. are some of the things that can help. You think, in developing tactile sense, they need to be understood thoroughly. In fact a teacher can successfully employ many more things for this purpose.

Developing and sharpening of tactile sense would mean to enable a child to recognize difference between right and left, up and down, left middle, right middle, and also to be able to count dots besides turning over the page and holding the books. A means the development of directional & positional concepts would need to be taught. The material that can be used as you have

rightly pointed out would include the beads and objects of different textural surfaces. But, while selecting the object of different textures, we should always ensure that the texture of the object does not hurt the fingertips of the child.

3.6.2 Activities for developing reading readiness

A variety of activities can be planned and organized by a teacher to develop reading readiness. Why don't you try to mention a few activities that could help developed and sharpen tactile sense in the space provided below: -

---

Yes, you are right. You can give objects of different textural surface to a child and asked him to feel each surface tactually and understand the difference. Before doing so we should give different size of beads to count. In the second stage we should asked the child to arranged the beads size wise in groups. We should also help the child to understand which bead is smaller or bigger.

After the child is able to perform the above successfully we should prepare a sheet on which objects of different textures like Silk cloths, Woolen cloths, Cotton, Plastic sheet should be stuck. Then we should provide this sheet to the child and explain these textures.

In the next stages we should ask the child to do matching. Once the child is able to match texture of Woolen cloths with another pieces of Woolen cloths and so on and so forth. We should introduce dots on paper.

We should first of all make the child feel each dot separately. For this purpose, a teacher can raise dots on a sheet of paper. There should be gaps between dots. While doing so ask the child to count the dots in each line vertically as well as horizontally. You can help the child to learn the concept of left –right, up- down and the middle through this activity.

In the subsequent stage you should prepare a Braille sheet 2 dots in each cell of a line when 3 dots then 4 dots etc. ask the child to count the dots of each cell. Also explain the position of the dots in a cell where there are 4 dots in each cell, see figure – I.

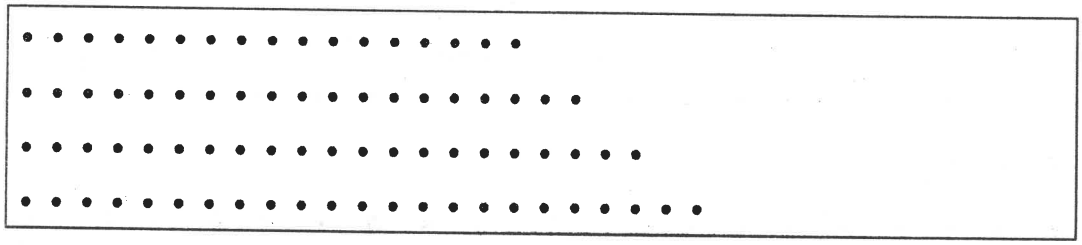


Fig. –I (a)

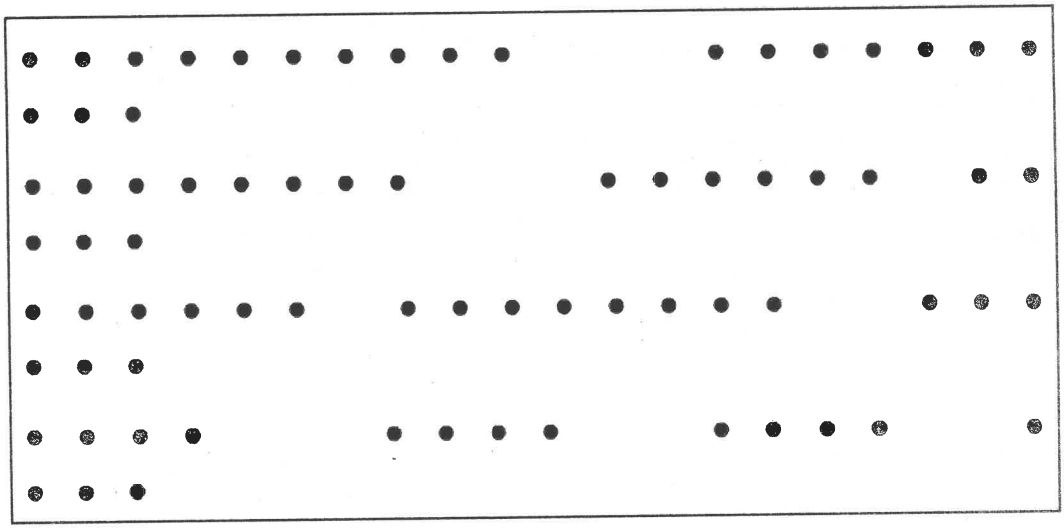


Fig. –I (b)

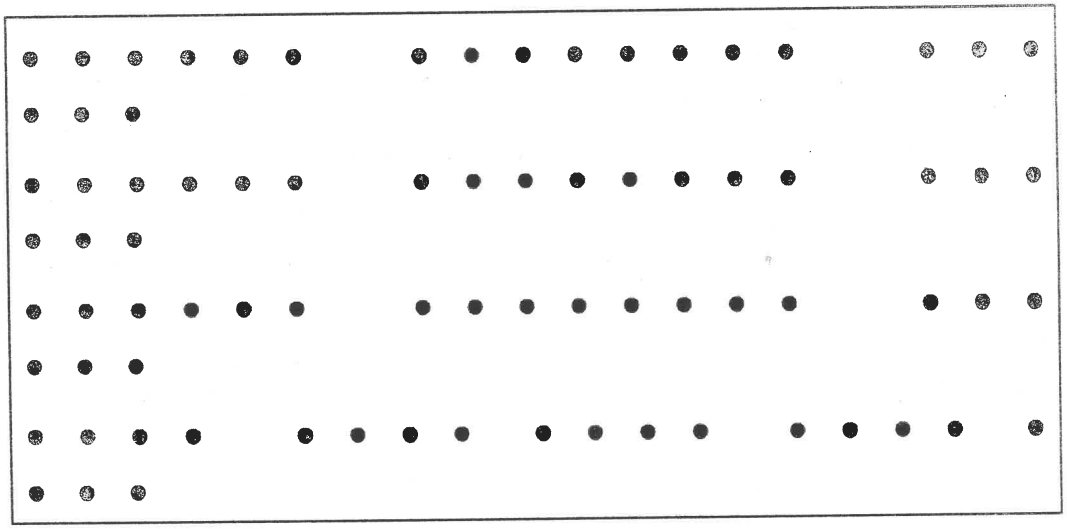
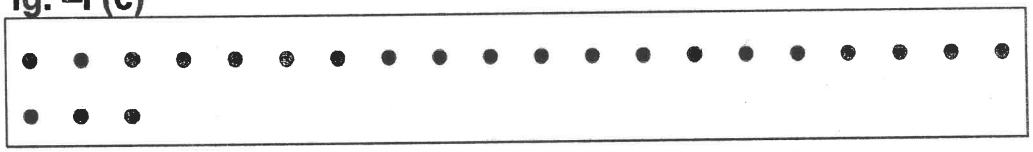


Fig. –I (c)



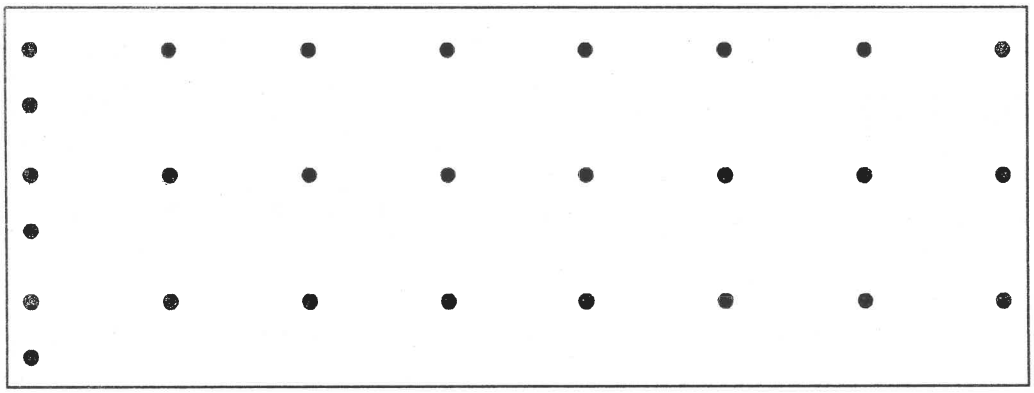


Fig. –I (d)

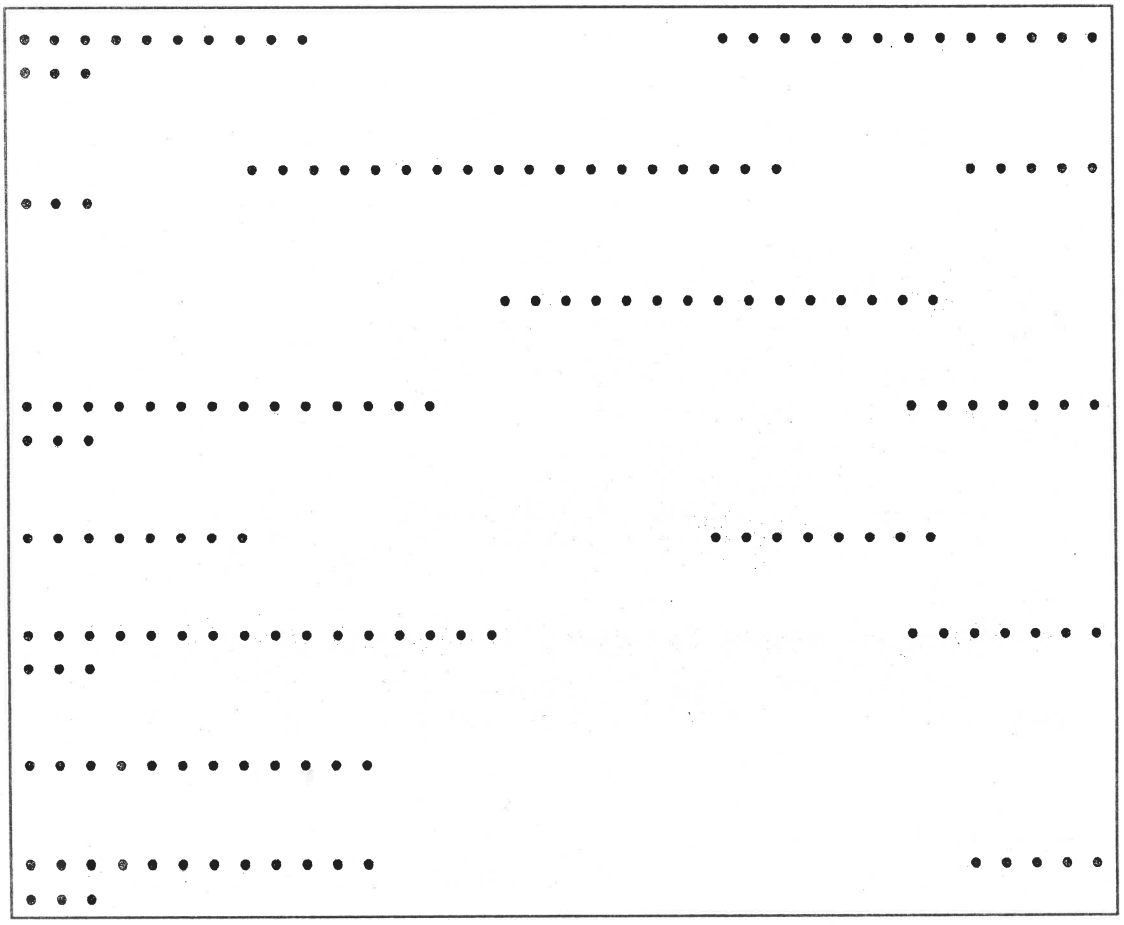


Fig. –I (e)

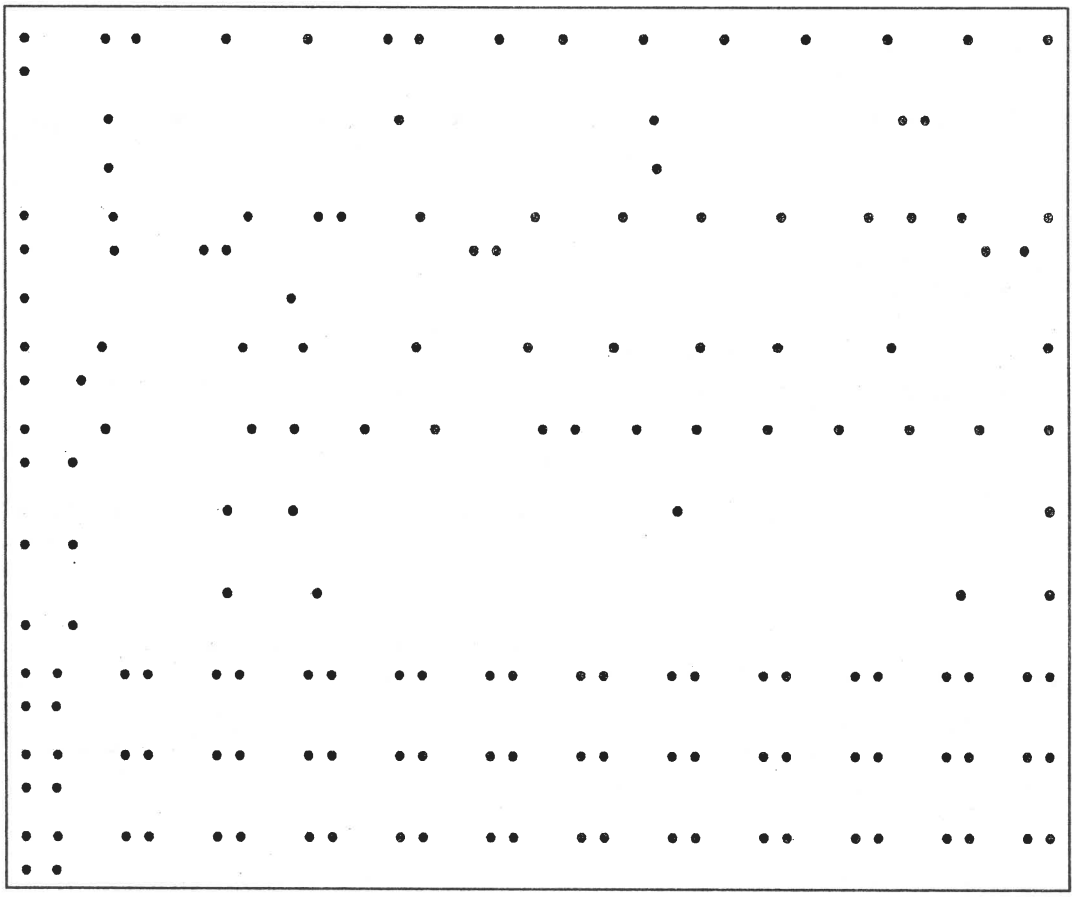


Fig. –I (f)

Once, the child is able to understand the position of dots and also the meaning of left-right, up- down and the middle, he can be introduced attaching the meaning to different combination of dots, what is known as introducing Braille reading.

3.6.3 Motivation

Any thing we learn, is related to the amount of motivation we have for learning, that is if a child is motivated (made realize that what he is going to learn will help him in his further learning) to learn the teaching would become easier. For this purpose, the teacher must ensure that Braille labels are pasted on the objects that the child comes into contact repeatedly daily such as his school bag, chair, desk/table, window shutters, doors of his room, shutters of his almirah and the like. This will motivate the child to know what is written on the Braille label. This will motivate him/her to take interest in learning Braille, as it would enable him to know what is written on the Braille labels. The content of the label should be the child's name, room number, door of the room etc.

3.7 TEACHING BRAILLE READING

The specialists in the field of the education of the blind have suggested a number of methods of teaching Braille reading. These include letter method, word method and sentence method.

3.7.1 Traditional Method of Teaching Braille Reading: -

Traditionally the Teacher has been using letter method to teach Braille reading. According to this method the child is taught to recognize the shape and also the number of dots of each letter. Once, the child has learned few letters, and then he is taught to learn to read words. For this purpose a wooden board of 5" x 3" approx. is used. In this wooden board, six shallow holes are made, three on the left and exactly parallel three on the right. See figure –II.

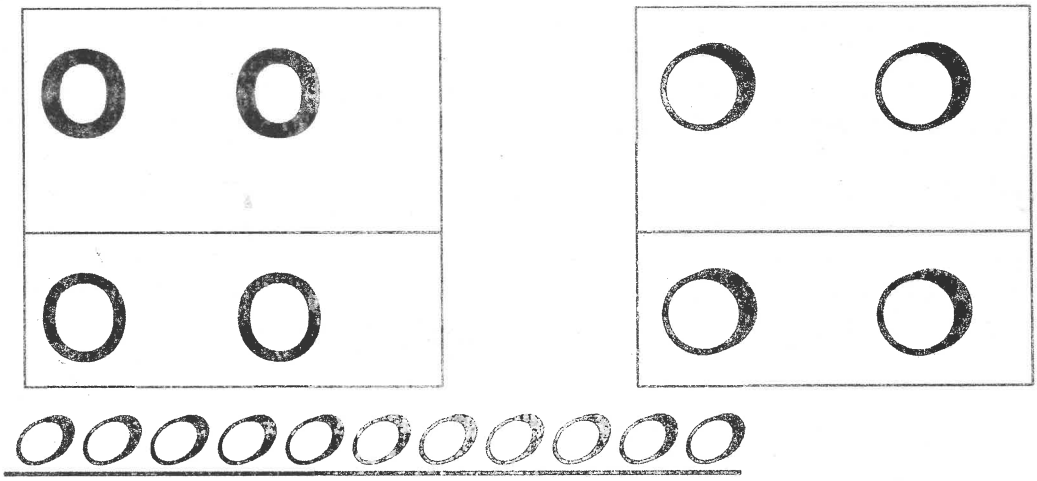
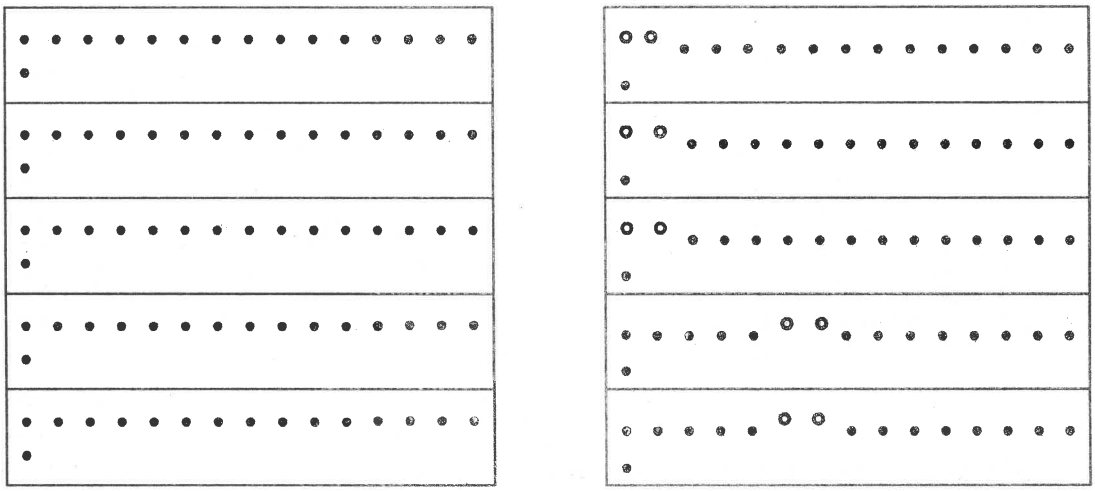


Fig. II

In this board glass balls are put to form the shape of letter. And the child is taught the dot numbers as well as the shape of each letter. This is then transferred to the metal sheet with raised letter. One can use in between a device called Brailed board in which several lines of very small holes are made. By fixing metal pegs, letters can be made which are tactually feel able, See figure III



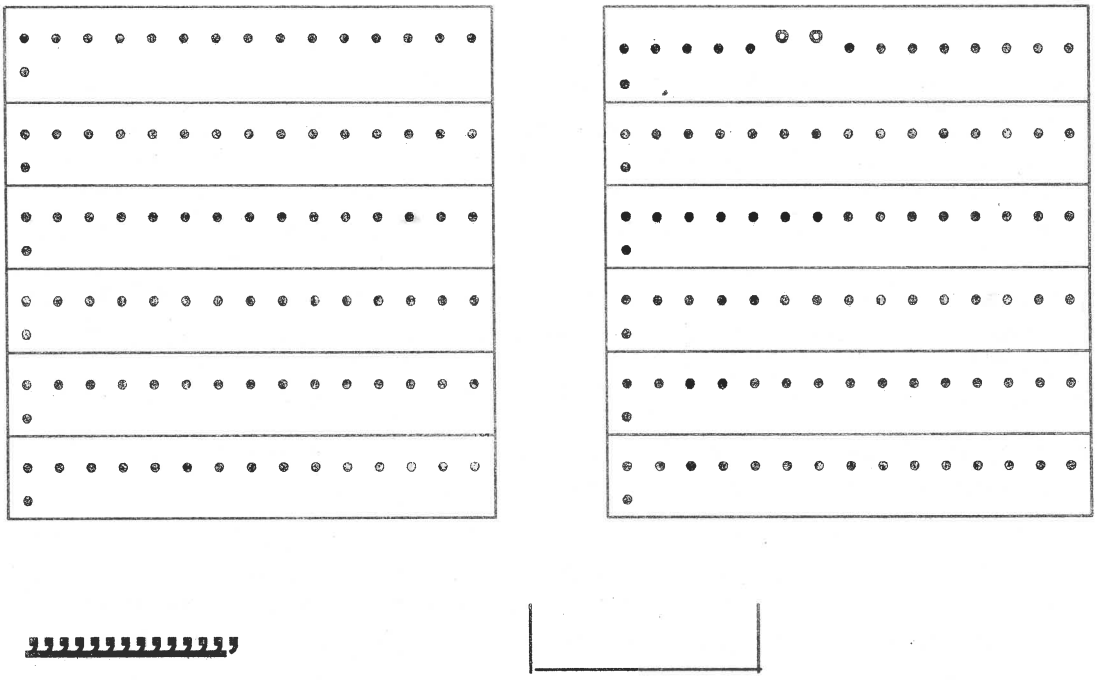


Fig. III

This method according to various researchers (Nolan and Cadrice & Nolan and Morris) is less effective because we do not read anything letter by letter. More over, they argue that this lays stress on memory rather then on recognizing the shape. Therefore, some specialists advocate the use of word and sentence methods.

3.7.2 Word Method

According to this method we introduce directly the words, which are in the vocabulary of the child. Small flash cards with words written in Braille on them are given to the child and he is asked to read them. For example, Mango on one card, Apple, Boy, Girl etc. After the word on each card the letters used in that particular word are written separately. The child is asked to compare each letter with the letters in word. Thus, he learns to read the words as well as the letters used to form these words.

This method is also found to be unacceptable, as we do not read words individually. Moreover this as well as the previous method according to several researchers does not help achieve desired reading speed.

3.7.3 Sentence Method

We read in sentences and communicate in sentences. Therefore, many specialists are of the view that Braille reading should be taught through sentences written on flash cards containing small sentences such as "This is a book", "This is a pen", " My name is Mohan", "It is my book", "It is my bag" etc. After each sentence, each word of the sentence should be written in different orders and letters after the words. The child must be asked to read the sentence repeatedly without bothering about the letters used. After sufficient practice the child should be asked to read the word and compare the same with the word in sentence and thereafter letters in the word.

This method is according to its followers is believed to be psychological as well as logical as it is based on actual practice in communication.

Remember that none of the above methods can be effective for every child. Experience shows that some children learn through traditional method more easily while some others learn to read through sentence method. In our country, traditional method is mostly used. Several studies have shown that higher rate of reading speed can be attained if Braille reading is taught through the sentence method or the combination of sentence & word method. For an effective use of these methods to teach Braille reading, the child should be given ample practice in moving fingers in a straight line. The child should be encouraged to use both index fingers for reading. The right index finger should be used to read and the left index finger should follow it. As soon as half of the line is read, the left index finger should move to the beginning of the next line and should perceive a couple of words by the time right index finger finishes the line. This helps in improving reading speed, as the time spent for the right index finger to come to the beginning of the next line is saved.

3.8 TEACHING BRAILLE WRITING

Many a times people ask a question as to whether Braille reading should be taught first and thereafter writing or vice - versa. There is no a hard and fast rule about this. A competent teacher will, by experience, be able to know by the abilities of her pupils whether he/she would learn to read or write first. Braille writing should be introduced along side reading-Chapman (1988). First, a child should be taught the concept of a Braille Cell and thereafter the position of dots in the cell.

3.8.1 Introduction to Braille writing devices

Generally the visually handicapped students use two types of Braille writing devices. One manual Braille writing device called Braille writing slate and the other like a typewriter called Brailler or Braillewriter.

On Braille slate dots of each letter are punched individually. Thus, writing on a Braille slate is fatiguing and time consuming.

On Brailler or Braille writer, all dots of a letter are punched by a single stroke as we do type a, b or c etc. by one stroke on a typewriter.

3.8.2 Teaching writing on Braille slate

Braille writing slates are of two types, one is which a metal clamp is fixed on the top of a wooden board in which a Braille paper is fixed. There is frame of metal consisting of two lines of 36 cells each. The paper is placed in between this frame and by placing the pin of stylus in the Braille cell, the dots are punched.

We should orient the child to each of these components and thereafter teach him to fix a Braille paper. Generally, 40 G.S.M paper is found to be suitable for Braille writing. After teaching to fix the paper, the child should be taught to hold the stylus and then the technique of punching the dots. We should not insist initially on writing particular letters rather we should encourage the child to punch all six dots in each cell. Thereafter, we should teach him the letters used in writing his name.

In this manner, we should proceed gradually and introduce entire alphabets through know words. Remember that while writing on Braille slate 1,2,3, is on the right side and 4,5,6, on the left because we read by turning the papers. When 1,2,3 comes on the left and 4,5,6 on the right side.

3.8.3 Teaching writing on Brailler

The child should be oriented to the each and every part of the Brailler. Thereafter, he/she should be taught to fix the paper in the Brailler. On Brailler (Perkins Brailler), on the left extreme, there is a key, which is used to change the line. The key on the right extreme is used to bring the dot box one-space back ward. In the middle there is a set of seven keys. The middle one is the space bar. On the left adjacent to the space bar is 1 and then 2 and 3, on the right side of the space bar adjacent is 4,5 & 6. The index fingers are placed at 1 & 4, middle fingers 2&5 and the ring fingers 3 & 6. Right/left thumb is used to

press the space bar. Thus, if we have to type P (1,2,3,4,) then dots 1,2,3,4 are pressed simultaneously in one stroke. This is less fatiguing and faster.

3.9 TEACHING & READING WRITING TO LOW VISION CHILDREN

Fully sighted pupils and children with low-vision learn to read in the same way; it is in the presentation and management of the reading material itself that needs special-attention.

There is no sole method of teaching reading to pupils with low vision that has been categorically shown to be better than any other. A flexible approach is required in order to meet individual needs, as there are some problems in the management of print. Poor levels of communication, low motivation because of inadequate reading material, and difficulties in managing printed material remain challenges for the teacher.

There are different variables among low-vision children, these are: -

Nature and extent of their visual disabilities,

Levels of language development,

Their motivation to want to read.

Depending upon children's requirement, individual reading strategies are being chalked out. Distinguishing figure from background, discriminating shape and visual search and scan are essential aspects of reading.

Pre-reading activities involve the commonly accepted areas of visual perception, which can be tailored to meet the need of individual children.

For a low-vision child using magnifiers, the area visible at one glance gets reduced. Therefore, perceiving the whole words and phrases and searching and scanning of a line become difficult. Children using CCTV also face the same type of difficulties. Though low-vision children exhibit low reading rates and delay in reading attainments but it should not prevent visually handicapped students from enjoying reading and gaining information from it.

Much can be done to reduce difficulties by presenting (I) legible material, & (ii) encouraging search strategies & motivation. On an individual basis this is the best effected by the reading and a specialist teacher or adviser for visually handicapped children. Lighting should be good, position should be comfortable to allow the reader to make maximum use of residual vision. Children with mystagmus need to slightly move the book

from side to side to reduce fatigue. If needed, 'Exposure-Device' should be provided to children. It helps to concentrate visual attention, and facilitates learning of the word-shapes. Simple 'Exposure-Device' can be made with dark cardboard with an oblong window.

Pupils with a peripheral field loss (tunnel-vision) may be helped by a reducer. If reduces the size of print seen in the central areas of vision.

Once, reading skills have been mastered by using the enlarged print, the pupil should try to reduce the print gradually to the standard print.

Enough time should be given to the students to complete the reading assignments.

The length and presentation of the material given to them should be magnified if required.

WRITING and reading are two parallel activities. Like in reading, oral-communication and visual perceptual skills are needed for teaching writing to low-vision children. But, some additional pre-writing activities include - hand-eye co-ordination, directionality and copying shapes. Drawing, coloring and pattern-making make the child learn how to hold and control pencils and crayons. Sometimes, though the shapes of the final character are clear to the pupils, yet they don't know how the letter is formed. To show up the exact movement, individual demonstration is required followed by lot of opportunities to scribble.

Group activities in which pupils of different visual field can be encouraged to talk about unclear concepts.

Initially, such children may write incorrect spellings, reversed letters and such like other mistakes. These should not be discouraged. Cursive writing is sometimes helpful.

Lot of appropriate material and sufficient time to complete the task should be provided.

3.10 SUMMARY & POINTS TO REMEMBER

1. Braille is a tactile script, named after its inventor Louis Braille. Braille script is a system of touch reading based on six dots arranged in two vertical lines of 3 dots each in one cell.
2. This script traveled from France to Europe and then to America and other parts of the world. Braille script has opened the gateway of knowledge for all the Blind in the world ever since it was invented.

3. In pre-independence India, different Schools for the Blind had prepared their own code to be used in different languages inn the country. It was causing great difficulty. In 1941, the then Central Government for the first time set up a Committee to develop a uniform Braille code for Indian languages. But this effort could not succeed.

4. After Independence, Govt. of India and UNESCO worked together and uniform Braille called "Bharati Braille" had evolved. Bharati Braille is based on the principle of phonetics.

5. In addition to Braille, low-vision children can read and write print. But there are certain challenges before the teachers of low-vision children. Some low vision children may have restricted field of vision; others may have only peripheral vision etc.

6. There are various factors, which affect the learning of Braille, such as individual differences, age, intelligence, tactile perceptual ability, tactile tolerance etc. Another important factor is the knowledge of language.

7. As the Braille is based on touch reading it involves fingertips for tactual experience. Different type of material is used in developing and shaping the tactile sense, which in turn enables the learner to recognise the difference between right and left, up and down, left-middle, right-middle, and also to be able to count dots.

8. Traditional method of Braille-teaching includes word method of sentence method.

9. For teaching Braille writing, generally two types of Braille writing devices are used, namely Braille writing slate (a manual device) and Brailler (a typewriter like device).

10. For teaching, reading and writing to low-vision children, different methods are being used combined with the skills of a competent teacher. Good lighting, comfortable seating position, adequate reading material & proper management of printed material are few such strategies.

3.11 CHECK YOUR PROGRESS

1 Why was Pre-braille tactile scripts not conducive for the education of the Blind?

2 Trace the development of Braille in 50 words

3 What problems did the blind children and their educators face with regard to Braille in pre-independent India?

4 Enlist the method of teaching Braille.

5 Prepare fine activities for developing tactile sense.

6 Fill in the blanks

(a) Braille was invented by _____

(b) Tactile tolerance means _____

(c) Braille writing devices are _____

(d) The difference between Braille writing slate and Brailler is _____

(e) Reading readiness means_____

3.12 ASSIGNMENTS

1. What are the different variables among low vision children & what are the restricted field of vision in reading & writing to low vision children?
2. What problems do the blind children and their educators face with regard to Braille in pre-independent India?

3.13 POINTS FOR DISCUSSION

Discus in your contact programmed with your teacher the following: -

(a) Problems of Braille

(b) Role of touch in reading

(c) Implication of different methods of teaching reading Braille

(d) Techniques problems face low vision children in learning to read and writing

Other points

_____

_____

_____

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UNIT 4: MEDIATED TEACHING-LEARNING – CONCEPT, NEED AND PROCEDURE

STRUCTURE

- **Introduction**
- **Objectives**
- **Definitions**
  - Orientation
  - **Mobility**
  - **Goal of Orientation and Mobility**
- Various Ways And Means of Orientation and Mobility
  - **Sighted Human Guide**
  - **Trained Guide Dogs**
  - **Walking Canes or Mobility Canes**
  - **Electronic Travel Aids**
  - **Constraints and Considerations**
- Skills In Orientation And Mobility
  - **Skills of Orientation**
  - **Mobility Skills**
  - **Sighted Human Guide**
- Cane Techniques
  - **The Cane**
  - **Types Of Canesfig.-1)**
  - **Cane Skills**
- Training Strategies
  - **Flow Chart : The Flow Chart Provides A Summary Of The Strategies To Be Followed.**

- Pre Requisite Skills And Training
  - **Written Instructional Programmed**
  - **Training**
  - **Evaluation**
  - **Never Vs. Ever**
- Lesson Planning – A Proforma
- Unit Summary : Things To Remember
- Check Your Progress
- Assignment / Activity
- Points For Discussion/Clarification
- References / Further Reading

4a.1 INTRODUCTION

You might have come across the implications of Visual Impairment in your previous lessons. However let me remind you about the limitations that would be imposed on a person who has no sight or lost vision, which concern our lesson

Father Thomas Carroll in his book titled " Blindness. What it is? What it does? And How to live with it?" mention twenty losses in which the ability to move is one in the basic limitations. Berthold Lowenfeld in his book "Berthold Lowenfeld on blindness and blind people", also mentions the limitation in "getting about". It is obvious that a person either born blind or lost sight after sometime is confronted with the problem of moving about.

In this unit we shall try to understand what is orientation and mobility, what are various types available, techniques to overcome and how to teach orientation and mobility skills to the visually impaired.

4a.2 OBJECTIVES

After going through this unit you will be able to :

- Define Orientation and Mobility and understand the importance
- Differentiate between Orientation and Mobility

- Describe various methods available
- Find out most appropriate, practicable and widely used method
- Suggest various pre-requisites
- Write a detailed lesson plan
- Develop skills in the techniques of Orientation and Mobility

4a.3 DEFINITIONS

Orientation and Mobility is commonly used in the education of the visually impsired, generally referring by its short form O&M. Orientation and mobility are two different words meaning differently but have interlinks. Lets now find out what these words actually meant

4a.3.1 Orientation

Orientation is nothing but 'Establishing one's position in the immediate environment'. If you are reading this lesson in your room sitting at your table, the position of your table to the room and your room in your house, location of the house in your town or village would be considered your orientation. So orientation is knowing where in which direction and the important places that are near to you which make you recognise your exact location in the immediate environment or surroundings.

To establish your position you have to gather information through your senses and process it. Hence for a sightless person "gathering information from the environment with their remaining senses and processing it to establish his/her position refer to the skills of orientation.

4a.3.2 Mobility

Mobility means replacement. It is the movement of a person from the present position to the desired position. Mobility for a blind person means that movement is:

- **Independent**
- **Safe**

- **Purposeful and**
- **Graceful**

Unless a person is able to know the surroundings he cannot move from one place to the other desired without orientation. Orientation is a pre-requisite for mobility hence the words ORIENTATION, MOBILITY are combined and used 'ORIENTATION AND MOBILITY'

The movement of a person from the present position to the desired position involves safe independent walsdkinh. So a sightless person has to employ certain techniques to avoid the objects/obstacles in the way. Hence whatever the techniques that are used n the movement are referred to mobility skills or techniques of mobility.

4a3.3Goal of Orientation and Mobility

The Ultimate goal of Orientation and mobility for a blind person is to move safely, independently and efficiently and gracefully by utilizing a combination of orientation and mobility skills. (Hills and Ponder,1976)

4a.4 VARIOUS WAYS AND MEANS OF ORIENTASTION AND MOBILITY

Four of the most common ways for people with visual imperilment to move about are by using :

- **Sighted Human guide**
- **Trained Guide Dogs**
- **Sticks or walking canes-Mobility canes and**
- **Electronic aids.**

4a.4.1 Sighted Human Guide

In this method a person who has no vision travels with the help of a human sighted guide. This becomes necessary

when traveling in new places, busy streets, roads and buildings which are not familiar to a visually impaired person.

4a.4.2 Trained Guide Dogs

Only certain species of dogs are trained to guide people with visual impairements. Once the dog is trained the blind person and the guide dog need to be trained together. Familiarization with the dog and the person using it is necessary. Simply put it the blind person and the dog should become friends. The training programme includes walking down all the routes usually covered by a blind person. Guide dogs can only help in overcoming obstacles in the way but the blind person should know the route.

4a.4.3 Walking Canes or Mobility Canes

This is the most viable and affordable mode of travel for people with visual impairments especially in India. The blind person walks with the help of a long cane or a folding cane using appropriate techniques. The person using the cane must be trained to use the cane.

4a.4.4 Electronic Travel Aids

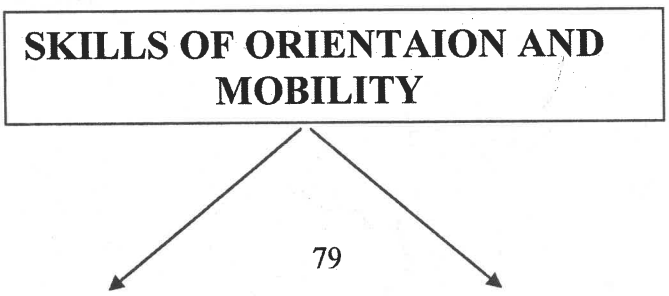
With the advancement of science and technology many electronic gadgets have been developed to aid the visually impaired in travel. Some of the technologies which are in use are LASER Ultrasonography. Some of these aids are: Path sounder, Sonic guide, laser cane etc. These help the user to detect obstacles before into contact with any obstacle in the line of travel.

4a..4.5 Constraints and Considerations

- **Human sighted guide is essential for various reasons such as unfamiliar places, busy locations. It is sometimes easy to get a sighted guide. A blind person also feels safe while traveling with a sighted guide. On most occasions the guide may be a relative, a friend . But traveling always with a guide makes a blind person dependent. If the sighted guide is the same (in most cases is a close friend or relative such as wife, daughter, son brother, sister etc.) the blind person may feel that he is being a burden .**
- **When it comes to the use of dog guides the training and use becomes expensive. Only certain species of dogs are trained or capable of getting trained and used. Feeding the guide dog, taking care of it, maintaining good rapport and basing on the lifespan of humans and dogs one has to change many dogs. In India stray dogs are a menace. For the above good reasons use of guide dogs becomes impracticable in India.**
- **Electronic Travel aids are very expensive and so are their maintenance. Their adaptability to suite the climatic conditions of India also have to be considered.**
- **Hence the above discussion leaves us with one and only most viable, affordable mode of travel " CANE TRAVEL".**

4a.5 SKILLS IN ORIENTATION AND MOBILITY

Skills in Orientation and mobility can be divided into two groups.



ORIENTATION	*MOBILITY SKILLS*

4a.5.1 Skills of Orientation

Skills of orientation include receiving, processing, and integrating the information received. It has many aspects which are being discussed in details.

A. **Use of remaining senses: The sense of sight can not be substituted very effectively. However the effective use of the remaining senses viz. Auditory(sound), Tactile(Touch),Gustatory(Taste)and olfactory(smell)disabled person to overcome the dominance of vision. We hear many sounds and if we c0ould identify the sound , locate or attach meaning to that sound we have perceived it. A person can identify others by their voice if familiar. For example we listen to song and immediately identify the person singing. Likewise many objects , things are identified in the similar manner. A flower shop, coffee shop, grocery shop, medical shop and birds, animals vegetables and fruits are identified using the remaining senses by the blind persons other than sight.**

B. **Kinesthetic sense: The information that we get with the help of the position and movement of the muscles is considered to be kinesthetic sense. It can be easily identified by the position of the muscles and their movement at the calves / legs that we are climbing .**

C. **Land Mark: Familiar objects, sounds or any stimuli that can be easily recognizable and permanent in the**

environment is called a land mark. A telephone poll just by the side of your house gate is a land mark.

D. Clue : Familiar object or any stimuli to the senses that is not permanent in the environment is called a clue. By the sound of typing one knows that the typist is at work. But the sound is not always available. By the shadows we can understand the approximate time of the day. These land marks help in estimating the length of travel and the remaining travel and to locate places.

E. Conceptual skills : The conceptual skills include three areas: Body, Spatial and Environmental. Body concepts refer to body image and body schema. Body schema is nothing but balancing the body. Spatial concepts include positional, relational and measurements. Environmental concepts relate to traffic, crossing, pavements etc.

4a.5.2 Mobility Skills

A. Protective techniques: Protective techniques are safety techniques employed by a blind person to avoid obstacles in his/her line of travel. They also help in free and safe walking.

B. Lower body protection is used by keeping either of the hands across the body diagonallyinfront of the legs palms insides that the obstacles are detected by the back of the hand when comes into contact.

C. Upper body protection is used by keeping any of the hands in front of the face just above the eyes, the palm of the hands facing out. The forearm from the elbow is to be kept horizontal. This helps in detecting and avoiding obstacles such as hanging tree pots, trees, plants, signboards, the place beneath the staircase which may cause injury to the head.

D. Combination of the both the techniques is used while exercising one with the right an the other with the left.

E. **Trailing is tracing any continuous line of travel with the knuckles(back of the hand fingers) such as a wall, side of a busetc.**

F. **Squaring off is the technique in taking directions. Both heels of the feet to be placed touching together. Move one heel to the desired angle while in contact with the other and then bring the other foot to the moved foot**

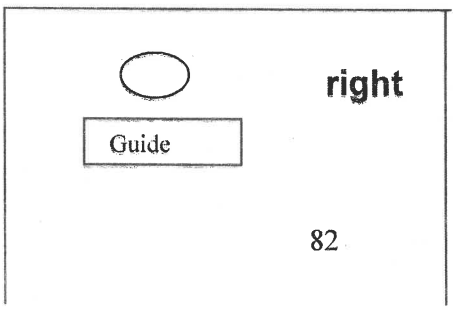
4a.5.3 Sighted Human Guide*:* **walking with the help of other person who is sighted is HUMAN SIGHTED GUIDE TECHNIQUE. This is generally employed when the guide is available. It should be used in busy places, unfamiliar surroundings. When using a sighted guide the blind person and the guide should follow certain techniques for free and trouble free walking. Prior to using these techniques one should know the following.**

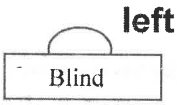
a. Making contact: **The guide should stand beside the blind and touch his back of any hand with the back of his hand. Then the blind should trace the hand of the guide and hold just above the elbow.**

b. Grip: **The grip should be moderate. It should not be too loose or tight.**

c. Position: **The blind can hold wither of the hands of the guide. But if he is holding the right handoff the guide he should do it with his left hand and vice versa.**

The blind should be 1 to 1 ½ feet behind the guide. In this position the hand of the blind should be in the shape of "L" the forearm being horizontal. The left shoulder of the blind should be in line with the right shoulder of the guide.





d. Walking : **In this position both the guide and the blind should move. The guide shall be detecting obstacles and the gait should not be fast.**

e. Doorways : **The guide should inform that they are approaching door way and they have to go through the door way. Hence the guide should place the hand of the blind on the door knob then move the blind should enter and then close the door after him and make contact.**

f. Narrow ways : **In the narrow ways such as aisles the guide should move his hand from the side to the back of his body diagonally. The bind person should extend his hand and move exactly to the back of the guide.**

g. Sitting in a Chair : **The guide should stop near the chair and put the hand of the blind on the hand rest of the chair. Then the blind should search for the any articles in the chair and sit. If he find any articles he should take them into his hand and sit .**

i. Ascending and descending the stairs: **The guide can tell whether they are going up the steps or coming down. Many a times that it is understood that if the guide stops for a while before climbing that they are going up the steps and the guides does the same while coming down. If the stairs have handrails the blind can trace them.**

NOTE : DO NOT FORGET TO ASK YOUR LECTURER TO DEMONSTRATE ALL THESE TECHNIQUES IN YOUR CONTACT CLASSES.

4a.6 CANE TECHNIQUES

Mostly and widely used , very practical and economical way of mobility is Cane technique. The use of the cane is systematized by Dr. Richard Hoover so it is known as Dr. Hoover's cane and it is painted white so it is also known as "white cane". Many visually disabled feel shy to use the cane as they say it symbolizes that they are handicapped but infact the cane is the symbol of INDEPENDENCE. It is the extension of the sense of touch.

Let us find out about the cane.

4a.6.1 The Cane: The cane has four important parts. They are 1, hook or crook 2. grip 3. shaft 4 tip. Hook is a plastic loop for hanging the cane when not in use. The hook also is the same. The grip is generally of rubber for firmness. The shaft is a long hollow tube with light tapering. (Fig.4)

The tip is generally of nylon. The cane is always painted white. Generally it is painted with illuminating paint to facilitate the motorists to know that a blind person is on the move. Sometimes the lower part of the cane is painted red.

4a.6.2 TYPES OF CANES: **There are three types of canes available1.cane 2.Collapsible or folding cane 3. Electronic cane. All the canes have almost the same parts. A long cane can not be folded where as a folding or collapsible cane can be folded into 4 or 5 pieces basing ob the length of the cane. The electronic cane has a device which sends LASER or ultrasound waves and a receiver.**

A. The grip : **Cane should be held at the grip with any hand. The forefinger should be in line with the grip, while the thumb to one side and all the other fingers opposite to thumb.**

B. The Position: **The cane should be placed at the center of the body. Which means the wrist of the hand holding the cane exactly in front of the body(navel) of the user. The hand should be stretched to the maximum.(Fig.-1)**

C. The Rhythm : **The rhythm refers to the movement of the cane and the legs. While the cane is on to the right side the left leg should be forwarded and vice versa.**

D. The Arc : **The arc means the movement of the cane to the sides. The cane should be moved to the left and to the right not exceeding more than 15 degrees both the sides. It means the cane should be moved to the extent to detect obstacles that come in line of travel to the body. The arc should be equal to the right and to the left from the center of the body. Hand should not be moved but only the wrist thus keeping the palm always in front of the body. The tip of the cane while moving or swinging should not be lifted more than one to one and half inches from the ground. (Fig.-3)**

E. The Height : **The cane should be selected basing on the height of the user. The ideal length of the cane should be to the middle of the user's chest while placed vertically. (Fig.-2)**

4a6.3Cane Skills

A. Diagonal Technique: **The cane is held at a diagonal across and in front of the user to enable safe travel by detecting obstacles. The cane is trailed in front of the user to enable the person to detect doorways,stairwayas etc. in familiar or unfamiliar environments**

B. Touch Technique: **The cane is placed in front at the center of the body swinging from side to side following the above said arc, rhythm. This technique is widely used in travel while shoreline with two point tap.**

C. Touch- Slide : **This technique is used on curbs, pavements etc.**

D. The Three Point Touch : **This is mostly used in rural areas to follow a narrow path.**

Mobility skills using a cane are taught according to the individual's need. But generally speaking a wide variety of techniques are taught to suite different situations in the environment, including crossing the streets, roads, walking along a shore line , pavements ,stairs, entering and exiting doorways, vehicles and so on. Some common routes used in O&M training are from the house to the shop, place of work, bank, post office, religious center, recreation center, park etc.

4a.7. TRAINING STRATEGIES :

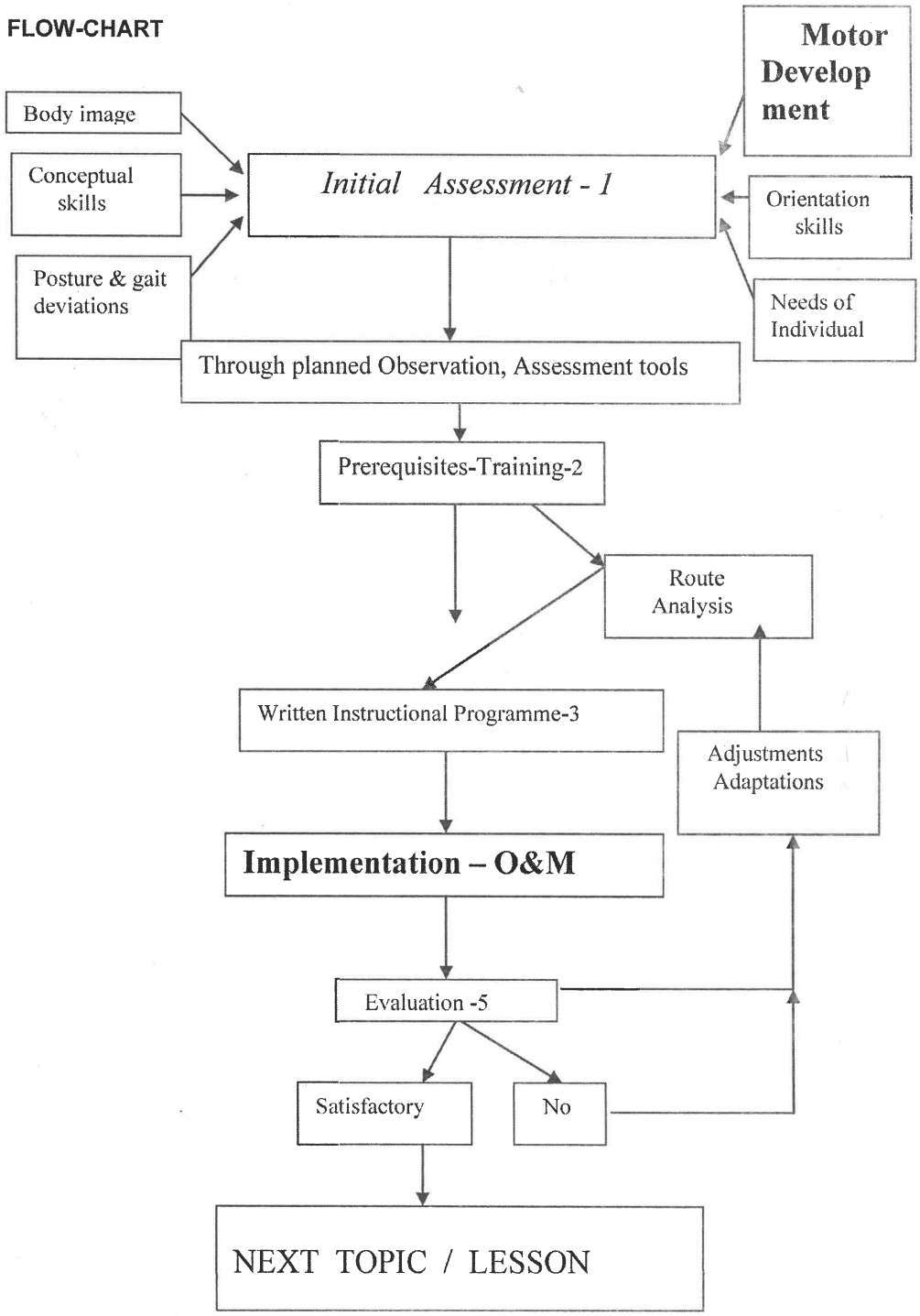
A. **orientation and mobility training should be on a 1: 1 basis**

B. **The trainer or instructor should be specially trained and with normal vision.**

C. **The training should be need based in real situations such as home, different routes regularly used by the person.**

4a.7.1 Flow Chart : **The flow chart provides a summary of the strategies to be followed.**

4a.7.1 FLOW-CHART



4a.8 PRE REQUISITIE SKILLS AND TRAINING

Once the client is assessed , orientation skills along with other specified areas of training need to be considered. Including sensory training, posture, gait correcting deviant mannerisms, body image and conceptual skills.

4a.8.1 Written Instructional Programmed: **Once the person has mastered orientation skills a written programmed of instruction is necessary. The written programmed is developed according to the routes that programme the person uses regularly. This includes writing down all the landmarks, clues to be identified, skills and techniques required on each route. These are checked techniques and objectives are meticulously planned. A written programme is necessary for implementation.**

4a.8.2 Training: **This is practical part where O&M training is given to the clients on the routes identified. Implementing the written instructional programme is vital and should take more time than planning and assessment. The client is guided and encouraged to move freely and independently.**

4a.8.3 Evaluation: **Careful observation of the training on each route helps the trainer to identify difficulties faced by the user. Hence, adjustments and adaptations are an essential part of evaluation. The trainer may need to re-analyse the route if the user is not very successful. This analysis may lead to change of route, looking for more viable landmarks and clues, and /or a change of cane skills.**

4a.8.4 Never Vs. Ever: **While training, the O&M Instructor needs to be aware of the following:**

a. **Never discourage the user. Never say he/she has failed rather provide encouragement by saying that next time might be better.**

b. Always counsel the client. Be patient and guide properly.

c. The person being instructed should always be encouraged to dress properly, e.g. Tight jeans and cumbersome dresses are inconvenient when training with cane.

d. Encourage the person to wear soft soled shoes and not high heels.

e. Mannerisms, posture and gait deviations need to be corrected as and when they occur that is immediately.

4a.9 LESSON PLANNING – A PROFORMA

I General Information:

1. Name of the Pupil
2. Age of the Pupil
3. Class and school
4. Date
5. Time
6. Techniques to be taught
7. Topic
8. Mobility Aids
9. Location

II. Objectives

1.
2.

III. Skill Development

a. Explanation
b. Demonstration
c. Practice

IV. Check list

S. No.	Skills/Sub skills	Performance		
		Good	Average	Bad

V. Remarks of the O&M Instructor

VI. Signature.

4a.10UNIT SUMMARY : THINGS TO REMEMBER :

- **Orientation and mobility is very essential for the visually impaired**
- **Orientation is establishing your position in the environ net an mobility is the replacement from one place to the desired position.**

- **Orientation skills are to be learnt and developed as pre requisite for mobility.**
- **There are various orientation and mobility skills.**
- **Written instructional programme is essential**

4a.11 CHECK YOUR PROGRESS

1. **What is the importance of Orientation and mobility for the visually impaired.**
2. **Explain the difference between orientaion and mobility and define them.**
3. **What are the various methods available for blind in O&M?**
4. **Explain in detailotective and sighted guide techniques.**
5. **Explain the cane techniques.**
6. **Write a lesson plan for the topic " Trailing".**

4a.12ASSIGNMENT / ACTIVITY

1. **Blindfold yourself and try to find out the way from your house gate to your room.**
2. **Blindfold/ tie your handkerchief on your eyes and trace the walls of your house**
3. **Blindfold yourself and walk for sometime and list out the difficulties you faced.**

4a.13POINTS FOR DISCUSSION/CLARIFICATION

After going through this unit you may like to have further discussion on some points and clarifications on other. Note down those points and do not forget to ask your teacher/lecturer in your contact classes.

4a.13.1 Points for discussion

4a.13.1 Points for clarification

4a.14 REFERENCES / FURTHER READING

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UNIT 5: ENRICHED TEACHING FOR CONCEPT DEVELOPMENT: CONVERTING VISUAL CONCEPTS INTO ACCESSIBLE EXPERIENCES

STRUCTURE

4b.1 INTRODUCTION

You have come across the limitations of blindness or the losses due to blindness. One of the major limitations due to blindness is the limitations in the basic skills in which the activities of daily living become a major part. The activities a person does daily from the moment he wakes up in the morning and till he goes to bed are considered daily living skills.

4b.2 OBJECTIVES

After going through this unit you shall be ale to :

- **State the meaning of Daily living skills**
- **Define Daily Living skills**
- **Describe the importance of Daily Living Skills to Blind**
- **List out various skills**
- **Teach skills to visually impaired children**

4b.3 DEFINITION

The basic activities that a person employs daily to maintain and keep himself on par with the others and certain activities that are must for a person to live and does on a day to day basis are called "DAILY LIVING SKILLS/ ACTIVITIES OF DAILY LIVING or quite recently they are known as SURVIVAL SKILLS."

4b.4 BLINDNESS AND DAILY LIVING SKILLS

Loss of vision in a person limits the following:

- **Visual Stimulus**
- **Motor Development**
- **Incidental Learning**
- **Imitative Learning etc.**

We are very much concern with the limitation in IMITATION because a sighted person learns learns all these activities of daily living with imitation. Only when a person does something in a wrong way the elders or others correct them. Mostly these skills are acquired from childhood onwards. However the environmental deprivation and lack of opportunities also retard the development of these survival skills in the blind children.. These skills are very important for a blind person if not one has to depend upon others for each and everything.

4b.5 OBJECTIVES OF TEACHING DAILY LIVING SKILLS

- **To enable a blind person to carryout day to day activities on his own or with minimal assistance.**
- **To make a blind person independent**
- **To make a blind person develop self-confidence**

4b.6 PRE – REQUISITIES FOR TRAINING

Most of the daily living skills are of routine nature. Lack of visual stimulus leading to absence of imitative learning makes one to realize that each and every skill has to be taught to the blind in a formal way after careful planning. The following has to be considered before teaching activities of daily living.

- **Adaptations necessary**
- **Assistive devices that may help in doing an activity quickly and precisely**
- **Identifying the difficulties faced by the individual**
- **The needs, age, occupation and other personal issues**

4b.7 LIST OF DAILY LIVING SKILLS

It would be difficult to list out all the skills of daily living. However some areas are herewith mentioned for your understanding.

1. **Personal Hygiene: Bathing, Dressing, Taking care of teeth etc.**
2. **Use of toilet**
3. **Using electrical and electronic devices**
4. **Shopping**

5. **Taking care of home**
6. **Cooking**
7. **Handling money**
8. **Using public utility services such as Bus, Post office, Banks etc**

However it is advisable to monitor Initial assessment of the individual and then list out the skills required to be taught basing on the needs of an individual.

4b.8 TASK ANALYSIS

Task analysis is nothing but listing out the sub skills in an activity. To exemplify let me take a skill : Combing hair. This skill can further be made into many sub skills. It means that any one activity may have more areas of skills.

- **Identifying comb**
- **Identifying oil**
- **Applying oil**
- **Holding the comb**
- **Combing**
- **Making plaits**
- **Using ribbons**
- **Different styles of plaits etc.**

The skills should be from simple to complex. Oral explanation, demonstration, Practice are the important steps to be followed by the instructor.

4b.9 LESSON PLAN – A PROFORMA

1. General Information

1. **Name of the Pupil**
2. **Age**
3. **Class & School**
4. **Date**
5. **Time**

6. Skill to be developed

7. Assisstive devices

2. Objectives:

1.

2.

3. Skill Development

1. Explanation

2. Demonstration

3. Practice

4. Check list

S. No.	Skills/Sub skills	Performance		
		Good	Average	Bad

5. Remarks of the teacher

6. Signature

4b.10UNIT SUMMARY/ THINGS TO REMEMBER

- **Daily Living Skills are very essential of the blind**
- **Mastery over the skills make a person self sufficient or independent**
- **Activities of daily living are to be taught on the basis of the persons needs**
- **If necessary aids or assistive devices should be used**
- **Task analysis is a must and written instructional lesson plan is must**
- **Initial assessment has to be done**

4b.11CHECK YOUR PROGRESS

i. **Explain the importance of Activities of Daily Living for a blind Person**

ii. **List out the daily Living skills**

iii. **What do you understand by task analysis explain with an example**

iv. **Write a lesson plan to teach on the topic "Brushing teeth"**

4b.12ASSIGNMENT/ACTIVITY

1. **Tie a handkerchief on you eyes or blindfold and try to brush your teeth and list out the difficulties you have faced**
2. **Blindfold one of your brother/sister or any family member and teach any of the daily living skills**

4b.13POINTS FOR DISCUSSION/CLARIFICATION

After going through this unit you may like to have further discussion on some points and clarifications on other. Note down those points and do not forget to ask your teacher/lecturer in your contact classes.

4b.13.1 Points for discussion

4b.13.1 Points for clarification

4b.14 REFERENCES/ FURTHER READING

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BLOCK 2 : MATHEMATICS

INTRODUCTION

It is a widely accepted fact that the curriculum for the education of children with visual impairment needs no change. What is required is modifications/adaptation in methods and material used for teaching various curricular areas. Vision is the major mode for learning language and mathematics in regular schools. The blind children studying both in special and general schools (inclusive/integrated) setting needs to be taught these subjects with the help of audio tactile material.

Braille is the mode for learning to read and write (about which you have already studied in Block-1). You have also studied about the process of concept development and implications of visual impairment in gaining knowledge about various concepts.

The techniques of adapting/preparing teaching learning material have also been discussed in Block-1. In this Block you will be studying about the methods and techniques of teaching various language skills, gaining mathematical concepts and procedures for evaluating the achievements of visually impaired people in language and mathematics.

OBJECTIVES

On the completion of this Block, you will be able to :

- appreciate the needs and importance of developing listening skills among visually impaired children in learning language.
- define verbalism in visually impaired students.
- understand strategy for minimizing verbalism among visually impaired students.
- prepare teaching material for developing mathematical concepts and ideas in visually impaired people.
- apply various procedures in evaluating the achievement of visually impaired people in language and mathematics.

UNIT 1: COPING WITH MATHEMATICS PHOBIAS

STRUCTURE

- Introduction
- Objective
- Listening Comprehension Activities
- Activities of Listening Skills
- Types of Listening Skills
- Pre-requisite Skills for Language Development
- Development of Vocabulary and Comprehension Skills
- Hints for Braille Reading
- Development of Vocabulary Skills
- Development of Comprehension Skills
- Concepts Involved in Reading Comprehension
- Types of Reading Comprehension
- Techniques of Teaching Reading Comprehension
- Developing Reading Habits among Pupils
- Verbalization of Visually Impaired Children
- Suggestions for exercises to Improve Verbal Skills
- Unit Summary
- Check your progress
- Assignment
- Points for Discussion and Clarification
- References

1.20 INTRODUCTION

In oral communications listening skills is an important media in the education of the visually impaired in the process of obtaining auditory information. Most of the cognitive processes required in listening to some one read a book are the same needed in listening to talking book or a book. The ability of the child to listen, speak, read and write is the childs ability to handle his or her particular language code. For the child with visual disabilities, the ear and its proper use are vital. Starting with being able to discriminate various sounds from real life, leading on to sounds made by the teacher and the classmates, the child has to progress to the development of a vocabulary for speech. Again the same basic techniques used for the sighted child to develop listening skills may be utilised for the child with visual disabilities with the condition that since this child cannot see, the brain must receive messages from other senses to help the child comprehend what is heard especially in case of vocabulary. A sighted child can see a chair and hear the sound 'chair' and have some comprehension of what 'chair' means. To the visually impaired child, just the sound 'chair' is only a sound. Its meaning can come from a direct contact with the chair.

No child should be expected to understand fully what he has heard on a cassette tape without prior instruction in auditory skills. It is well known that like other senses the hearing sense does not develop automatically. Since this sense is vital to the visually impaired children, special efforts have to be made to improve

(a) analysis of auditory stimuli,

(b) auditory attending,

(c) sound localization,

(d) auditory focus-field,

(e) auditory discrimination,

(f) sequencing,

(g) auditory memory,

(h) auditory closure and

(i) language usage.

Proficiency in the listening skills can be attained through systematic training and practice in the above skills.

DEFINITION OF TERMS

Auditory

Related to or experienced through the sense of hearing.

Auditory ability

The ability to identify and locate a given sound. Example boiling water, pouring water.

Auditory discrimination

The sensory process of recognition of difference between sounds.

Bharati Braille Codes

It is uniform Braille script for all the Indian languages.

Braille

Device for enabling the blind to read and write, in which an alphabet is employed consisting of various arrangements of raised dots, within a framework of six dots, arranged in three rows.

Braille codes

It refers to different course codes of mathematics, science and music based on the Braille script for specific purpose.

Concrete

Applied to a particular object, usually of sense, or to a particular event, or to some characteristics circumstance, inherent in such particular object or event, in opposition to abstract; sometimes used of the type of intelligence manifested in dealing with things of practical affairs.

Disability

Loss or impairment of a function, due usually to some impairment of structure.

Disabled

Refers to individual, who because of impairments, is limited or restricted in executing some skills, performing tasks, or participating in certain activities, movements, or patterns.

Handicap

Disadvantage for a given individual resulting from an impairment or disability that limits or prevents the fulfillment of a rule that is normal (depending on age, sex, social and cultural factors) for that individual.

Hearing

The experience derived through the receptors for sound in the Cochlea of the inner ear; hearing loss, the percentage below normal hearing at different frequencies, usually indicated in a curve based on audiometer results. Development of auditory skills, start to discriminate between the localized sounds.

Impairment

Any loss or abnormality of psychological, physiological or anatomical structure or functions.

Learning

An effect of change in the environment. Educators use the 'learning' interchangeably with the idea of behavioural change. To acquire skill in, to show progress in, or to suggest a level of attainment.

1.20 OBJECTIVES

On the completion of this Unit, you will be able to :

- define listening.
- plan and organize activities for developing listening and reading comprehension.
- describe various types of listening skills.
- outline prerequisite skills for language development.
- explain various techniques for enhancing vocabulary.
- describe various techniques for teaching reading and listening comprehension.
- develop reading habits among visually impaired children.
- explain verbalism among blind people.

1.20 LISTENING COMPREHENSION ACTIVITIES

The visually impaired children should be given the necessary training and systematic practice in the following aspects.

- Distinguishing between key sounds, stress and intonation patterns in the contact of sentences.
- Listening to material (especially dialogues) containing patterns and vocabulary known to students.
- Carrying out instructions and directions e.g. students may be asked to identify a person or a place from the description which they have listened.
- Listening to an informed description or commentary that relates to tactual aid.
- Listening to material which has a high information content such as news bulletin, announcements (railway) with attention pointers (questions or true/ false statements).
- Listening to discussions.
- Dictation involves the ability to understand a sequence of sentences read aloud and also to respond in writing.

1.20 ACTIVITIES OF LISTENING SKILLS

Different types of activities can motivate the visually impaired children to develop listening skills. The training should start from the pre-school level.

The different phases of training should be given to the visually impaired children may be classified as follows:

- Sound localization skills
- Sound discrimination skills
- Sound tracking
- Associating objects and sounds
- Auditory background and selections of the needed sound source
- Development of auditory tolerance
- Skill Of Sequencing the sound clues
- Reconstructing life situations through auditory clues.

Gradual development in the above skills enables the child to improve vocabulary. Any activity, in the classroom or outside or in the laboratory or at home, which develops the above skills need to be encouraged. As the teaching of these skills is not difficult and can usually take the form of games, the family of the child needs to be strongly encouraged to be involved in the listening skill development of the child.

1.20 TYPES OF LISTENING SKILLS

Rose-Marie Swallow and *Alkin Conner* described four important types of listening skills. All the four skills are well-differentiated and relatively independent skills. It is very difficult to differentiate the individual skills with these skills may help the students to develop an overall ability to receive information through the auditory channel efficiently and effectively. The teacher should plan the academic activities through these skills individually for successful learning purpose. These four skills are as follows:

1. Listening for details
2. Listening for sequence
3. Listening for word meaning
4. Listening for the main idea

Listening for details

While reading, the visually impaired children may miss the details of information when compare to sighted children (Visual readers). Because most of the visually impaired children not interested to read through Braille media. Also Braille media involves a systematic Braille mechanisms and corrective

finger coordination skills. Since learning through listening is slower than visual reading, details of text materials should be thought as facts. In case of qualified reader is utilised in reader service programmes, the errors can be classified by the same reader.

Listening for sequence

Ability to recall the sequence of events or parts of a story is very important. If the children missed the sequence of events the learning processes will become complex. When the teacher is developing this skill through practice exercise, he should be very careful not to use the natural sequence of events. The visually impaired children will be able to respond correctly simply from experience or previous learning.

Listening for word meaning

In the practice stage, the use of drills are effective to understand the meaning of vocabulary. This skill may be introduced and practiced by the visually impaired children through mechanical drills and meaningful practice. Using tactile word material, phasing out cues, open-ended responses and imaginary situations are some of the activities to practice the above skill.

Listening for the main idea

Generally words also communicate certain ideas or concepts. The necessary and appropriate training is essential to understand the actual team or main ideas of any particular text material read out by a reader or teacher.

1.20 PRE-REQUISITE SKILLS FOR LANGUAGE DEVELOPMENT

- Language begins with the ability to listen and to extent meaning from the sound – A.
- Listening involves hearing, attending, discriminating, understanding and remembering skills.
- Listening is learned behaviour. The visually impaired children should be given proper orientation and necessary activities to develop the listening skills.
- Actions oriented words should used frequently.
- Language development depends upon associating factors such as his social experience, his opportunity to use language in different contexts, his self-initiative to improve the language abilities, the assistance rendered by the teachers and the sighted classmates.

- Children must have experience in handling, manipulating an exploring objects to develop skills with which to explore environment.
- Children must be encourage to use speech in every situation in which it is normally required.
- Children need to hear language.
- Teachers should speak slowly and good speech model.
- Learning language should be fun and rewards should be given to the students.
- Communication activities should be meaningful.
- Children need a variety of listening experiences. Activities that require a need to talk are important.
- Games of all types should be used. Games can be made of most language activities such as namely and asking questions.
- Story telling, which includes reading aloud is important.
- Teachers should accompany their activities with talk.
- Teachers should be consistent, using the same words for the same objects and actions.
- Teachers should establish realistic short-term goals.
- Dialogue and conversations should be encouraged.

Language Development Checklist

Name: Standard:

Development level/ skill level	Competencies	Comment	Date
General readiness			
Physical			
Cognitive			
Language ability			
Social behaviour			
Reading readiness			
Braille mechanics			
Turning pages			
Positional concepts			
Interest in reading			
Vocabulary development			
Use of marking system			
Reading			
Reading for detail			
Reading for general information			
Independent word-attack skills			
(Synthesis: analysis)			
Reading for enrichment			
Reading for recreation			
Oral reading			
Silent reading comprehension			
Handlers format shifts on examining reading			
Writing			
Use of writing pocket frame and stylus			

Self correction Use of writing board Note taking Composition/ poetry format **Listening** Discriminating listening in class Use of live readers Use of recorded material			

1.20 Development of vocabulary and comprehension skills

Comprehension is often narrowly interpreted as involving written answers to questions based on a short reading passage. Reading comprehension means reading with through meaning. In fact, reading without comprehension is meaningless. Good reading habits and practice will develop clear understanding of material or passage meant for reading. Mere mechanical reading will not give necessary comprehension abilities. The necessary proficiency skills should be developed to relate the idea of thought involved in the passages.

The study of development of vocabulary and comprehension skills for visually disabled children covers listening, speaking, reading and writing skills, just as it does with sighted children. Not being sighted and therefore not being able to see print, a medium for reading and writing is needed for children with visual disabilities. It is based upon tactile skills of the child. As with normal child, the visually impaired child requires a variety of auditory discrimination skills for language learning and use. Reading and writing based upon tactile skills need to be trained for the development of vocabulary and comprehension skills.

1.20 Hints for Braille reading

- Good Braille readers use two hands.
- Placing both hands at the beginning of a line.
- The right hand continues across the line, while the left hand moves in the opposite direction and locate the beginning of the next line.
- Good two-handed readers need to acquire a light tough.
- To touch the dots lightly.
- Clean, warm hands are important for rapid and correct Braille reading.

- Never tell a child that there are reversible pairs of letters in Braille.
- Before introducing the Braille, the child has to develop a variety of tactile discrimination which will help prepare him to discriminate among dots and their patterns when learning Braille.
- Both for using books, the basic language development and for general orientation in the environment, the visually disabled child requires a number of ideas in regard to positions in space such as left and right, top and bottom, above and below, inside and outside, etc.

Vocabulary Development

Objectives

- To promote independent reading
- To develop sight vocabulary skills
- To develop word analysis skills
- To help the child to know the usage of words

1.20 DEVELOPMENT OF VOCABULARY SKILLS

- Uses several words with appropriate meaning.
- Indicates wishes by saying a word.
- Responds to simple commands.
- Combine words into short sentences.
- Talk with sentences using five or six.
- Participate in conversations.
- Tells simple stories.
- Ask many questions.
- Modifies speech according to listener's behaviour and needs.
- Sing songs from memory.
- Puts ideas in a proper sequence.
- Making statements, asking questions.

Activities of Enhancing Vocabulary Development

1.1 Writing experience stories

- Motivating the child.
- Transfer from listening vocabulary to speaking vocabulary and to writing vocabulary.
- Meaningful learning of words.
- Teachers guidance is needed in selecting words to familiarised with as it involves more contractions.
- Teachers awareness is essential on the words encountered by the child.

2. Supplementing the classroom teachers vocabulary-building efforts through activities.

3. Verification of understanding of words at every stage.

4. Helping the child to categorise words.

5. Presenting new words in context rather in isolation.

1.1 Varying the shapes of the pages and cover to give varied experience.

7. Rhyming exercises, the study of prefixes, suffixes are other activities for vocabulary development.

1.20 DEVELOPING OF COMPREHENSION SKILLS

Objectives

- To develop adequate comprehension skills.
- The develop the skill of literal comprehension skills (to understand what the author is saying).
- To develop the skill of inferential comprehension skills (to be able to infer meaning).
- To the develop the skill of evaluation, comprehension skills (to make judgement about what is read).
- To enjoy and appreciate the literary qualities of a story.
- The ability to read English intelligently and imaginatively.
- The ability to speak intelligibly.
- The ability to understand English when it is spoken.
- The ability to write English correctly.

- Familiarity with simple rhymes and poems.
- Interest in library reading and listening.
- Develop the habit of reading vast material through Braille or in recorded cassette or reader service programme with adequate comprehension of the material read.
- Since comprehension is not just recall or recognition but a through understanding, the children should be given proper practical continuous exercise in distinguish, summary, compare, elaborate the read material.
- A necessary distinction should be made in both in intensive and extensive reading.

Activities of Enhancing Comprehension Skills

1. Allow the child to read a quiet area and gradually build tolerance for noise and distraction.
2. Provide first hand concrete experiences.
3. Encouraging the child to use tactual, auditory and kinesthetic imaginary.
4. Using the structural clues. Point out word beginnings, endings, spelling patterns and letter repetitions.
5. Using context clues-Brailled exercises with deleted words and phrases.
6. Make frequent checks of comprehension.
7. Provide opportunities to read a variety of material.

1.20 CONCEPTS INVOLVED IN READING COMPREHENSION

Reading comprehension involves the understanding the meaning of

a. new content words for each lesson.
b. new grammatical structures.
c. new concepts and
d. relationship to ideas.

The learning of the visually impaired children through pieces. In learning, he has to perceive an idea through 'structure' rather then 'form' as in the case of sighted children. Because of the following reasons.

- Visually impaired children take longer time for forming a concept. Since, the tactile and auditory perception on any account cannot replace the visual perception and not even match the experiences

formed out of visual perception, visually impaired children tend to attain reduced experiences.

- Since touch reading is a tedious process, the visually impaired children may had fatigue in reading for longer time, but this has nothing to do with his cognitive development. There are children who are very good in the mental processes and at the same time very slow in Braille reading.
- Some times, the problems in the learning may be due to additional disabilities is the child.

1.20 TYPES OF READING COMPREHENSION

Types of reading comprehension may be divided in two ways. They are (1) intensive reading and (2) extensive reading.

Intensive reading involves the detailed analysis of the reading material for the purpose of thorough understanding of the given passage. Intensive reading provides a basis for greater control of language in speech and writing. It includes the comprehension of words, the use of structures, phrases and idioms, general meaning of the given material and the comprehension of grammatical items.

Where as extensive reading involves the over-all meaning or central idea of the given material. It develops the student's pace according to his individual ability. It gives necessary skills to the students to read directly and fluently. Short stories, simple biographical sketches are the suggested activities to improve the extensive reading abilities.

For effective Braille reading, a proper Braille mechanism needs to be developed both in Braille and Braillon sheets. By Braille mechanism, we mean the efficient movement of the hands over the Braille line with proper hand position and finger position. Children who do not develop better Braille mechanism just butterfly over the Braille sheet which contributes to the slow reading of them. Educational progress of the visually impaired children based on their reading ability and their physical readiness, the emotional and the psychological readiness also contribute to the success of in reading.

Techniques for introduction

1. When giving a reading assignment, give the student general questions to answer. Have him practice formulating his own questions based on book titles, chapter headings, etc.
2. Identify and drill for rapid recognition of 'sign-post' words (and, likewise, moreover, furthermore) that signal a continuation of thought.
3. Identify and drill for rapid recognition of 'turn-about' words (but, yet, nevertheless, despite) that change the direction thought.

4. Gave the child practice rapid, automatic recognition of common words.
5. Set rate and comprehension goals for material that is being read.
6. Reinforce reading for the main idea through writing activities.
7. Make the child to re-read a page several times in order to pickup additional words.

1.20 TECHNIQUES OF TEACHING READING COMPREHENSION

Teaching of "Reading comprehension" involved following three important stages. They are as follows:

The pre-reading stage.

The reading stage.

The post reading stage.

The pre-reading stage

The pre-reading stage involves the introduction of new lesson or revision of the previous lesson. The teacher should introduce the new lesson with the support of tactile three dimensional models, tactile pictures and sketches related to that lesson. Revision of the previous lesson should be reviewed by asking some comprehension questions by adopting the techniques like (a) questions and answers, (b) asking students to summarise and (c) language and grammar exercise.

The reading stage

A thorough knowledge in Braille code, correct hand position and the necessary essential Braille reading technique helps the child to reduce the fatigue in this stage. While the teacher is reading the para, the visually impaired children should listen properly. This stage involves

(a) model reading by the teacher,
(b) word meanings and explanations,
(c) silent reading by the pupil and
(d) comprehension question.

The post reading stage

The post reading state involves the following types of exercises.

1. Vocabulary exercise : meaning and usage of words.
2. Spelling and punctuation exercises.
3. Pronunciation exercises and
4. Structure exercises.

Developing skill of extensive reading

Developing skill of extensive reading involves the following skills. The teacher has to make special effort to develop the skills like

(a) introduction,

(b) survey,

(c) questions and

(d) '3R' stage.

The 3R stage includes the sage of reading review and reproduction. The teacher should be available for help and consultation, to develop the above skills in a appropriate manner.

1.20 DEVELOPING READING HABITS AMONG PUPILS

The visually impaired children have the access to get the reading material in three ways. They are

(1) Braille text book,

(2) Recorded material and

(3) Reader service.

Learning through Braille is the most accepted viable media, developing reading habits among the visually impaired children are very important. The following suggestions are offered to improve the reading habits.

- The teacher himself should be good Braille reader.
- Proper guidance is necessary to select the Braille textbook based on the students ability and interest.
- Necessary Braille book library.
- Necessary training in oral reading.
- Since Braille is the primary model of communication for the visually impaired children, the children's should be motivated to make continuous interest in reading the Braille.
- Survey of pupils Braille reading interests should be conducted.
- The necessary skills in Braille reading like finger manipulations skills, fine motor co-ordinations and control of muscles and competency to read familiar words.
- Arouse pupil's will to read the Braille language like open Braille, dot configuration, upper contractions, lower sign-contractions, dot-letter-contracted words and Braille short hand.

- Discussions on the Braille textbook also prove effective in whispering those who do not read at all or read less. Braille reading club should be started in every special and integrated schools.

Reading style development

The Braille style refers to the way in which the child sits (or stands), holds a Braille book and moves his hands. It also includes the desire for quiet or ambient noise, presence or absence of sub-vocalisation or movements of other body parts while reading.

Some ways of fostering reading style

1. Provide a variety of reading environments.
   - Vary the noise level.
   - Introduce chair/table combinations that differ in height.
   - Allow children to sit on floor for reading.
2. Demonstrate ways to hold a Braille text book.
3. Demonstrate ways to move one's hand independently across a Braille page. Help the student experiment with innovative ways of moving his/her hands.
4. Help the child reduce sub-vocalisations.
5. Encourage children to discuss their Braille reading styles with each other.

Suggestions for the Resource Teachers to facilitate the use of Braille

1. Keep necessary materials for Braille reading in a more accessible place in the resource room.
2. Double space all material that is transcribed from the reader.
3. Transcribe material having picture content according to the reason for inclusion of the picture.
4. When transcribing print materials to Braille, it is often necessary to alter the format for ease of reading in Braille.
5. Print materials that are tape-recorded must be recorded with pauses.
6. Transcribed materials should be used for supplementary tutoring whenever feasible.

Developing reading habit in foreign language is of great use. We may sum up in the words of Prof. Rajagopalan : 'we can never hope to improve the standard of English of our pupils and help them derive full benefits out of

learning a difficult foreign language unless and until this desirable habit is formed among our students first'.

1.20 Verbalization of Visually Impaired Children

Education of he visually impaired children has been undergoing changes from time to time. The problems a person with a disability or impairment encounters when interacting with the environment. A disability may pose a handicap in one environment but not in another. There is a saying 'the hand is the eye of the blind'. That means that touch becomes the most important sense when vision is absent. Hence blind children's need to be stimulated and motivated for tactile experiences. Thus they will learn to manipulate things and develop that sensitive touch which they need for the understanding of the world in which they live. A sighted child learns by observations and imitation must be taught to the blind slowly and patiently. As we shall see later it is important for language development, the verbal skills like reading and writing should be taught properly and continuously to the visually impaired children.

1.20 Suggestions for exercises to Improve Verbal Skills

1.1 Let him touch and name objects as he uses them daily.

- Body parts
- Objects in connection with daily living skills.
- Objects in connection with daily feeding.
- Objects in connection with his environment.

b. Encourage him to be active and at the same time name those activities.

c. Watch your child's concept development.

Suggestion on the Teaching of Vocabulary Factors Involved In Verbalization

- Verbal commands are enough to make them perform the activity.
- Verbal explanation would make the learning interesting and profitable.
- Instruction should be carefully graded and arranged in a natural order.
- The teacher in this method should appeal through sense perception to the understanding of the child.
- Words should be selective, simple, meaningful and should convey the ideas properly.
- Inadequate vocabulary is one of the common problem in verbalization.

- Power of expression based on the selective words.
- Words must stimulate responses and necessary for human experiences.
- The vocabulary for active use should by systematically presented and practiced.
- Vocabulary should always be taught in normal speech utterances.
- New vocabulary items should always be introduced in known structure.
- Whenever a familiar word is met in a new context, it should be taught and practiced.

The study of verbalization covers listing, speaking, reading and writing skills, just as it does with sighted children. Not being sighted and therefore not being able to see print, a new medium for reading and writing is needed for children with visual disabilities. It is based upon tactile skills of the child. As with normal child, the visually disabled child requires a variety of Auditory discrimination skills for language learning and use. Language is a system used by a group of people for giving meaning to sounds, words, gestures and other symbols to enable communication with each others.

1.20 UNIT SUMMARY

1. Skill of listening means to derive meanings from the heard words and sentences.
2. A number of activities, for example, preparing short notes after hearing Radio or telecast news, listening a lesson from cassettes recorder, etc., needs to be planned and the children must be motivated for actively participating in these activities. This will help in developing listening skills as well as listening comprehension. Similarly, the structured and graded questions-based- exercises must be planned and the children must be asked to complete these exercises on the heard and or read passages or stories. This will help develop both reading and listening comprehension.
3. Ability to speak, read, pronounce correctly and use different parts of speech correctly are some of the pre-requisite skills for language development. These skills needs to be very carefully planned and taught for teaching language- whether it is a mother tong or foreign language.
4. The children must be explained the methods of using dictionary and they must be encouraged to refer to or make use of a dictionary while

reading or listening to find out the meaning of words used in a read or listened passage/story.

1.20 CHECK YOUR PROGRESS

1.ı Define the following terms:

(a) Auditory
(b) Braille
(c) Concrete
(d) Disability
(e) Impairment

2. Distinguish between:

(a) Braille codes & Bharti Braille codes

(b) Disabled & Handicap

3. How to teach to lesson through verbalization?

4. Give a brief account of the types of listening skills.

5. How you can develop listening skills in visually impaired children?

1.20 ASSIGNMENT

- The teacher trainee should prepare set of reading readiness material for the visually impaired children.
- The trainee, with the help of the check-list given at the reading material can make a study of the language development skills in visually impaired children of the integrated and residential schools.
- The trainee can design a game for development the vocabulary in the primary school visually disabled child.
- The teacher trainee can prepared a sequence of events for developing the auditory development of the visually impaired children. The child should be asked to reconstruct life situations from sound clues.
- The trainee can prepare a list of teaching lessons through verbalization.
- The trainee can prepare active and passive vocabulary needs for verbalization.

1.20 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 these points below:

1.20.1 Points for Discussion

1.20.2 Points for clarification

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UNIT 2: CONCEPTUALIZATION OF MATHEMATICAL IDEAS – PROCESSES AND CHALLENGES FOR CHILDREN WITH VISUAL IMPAIRMENT

STRUCTURE

- **Introduction**
- **Objectives**
- **Factors Contributing to learning Mathematics**
- **Impact of visual impairment on learning Mathematics**
  - Role of vision in learning Mathematics
  - Problems resulting from loss of sight in learning Mathematics
  - Various approaches of learning Mathematics
    - Building the Attitude
    - Providing Appropriate teaching learning material
    - Training and Enrichment courses for the teachers
- **Need and Importance of developing Mental Arithmetic**
- **Learning of various appliances of Mathematics**
  - Abacus
    - Structure
    - Strengths
    - Limitations
  - Taylor Frame
    - Structure
    - Strengths
    - Limitations
  - Geometrical devices
  - UNICEF Project for Development of Teaching Material
- **Braille Mathematics Code for India**
  - Historical Perspective

- Basic Braille Mathematical symbols and there uses.

- **Summary/Points to Remember**
- **Check Your Progress**
- **Assignments/Activities**
- **Points for Discussion/Clarification**
- **References**

2.1 INTRODUCTION

Mathematics cultivates child's thinking and reasoning skills. Mathematics lays the foundation for systematical thinking through the numerical and special aspects of the objects. Mathematics as a subject is important for a blind child just ads it is for other children. The possibility of visually impaired children learning. Mathematics is often questioned by highlighting some of the areas in Mathematics that demand vision. Whereas, research studies reveal that visually impaired children can also learn mathematics when they are taught in an appropriate manner.

2.2 OBJECTIVES

After going through this lesson, you will be able to:

- Enlist various factors that promote better learning of Mathematics;
- describe implications of visual impairment in learning Mathematics;
- understand problems in learning Mathematics and indicate strengths and limitations of various Mathematical appliances used by usually impaired students;
- learn the use of appliances e.g. Abacus, Taylor Frame and Geo-board etc.;
- know the sources of obtaining these devices and understand the use of Braille Mathematical symbols;
- Appreciate the role of mental arithmetic and geometry in day-to-day life.

2.3 FACTORS CONTRIBUTING TO LEARNING OF MATHEMATICS

It is worth mentioning the various factors that contribute to the child's success in better learning of Mathematics. These are:

2.3.1 Selection and teaching of suitable mathematical Braille Codes

The mathematical Braille Code must be introduced to children as and when they occur in the text. By doing so, children should develop knowledge of the Braille mathematical code and their practical use. Right from the first standard, the children should be exposed to the text material wherein Braille Mathematical codes are incorporated. This will give them an idea regarding the format of presentation.

2.3.2 Adaptation of the text material for the visually impaired child without changing the learning outcomes. Darling (1985) states that the learning activities of visually impaired children can be created without changing the learning outcomes set forth for sighted children. She also states the mathematical aids are of paramount importance in developing the right type of concept in the child.

2.3.3 Teaching of mathematical devices e.g. the abacus, Taylor frame, geo-board etc. to the visually impaired child for making the necessary calculations and understanding diagrams . Abacus takes little time in calculation while linear equations are possible to be shown in Taylor Frame. For teaching mathematical diagrams, geo-board and relief sheets are useful.

2.3.4 **Provision of suitable mathematics text-material after necessary editing of the content and format. Mathematics learning is not very difficult but it is a long process and makes the child and teacher feel that it is difficult. This cannot be a achieved overnight, it needs continuous effort.**

2.3.5 **Preparation and use of appropriate teaching aids for supplementing instruction in teaching Mathematics. Like any other child there is need to device innovative material to give concrete ideas to visually impaired child too.**

2.4 IMPACT OF VISUAL IMPAIRMENT. ON LEARNING MATHEMATICS

According to Lowenfeld (1950), there are three basic limitations imposed upon an individual due to loss of vision. These are (i) in the range and variety of the experiences, (ii) in his ability to get about and (iii) in his interaction with the environment. These limitations have certain educational implications, which in turn affect the learning of Mathematics in the initial stage.

2.4.1 Role of vision in learning Mathematics

Vision and hearing are two main distance senses. Vision has the most important function in serving as a unifying and structuring sense. Vision gives details of form, size, colour and spatial relationship of objects. Vision helps in gaining concrete ideas of objects as such and in gaining spatial qualities of objects. For a sighted child, learning from the environment takes place almost all the time without any special effort. Vision helps a child to move freely in the environment, thus great amount of knowledge and information is gained by a seeing child. All these informations acquired through vision make sound base for learning of Mathematics. At later stages, while performing, mathematical operations in real classroom situation, vision proves to be of immense importance. Mathematical operations are performed with good speed by seeing children as they involve visual tasks. For example, the setting out of long multiplication and long division involve the visual skills of scanning and searching.

2.4.2 Problems resulting from loss of sight in learning Mathematics

Due to lack of vision, the blind child

(a) **finds it difficult to gain concrete ideas of form, size, colour, spatial relationships, and spatial qualities of objects;**

(b) **is unable to observe the objects in toto; thus gains a partial knowledge of the objects;**

(c) is unable to acquire incidental learning;

(d) faces problems in setting out long multiplication and long division;

(e) finds it difficult to construct desired geometrical figures;

(f) takes more time in learning and comprehending mathematical concepts;

(g) takes longer to feel along a line than to scan it visually;

(h) faces problem to make the graphs themselves.

2.4.3 Various Approaches of Learning Mathematics

The scheme of Mathematics teaching needs to be carefully chosen in accordance with the requirement of visually handicapped pupils. During the Junior years Mathematics needs to have a practical basis to ensure the understanding of increasingly complex concepts and relationships. Relevant language referring to shape, size and quantity needs verification by tactile practical examples, and individual demonstration of processes.

Learning Mathematics in the secondary school is concerned with academic attainment leading to examination. It also has important implications in practical everyday situations and in the management of daily life.

Despite initial delay in concept formation, outstanding success in Mathematics has been shown by the blind student in subsequent years. Achievements are, however, dependent on the various approaches of learning Mathematics. These approaches are:

2.4.3.1 The policy makers, the Education committee and the teachers should first of all, should bear in their minds that

(a) Mathematics as a subject is very interesting and like other students, blind students also take fun in learning Mathematics;

(b) its emphasis on logical thinking and the opportunity it offers to relate theory to practice are invaluable;

(c) though certain areas of Mathematics in higher classes may be difficult to master for blind students but they are not impossible; and

(d) may be there are some blind students who are not able to master the higher levels of academic work in Mathematics but they should not be deprived of

Mathematics. A lively programme of 'social' Mathematics should be provided to them. Practical projects such as formulating plans for furnishing a room exemplify this. Measuring out the space available, working out the area of carpet and curtain necessary, and costing the furniture give opportunities for sharing practical activities and devolving mathematical skills.

With your experience list reasons for teaching Mathematics to blind students in the space provided:

2.4.3.2 Appropriate teachings-learning material should be provided like:

(a) Selection and teaching of suitable mathematical Braille codes should start from the primary level itself because at later stage they resent learning it. The teaching of these codes should take place in a phased manner. It is not necessary to teach all the mathematical codes at a time. Suppose 15 codes are to be taught at the III level, these can be taught as and when they are required in the lesson. In this way the learning is spread out over the year and becomes more meaningful to child. When the child is through with the writing of the codes, a small passage can be prepared in Mathematics by the teacher and the child can be asked to read that. This practice is necessary to master the difference between the mathematical Braille code and the literary code while reading.

(b) Providing Mathematics Braille text material is inevitable for blind students, as unlike seeing children whose teaching is done mostly through blackboard work supplemented by oral instruction. For teaching Mathematics to blind students, oral instruction makes sense only when the print material is provided in Braille text format. The proper preparation and appropriate

usage of Braille material may overcome the educational problems of blind students in learning Mathematics. The teachers of the blind students should know the techniques of preparing mathematical texts involving both literacy and mathematical Braille codes. To supplement the use of mathematics text material, a small guidebook in Braille consisting of model problems certain diagrammatic illustrations, etc., can be provided to the child. Another important aspect is to incorporate the necessary diagrams in the lessons. Provision of such diagrams in the text itself enhances the understanding of the child. However, the diagram should not be overloaded with information. All possible alternatives have to be explored in order to make the teaching learning in Mathematics more purposeful.

(c) Providing the tactile material and teaching aids & appliances is desirable along with the Braille text material in Mathematics. The blind students should be given semi-concrete & concrete objects for manipulation. The learning situations should be provided to give adequate experience and skill in classification, seriation, matching, comparing, naming etc., required for subsequent learning in Mathematics. The objects of environment and daily use, play things should be used in giving incidental learning to the blind students. The play activities involving simple operations like sorting in tidying the kitchen table, matching operations in putting a cup on each plate or putting buttons in the holes while dressing the doll. The spatial ideas of bigger-smaller, near-far, filled-empty, curved-plane etc. should naturally be formed through play with concrete material.

Material should be designed for developing a finer sense of discrimination and ordering, for example inset boards or trays with correspondingly fitting solids for shape recognition. Due emphasis should be laid on developing the kinesthetic tactile

and auditory sensations: through use of structured material. If the blind children are guided through these preliminary activities, their latter formal work in mathematics will be on secure foundation.

For teaching the concept of place value, the teacher should use counters, using a bigger or tactually different counter for every tenth object to be counted. Thereafter, a Spike Board with counters may be used. This can be followed by use of a ten base abacus and only after this the Cramner Abacus should be used. For giving the idea of place-value, one more Dienes apparatus can also be used.

The four arithmetical operations can be taught using concrete and structured material like number track, number board, unifix cubes etc. The structural properties and inter-relations among the four operations can also be conveyed by the use of these materials.

The idea of space, time and derived concepts like speed etc. appear to be one of the major problem areas for the visually impaired children. This should be linked with the mobility training. For example, the concept of graphical location can be given by pegging two ropes with knot at one pace interval placed perpendicular to each other on a ground. The children can locate an object like chair, another child etc. by starting from the origin. The teacher can give directions of movement along the axis. Subsequently, the same exercise can be done on paper and later on embossed graph paper can be made available to the children.

The use of the magnetic board can also be made in giving the geometrical concepts particularly, those involving flexibility of movement and locus.

Details about the appliances for Mathematics (Abacus, Taylor-Frame, and geometrical devices) are given in 2.6.

(d) Adaptation of Instructional Methods and development of Mental Arithmetic the methodology followed by the teacher in teaching Mathematics has a direct bearing on the learning of the child.

National Policy on Education stresses child centered approaches in teaching methodology. Each child has his own needs, interests and limitations, which need to be taken care of. The teaching should generate stimulating environment in the class. Individualized instruction is the latest concept. Children can learn any concept by themselves at their own speed provided the facilities are available to them. Teacher as a facilitator has to provide opportunities to enable the children to learn new things. The pupils may be grouped according to the needs of the situation to encourage mutual cooperation and exchange. They may even try wrong solutions to the problems and thereby discover their mistakes and learn from them, in contrast to the approach invoking routine drill which is more of mechanical nature. This approach can make the learning meaningful and interesting for the children.
Please write one teaching experience that would be most suitable for visually impaired student too in teaching Mathematics in the space provided:

2.4.3.3 **Training and Enrichment Courses for the teachers are of great importance to promote school education of the visually handicapped children as the teaching of these subjects is badly neglected in most of the schools in South Asian Countries.**

2.5 NEED AND IMPORTANCE OF DEVELOPING MENTAL ARITHMETIC

Learning Mathematics is considered to be difficult even for the sighted children. It is thought to be a subject involving abstract entities having little resemblance to real objects which one handles in daily life. Yet the applications of even the simplest mathematical operations and results are numerous. But if Mathematics be merely abstract it should be easier for a visually handicapped persons to comprehend it. But this is not so by virtue of the developmental process of concept formation in the human child as well as the nature of the concepts and relations involved in learning Mathematics.
Mathematics is a deductive system of concepts and propositions. The basic concept of any branch of Mathematics have to be general and minimum possible. By not referring to any particular object they become relevant to a

very wide class of objects. For examples the concept of natural number doesn't refer only to pebbles or apples or coins or houses but to any and all entities which satisfy a set of axioms. (The axioms are propositions whose validity is considered to be self-evident).

The important point that emerges about the nature of mathematical concepts is that the elementary and most general characteristics are most significant and so also the process of their generalization which may be abstract. The perception of these concepts can be achieved only intuitively. The visually handicapped are no less competent in this intuition, and mental computation is not likely to cause any particular difficulties. Visually handicapped children become adept at this since they are used to relying on their memories rather than referring to books for prompting. In order to develop the mental ability of doing mathematical calculation, concentration and a mastery of basic mathematical operations are required. As in the case of other activities, this too needs systematic instruction, practice and application. In visually impaired children, this exercise could start with the learning of the abacus. Calculations in the abacus require a mastery over the multiplication tables and ability in the abacus contributes to mental abilities in calculation.

Once the child is proficient in operations with the abacus, ranging from addition, subtraction, multiplication, and division (especially long division involving many digits) up to the process of calculating square root, percentage etc., he/she can be trained to use short-cut techniques in computing the values. For example, 458x208 can be divided into various steps such as 400x208, 50x208, 8x208 and even further depending upon the ability of the child to store the calculated values in his/her brain before making the sum total of the entire calculation. Training in remembering a set of numbers over a period of time, games for calculations, etc. can be performed by the student and teacher in order to gain sufficient practice. Prolonged training and practice in performing mental calculation & help the child to acquire a mathematical mind, which is very essential for problem solving, analysis of information, a scientific approach in performing day-to-day activities, etc.

After each exercise in improving mental calculations, it is necessary for the child to verify his/her answer with the help of mathematical devices such as the abacus or Taylor Frame. The process of calculation in mathematical device helps him/her to discover where the mistakes were made during the mental calculations. Kalaiselvi (1985) studied the effect of the abacus and the Taylor Frame in teaching mathematics to visually impaired children. The study reveals that most teachers working in residential schools are unaware of the use of the abacus. The study recommends that systematic instructions should be given to handle the abacus, and mental calculations can be developed in primary level children by the play way method.

Please write in the space provided as to why do you think that play way method of teaching Mathematics is very useful?

2.6 LEARNING OF VARIOUS APPLIANCES FOR MATHEMATICS

It is essential that all visually impaired students should be provided opportunities to access and use a range of equipment, resources and technology options. Many times, the teacher may be unaware of the latest developments and availability of such resources. Collaborative partnerships with special education teacher can help in solving a number of day to day problems in teaching Mathematics and achieve specific learning outcomes, using certain aids and appliances should be taught to visually impaired students.

2.6.1 Abacus

Abacus is a device used by visually impaired children for doing basic mathematical calculations. It takes less time for calculations. Being tactile, abacus is more relevant for visually impaired children. In Japan and some other countries, abacus is used by seeing children, though it is yet to be popular in developing countries among school children.

2.6.1.1 **The Cramner Abacus used in India is an American adaptation of the Japanese Soroban Abacus. It is a pocket-size calculating device. Abacus is rectangular in shape. Abacuses with varied columns are used in different countries. In India, abacuses generally have 15 columns.**

A bar is separating the abacus horizontally cutting across all the 15 columns, leaving 2/3rd of the area below and 1/3rd of the area above it. The lower portion is known as Lower Abacus and the upper portion is known as upper Abacus.

Each column in the lower abacus has four beads, each bead assumes the value 1 (one). Each column in the upper abacus has only bead and assumes the value 5 (five).

In operation, the extreme right column is treated as the unit column, the immediate left to the unit column is the tens.

The Pre-requisite skills desired for efficient learning of the Abacus are:

(1) Memory of the multiplication tables for numbers 1 to 20.

(2) Understanding the concept of complement of a certain number with respect to the Union specified.

(3) Demonstrating the correct finger movements in using Abacus.

(4) Explaining the concept of cleaning and adding in Abacus.

(5) Explaining the counting procedures in abacus.

(6) Demonstrating correct hand positions in using Abacus.

(7) Memory of the squares of the numbers 1 to 25.

(8) Memory of the square roots (perfect) of squares from 1 to 1000.

(9) Understanding the concept of LCM and HCF.

2.6.1.2 Strengths

At the end, following skills are expected from the learner:

(1) Ability to formulate problems for addition of one digit, 2-digits and multiple digits and adding them in Abacus.

(2) Ability to formulate and solve problems in subtraction.

(3) Ability to formulate and solve problems in multiplication.

(4) Ability to formulate and solve problems in multiplication of numbers involving zero, for example 609x35 &201x 98 etc.

(5) Ability to formulate and solve problems in division.

(6) Ability to formulate and solve problems in long divisions i.e. using four-digit numbers as dividends.

(7) Demonstrating the placement of whole number, numerator and denominator in addition and substraction of fractions.

(8) Ability to formulate and solve at least 10 problems in Fraction Addition

(9) Ability to formulate and solve at least 10 problems in Fraction Substraction.

(10) Ability to formulate and solve at least 10 problems in Fraction Multiplication.

(11) Ability to formulate and solve at least 10 problems in Fraction Division.

(12) Ability to demonstrate decimal operations placement of decimal points in Abacus.

(13) Ability to fond percentage value for 10 Fractions.

(14) Ability to find the square roots of at least 10 whole numbers and decimal numbers.

(15) Demonstrating the skill in using two abacuses simultaneously for complex mathematical problems.

Please acquire an abacus and practice various operations on it.

2.6.1.3 Limitations

(1) Some mathematical structure e.g. linear equations can't be shown in the Abacus.

(2) Formats in Geometry & trigonometry etc. can't be presented in abacus.

(3) All the steps of mathematical calculations can't be displayed in Abacus.

(4) In it, previous steps are erased; as a result of which detecting the steps where the child has committed a mistake is not possible for teacher.

(5) Abacus can't be used for teaching the processes of calculation.

Do you agree that despite its limitations abacus is a very useful tool? Yes/No.

2.6.2 Taylor Frame

Abacus is used for teaching calculations to visually impaired students in majority of schools.

2.6.2.1 Structure

Taylor Frame is a slate with a set of pegs/types. The slate has octagonal cells in which pegs/types can be fixed and removed. The types have a line on one edge while two braille dots on the other edge. Each edge of type can be placed in eight positions. Thus the two edges of the type can be placed in 16 positions. These 16 positions represent 1,2,3,4,5,6,7,8,9,0, plus, minus, multiply, divide, equal to and decimal. All the steps of Mathematics operation can be depicted on Taylor Frame for blind child to understand and do.

2.6.2.2 Strengths

1. **Steps of the mathematical operations can be represented.**
2. **Teaching of the processes involved in actual calculations are shown.**

2.6.2.3 Limitations

1. **Types are made of lead, which is a poisonous, metal and harmful for the children using it.**
2. **Setting up of the sum is highly time consuming and**
3. **Setting up of long problems is sometimes very difficult.**
4. **At a time, only a single sum can be solved.**

Acquire a Taylor Frame and perform operations on it and check for yourself its utility and limitations.

2.6.3 Geometrical Devices

Appropriate blocks, planes, toys and wire figures for learning geometrical shapes should be used, alongwith some specifically designed teaching aids. One such aid is Dienes apparatus, which consists of long, flat and bigger cubes. Few other devices are:

(a) Geometry kit,

(b) Mesh Board,

(c) Pragma Drawing kit BPA 50

(d) Measuring tape

You can make use of number of objects in your day to day life to teach Geometrical concepts to visually impaired child like bangles, match box, dice, box, table top and thread. Can you list more such objects in the space provided?

2.6.4 UNICEF-Project for Development of Teaching Material

Inn 1988, a UNICEF funded project at National Institute for the Visually Handicapped (NIVH), Dehra Dun was started. It adopted the NCERT Syllabus of primary classes for the visually handicapped children for developing suitable learning activities and requisite teaching aids. In the first stage of project, the NCERT syllabus was analyzed to identify the main concepts and the nature of problems experienced by blind children. A number of teaching aids were designed, tested and developed as a kit. The kit included:

1. Sorting try and flexible compartments
2. Number rods with tray
3. Spike board
4. Sliding strips
5. Unit cubes
6. Magnetic Board with Graph
7. Number Board
8. Geometrical solids
9. Geometrical Figured Tray with Wire Forms
10. Braille Clock
11. Braille Calendar
12. Geometry Device
13. Fraction Strips
14. Fraction Discs

2.7 BRAILLE MATHEMATICAL CODE FOR INDIA

2.7.1 Historical perspective

The National workshop on Adoption and Introduction of an appropriate Braille Mathematics Code for India was held in September 1988 at the NIVH, Dehra Dun. The workshop unanimously selected 'The Nemeth Braille Code for Mathematics and Science Notation – 1972 Revision' for adoption in India.

2.7.2 Basic Braille Mathematical Symbols and Their Explanations

Table – 1

S.No.	Sign		Dots	Sign
1.	**Plus**	+	**3-4-6**	
2.	**Minus**	-	**3-6**	
3.	**Multiplication cross**	X	**4,1-6**	
4.	**Multiplication dot**	.	**1-6**	
5.	**Division**		**4-6,3-4**	
6	**Is equal to**	=	**4-6,1-3**	
7.	**Is greater than**	>	**4-6, 2**	
8.	**Is less than**	<	**5,1-3**	

Explanation

(1) **The signs for plus, Minus, Multiplication (Cross), Multiplication (Dot) and Division are Operation signs. No space must be left either before or after them.**

(2) **The signs for 'is equal to; 'is greater than' and ' is less than' are comparison signs. A space must be left both before and after them.**

Table – 2

S.No	Sign		Dots	Braille sign
1.	**Round Bracket Opening**	(	**1-2-3-5-6**	
	Round Bracket Closing	)	**2-3-4-5-6**	
2	**Square Bracket Opening**	[	**4, 1-2-3-5-6**	
	Square Bracket Closing	]	**4, 2-3-4-5-6**	

3.	Curly Bracket Opening	{	4-6, 1-2-3-5-6	
	Curly Bracket Closing	}	4-6, 2-3-4-5-6	

Explanation

(1) **The signs for Brackets must be used both for literary and mathematical purposes.**

(2) **The signs for Brackets in English Braille, however, are used to enclose literary matter on title pages.**

Table – 3

S.No.	Sign		Dots	Braille sign
1.	Fraction Indicators			
(a)	Simple			
	Opening		1-4-5-6	
	Closing		3-4-5-6	
(b)	Fractional Part of a Mixed Number			
	Opening		4-5-6, 1-4-5-6	
	Closing		4-5-6, 3-4-5-6	
2	Fraction Lines			
(a)	Uses with Simple-Fraction Indicator			
	Diagonal	/	4-5-6, 3-4	
	Horizontal	-	3-4	
(b)	Used with Fractional part of a Mixed Number			
	Diagonal	/	4-5-6, 3-4	

	Horizontal	**-**	**3-4**	

Explanation

(1) Simple Fraction is one whose numerator and denominator contain no Fraction.

(2) Simple Fraction Indicator must not be used when the expressions on either side of the diagonal line appear in the same level and are of the same size and type.

Table – 4 : Basic Shapes

S.No.	Sign		Dots	Braille Sign
1.	**Shape Indicator**		**1-2-4-6**	
2.	**Acute Angle**	**<**	**1-2-4-6, 2-4-6**	
3.	**Triangle**		**1-2-4-6, 2-3-4-5**	
4.	**Square**		**1-2-4-6, 2-5-6**	
5.	**Rectangle**		**1-2-4-6, 1-2-3-5**	
6.	**Circle**		**1-2-4-6, 1-4**	
7.	**Is perpendicular to**		**1-2-4-6,1-2-3-4**	
8.	**Is parallel to**		**1-2-4-6, 1-2-3**	

2.8 UNIT SUMMARY: THINGS TO REMEMBER

- Mathematics cultivates child's thinking and reasoning skills
- Mathematics lays the foundation for systematical thinking.
- Mathematics as a subject is important for a blind child just as it is for other children.
- Visually impaired students can also learn Mathematics if thought in an appropriate manner, despite being questioned by highlighting some of the areas in Mathematics that demand vision.

- Visually impaired students can also learn Mathematics if thought in an appropriate manner, despite being questioned by highlighting some of the areas in Mathematics that demand vision.
- Various factors contribute to better learning of Mathematics, such as selection and teaching of suitable mathematical Braille Codes, adaptation of the text material; teaching of mathematical devices and preparation & use of appropriate teaching aids.
- Visually impaired students face certain problems in learning Mathematics due to lack of vision, such as difficulty in gaining concrete ideas of objects, setting out long multiplication and long division. Blind students take longer to feel along a line and face problem to make the graphs themselves.
- Various approaches of learning Mathematics include building the attitude, selecting and teaching of suitable mathematical Braille Codes; providing Braille text material; providing teaching aids and appliances; and last but not the least is adaptation of instructional methods and development of mental Arithmetic.

2.9 CHECK YOUR PROGRESS

1 List the factors that can build positive attitudes to learn Mathematics by blind children.

2 List the factors that can cause difficulty in learning Mathematics by visually impaired students.

3 Compare the strengths of Abacus and Taylor Frame in learning Mathematics by blind students.

4 How can Braille Mathematical symbols help in learning Mathematics by blind student?

5 How can learning of mental Arithmetics by blind students help them in day-to-day life situations?

2.10 ASSIGNMENT/ACTIVITY

1. Draw various types of angles on relief-sheets by using the Geo-board.
2. Prepare a Braille booklet on Braille Mathematical Code.
3. Write table of 11 on Taylor Frame.

2.11 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 these points below:

2.11.1 Points for Discussion

2.11.2 Points for Clarification

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UNIT 3: PREPARATION AND USE OF TACTILE MATERIALS

STRUCTURE

- **Introduction**
- **Objectives**
- **Concept of Evaluation**
  - Language Development skills
  - Learning Mathematical Concepts
- **Need for Evaluation**
  - Language Development skills
  - Mathematical Concepts
- **Implications of Visual Impairment on Evaluation in the achievement**
  - of Language development skills
  - of mathematical concepts
- **Preparation and Uses of Evaluation Tools**
  - Language Development skills
  - Mathematical concepts
- **Summary and points to Remember**
- **Check your Progress**
- **Points for Discussion/Clarification**
- References

3.1 INTRODUCTION

Evaluation is an on going process and its importance holds good for the education of visually impaired child too. Like any other child a visually impaired child's education aims at development of language skills and mathematical concepts. Some very interesting factors need to be taken care during evaluation of language skills and mathematical concepts among visually impaired children.

3.2 OBJECTIVES

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

- Describe the concept of Evaluation and need for evaluation.
- Explain the concept of evaluation of language development skills and evaluation of learning in mathematical concepts.
- Understand the need for evaluation in relation to language development skills and mathematical concepts.
- Understand the implications of visual impairment on evaluation in the achievement of language development skills and mathematical concepts.
- Prepare and use the evaluation tools for language development skills and mathematical concepts.

3.3 CONCEPT OF EVALUATION

Evaluation is an important component of teaching learning process. Many techniques and technical procedures are used in the evaluation process. Different procedures are formulated by different persons at different level. Evaluation is continuous, all pervasive and dynamic.

The most extended and comprehensive definition of Evaluation is given by **C. E. Beeby (1977),** i.e. "Evaluation is the systematic collection and interpretation of evidence, leading as a part of the process to a judgement of value with a view to action."

There are four key elements to this definition:

1. Systematic
2. Interpretation of evidence
3. Judgement of value and
4. With a view to action

First, the word systematic means that the information needed will be defined with some degree of precision. And also, planning to secure such information

can be done, such as questionnaire, interviews and observational procedures can be used to gather the information. There, the important point is whatever kind of information is gathered, it should be acquired in a systematic way.
The second element 'interpretation of evidence' introduces a critical consideration. Though, in practice, this element of evaluation is sometimes overlooked in evaluation. The mere collection of evidence doesn't, by itself, constitute evaluation work. The interpretation of evidence often indicates the presence or the absence of quality in an educational venture.
The third element of definition, judgement of value takes evaluation for beyond the level of mere description of what is happening in an educational endeavour.
The fourth element of definition is appropriate action based on judgement.

3.3.1 Evaluation of Language Development Skills

Language development of a blind child depends upon their home influence and different ethnic origins. Their pre-school experience play a significant role in terms of the encouragement and opportunities to talk, to listen, ask and communicate needs and feelings through words. Blind children should have enhanced opportunities to handle and explore objects using his intact senses to enrich experiences and provide contact for descriptive and expressive language.
Language development skills form an important component of educational curriculum and its evaluation involves assessing of reading, writing, comprehending and expressing skills of children in various languages, which they have in their syllabus. Vocabulary and concept development form important components of language development skills.
Activity 1:
Get the brailled answer copy of the blind child transcribed and evaluate it along with other children. Note the total number of spelling mistakes made.
Activity 2:
Visit an integrated education programme. Transcribe the answer sheet in Braille script into print. Let the regular teacher correct it. Please test the conceptual mistakes made by the child in answering.

3.3.2 Learning Mathematical Concepts

Learning of mathematical concepts imparts logical thinking and numerical skills besides reasoning. Evaluation of learning in mathematical concepts aims at assessing:
Understanding of the concepts;
development of skills to do mathematical operations;
ability to find solutions of mathematical problems;

understanding the concepts of time, distance, money, measurement, etc. as per syllabus;
Group work:
"The role of aids in teaching Mathematics to visually impaired children."
Individual Assignments:
Listing the pre-requisite skills for learning geometrical figures in Mathematics.

3.4 NEED FOR EVALUATION

Evaluation involves gathering and interpreting information about how well each child is progressing an how well an educational program is succeeding in reaching its goals, but it also includes judgments about the goals themselves. In a nutshell, these two types of judgments are:

(a) About the child, program, curriculum, or institution being evaluated. The interpretations made through the evidences about a curriculum will help in deciding whether any changes had to be brought about in the methodology or curriculum objectives or goals. This judgement will also help in the selection of content and learning experiences and also in better organisation.

(b) The second type of judgement is taken in the light of first, alongwith other relevant factors. It helps in deciding the future policy and action.

The last element is action to be taken. The evaluation results in judgement to decide the future action. Educational evaluation is clearly decision-oriented, that leads to better policies and practices in education. The decision may be of following types:

(i) decision to abolish a program altogether.

(ii) Content-modification, organization and time allocation; course or curriculum development.

(iii) Decisions about content-material, revision in instructional material, planning the learning activities and criteria for staff selection.

Evaluation is a process of making value judgement over a level of performance or achievement. To find the level of achievement, one needs to make some measurement and decide, to what extent that level is satisfactory.

Making value judgements in evaluation process presupposes the set of objectives. Evaluation is the process of determining the extent to which the objectives are achieved.

Evaluation is concerned not only with the appraisal of achievement, but also with its 'improvement.' Therefore, it applies in evaluating the effects of a part over a whole or whole over a part of the programme.

Thus, conclusively, evaluation is a systematic process of determining the extent to which educational objectives are achieved.

It implies a critical assessment of educative process and its outcome in the light of the objectives.

Evaluation includes both qualitative descriptions of student performance and their value judgements concerning the desirability of that performance.

3.4.1 Need for Evaluation of Language Development Skills

Development of language in a child starts with verbal communication, which takes place well before the child comes to school and are centered round parent-child interaction. Both communications from the parent to the child and from child to parent are important in the language development of the child. Similarly when the child starts going to school he is exposed to interaction with the teacher, peer group and is involved in activities like attending Morning Prayer, classroom activities and recitation of poems. In higher classes the child is exposed to grammar, literature and extensive communication. These exposures during the education of child have direct bearing on the language development skills. To ensure optimal development of language skills there is a need for evaluation. The education of a visually impaired child involves planning of his rehabilitation. It makes it essential to understand the strengths and limitations of the child. There is need for evaluation of language development skills to provide the necessary information.

Q(1) The regular teacher can identify

(a) The text use problems of visually impaired children in regular class.

(b) The problems of Braille reading and writing.

(c) The problems relating to the mobility.

Q(2) In Braille writing, Using slate and stylus, the children have to write from

(a) Right to let

(b) Left to right

(c) Top to bottom

(d) bottom to top

Q(3) In evaluating the Braille answer sheets the child should be downgraded for

(a) more conceptual errors

(b) More Braille errors

(c) Neatness

Q(4) Crossing out mistakes means

(a) Correcting a particular dot

(b) Locking out all the dots over the place of error

(c) Understanding the mistake

Q(5) In ideal situations, a teacher should expect

(a) Lengthy answers from visually impaired children

(b) Small notes from visually impaired children

(c) short but correct answers from visually impaired children.

3.4.2 Need for Evaluation of Mathematical Concepts

Development of mathematical concepts among children starts with number concept. The curriculum for mathematical concepts is set up very carefully. Efforts are made that it has direct utility in day to day life. In secondary school mathematical concepts form an important part of academic skills. Evaluation is essential to ensure that the objectives are being achieved and identify the areas of improvement. Through evaluation suitable modifications are incorporated from time to time to develop desirable skills among children. The remedial steps are possible only through effective evaluation procedures.

Q(1) A mistake in abacus is possible owing to the

(a) difficulty of the device

(b) movement of excess or missing beads

(c) difficulty of Mathematics.

Q(2) For visually impaired children in integrated education programme, Mathematics

(a) can be omitted

(b) should not be omitted

(c) can be taught only at primary level.

(d) Can be taught only on secondary level.

Q(3) For visually impaired children, drill in Mathematics should be emphasized

(a) to solve a number of problems.

(b) To get the theoretical knowledge.

(c) To understand a particular concept

(d) to be at par with sighted peers.

Q(5) A mistake in abacus is possible owing to the

(a) Difficulty of the device

(b) Movement of excess or missing beads

(c) difficulty of Mathematics

Q(6) Reading a Mathematics Braille book may be difficult for a visually impaired child because of

(a) The bulkiness of the book

(b) The lack of interest in Mathematics

(c) Unawareness of Mathematical Braille codes

Q(7) The devices used for mathematical calculations are

(a) Slate and stylus

(b) Abacus & Taylor Frame

(c) Braille Writers

(d) None of the above

Q(8) Showing the linear equations in abacus is

(a) Possible

(b) Not possible

(c) Partly possible

3.5 IMPLICATIONS OF VISUAL IMPAIRMENT ON EVALUATION IN THE ACHIEVEMENT OF LANGUAGE DEVELOPMENT SKILLS AND MATHEMATICAL CONCEPTS

Visual impairment among children needs to be understood very well during evaluation so that the basic objective is achieved. During evaluation following implications of visual impairment must be considered:

(a) Visually impaired child expresses through writing in Braille script or through use of typewriter or amanuensis. Suitable arrangements should be made during evaluation process.

(b) The said methods of expression consume more time. Therefore, visually impaired children should be allotted with extra time at the rate of 20 minutes per hour to ensure equal opportunity and compensate for time consuming procedures through which visually impaired child has to go through.

(c) For Mathematics visually impaired child needs abacus or Taylor frame. The necessary arrangement should be made.

(d) The missing visual experiences in terms of diagrams and other exposure should be compensated through tactile experiences to a visually impaired child. Alternative questions should be provided in the question paper for maps and similar other visual based questions.

(e) Opportunities to build verbal description memories for visually impaired child. Suitable flexibility should be provided to give

description of diagrams instead of drawing them by visually impaired child.

(f) Making educational material available in large print for low vision children. Evaluation system should ensure providing question papers in large print for low vision children.

3.5.1 Implications of visual impairment on Evaluation in the achievement of language development skills.

Besides above The following implications of visual impairment on the language development skill of visually impaired child should be taken in consideration during evaluation:

(a) Vocabulary of visually impaired child is limited and special efforts have to be made to encourage the child to build it. While evaluating this limitation of visually impaired child should be considered.

(b) The rate of reading through Braille script is slower as compared to print and child should be taught skills to enhance his Braille reading capacity using modern methods. Where ever possible question papers should also be provided in Braille script.

(c) Research has revealed that there is delay rather than deviation in language development skills among blind children. While evaluating language development skills in integrated setting the visually impaired child be encouraged for what he knows rather than otherwise.

(d) The visually impaired child should be encouraged to write more and more in Braille and get it checked regularly from the teacher. Children at primary level should be encouraged to write their answers in Braille script. Providing of amanuensis at primary level adversely affects Braille reading and writing skills of visually impaired child.

Length of answers:

Long answers are not always good answers, just because they are long. Especially with a Braillewriter, brevity should be commended. One should not expect long answers from blind children unless

elaboration is one of the important performance criteria for the examination. In fact, the resource teacher instructs on methods of taking short notes from class lectures. It is only when conceptual clarity, brief note taking skills, and elaboration under specified circumstances are required, that the blind student can compete fairly. By focusing on essential concepts good marks may be given fairly if the important parts appear in the answers. For example:

Q: Fill in the right preposition; The book is lying ____ the table.

In such a question the teacher may expect the sighted child to answer as follows:

A: The book is lying on the table.

The visually impaired child may answer as follows:

A: on

He omits the full sentence. This way of answering saves time.

3.5.2 Implications of visual impairment on evaluation in the achievement of mathematical concepts.

Besides above the following factors have direct bearing on evaluation of mathematical concepts among blind children:

(a) The visually impaired child should be encouraged to master the skills of using abacus, Taylor frame and geometry kit effectively. At the time of evaluation they should be provided with the necessary equipment.

(b) Visually impaired children should be provided with Braille books in mathematics well in time. The question papers in Braille should use only those mathematical codes that have been taught to the child.

(c) Visually impaired children should be introduced with Braille mathematical code as and when it appears in the textbook.

(d) The visually impaired children should be exposed to all the mathematical concepts including geometry and trigonometry.

(e) Innovative methods should be used to make mathematics interesting for visually impaired child.

The adjustment and adaptation of evaluation and examination procedures should be viewed from the point of view of presenting the test questions and the modes of answering by visually impaired children. The guiding principle is

that the procedures should be as close as possible to the practice with sighted children. The purpose of adaptation is that blind children should not be at disadvantage in evaluation and examination due to their handicap. Substitution and omission should be the last resort. A few ways in which questions can be communicated to blind children and their answers can be elicited are given below:

Questioning modes:

1. Written in Braille
2. Written in print but read by a reader for the blind child.
3. Listening by the blind children from audio cassette player.
4. Oral questioning by the examiner.
5. Combination of the above.

Answering Modes:

1. Writes himself in Braille.
2. The scribe writes for him.
3. Records on audiocassette.
4. Give answer orally to the examiner.
5. Combination of the above.

Generally, Mathematical calculations are taught step by step so that a student has a sure way of arriving aş a proper conclusion. The blind child should know and understand these steps. However, for speed and simplicity, blind students are taught mathematical calculations with an abacus, and present their answers in Braille on a separate answersheet. This does not mean less work or less study for the blind child; it actually means more. Yet, in practical life situations, the abacus is most functional as a substitute for pencil and paper for the blind students. Abacus work must be done very carefully. For example, 5432 + 4379 = 9811. At times the student may write the answer 8811.

In this case while the answer is indeed wrong, the error is most likely in the mere movement of one bead. The teacher should congratulate the student for the portion completed successfully, and bear in mind that the students need more time to learn to

handle the abacus effectively. Teacher's flexibility in this aspect is highly appreciated. Wherever possible, the written answer can be supported by oral responses.

3.6 PREPARATION AND USES OF EVALUATION TOOLS FOR LANGUAGE DEVELOPMENT SKILLS AND MATHEMATICAL CONCEPTS

The goal of education is all round development of the child. Evaluation is a mirror, which reflects the extent to which teaching objectives are achieved. Evaluation, therefore, has to be comprehensive. It implies that evaluation should encompass all aspects of teaching objectives. Evaluation is required to assess the pace of pupil's progress, identify learning problems, taking teaching related decisions. In this way evaluation can be a day to day, lesson to lesson, and unit to unit process.

Evaluation data are collected through different sources, informal evaluation and formal evaluation. Informal evaluation is usually in progress when the teacher asks questions during the lessons or observes child behavior in some situations incidentally. For formal evaluation several systematic procedures are followed. The most important is achievement test. Several types of questions are used as tools in achievement tests. For example, very short answer type, short answer type, essay type, multiple choice type, matching type, true/false type, sentence completion type, fill in the blank type, etc.

Preparation of tools for Evaluation of mathematical concepts and language development among visually impaired children must be in accordance with the following guidelines:

(a) The tool should ensure equal opportunities to visually impaired children; therefore, they must be compensated with extra time to attempt their questions.

(b) The visually impaired children should be subjected to evaluation at regular intervals rather than once or twice a year. The assessment report should reflect their regular performance in the class.

(c) There should be complete evaluation report consisting of information about their non-academic activities so that the same could be used for guidance and counseling.

3.6.1 Preparation and uses of evaluation tools for language development skills

All classrooms teaching and learning are based on language. For evaluation of language development skills certain specialized tools are recommended in addition to general evaluation tools. For example, there are various games for evaluating the memory, the ability to guess correctly, knowledge of noun, verb, adverb and vocabulary. The activities designed to enhance language learning in children are studded with questions in between.

Q: Find a word beginning with given letters a, b, & o.

Q: Write the names of two boys, two girls, two animals, and two fruits beginning with the letter A.

Q: Answer the following

(a) Which is longer a week or a month?

(b) Which is bigger, a plane or a car. Which is sweeter, honey or jam.

Q: Write the word that does not belong to the same class:

(a) Cat, doc, rat, fish.

(b) Milk, water, oil, tea, Stool, chair, bed,

Similarly other evaluation tools can be deviced or developed for testing the abilities in reading, oral reading, writing, and listening. In case of blind children reading and oral reading include comprehension, reading for information, reading for enrichment and for recreation and examination. Writing includes use of writing board, use of writing frame and stylus, self-correction, note taking, composition and poetry format. Listening skills involve discriminating listening, use of live readers, and use of recorded material.

3.6.2 Preparation and uses of evaluation tools for mathematical concepts

For formal evaluation in Mathematics several types of questions are used as evaluation tools. The questions can be tick the correct response type, fill in the blank type, true/false type, analogy type, solve the problem type, draw the diagram type, etc. Question paper can be given in Braille, in print read by a reader, orally or in the audiocassette. Similarly, the blind child can give answers in Braille, by recording on the audiocassette, by telling orally to the examiner, or with the help of scribe.

Q: Before classroom instruction is a must for Mathematics:

(a) yes

(b) No

(c) Partly

Q: In an integrated programme the resource teacher:

(a) Should be a Mathematics teacher

(b) Need not be a Mathematics teacher

(c) Need not be a Mathematics teacher but should have some background in Mathematics

3.7 SUMMARY AND POINTS TO REMEMBER

- For low vision children question paper in large print should be provided. Low-vision children write their answers by themselves or with the help of scribe.
- Evaluation is a continuous process and an important component of teaching learning process.
- The importance of evaluation holds good in relation to language development skills and mathematical concepts too.
- There are important implications of visual impairment on evaluation in the achievement of language development skills and mathematical concepts.
- It is very important to prepare and use the evaluation tools for language development skills and mathematical concepts.
- Evaluation of language development skills include assessment of reading, writing, comprehending and expressing skills in addition to vocabulary and concept development.
- Learning of mathematical concepts involves logical thinking and numerical skills besides reasoning. Evaluation of learning in mathematical concepts aims at assessing; the concepts understanding; skill to do mathematical operations; ability to find solutions to mathematical problems; and understanding the concepts of time, distance, money, measurement, etc. as per syllabus.

3.8 CHECK YOUR PROGRESS

1. Language development skills include reading, writing, comprehending and expressing.

(a) shouting

(b) singing

(c) discussing

2. Learning of mathematical concepts means

(a) Development of logical thinking

(b) Numerical skills and reasoning

(c) ability to find solutions of mathematical problems

(d) all the above.

3. Evaluation includes

(a) qualitative descriptions of student performance

(b) students value judgement concerning the desirability of that performance

(c) None of the above

(d) both (a) & (b)

4. Development of language of a child starts with

(a) classroom activities

(b) morning prayers

(c) parent child interaction

(d) teacher pupil interaction

5. Remedial process in the pedagogy are possible after

(a) evaluation

(b) discussion

(c) informal interaction

(d) parent teacher association meetings

6. "Whether or not the objectives are achieved can be ascertained through effective evaluation". This statement is

(a) true

(b) false

(c) cannot say

7. What are the four key elements of evaluation give details.
8. Write down the essential arrangements, which need to be made while taking examinations of visually handicapped students.
9. What are the implications of visual impairment on evaluation in the achievement of language development skills? Give a short answer.
10. Write briefly about the implications of visual impairment on evaluation in the achievement of mathematical concepts.

3.9 POINTS FOR DISCUSSION/CLARIFICATION

After going through the unit you may like to have further discussions on some points and clarification on other. Note down these points in the space provided below:

3.9.1 Points for discussion

3.9.2 Points for clarification

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UNIT 4: MENTAL ARITHMETIC ABILITIES – CONCEPT, IMPORTANCE AND APPLICATION

STRUCTURE

- **Introduction**
- **Objectives**
- **Goals of Science Education**
- **Methods of Teaching Visually Impaired Children**
  - Teaching Methodologies
  - Necessary Competencies to be Developed
  - Lecture Methods
  - Historic Methods
  - Inductive Methods
  - The Deductive Methods
  - The Synthetic Methods
  - Analytic Methods
  - Palyway Methods
  - Simulating Conditions
  - Education Through Environment
  - The Explorative or Discovery Methods
  - The Project Methods
- Presentation of Tactile Diagrams
- Science Text Material
- Adapted Science Instructional Material
- Change of Methods but not Objectives
- Presentation of Tactile Diagrams

- Characteristics of Tactile Diagrams
- General Principles
- Adjustment Strategy
- Various Stages of Instructional Strategy
- **Unit Summary**
- **Check Your Progress**
- **Assignment**
- **Points For Discussion/Clarification**
- **References / Further Readings.**

1.1 INTRODUCTION

Education of the visually impaired children is undergoing constant changes from time to time. Invention of new methods, introduction of new techniques, devising new equipments etc., have made an impact on the educational set up. The education of the disabled in general were rejected, ignored and considered as a welfare activity had become a commitment of the government and other organizations. The National Policy on Education (1986) had elevated status of the special education on "Education of the Impaired" in its programme of action. It is confirmed that the majority of the visual impaired children in special and integrated schools simply have not been exposed in science teaching. Science education being an important component of the education system should contribute in the solution of the problems of the country by developing desirable understandings, skills, abilities and attitudes have been neglected for the visually impaired children for the past one hundred years. Greatest challenge is to teach science and make it relevant to Visually Impaired Children and fulfil their needs and aspirations.

DEFINITION OF TERMS

Science

- Science is a cumulative and endless series of empirical observations which result in the formation of concepts and theories, with both concepts and theories being subject to modification in the light of further empirical observations. Science is both a body of knowledge and the process of acquiring it.[1]
- Science is an accumulated and systematized learning, in general usage restricted to natural phenomenon. The progress of science is marked not only by an accumulation of fact, but by the emergence of scientific method and of the scientific attitude.[2]
- Henri Doincare explains: "Science is built of facts as a house in built of stones; but an accumulation of facts is not more a science then a heap of stones".

Concept

Concept is defined as (a) An accumulation of all that is conveyed to one's mind by a situation, symbol, or object. Some times used to refer to a thought, opinion, or general idea of what something should be. (b) The set of characteristics common to a class of objects; e.g., triangularity includes

[1] Frederic Fitzpatrick, Policies for science education. New York; Bureau of Publications, Teachers College, Columbia University, 196.

[2] "Science" The Columbia Encyclopaedia, (3rd, ed., 1963), p. 1990.

all three sided figures (Kelly and Vergason),
Concept is "an idea or thought, especially a generalized idea of a class of objects, abstract notion" (Webster's New World Dictionary)

Visually Impaired

It is any loss or abnormality in vision, may be anatomical, physiological, structural or functional.
Visually impaired children means the children who are with vision problems but are academically capable / educable.

Blind

Those whose visual acuity is 20 / 200 or less in the better eye with the best possible correction or a restriction in the field of vision to an angle subtending an arc of 20 degrees or less.

Visual acuity (Vision)

The sharpness of vision; Usually refers to central vision.

Adapted Instructional Material

Adapted instructional materials means the nature of special approaches and presentation styles that would be required for providing optimal learning experience to the visually impaired children in the regular classroom. It is a process of making necessary changes such as duplication, modification, substitution, omission etc., without changing the instructional objectives. The adaptation may be in terms of teaching methodology, special approaches, teaching aids, presentation style, evaluation, enriching assignments etc. It is a whole package of instructional strategies which can make the visually impaired child not to loose any necessary information.

Integrated Education Programme

It is the educational programme in which the visually impaired children study along with the sighted (normal) children in the regular schools. Integration aims at normalising the life and education of the visually impaired children in the least restrictive environment. In this system visually impaired children are educated with the seeing children in normal schools.

Impairment

Any loss or abnormality of psychological, physiological or anatomical structure or function.

Tactile

Perceived by and connected with the sense of touch.

Teaching

Teaching is a presence of mind and person and body in relation to another mind and person and body, a complex array of mental, spiritual and physical acts affecting others. Freedom and discipline are the essential conditions for teaching and learning. Teaching varies with every

class, every hour, every new group of students.

Teaching Science

"At the lower secondary stage science should be developed as a discipline of the mind. The newer concepts of physics, chemistry, and biology the experimental approach to the learning of science should be stressed" states **Kothari Commission.** Teaching science from a philosophical point of view has broader goals. Science education begins with very young children and becomes more explicit and more complex in later years of learning. It involves greater and greater student participation in actual hand contacts with experimental materials and the experimental equipment as the grade progresses.

1.2 OBJECTIVES

The reader is expected to understand the following objectives with reference to visually impaired children.

- Describe the importance of teaching science.
- Explain the nature and methods of teaching science to Visually Impaired Children.
- To develop an understanding of one's natural environment.
- To prepare tactile diagrams and visual oriented concept in tactile form with necessary modifications.
- To develop systematic thinking for scientific inquiry, critical appreciation and creative operations.
- State the roe of an experiment is learning scientific concepts, chemical Braille notations etc.
- To develop the manipulative skills, discriminative textures, tactile components, etc.
- To develop teaching strategies, adaptations, materials and equipments.
- To develop interest in inquiry, problem solving and verifying principles and relations.
- To develop appreciation of the use of science and technology in day to day life situations.
- To develop children ability to weigh and sift evidence, remain open minded, listen to ideas of others and them make decisions on the merit of evidence.

- To allow and encourage the visually impaired children to experience and discover science principles for himself.
- To interact the visually impaired children with seeing children in all the activities of the science programmes.

1.3 GOALS OF SCIENCE EDUCATION

There is a general opinion in the society that visually impaired children were deprived and their limitations were not allowed them to choose science as subject for their higher education. The true goals of science education are first to develop conceptual skills of the child, the ideas and attitudes about scientific methods. Unless the skills are developed, science in daily living may become meaningless for the Visually Impaired Children. A good scientific process helps the individual to arrive at a logical deductions, examining unlikely alternative of an activity and suggest suitable suggestions. It also helps one to understand the relationship between the physical well being and mental health and so on. From the very first grade, schools begin to develop those habits and attitudes in developing concepts of precision in measurement, especially in the use of materials and equipments. Since the whole concept of evolving scientific attitude as a philosophical part of man has gathered enormous momentum, science tries to inculcate the volume of intellectual honesty in the human being.

1.4 METHODS OF TEACHING TO VISUALLY IMPAIRED CHILDREN

Unanimously, it has been largely admitted by the special teachers in the field of education of the visually impaired that the methods adopted in instructing the normal sighted children can be applied to the teaching Visually Impaired Children with some accurate and precise modifications.

Developing of manipulative skills, importance of the continual interaction of the individual with his environment has a great influence in the understanding of concepts in science. It was noted by PIAGET that Visually Impaired Children, possibly because of their lack of comparable experience with objects, fall behind sighted children in their development of logical reasoning. The teaching of science should not be confined to the classroom especially in the case of Visually Impaired Children. Concepts such as root system and shoot system could be easily understood by the visually impaired child with the explanation of the environment. For certain concepts the Visually Impaired Children spent more time exploring then did sighted children. The visually impaired children who are devoid of the visual experience should necessarily be given this practical experience to form the right concept by designing a series of personalized activities to make concrete experience.

1.4.1 Teaching Methodologies

According to 'Kothari Commission Report' if science is poorly taught and badly learnt, it is little more then burdening the mind with dead information, and it could degenerate even into a new supervision. The process of interpreting the world of knowledge to the childs mind is called the method of teaching. The main objectives of teaching science are to ensure the appreciation of the student and also do develop the necessary competencies in them. Coordination of these two aspects are the big task before the teachers. The methods should aim at providing sufficient opportunities for the visually impaired children to think and discover. The real teaching should focus at the development of the following competencies in the children. It is, however, important to note that a method should not become an end itself but should be used as a means to achieve the set of aims of teaching.

1.4.2 Necessary Competencies to be Developed

- The teaching method should help the student to think for himself and stimulate further action.
- The teaching should develop the capacity for 'clear thinking'.
- The teaching method should develop the divergent and creative thinking of the learner.
- The teaching should develop in them certain moral and social values.
- It should help the student to acquire understanding.
- It should sustain the interest of the students in their work.
- It should enable them to remember the principles and facts very easily.
- It should help the student to become an active independent discover of knowledge.
- It should enable the students to acquire knowledge effectively and experience the meaning so that they can have transfer of learning.

Following are the two different approaches accepted in teaching-learning processes. They are (a) content approach and (b) action approach have been well recognized. There are few teaching methods which are universally followed are found to be more effective in the education of the visually impaired too. They are not mutually exclusive but share into one another. They are as follows.

1.4.3 Lecture Methods

Practically lecture method is the most dominated method in our schools and is liked by majority of the teachers. The teacher is only the active participant in the teaching-learning process and the pupil's are the passive listeners. This

method is economical, simplifies the work of the teacher and is useful in imparting factual information and relating some of the thrilling historical and biological incidents in science. Since the visually impaired children are active listeners can understand remember the facts and principles with the same speed as they are told by the science teacher. This method can be used to explain certain theoretical points, explaining the demonstration summarizing and recapitulating certain demonstrations and scientific principles at the and of the lesson and some relevant background material of a topic.

1.4.4 Historical methods

Science has its own history and every invention has its historical background. The children feel very much interested and fascinated in listening to the stories and the teacher can introduce his talk with an interesting story for example principles of Archimedies, Newton's laws, Steam engine, Radio, Television, Computer, etc. However, this method cannot be adopted as a method of science teaching but it is suggested that historical approach should be made wherever it is possible.

1.4.5 Inductive methods

The objectives of teaching science stimulate the child is lead to discover truth for himself. The various processes in the inductive methods are

a. Observation of the given material.

b. Discrimination and analysis noting differences and similarities.

c. Classification

d. Abstraction and generalization and

e. Application or verification.

Generally this method leads from the particular to the general and from the concrete to abstract. Since Visually Impaired Children are devoid the visual experience, development of concepts in gradual manner from the more concrete experience to abstract ideas is very advisable.

1.4.6 The deductive methods

This deductive method derives particular truth from the general truth and concrete facts from abstract ones. In the deductive method rules, generalizations and principles are provided to the students and they are asked to verify them with the help of the particular examples. In deductive method the teacher work is simplified and is very suitable for the primary level children. Deductive method is require a particular strategy or formula for solving problems; so a lot a memorizing is necessary. In best teaching the deduction method should always be proceeded by induction method.

1.4.7 Synthetic method

The method of science ensures the use and development of the sense of touch, sight and hearing. Synthetic method proceeds from known to unknown. This method is more suitable for visually impaired children as the unknown matter is approached gradually with the known facts on hand. By this the children are able to develop the skill of reasoning.

1.4.8 Analytic methods

Analytic method proceeds from unknown to known. It starts from conclusion to hypothesis. Especially for the children of higher classes, this method is suggested as it develops a sense of discovery. The analytic mind helps the child to gain better understanding of a subject.

1.4.9 Playway methods

As per as the visually impaired children are concerned, teaching science should be made more interesting and adventures. Playway method insists the development of concepts in an informal way. Here the child will not be feeling that he is following a particular system in acquiring a concept but the learning is so natural and informal. Since the Visually Impaired Children need a lot of varieties for their sound educational experiences, play way method is one should be followed in science teaching.

1.4.10 Simulating conditions

Simulating conditions are very imperative in the education of the Visually Impaired Children. Simulation can be treated as the foremost technique for developing concepts which are beyond the reach of the child. In case actual experiences are not possible, the child could be explained through simulating experiences. The tactile aids are mostly based on the simulation principles and it enhance the development of reasoning in congenitally visually impaired children.

1.4.11 Education through environment

The theory of child development, stressed the important of the continual interaction of the individual with his environment in the development of logical reasoning. It was noted by PIAGEAT that visually impaired children, possibly because of their lack of comparable experience with objects, fall behind sighted children in their development by logical reasoning. Environment has a great influence in the education of the visually impaired children. In fact, visually impaired children learn more through the exploration of the environment. Teaching methodologies are many and at the same time the learning styles of the children will also vary. While teaching, the teacher

should take into account the entry behaviour of the child which is most essential for fixing the instructional objectives. Without this proper assessment of the entry behaviour of the child for learning, mere teaching will be futile.
A committed teacher, a capable student and a sound environment are the three key factors involved effectively in the education of Visually Impaired Children. Many visual oriented concepts and experiences in science were neglected due to non availability of Braille science text book, adapted instructional material in teaching science, tactile teaching aid material, ineffective teaching and defective educational planning and evaluation system. The teaching method should more goal oriented and client oriented rather than mere teaching oriented.

1.4.12 The explorative or discovery methods

Mostly all the human actions are based on desire and purpose. The desire and purpose should be identified by the teacher. The visually impaired children are learning through other than the visual sense particularly in tactile way. It is observed that visually impaired children took more time exploring then the sighted children. For the sighted children exploration is a easy function. Exploration is an important skill and this method and technique should be taught to the Visually Impaired Children in a systematic way. The index and thumb finger is involved more in exploration and the finger tips has nerve endings, which enable the touch reading. The area covered by light pressure of the finger tips on the paper gives the necessary information to the child to discriminate the things easily.

1.4.13 The project methods

The essence of this method is to carry out a useful task in a group in which all the students work co-operatively. Learning by doing and learning by living are the two principles involved in this method. This method involved providing a situation, choosing planning, executing, Evaluating and recording. In this method the visually impaired children can actively participate along with sighted and can select the suitable activity to assist the sighted.

1.5 PRESENTATION OF TACTILE DIAGRAMS

1.5.1 Science text material

The use of Braille text in science can not be overlooked for Visually Impaired Children. The content in science text books which contains more of facts and procedures should be presented in tangible form to the visually impaired child to enhance his learning. Science text material requires lot of editing. Since it contains diagrams, practical exercises under each lesson so on, presentation of text material should not confine the visually impaired child when using the

material alongside his fellow sighted counterparts. In case of modification of a diagram, instructions about the kind of modifications could be specified. Similarly in case of omission of the diagrams or an exercise, it is very vital to explain the concept of text and the reasons for omitted portion.

1.5.2 Adapted science instructional materials

The adapted science instructional materials should be prepared and supplied into regional languages. The supplementary teaching aids should be given along with the instructional material. In order to facilitate the visually impaired teachers effort should be made to prepare the material in Braille. In adopted instructional material one has to bear in mind the following aspects. The special curriculum approaches for visually impaired children can be given in the following principles.

- Duplication as far as possible.
- Modification of the lesson with out changing the concept.
- Substitution of a models for giving the same approximate experience.
- Omission under unavoidable circumstances.

1.5.3 Change of methods but not objectives

Regular classroom teachers do not need specialized training in teaching the visually impaired. What is needed is for them to administrate the openness, flexibilities and resourcefulness in employing instructional strategies. The teacher may have the varied materials and methods in the teaching of the visually impaired so that class objectives can be achieved. When necessary, the teacher can change methods, but not objectives for visually impaired. Regular teacher who have had prior experience with visually impaired children always tell that most adoptive methods prove equally helpful for other students as well and the teaching creativeness employed for the visually impaired child enriches learning for the entire class. Further more, it is believed that careful planning required for the visually impaired may result in more thoughtful instruction for the entire class.

1.6 PRESENTATION OF TACTILE DIAGRAMS

There is saying 'the hand is the eye of the blind' Tactile diagram should be prepared in such a way that the visually impaired children is able to explore, discriminate and recognize it with out much confusion. Tactile diagrams should make the teaching effective, quicken the pace of learning, help to over come the hurdles in learning, provide first hand concrete experience and bring variety to the learning of the visually impaired children. Sense of touch becomes the most important media in the learning process and also it provides

rich experience such as size, shape, texture, hardness or softness, weight, moistness or dryness, temperature, etc. Hence the preparation and presentations of the tactile diagram should follow the following aspects.

1.6.1 Characteristics of Tactile diagram

- Tactile diagram should be stimulate and motivate the Visually Impaired Children.
- It should provide an appropriate tactile experience.
- It should be simple ands clear in shape.
- It should make the teaching effective and learning interesting.
- It should provide three dimensional and concrete experience and bring variety to the learning of the Visually Impaired Children.
- It should quickness the pace of learning and to overcome the hurdles in learning.
- It should make the child to explore, discriminate and recognise it without much confusion.
- It should be strong and sturdy enough to have longer durability.
- Principles of Tactile diagram may be make it cheap, use it well and change it often.

1.7 GENERAL PRINCIPLES

The general curriculum which contains more visual experiences and less 'non-visual experiences' must be analysed to convert the visual experience to non-visual experiences for the visually impaired children. In this aspect, one has to bear in mind the following principles.

- Duplication as far as possible.
- Modification of the lesson without changing the concept.
- Substitution of a model for giving the same approximate experiences.
- Omission under unavailable circumstances.

1.7.1 Adjustment strategy

The adjustment approach is to know about an experience usually planned for sighted children could be provided to a visually impaired children without much deficit. In a normal text material, when most of the concepts given are visual

oriented, a teacher of the Visually Impaired Children should explore all possibilities for converting the 'visual oriented concept' to a non-visual oriented concept' in order to give the optimum learning experiences to the Visually Impaired Children.

Once the analysis is made for the exploration for the conversion of visual to non-visual concept, one can find a number of avenues which are applicable and possible for the visually disabled child to acquire the near normal experience through other sensory inputs, such as auditory, tactile, olfactory, etc. Even though these could not be treated as substitute for the vision, equally sufficient information could be given through them for compensating the deficit. The strategies can be thought in the following lines of action.

- Compensatory experience through additional verbal instruction.
- Compensatory experience through the provision of appropriate learning material in the tactile form.
- Compensatory experience through the provision of three dimensional aids.
- Compensatory experience through the creation of life situations.
- Compensatory experience through the auditory information supplemented by verbal explanation.
- Compensatory experience through all remaining faculties which does not demand primarily the vision for the source of input information.

In a classroom setting, a teacher cannot use one particular approach for providing the necessary learning experience, but may have to use all the above approaches in an integrated manner according to the different situations.

1.7.2 Various Stages of Instructional Strategy

The analysis for developing an instructional strategy may be in terms of

(a) instructional objectives for covering the components, sub-components of the learning task.

(b) the learning experiences which can be provided by a regular teacher in regular classroom in a regular lesson along with the sighted children,

(c) the learning experiences which will to be provided in regular classroom along with instruction for sighted children with adjustment for sensory or cognitive deficits arising out of visual impairment and

(d) the learning experiences which will have to be provided to the visually impaired child outside a regular classroom, may in the resource room

by a resource teacher or actual life situations. The later three types of learning experiences combined together should be in a position to help this child to learn optimally according to his cognitive capacities taking into account the deficits arising out of the disability.

Bearing in mind the principles and procedures, the general framework for analysis is presented in the following paragraphs. The framework is consisting of the following major classifications.

1. Objectives
2. Ascertaining pre-requisites
3. Presentation
4. Follow-up.

The major classifications are further analysed into sub-points to highlight the specific nature of the analysis of teaching task. By nature, the classifications are given in the hierarchical sequence and the points given in the classifications are inter-woven. One could see the logical approach adapted in the framework for analysing a teaching task. The general framework can be applied to all subject area for analysis.

1.8 UNIT SUMMARY : THINGS TO REMEMBER

- Instructional materials needs special adaptation for teaching science to VIC. Special approaches and presentation styles would be required for providing optimal learning experience to the visually impaired children in the regular classroom. It is a process of making necessary changes such as duplication, modification, substitution, omission etc., without changing the instructional objectives. The adaptation may be in terms of teaching methodology, special approaches, teaching aids, presentation style, evaluation, enriching assignments etc. It is a whole package of instructional strategies which can make the visually impaired child not to loose any necessary information.
- Develop an understanding of one's natural environment.
- Prepare tactile diagrams and visual oriented concept in tactile form with necessary modifications.
- Develop systematic thinking for scientific inquiry, critical appreciation and creative operations.
- State the role of an experiment in learning scientific concepts, chemical Braille notations etc.
- Develop the manipulative skills, discriminative textures, tactile components, etc.

- Develop teaching strategies, adaptations, materials and equipments.
- Develop interest in inquiry, problem solving and verifying principles and relations.
- Develop appreciation of the use of science and technology in day to day life situations.
- Develop children ability to weigh and sift evidence, remain open minded, listen to ideas of others and them make decisions on the merit of evidence.
- Allow and encourage the visually impaired children to experience and discover science principles for himself.
- Interact the visually impaired children with seeing children in all the activities of the science programmes.

1.9 CHECK YOUR ANSWERS

1. The broad ways of learning science by visually impaired children may be enumerated as follows.
   a.
   b.
   c.
   d.
2. Learning areas which require due considerations in the education of the visually impaired are
   a.
   b.
   c.
   d.
3. The science text material needs a lot of editing due to the following.
   a.
   b.
   c.
   d.
4. The evaluation of the visually impaired children in science should take into account the following for consideration.
   a.
   b.
   c.
   d.

5. In my opinion, science learning can be made interesting to the visually disabled child is the following ways.
   a.
   b.
   c.
   d.

6. As far as possible, tactile diagram should convey
   a. all ideas of the lesson.
   b. only one idea of the lesson.
   c. central idea of the lesson supported by its components.
   d. the type of textures used in the diagram.

7. The size of the tactile diagram for the visually impaired child should be
   a. too big to explore freely.
   b. too small to be handy.
   c. within the reach of the two hands of the child.
   d. presented in these dimensional form only.

1.10 ASSIGNMENT

- The teacher trainee should observe the methods of teaching science in the regular schools by the regular classroom teachers and suggest the adaptations required for visually impaired children.
- The trainee should interview atleast twenty visually impaired children of the secondary school level and enumerate the difficulties encountered by them in learning scientific concepts in various subjects.
- The trainee should select on experiment in physics and orient a visually disabled child to do the experiment by himself on setting specific direction. In doing so, the difficulties encountered by the child should be noted and the trainee can suggest the ways of solving such problems.
- The trainee can prepare a three dimensional aid and two dimensional tactile diagrams for teaching any two concepts in science and experiment them with the visually impaired children.

1.11 POINTS FOR DISCUSSION/CLARIFICATION

After going through the unit you may like to have further discussions on some points and clarification on other. Note down these points in the space provided below:

1.11.1 Points for discussion

1.11.2 Points for clarification

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UNIT 5: EVALUATION PROCEDURES WITH SPECIAL REFERENCE TO THE NEEDS OF CHILDREN WITH VISUAL IMPAIRMENT

STRUCTURE

- Introduction
- **2.2 Objectives**
- **2.3 What is the Meaning of Social Science and Social Studies?**
  - **Aims and Objectives**
    - **2.4.1 General Aims and Objectives of Teaching Social Sciences**
      - **Specific Aims and Objectives of Teaching Social Sciences**
- ***ACQUIRING KNOWLEDGE***
- ***DEVELOPMENT OF REASONING POWER AND CRITICAL JUDGMENT***
- **Training in Independent Study**
- **Formation of Abilities and Skills**
- **Training in Desirable Patterns of Conduct.**
  - Importance of Method of Teaching
  - Play Way Method of Teaching to the Visually Impaired
    - **Activities for Visually Impaired through Play Way Method**
  - Place of Field Trips in Teaching Social Science
  - **Map Reading and Interpretation**
    - ***WHAT IS MAP?***
    - ***GENERAL CLASSIFICATION OF MAPS***
- Scale Maps
- Thematic Maps
  - **Types of Maps Useful for the Visually Impaired Children**
  - **Map Reading a Plus Curriculum?**
  - **Functions of Maps and Globes**

2.1 INTRODUCTION

During recent decades many significant changes have taken place n educational thought and practice. Not only have the ideas been identified and broadened concerning the materials of instruction and the methods of presenting such materials in the schools, but the very purpose of education have undergone radical modifications. In the education of visually impaired children, several attempts have been made to offer various subjects in schools including mathematics and science. The teaching social science also met significant changes in terms of materials and methods. It is the aim of the author of this unit to present the general concepts of social science, contributions of social science to visually impaired children, aims of teaching social science, the methods of teaching such as play way method and filed trips in teaching social science, presentation of maps, use of different types of maps and globe and other related information in teaching social science to the visually impaired children.

2.2 OBJECTIVES

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

- State the meaning of social science and social studies.
- Describe the aims and objectives of teaching social science.
- Explain the meaning play way method in teaching social science.

- Identify the activities to adopt play way method of teaching.
- Narrate the ways and means of conducting field trips for the visually impaired children.
- Define map and classify the different types of maps.
- Identify the maps useful for the visually impaired children.
- Diagnose the difficulties faced by the visually impaired children in map reading.
- Explain the different skills and abilities to be acquired by visually impaired children for reading and interpreting maps.
- List the various map reading skills and abilities to be acquired by visually impaired children at the primary and secondary level.
- Name the different materials that are needed for preparing tactile map for the visually impaired children.

2.3 WHAT IS THE MEANING OF SOCIAL SCIENCE AND SOCIAL STUDIES?

In general, the social sciences are those subjects that relate to the origin, organisation, and development of human society, especially to man in his association with other men.

- The terms "social sciences" and "social studies" are used interchangeably in regard to the social subjects taught in the secondary school.
- The term 'social sciences' are concerned with immediately with the life, the institutions, the thought, the aspirations and the far-reaching policies of the nation in its world setting. The social sciences take us their province the entire range human history, from the earliest times down to the latest moment, and the widest reaches of contemporary society, from the life and customs of the most remote people to the social practices and cultural possessions of the immediate neighbourhood. The social sciences thus embrace the traditional disciplines, which are concerned directly with man and society.
- The term 'social studies' can be defined as "those studies whose subject matter relates directly to the organisation and development of human society, and to man as member social groups." In this meaning of the term, the social studies are adapted from the social sciences in order to play a part – and a very important one – in achieving the purpose or objective of education.
- At present the term, social science is widely used in secondary school curriculum taking into account the subject of social studies give the opportunity to the children to search for truth in contemporary social, political, cultural and cultural problems and also the knowledge of facts.

2.4 AIMS AND OBJECTIVES

2.4.1 General aims and objectives teaching of the social sciences

- The enrichment and development of the lives of pupils to the greatest extent of their abilities and powers within the environment.
- The training of pupils to take their own places in a democratic society in such a way as to make their country a better place in which to live. In order to accomplish these aims, certain specific objectives must be set up and achieved.

The teaching of factual knowledge is not enough. The pupil must be taught to realize the influences that could control his life, as well those lives with which he comes in contact. The inculcation of the spirit of co-operation, the development of tolerance and an understanding and a sympathy for mankind, as well as practice in constructive thinking, reasoning, and critical judgement, should be the main purposes of the social science in achieving the general objectives of education.

2.4.2 Specific aims and objectives of teaching social sciences

The specific aims and objectives of teaching social sciences can be as follows:

- ❖ Acquiring knowledge
- ❖ Development of reasoning power and critical judgment
- ❖ Training in independent study
- ❖ Formation of abilities and skills
- ❖ Training in desirable patterns of conduct

❖ *ACQUIRING KNOWLEDGE*

One of the chief aims of teaching social sciences is the acquisition of facts. Each knowledge and understanding contributes directly to social progress because they are necessary for clear thinking and reservation judgment. The good citizen must acquire a certain amount of factual information. With out facts, thinking is impossible, and without thought, the many problems of modern life and civilization cannot be solved. Collection of information contributes for the normalisation and mainstreaming of visually impaired children and the study of social sciences is necessary for their social intercourse.

❖ *DEVELOPMENT OF REASONING POWER AND CRITICAL JUDGMENT*

The development of reasoning power is closely related to the acquisition of knowledge. The psychology of reflective thinking may be briefly explained. The power of thinking and reasoning cannot be trained without the acquisition of facts. Not only are facts are necessary for thinking and reasoning, but they must be so organised as to form clear associations.
Judgment is based on facts. The social sciences should be the chief media for training for the pupils to render social judgments and to draw generalisations after sufficient and proper data haven been gathered. It is important in the development of reasoning power and judgment that the teacher should take into account the on set of blindness, nature of blindness, age and experiences exposed to the visually impaired children.

❖ Training in Independent Study

A method of study will remain long after most of the factual information is forgotten. As far as visually impaired children are concerned, time must be devoted for the best methods of study. The visually impaired children at the primary level may find it difficult to develop independent study. The teacher must consider the development of correct study habits in the same manner as the sighted children achieve that. The visually impaired children must be trained to collect information through different sources. He must be encouraged to read books, which are available in braille form.

❖ Formation of abilities and Skills

The abilities and skills in reading maps, charts, graphs constitute an important part of the study of social sciences. In a way, the skills developed from the study of social sciences motivate the visually impaired children to use the mobility map for the different purposes apart from using it for independent travel.

❖ Training in desirable patterns of conduct.

The children have lot of opportunities to study the different personalities, their achievements, failures, aspirations etc.; this helps them to develop desirable patterns of behaviour. Social mindedness, right attitude towards the living society, patriotism, courage, sympathy etc., are the desirable qualities that can be developed in the young minds through the study of people of different culture and civilizations.

2.5 *IMPORTANCE OF METHOD OF TEACHING*

Owing to the development of methods of instruction and their importance at the present time in the education of the visually impaired children, it is essential that the teacher must need systematic organisation and graded activities for presenting a matter to the visually impaired

children. No doubt, his success in imparting education to the impaired is largely depending on the methods and approaches he selects for presenting the subject matter.

2.6 PLAY WAY METHOD OF TEACHING TO THE VISUALLY IMPAIRED

Play way method has been practiced as the effective method of teaching at the primary level over years. In this method, the teacher of visually impaired children needs careful analysis of sympathetic insight rather than scientific principles of teaching. The basic philosophy of play method of teaching is "psychologising the instruction" according to the nature of the child. It emphasises the principle of simplification of the elements of knowledge and their reduction to the series of graded exercises. In this method of teaching, the teacher tries to instruct the subject matters in a number of games related to different themes of the subjects to be taught. The great educationists like Pestalozzi, Rabindranath Tagore, and Gandhi advocated play way method. Play way method is based on the learning principle of interest or motivation. The principle of interest or motivation is the most important of all principles of learning. Interest is the petrol that drives the mental engine. Child is the most important part of the educational triangle. "Study the child before the book' is the slogan of the present day education. The study of the child requires a study of his inborn qualities, which go by the name of inner, drives, instincts or motives. Children are naturally interested in playing, which are connected with their natural urges or activity. 'Learning while playing' makes learning process easy and simple.

2.6.1 Activities for visually impaired through Play way method

The social science teacher can teach a number useful activities for the visually impaired children by play way method. Here are some of such activities.

- The visually impaired children can be involved in 'forming a shape' by using the pieces. For example, a wooden Indian map (The materials such as card boards, cork can also be used for preparing maps) may be cut into several pieces and the children can be asked to make it one by joining its pieces. Before this, the teacher must orient the child to the full shape and structure of the map. On the successful completion of this assignment, activities can be given for the visually impaired children for other maps. This kind of activities will be immense use for the child to identify a particular country in a world map.
- The visually impaired children can be given primary shapes such as triangle, square, circle etc., and the small clips in braille. They can be asked to match the shape and the associated name.
- The children can be asked to match different objects and their names given in braille slips.
- The children can also be asked to collect the information regarding the location of their residence, the important temples, the important buildings etc.,
- The children can be involved in stamp collecting with the assistance of sighted children. This will help them to get the knowledge of different nations of this world.

- Interest in social science can be developed through the collection historical objects such as stones, coins, used articles etc.,
- After proper orientation to the different symbols used in the mobility map, the child may be asked to identify the different symbols used in the map. For example, ta child, as a church, may identify symbol. This will help the child to locate the different locations in geographical map.
- In tactile matching board, the child may be asked to match the important nations and their capitals. This country can be extended to a district, taluk etc.,
- If possible, the teacher can give opportunities for the child to feel the different shapes drawn in plastic relief sheets. This will give a better visualisation in map reading.
- Visually impaired children can be involved in dramas. They can also participate in mono acting, group acting etc.,

2.7 PLACE OF FIELD TRIPS IN TEACHING SOCIAL SCIENCE TO VISUALLY IMPAIRED CHILDREN

- The children can be taken to historical places –temples, hills, rivers, etc., so that they can get first hand experiences of those places.
- Museums and archives are of historical importance in most of the countries. The visually impaired children can be taken to such places to study further. The teachers should get special permission for visually impaired children to touch and feel the objects and develop the necessary concepts.
- In many places, light and sound programmers are conducted to explain some historical events. Even though it is involving bother light and sound, visually impaired children do not lose much from such programmers because the sound is the primary mode of conveying the message of the event or the episode. Similar programmers suitable to the school level can be arranged and recorded and exposed to the visually impaired children.
- The visually impaired children can be taken to important places like market, post offices so that they can get first hand experiences.

Map reading is an important aspect in teaching and learning of social science in schools. The following pages will explain to you the different features of map teaching and learning.

2.8 MAP READING AND INTERPRETATION

2.8.1 WHAT IS MAP?

Map is the representation on a flat surface of all parts of the earth surface to show physical, political or other features each point on the diagram corresponding to a geographical position according to a definite scale or projections.

Map is a locational guide for both earth features and human distribution elements. It is also a means for putting related things together. *The map is also the abstract representation of the real environment* as the 3D structure of the real environment is represented in 2 dimensional picture or drawing.

2.8.2 GENERAL CLASSIFICATION OF MAPS

The maps are classified according to:

1 Scale maps (The scale of the map they show)

2 Thematic maps (The subject or theme they show)

❖ SCALE MAPS

The maps according to the scale are the following:

CADASTRAL MAPS

The large-scale maps are also known as cadastral maps. These are drawn on a very large scale up to 25 or more inches to a mile. They are really plans and the large scale allows full details to be shown such as the boundaries of fields, individual buildings etc., These maps are useful for the purposes of taxation or to define property in legal documents. This type of maps can be presented to the visually impaired child in tactile form in such way that it is possible for him to touch and feel it.

Topographical Maps

These are also large-scale maps based on actual surveys. The scale ranges from 1" to a mile or four or more inches to a mile. That is 1:20500 and 1:50,000. A new scale has come in which 1:25,000 (quarter inch to a mile). The survey maps fall under this category. The teacher can give oral explanation to visually impaired child to orient him to this type of maps.

Chorographical Maps

These are small-scale maps of the various parts of the world showing typical features by conventional signs. The atlas maps fall under this category.

World Maps

These are also small-scale maps showing the whole world.

❖ Thematic Maps

These maps are classified according to some important features, which they show. The main types are:

- An outline map, which shows only the boundaries of countries and continents.
- A political map, which shows the political boundaries, states, districts, towns, roads and railways etc.
- A relief or physical or aerographical map which represents the nature of the land surface by means of contours and colour tints.
- A bathymeteric map, which shows the depth of the oceans with tints of blue colour.
- A bathy-aerographical map which is a combined map showing depth of oceans and height of land surface.
- An ethnographical map which locates the distribution of the races of mankind.

- A vegetation map, which shows the distribution of natural vegetation.
- A biological map, which shows the distribution of flora and fauna.
- A weather map, which shows the distribution of temperature, pressure and rainfall for a short period only.
- A climatic map which shows either the distribution of temperature or rainfall or pressure or winds of a combination of all these for a particular season, as for example, a map of India showing winter or summer temperature.
- A distributional map which shows the distribution of some commodity or stock or crops.
- A commercial or economic map, which shows the area of production, distribution of exports and imports, density of population, railways and other routes.
- A geographical map which shows the distribution of rocks.
- A topographical map or ordnance survey map is a large-scale map, which shows the details of topographical features and drainage.
- An International map which is ordnance survey map drawn on a scale of 1:1000,000. It is divided into sheets having uniform scale and signs. Each sheet having showing some parts, which can be fitted with other sheets to show the country as a whole. It is drawn with the cooperation of the various countries of the world. This type of International maps can only be orally explained to the visually impaired child.

2.9 TYPES OF MAPS USEFUL FOR THE VISUALLY IMPAIRED CHILDREN

Mani M.N.G (1986) in his "Source Book for Teachers of Visually Disabled Children" mentioned the following are some of the maps for children in the school level, which could be presented, in embossed or tactile form for visually impaired children.

- Geographical maps which indicate the different mountains, rivers, plains, plateau, forest etc.
- Political maps which indicate the political divisions of the country into states and districts.
- Historical maps which show the empires of the different kings and queens and the time and duration of their rule in a particular country or an area.
- Transport maps, which show the different transportation routes of the country such as air routes, bus routines, rail routes etc., are given in this map.
- Maps indicating rainfall, direction of the monsoon etc.,
- Economic maps showing crops, industries etc.,
- Population maps, which show the distribution of population in various parts of the country.
- Graphs are also presented in the school curriculum, which should be taught to the visually impaired children.

- Statistical diagrams such as Pie diagram, Histogram, Frequency polygon etc., constitute a part of map reading for visually impaired children.

2.10 MAP READING A PLUS CURRICULUM?

Map reading skill can also be included in the category of plus curriculum since it requires sensory training involving tactual perception, finger manipulation, spatial relation, physical orientation etc., proper training is to be given through reading activity and practice in the above mentioned areas.

2.11 FUNCTIONS OF MAPS AND GLOBES

Since the maps and globes are considered to be the best tools to understand the physical environment in which we live, one must know what functions those tools perform.

- Most of the maps globes are attractive and sense challenging
- They provide basis for noting relationship and differences. Example: The relationship can be noted by comparing the map of the physical features and the map showing transport network of the same country. Climate map and population distribution of a country or region.
- They provide basis for inference
- Various types of distributional maps are useful to read and understand facts quickly.
- Maps give the salient overall picture of the whole world at one glance
- Maps give correct impression of size and shapes of any country or continent.
- The elevations and the slope of land may be understood by a glance at the topographical map.
- Maps and globes create curiosity in the children to raise the question like why and how.
- Maps of immediate environment help the visually impaired children to improve their knowledge of orientation and mobility.
- The embossed relief maps and other maps with proper discrimination helps in the formation of geographical concepts such as mountains, plateau and plains, deserts etc.,
- No instruction in geography can really satisfactory which does not involve frequent reference to the globe and every geography room should possess a globe at least 12 inches in diameter. Various types of globes are available such as
  - The globes in which outline and elevation are shown in colour. The different colours used in these globes do not give any meaning to the visually impaired child but the elevations give sense to him/her. The colours used in the globes are useful to the low vision children.
  - The globes containing the tactile outline of latitude and longitude can be useful to visually impaired children.
  - The teacher can also make the tactile globes by making small adjustments in the globe used for the sighted children.

- The globe placed in the social science room can serve the following purposes:
  - It always conveys the impression that the earth is round and to show correct shape of land, masses and water bodies.
  - Understanding of the areas in correct proportion to one another (for this, the concept of scaling must be oriented to the visually impaired child) and
  - True directions (for this, clock concept must be oriented to the child).

2.12 DIFFICULTIES FACED BY THE VISUALLY IMPAIRED IN READING AND INTERPRETING MAPS

- Usually visually impaired students have little experiences with map reading skills and geographical concepts.
- Since the three dimensional nature of the real environment is represented in two-dimensional maps and naturally it causes conceptual problems on the part of visually impaired children.
- Visually impaired children cannot understand maps when they are overloaded with information. But in the case of sighted children, visual aids such as maps and globes are colourful, pictorial, and attractive and they are more appealing to the eyes of the students. Vision allows simultaneous differentiation of the features, they are able understand even when the maps and globes are given in big sizes.
- Visually impaired children get confused with the boundary lines of a country; rivers and state boundaries since they feel curved lines are similar.
- They find it difficult to understand the *spatial relationships and scale value.* They have problems in differentiating the land and water, which can be easily understood by a mere look of the sighted children. (Usually land and water are discriminated by colour in the maps used by the sighted children.)
- Visually impaired children are able to understand the different features of the map by *gathering information piece by piece and not as a whole* since they largely depend on the sense of touch.
- Total experience is not possible in fingertips for the visually impaired children. *Tactile materials are an alternative but not a substitute for visual aids.* Large maps cannot be understood as a whole by the visually impaired as is done by the sighted children as eye movement is much more quickly than that of fingers.

2.13 HOW TO PRESENT MAPS?

Nolen and Morris (1971) have suggested that the best place to break the cycle of problem be at the conceptual level. Teachers should begin teaching basic geographical concepts in Kindergarten and once the child has a sufficiently broad conceptual knowledge of his environment then maps and map reading skills can be introduced with improved materials and an early start, many of the problems can be ameliorated.

John L.Barth (1981) Project Director of American Printing House for the Blind, Louisvaille has stated the following for presenting maps to the visually impaired children.

Orientation to environment

When the children enter the school, they must be oriented towards the environment in which they live. The objects in relation to the physical environment and spatial concept etc., this kind

of introduction helps in motivating them to use and appreciate maps. There are three aspects to orient the visually impaired child to the immediate environment.

1 Identifying the objects

2 Learning basic concepts and terms

3 The ability to get about in the immediate environment by navigating from location to the other.

There are certain basic skills that are needed on the part of visually impaired children. They are as follows:

- To define the size and extent of the tactual display
- To examine the display in a systematic manner
- Systematic analysis
- Observing distinctive features
- Locating reference points

The visually impaired children should realise that the real objects can be presented abstractly on a two dimensional surface. This knowledge helps him for effective understanding and utilisation of maps. The visually impaired child is expected to prepare their first maps of his/her first environment. Example: classroom.

2.14 TACTUAL SKILLS AND CONCEPTS IN MAP READING

The skills and the concepts acquired by the visually impaired child to read and understand the maps are as follows:

- Orientation to the personal environment
- Identification of objects and their physical relationship
- Geographical concepts
- Defining the extent of the map
- Systematic search
- Line tracing
- Analysing the distinctive features
- Searching for distinctive features
- Reference points
- Tangible representation of three dimensional objects on a two dimensional surface
- Tangible representation of spatial relationship
- Use of symbols
- Student's first map
- Routes
- Expanding the first map

2.15 SKILL EXPECTATIONS AT VARIOUS LEVELS IN READING MAPS

2.15.1 Readiness activities for map reading at the Primary level

- Children should realize that the maps represent their personal environment. Example: Map of a classroom.
- The primary level children probably at the fifth standard should acquire the ability to recognise the location of the equator, the tropics, and the poles and to large land and water bodies. They should associate certain natural conditions with distance from the equator. Example: Distribution temperature with respect to the distance from the equator.
- The terms of Latitude, parallels of Latitude should be introduced as a means of finding exact distances from the equator in degrees.
- At the sixth and seventh standards, map vocabulary should be greatly enlarged. Ability to see a continent, a country, an area or a city must be developed at this stage.
- Directional concepts, positional concepts (top, bottom, under, upon etc,) comparative terms (big, small, long, short, thick, thin etc.) must be clearly perceived by the child. This will make them interpret location and different physical features.
- At the end of the primary level, they should understand and appreciate the value of maps as a learning tool.

2.15.2 MAP READING AT THE SECONDARY LEVEL

At this level, the visually impaired children should realise that all the maps of the earth are distorted either in size or in the shape of the earth surfaces. By comparing different maps with the globe, they may note such distortions especially in high Latitudes. Only by using globes, the wrong impressions that are created by reading flat maps can be corrected. The following are the basic skills that are to be developed at the secondary level visually impaired children.

- Ability to read the entire commonly used map symbols representing both physical and natural features.
- Ability to read descriptive facts from regional maps and world distributional maps.
- Ability to draw inferences from a comparison of two or three maps.
- Ability to use latitudes and longitudes for location.
- Ability to use latitude of a region in relation to land and water bodies to make inferences concerning its climatic conditions.

2.16 PREPARATION OF TACTILE MAPS FOR VISUALLY IMPAIRED

The map with different attractive colours and very smooth surfaces may increase the curiosity and interest of sighted children in reading maps. But they do not make any sense to visually impaired children. The tactile or embossed map prepared out of materials, which are easily discriminable and explorable are more useful to visually impaired children. The teacher who starts preparing the tactile map for the use of visually impaired children should be cautious about the selection of materials and the method of using it in the map. It is important for the teacher to see the following while preparing tactile or embossed map.

- Map at the lower level should contain one theme
- The size of the map should be within the reach of the hands of the visually impaired child
- Bigger size map should be used for practice
- Separate legend must be used to interpret different textures used in the map.
- Both print and braille versions should be given in the map.
- The map should be tactually attractive i.e. it should have varied textures which can be easily discriminated by the child.

2.16.1 Materials useful for preparing tactile maps

The materials given below are locally available which can be effectively used for preparing tactile map for visually impaired children.

- Different varieties of sand papers
- Card boards of different thickness
- Sponge and flannel sheets
- Different sizes of beads and buttons for showing different items
- Threads with different thickness
- Different textile materials usually the scrap available from a tailoring shops
- Fevicol / Quick fix for pasting
- Rubber bands, plastic dots used by the ladies, strings etc.,

The list of materials given above is not exhaustive. A creative teacher can use as many as materials, which are found useful for visually, impaired children.

2.17 UNIT SUMMARY – THINGS TO REMEMBER

- In general, the social sciences are those subjects that relate to the origin, organisation, and development of human society, especially to man in his association with other men.
- The terms "social sciences" and "social studies" are used interchangeably in regard to the social subjects taught in the secondary school.
- The term 'social sciences' are concerned with immediately with the life, the institutions, the thought, the aspirations and the far-reaching policies of the nation in its world setting. With man and society.
- The term 'social studies' can be defined as "those studies whose subject matter relates directly to the organisation and development of human society, and to man as member social groups."
- At present the term, social science is widely used in secondary school curriculum taking into account the subject of social studies give the opportunity to the children to search for truth in contemporary social, political, cultural and cultural problems and also the knowledge of facts.
- The general aims and objectives teaching of the social sciences are: The enrichment and development of the lives of pupils to the greatest extent of their abilities and powers within the environment, training of pupils to take their own places in a democratic society, inculcation of the spirit of co-operation, the development of tolerance and an understanding and a sympathy for mankind, as well as practice in constructive thinking, reasoning, and critical judgement.
- The specific aims and objectives of teaching social sciences are: acquiring knowledge, development of reasoning power and critical judgment, training in independent study, formation of abilities and skills and training in desirable patterns of conduct
- The basic philosophy of play method of teaching is "psychologising the instruction" according to the nature of the child. It emphasises the principle of simplification of the elements of knowledge and their reduction to the series of graded exercises.
- Children are naturally interested in playing, which are connected with their natural urges or activity. 'Learning while playing' makes learning process easy and simple.
- Some of the play way activities are: The visually impaired children can be involved in 'forming a shape' by using the pieces, matching the shape or the objects and the associated name, stamp collecting, collecting the information regarding the location of their residence, the important temples, the important buildings etc., historical objects such as stones, coins, used articles etc., identifying the different symbols used in the map, different shapes drawn in plastic relief sheets, involving in dramas such as mono acting, group acting etc.,

2.18 CHECK YOUR PROGRESS

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

1. **"Psychologising the instruction" is the principle behind**
   - a. **The heuristic method of teaching**
   - b. **Learning by doing**
   - c. **Discovery method**
   - d. **Play way method**

2. **Visually impaired children have difficulties in understanding the map because it represents the real environment in**
   - a. **Two dimensional form**
   - b. **Three dimensional form**
   - c. **Concrete form**
   - d. **Abstract form**

3. **Topographical Maps come under the**
   - a. **Large scale maps**
   - b. **Small scale maps**
   - c. **International maps**
   - d. **Local maps**

4. **A tactile map for visually impaired children at primary level should preferably**
   - a. **Contain many themes**
   - b. **Contain one central theme**
   - c. **Be colourful**
   - d. **Contain simple items**

5. **Clock concept is useful for teaching**

a. **Directions**

b. **Spatial concepts**

c. **Difficult ideas in maps**

d. **Map reading techniques**

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

6. The visually impaired children should be taught map skill only with large sized maps.

7. Map reading is difficult for the visually impaired children because maps are available in tactile form.

8. For fixing the direction of the place in a map, reference points are useful for the visually impaired children.

9. Finger explorations are much slower than eye movements.

III. Answer the following questions:

10. Explain the meaning of social sciences and social studies? . What are the aims and objectives teaching social sciences?

11. What is play way method? How you use this method for teaching maps to the visually impaired children?

12. Narrate the ways and means of conducting field trips for the visually impaired children.

13. Define map and classify the different types of maps.

14. What are the maps that are useful for visually impaired children?

15. Explain the difficulties faced by the visually impaired children in map reading.

16. What are the different skills and abilities to be acquired by visually impaired children for reading and interpreting maps.

17. List out the various map-reading skills and abilities to be acquired by visually impaired children at the primary and secondary level.

18. Name the different materials that are needed for preparing tactile map for the visually impaired children.

2.19 ASSIGNMENT/ACTIVITY

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

1. List the various steps in teaching maps to the visually impaired children at the primary level.

2. List the pre-requisite skills for map reading of the visually impaired children

3. Prepare a list of skills and abilities that can be taught to the visually impaired children through play way method

4. *Suggest the steps to be followed in preparing tactile map for the use of visually impaired children*

2.20 POINTS FOR DISCUSSION/CLARIFICATION

After going through the unit you may like to have further discussions on some points and clarification on other. Note down these points in the space provided below:

2.20.1 Points for discussion

2.20.2 Points for clarification

2.21 REFERENCES /FURTHER READINGS

1. Woods, J.W. (1984). Adapting instruction for the Mainstream. Charles E. Meril Publishing Company.

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3. Jose Marickam S.J. and Kareparampil (1995). Persons with Disabilities in Society. Trivandrum: Kerala Federation for the Blind.

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BLOCK 3: SCIENCE

UNIT 1: PROVIDING FIRST-HAND EXPERIENCE IN THE CLASS AND THE SCHOOL ENVIRONMENT

STRUCTURE
Introduction

- **Objective**
- **Meaning of Evaluation**
- **Techniques of evaluation**
- *Implications of visual impairment in evaluating learning of science concepts by visually impaired students.*
- **Implications of visual impairment in evaluating learning of social science concepts by visually impaired students.**
- **Need of evaluation in sciences and social sciences.**
- **Unit Summary & Points to remember**
- **Check your progress:**
- **Assignments / activities.**
- **Points for Discussion / Clarification**
- **References.**

3.1 Introduction

Evaluation is an ongoing process and its importance holds good for the education of visually impaired child too. So, evaluation is required to assess the pace of pupils' progress, identify learning problems and taking teaching related decisions. It assesses immediate teaching outcomes on a continuous basis as well as at the end of a term, grade or a stage of education. It assesses the progress in a full academic session.

Like any other child a visually impaired child's education aims at learning of science and social sciences concepts. Some very important and interesting factors need to be taken care during evaluation of learning of concepts in science and social sciences. Evaluation helps in diagnosing pupils' difficulties in learning science and social sciences. Visual impairment of students has certain implications on evaluation of learning the concepts in science and social sciences.

3.2 Objectives

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

- describe various principles and techniques of evaluation,
- explain implications of visual impairment in evaluating learning of Science Concepts by visually impaired students,
- Explain implications of visual impairment in evaluating learning of Social Sciences by visually impaired students.
- Appreciate the need of evaluation of learning of science and Social Sciences by visually impaired students.
- Prepare tools for evaluating learning of Science and Social Science Concepts.
- Use techniques of evaluation for diagnosing difficulties of visually impaired students in Science and Social Science.

3.3 Meaning of Evaluation

Evaluation is a concept that has emerged as a prominent process of testing, measuring, assessing and appraising. Its main objective is qualitative improvement.

Strictly speaking, evaluation is a process of making value judgement over a level of performance or achievement. To find the level of achievement, one needs to make some measurement and decide, to what extent that level is satisfactory.

Making value judgements in evaluation process presupposes the set of objectives. Evaluation is the process of determining the extent to which the objectives are achieved.

Evaluation is concerned not only with the appraisal of achievement, but also with its 'improvement.' Therefore, it can be applied to evaluate the effects of a part over a whole or whole over a part of the programme.

Education is concerned with developing and modifying the patterns of human-behaviour. Education uses subject-matter-content as a means to bring about development and modification.

So, the education goals are desired developmental aspects of personality of students; then the student's performance is measured, and evaluation is done. This ensures the degree of those aspired changes in behaviour patterns.

Thus, conclusively, evaluation is a systematic process of determining the extent to which educational objectives are achieved.

It implies a critical assessment of educative process and its outcome in the light of the objectives.

Speaking of evaluation at large, in includes both qualitative descriptions of student performance and their value judgements concerning the desirability of that performance.

For example, on an attitude continuum, a comparative score of 80 denotes the measure of the individual attitude as well as a value judgement of positive attitude of negative attitude. While, on a grading scale in science, student's grade 'O' not only is a quality description of his performance, but also the position of his performance level.
Thus, depending on the occasion and purpose evaluation becomes either a tool of measurement plus some value judgement or goes beyond measurement and value judgement.

Techniques of Evaluation
The various techniques of evaluation are determined according to its purpose or stages.
Purpose of Evaluation Formative, Summative, Diagnostic, Remedial, Formal, Informal, Internal and External kinds of evaluation are the categories of evaluation designs structured according to the purpose of evaluation of what is evaluated, who is evaluated, kind of evaluator and manner of evaluation.

Formative evaluation Formative evaluation is undertaken to improve an existing programme. It seeks data regarding changes produced in public by the course, and looks for multidimensional outcomes and maps out the effects of the course along these dimensions separately. It identifies aspects of the course in which revisions are desirable during the course implementation.
Diagnostic evaluation helps in identifying student needs, levels and backgrounds, societal needs, and preferences that determine broad goals. It helps in identifying the nature of subject matter, and in identifying specific or general objectives that are determined by the psychological and other needs of the students. Diagnostic evaluation helps in diagnosing learning problems in students and the intensity of the problem. It also helps in diagnosing to what extent students are ready for learning experiences.
It also helps in diagnosing to what extent the students can cope with the pace of learning-experiences provided. Diagnostic evaluation is also helpful in diagnosing how the individual differences within the group can be tackled.

Formative evaluation is undertaken to improve an existing program. It seeks data regarding changes produced in pupils by the course, by the course, and looks for multidimensional outcomes and maps out the effects of the course along these dimensions separately. It identifies aspects of the course in which revisions are desirable during the course implementation.

Remedial Evaluation is undertaken to make alternations or modifications to check on deficiencies in the course. For example, improvement of instructional strategies, adoption of methods and procedures to improve slow-

learners; to improve reading comprehension in student; and to improve upon the skill learning in students.

Summative Evaluation is useful to assess the effect of a completed programme. It provides information to use in deciding whether to continue, discontinue or disseminate the program. Summative evaluation is frequently undertaken in order to decide which one of several competing programmes or materials is best.

Internal and External Evaluation Internal evaluation is used in the assessment and appraisal of students' cognitive, affective and psychomotor abilities.

The continuous process of internal evaluation is the total awareness of a teacher to identify the aspects of student development. Internal evaluation is continuous, periodic and an internal process. This means that assessment is done in relation to certain abilities and skills in certain subject areas periodically and continuously. Internal evaluation results should be analyzed and used for improvement of the whole system (Teaching, Learning and Evaluation).

External evaluation is useful in maintaining the standards. Keeping certain criteria, it compares and validates the program or a course. External evaluation also helps in promoting and certifying the students based on their achievement or performance.

Techniques of evaluation according to stages this classification is done according to the stages:

(i) Planning or Developmental Evaluation

(ii) Input Evaluation

(iii) Process Evaluation

(iv) Output Evaluation

Planning or Developmental Evaluation is also known as contingency Evaluation. This is conducted usually at the stage when objectives are being defined and needs are being determined. It includes defining and identifying unmet needs, unused opportunities, and needed and available resources. It is also useful in identifying and diagnosing resources of deficiencies in meeting needs.

Input evaluation adds in making decisions about how to use resources to attain programme how to use resources to attain programme goals. It is concerned

with the inputs and is useful in identifying and appraising the potential of individual agencies. It is also applied in comparing and analyzing of possible strategies and achieving goals, and in formulating designs for implementation. Process evaluation provides continuous or periodic feeding so that those responsible for programme planning and operation can review and possibly alter earlier decisions.

Output (product) evaluation is helpful in assessing the attainment or results at the end of the programme or even at appropriate stages within it. Product evaluation includes:

(a) Identification of the discrepancies between original objectives and actual attainments.

(b) Identification of intended results.

(c) The stage of information and suggestions for decisions to alter or replace previous planning.

(d) The planning for quality control by recycling the programme to attain unmet objectives.

(e) The provision of basic information and suggestions for continuing, modifying or terminating programmes.

3.5 Implications of Visual impairment in evaluating learning of Science concepts by visually impaired students

Before throwing light on the implication of visual impairment in evaluating learning of Science concepts by visually impaired students let us realize the following objectives with reference to visually impaired students:

i. describe the importance of Science,

ii. identify the ways of Science teaching,

iii. state the role of experiment in learning scientific concepts,

iv. Explain the use of chemical Braille notations.

v. Demonstrate methods of preparing and using science diagrams.

vi. Explain the various tools for evaluation and methods of taking examination along with required adaptations made.

For teaching of Science to Visually impaired students, certain adaptations and modifications are made by providing the students special opportunities for tactually exploring the materials & diagrams, by prior explanation of, or follow-up information, by taking them to the fieldtrips & enjoying first-hand information, by allowing them to do experiments in the laboratory by teaching

chemical notations. And, it has been proved beyond doubt that, though a little difficult task, teaching of physical and biological sciences should not be ruled out for visually impaired students. A little bit adaptation of methods and materials makes it a subject of interest and mastery for younger visually impaired children to grownups.

Likewise, in case of evaluation of learning in Science when the examinees are visually impaired students, certain modifications and/or adaptations are required in the modes of questioning and modes of answering. This principle works very well in case of theory as well as practical papers and equally applies for all the science subjects whether it is Physics, Chemistry, Zoology or Botany. Certain tips for modification/adaptations in evaluation of learning in Science by visually impaired students are listed below:

1. The Question papers can be provided in Braille and answers can also be obtained in Braille.
2. The question paper is given in print and read for the blind candidate by a scribe. Answers are spoken by the blind child to the scribe who in turn writes the answers in the answer-sheet.
3. The question may be recorded on an audiocassette and answers can also be recorded by the blind candidate on a cassette.
4. The fourth option is that the questions are asked orally by the examiner and answers are also given orally.
5. For low-vision candidates, the question-paper should be provided in large-print.
6. For evaluation in the diagram part. The visually impaired students may be asked to narrate verbally the answers to questions, which warrant diagrams. Instead of drawing the diagram, the visually impaired students should be expected to describe the procedure for drawing it. Marks should. Be awarded to the child for answering such questions in this substituted way.
7. In the evaluation of practical in all the Science subjects (Physics, Chemistry, Zoology and Botany), the same principle can be applied which is applicable for the diagrams. Safety should be ensured for all the students working in laboratories. Additional precautions can further reduce the risk of hazards for visually impaired students.
8. At the high school level, usually children do experiments in groups. While one child performs the experiment, another child is engaged in recording the result; yet another is engaged in observing the experiment. The children put all the facts together and present the experiment report. A visually impaired child is the member of such

team and shares the responsibility suitable to hem. During examinations, the evaluation of experimental work of a blind student can be done the similar way.

3.6 Implications of visual impairment in Evaluating learning of Social Science concepts by visually impaired students

Wile evaluating the learning of Social Science concepts of visually impaired students, broadly few principles have to be followed, which are given as under:

(i) Providing the question paper in suitable mode, such as Braille, large-print, print with scribe facility, in audiocassette, or orally to the blind students according to their need.

(ii) Blind students should be given full flexibility to give the answers from among all the available modes of answering.

(iii) During examinations, for evaluation in map reading ability, the child can show and mark the specified places in embossed map. But, as he cannot write or label the names in the map, a scribe's help should be taken to interpret the answers of the visually impaired child. Full marks should be awarded in such cases.

(iv) Every effort should be made to ensure that the required modifications and adaptations are made in the examinations, while evaluating visually impaired children for their learning of social science concepts; so that they are not at any disadvantage due to their low or no vision.

3.7 Need of Evaluation in Sciences and Social Science

Evaluation in Science and social Sciences is needed to find out whether the desired objectives have been met.

The evaluation of visually impaired students for their learning in the subject of Science tests whether the following objectives have been met:

(i) to make the students realize the importance of teaching science.

(ii) understanding the Scientific concepts and principles.

(iii) Realizing the importance of experiments in learning scientific concepts.

(iv) Explaining the role of chemical Braille notations.

(v) Demonstrating methods of preparing and using science diagrams.

The evaluation of visually impaired students for their learning in the Social Sciences finds out whether following objectives have been achieved:

(i) identification of the needs of visually impaired in learning social science.

(ii) realising the objectives & relevance of map-instruction to visually impaired students.

(iii) explaining the different types of tactile maps that are helpful for visually impaired children.

(iv) describing the methods of teaching maps to visually impaired children.

(v) suggesting the nature and types of raw material useful for preparing tactile maps.

(vi) understanding the limitations of map teaching and map learning for visually impaired children.

3.8 Unit Summary & Points to Remember

1. Evaluation is required to assess the pace of pupil progress, identify learning problems and taking teaching related decisions.
2. It implies a critical assessment of educative process and its outcome in the light of the objectives.
3. Various techniques of evaluation according to the stages are as follows (a) Planning or developmental evaluation (b) Remedial evaluation (c) Summative evaluation and/or (d) Internal and external evaluation.
4. Various techniques of evaluation according to the stages are as follows (a) planning or developmental evaluation, (b) Input evaluation (c) Process Evaluation (d) Output evaluation.
5. There are certain implications of visual impairment on evaluation of science and social sciences which need to be attended to, and suitable questing and answering modes must be followed .
6. During evaluation of map-reading, scribes help should be taken.
7. Mark should be awarded to visually impaired students at par basis, but when it comes to map reading, full marks should be given if the blind students have dictated the correct answer in oral description is given

3.9 CHECK YOUR PROGRESS

Q(1) Small visually impaired children learn science through:

(i) first-hand experiences

(ii) books

(iii) lectures

(iv) observation

Q(2.) Effective evaluation in learning the scientific concepts by visually impaired students can be done through.

(i) normal class approach

(ii) modified approach

(iii) auditory experience only

(iv) tactile experience

Q(3) **Chemical notations refer to:**

(i) diagrams in Chemistry

(ii) signs and symbols in chemistry

(iii) lessons in Chemistry

(iv) Braille notations for chemistry

Q.(4) H2C =CH2 is a

(a) single bond

(b) double bond

(c) triple bond

Q.(5) During examinations, while doing experiments in groups, the visually impaired child may be assigned to:

(a) do the experiment by himself

(b) observe the readings

(c) record the reading with the assistance of his sighted counterpart.

(d) Just stand and listen what others are doing.

Q,(6) A triple bond in chemistry is represented by:

(a) Dots 4 & 5

(b) Dot 4

(c) Dots 4, 5 & 6

(d) Dots 5 & 6.

Q.(7) In academic subjects, the visually impaired child should be:

(a) Evaluated individually

(b) Evaluated among fellow blind peers

(c) Evaluated at par with sighted children.

Q.(8) For a question requiring a picture, the visually impaired child should be asked to:

(a) narrate the concept of the picture,
(b) draw the picture,
(c) omit the question.

Q.(9) One of the main objectives of map reading is to-

(a) develop the skill of drawing in the child,
(b) provide variety in education,
(c) help the child to form a mental picture of a geographical area.
(d) Score better in social studies

Q.(10) The first stage of map reading is:

(a) the study of map languages,
(b) the understanding of scale value,
(c) the ability to draw the map,
(d) to recognize maps

Q.(11) A tactile map for visually impaired children at primary level should preferably

(a) contain many themes
(b) contain one central theme
(c) be colorful
(d) contain simple items

Q.(12) The child should be taught map skill

(a) only with large sized maps,
(b) only with standard (examination size) maps,
(c) with large sized maps first, and then be oriented to standard sized maps.

Q.(13) In finding a particular place in the map of a country, the following can be treated as a reference point:

(a) the population of the country
(b) a significant carve or straight shore line of the border of the country.
(c) Rivers of the country.
(d) Mountains of the country.

Q.(14) For fixing the direction of the place, the easiest way is through the

(a) 'clock concept'

(b) reference points

(c) approximation

Q.(15) A crayon pencil may be used by the visually impaired child effectively to:

(a) show a geographical area,

(b) draw the map,

(c) label the points of the map,

(d) beautify the map

Q.(16) Map reading has limitations for visually impaired children, because:

(a) maps are not available,

(b) questions on maps are omitted for visually impaired children.

(c) Finger explorations are much slower than eye movements.

3.10 Assignment/Activities

1. Visually impaired children cannot draw maps, but can understand and appreciate hem. For effective understanding, the map should have the following characteristics:

1. ----------
2 .----------
3.- ----------
4 ----------
5. ----------
6. ----------
7. ----------

2. Readymade maps may not serve the purpose. The teacher has to prepare maps constantly. In doing so, the following material can be used:

1. ----------
2. ----------

3. ----------

4. ----------

5. ----------

6. ----------

7. ----------

3.11 Points for clarification/Discussion

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

3.11.1 Points for Discussion

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

3.11.2 Points for clarification

3.12 References

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UNIT 2: INCLUSIVE/COLLABORATIVE LEARNING FOR LABORATORY WORK

STRUCTURE

- Introduction
- Objectives
- CBR and The Role Of People With Disabilities and Their Organisations
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. 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.

1.2. 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

1.3. CBR and The Role Of People With Disabilities and Their Organisations

People with disabilities, their families and their organisations can and should play an extremely important role within a CBR system. Adult disabled people have a role related to self-care and home-care. In the case of disabled children, it is the family who provides the bulk of home-based rehabilitation. Some disabled persons teach other disabled adults to read and write or contribute to ability/vocational training. For a certain proportion of disabled people, rehabilitation may not be a realistic option. They will need care and the family should provide it. There is evidence that recruiting disabled people as local facilitators for CBR gives excellent results.

Communities need to be sensitised to the fact that there are many disabled people in their midst –and that they have resources at their disposal to handle the major part of the disabled people's service needs. Disabled people and their families should mobilise resources and have an active part in the local management committees.

Successful disabled adults can play a particularly useful role: by meeting young people in the local schools, for instance. This might be one way of overcoming some of the negative images developed in the past. As members of the rehabilitation committee, they can become actively engaged in home visits, in analysing the local situation, and in proposing ability training and jobs.

BOX 1

CBR AND THE ROLE OF PEOPLE WITH DISABILITIES AND THEIR ORGANISATIONS (rights)

People with disabilities, their families and their organizations can and should play an extremely important role within a CBR system. The priority should be to build up local organizations. In our experience, the first one to be set up is often a parent organization. Later on, disabled adults form their own groups - as a rule they do so at the end of their schooling. Such groups are to be seen as having both social and political functions. It is a place forgetting together with others who have similar problems and needs.

But an organization can also act, as an interest group to voice their members' needs vis-à-vis local leaders and authorities. Where there exists more than one such special interest group, joining together in a local federation or in a union, as a more representative body, would give them more political weight. At a later stage, local groups may join provincial or regional ones and eventually form a national organization. A union representing all groups of disabled people and their families could be set up and request formal recognition. Such a group would be a valuable partner for the government to consult in all matters concerning services for disabled people.

This does not prevent each of the member organizations from keeping its specific profile and from continuing to carry out their social functions. A national federation or union or coalition can play a significant political role, making the public aware of the problems disabled people face and of the contributions they can make to society. Many such unions have approached political parties and other powerful groups to promote their ideas.

As pointed out with reference to the community level, disabled people's organizations have a crucial role to play when it comes to promoting environmental changes and seeking protection of their human rights. The authorities must be made aware of the fact that providing services and opportunities is not enough. Regrettably, in most developing countries the development of organizations seems to start more often than not from the top, and not from the grass roots. It is also unfortunate that there should be such fragmentation and lack of cohesion, considering the adverse effects this has on the attention a government will give to these interest groups. Disabled people should not confine themselves to joining their own separate associations. Rather, they should strive to become members of groups of non-disabled people representing political, cultural, religious, social, environmental and other interests. Integrating themselves in this way will serve to sensitize all such

1.4. Summary

People should play an active role in the management of the local project; planning and evaluation are important components. Another area for action is drawing attention to environmental barriers and requesting their removal. Disabled people should, at this level, also work toward ensuring that they will not be deprived of their human rights. If these rights are violated, they should approach those in the community responsible for legal protection and request them to take action.

1.5. Check Your Progress

1.6. Assignment/Activity

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 3: SCIENCE TEACHING LEARNING MATERIALS AND EQUIPMENT: I) PREPARATION AND USE OF TLM, II) LOCATING AND PROCURING SCIENCE EQUIPMENT

STRUCTURE

- Introduction
- Objectives
- A Rural Rehabilitation Programme That Combines Features Of CBR and II Movements
- Programme for Disabled Women
- Aging And Disability
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

3.1 INTRODUCTION

Although 70-80 percent of the disabled in developing countries, including those of Asia, live in rural areas, most of the programmes for the disabled cater to the urban population. It is also evident that most of the programme beneficiaries are men, in spite of the fact that many of them are 'gender neutral' and may even have a female bias in traditional terms. Most of the activities are related to self-employment or to employment in small and cottage industries (e.g., tailoring, cane furniture). For rural disabled women, there seems to be a considerable potential for small industrial activities.

3.2 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

3.3 A RURAL REHABILITATION PROGRAMME THAT COMBINES FEATURES OF CBR AND IL MOVEMENTS

PROJECT PROJIMO - A RURAL REHABILITATION PROGRAMME THAT COMBINES FEATURES OF CBR AND IL MOVEMENTS

I consider myself fortunate to have been closely involved, for the last 17 years, with a small community rehabilitation programme that combines features of CBR and IL. Based in the mountains of Western Mexico, the programme is called PROJIMO (Programme of Rehabilitation Organized by Disabled Youth of Western Mexico).

Most of the disabled villagers who run PROJIMO first came for their own rehabilitation, learned some rehabilitation skills by helping one another, and decided to stay and work with the programme.

PROJIMO has a motto: "Look first at my strengths, not my weaknesses. " In fact, many of the disabled workers at PROJIMO have developed outstanding skills, which range from peer counseling and physiotherapy to the creation of low-cost, high quality assistive devices.

PROJIMO started in an unusual way. It grew out of a community-run primary health care programme. Some of the village health workers happened to be disabled. Over time, these disabled health workers often proved to be among the most outstanding. To them, their community health work was not just a job; it was an opportunity for them to gain appreciation and respect. Because they came from marginalized positions in the community, their hearts went out to other disadvantaged persons. Thus, by becoming health workers, their weakness became their strength.

People helping each other

In PROJIMO, parents of children and disabled youth who have come for rehabilitation are asked to help out in whatever way they can. It is hard to say how many workers there are at PROJIMO as there is no sharp dividing line between rehabilitator and rehabilitated.

Most of the staff are persons who first came for their own rehabilitation, began helping others, learned skills and gradually became workers in the programme.

ORGANIC GROWTH OF THE PROGRAMME- FROM THE BOTTOM UP

The spread of PROJIMO'S methods and ideas to other communities has been informal and mostly spontaneous. Some "graduates" of PROJIMO, including disabled youth and parents of children, on returning to their home towns or villages, have performed rehabilitation activities based on their PROJIMO experiences, but adapted to the needs and possibilities in their own communities. However, each new "offspring of PROJIMO" has its own unique character and structure.

PROJIMO has also helped to coordinate a series of short courses or "educational exchanges" These are attended by disabled leaders and workers from programmes in Mexico and elsewhere, who share from one another's experiences.

3.4 PROGRAMME FOR DISABLED WOMEN

There are a number of reasons to assume that disability causes more problems to women than to men. These are summarised in WPA as follows:

> "The consequences of deficiencies and disablement are particularly serious for women. There are many countries where women are subjected to social, cultural and economic disadvantages, which impede their access to, for example, health care, education, vocational training and employment. If, in addition, they are physically or mentally disabled their chances of overcoming their disablement are diminished, which makes it all the more difficult for them to take part in community life. In

families, the responsibility for caring for a disabled parent often lies with women, which considerably limits their freedom and their possibilities of taking part in other activities."

Seventy-seven recommendations of actions to take on behalf of disabled women have been taken by the participants of a Seminar on Women and Disability, held at UNCSDHA, at Vienna, in 1990. A few of these are reproduced below; these concern ethics and human rights.

"Disabled women should be informed of their civil and human rights in order to be able to make their own decisions.

"Appropriate legislation that guarantees the full exercise of the rights of women to decide on sexuality, pregnancy, new reproductive technology, adoption, motherhood and any other relevant issue should be adopted and implemented.

"No medical decisions concerning a disabled woman should be made without her informed consent.

"Measures should be adopted to protect women with mental or learning disabilities and information should be provided in a manner that they can easily understand. When appropriate, an advocate should be provided to facilitate the decision-making of such women.

"Open and public discussions on topics such as sexuality, which are often considered too delicate to deal with, should be encouraged, with due respect to cultural norms, in order to increase the level of knowledge of disabled women, their families, professional staff and the general population.

"In countries where cultural and religious traditions make access to medical, vocational, rehabilitative and other services and to employment for disabled women difficult, measures should be taken to ensure that these obstacles are removed so that disabled girls and women can receive those benefits.

"Development and application of new reproductive technologies to prevent disabilities should be seen in terms of ethical and human rights."

Dr Fatima Shah, President of the International Federation of the Blind, and herself blind, lists the "special issues" concerning disabled women, as follows:

"a. Attitudes and prejudices of the public including family, community and even the government, which are stereo-typed and negative towards disability.

"b. Lack of mobility, isolation, confinement to the house. Socio-cultural patterns, and traditions stronger and more effective than legislation itself, are conducive towards creating this situation more acutely for females than males.

"c. Lack of education and training. Generally the percentage of literacy amongst women is lower than [amongst] men in most of the countries in this region. In the case of women with disability it touches the lowest mark. Economic dependence on the male members of the family, lack of training and employment.

"e. Lack of environmental adjustment, rendering mobility for the physically disabled very difficult.

"f. Lack of equipment [,] necessary to cope with the disability, i.e. wheelchairs, prostheses, hearing aids, etc.

"g. Poor health due to malnutrition, lack of activity, poverty and ignorance.

"h. Marriage: This is a much greater problem for women with disability than it is for men, due to socio-cultural patterns and the concept of a woman's physical image of marriage. This deprives her of her traditional role and status as a wife and a mother, and combined with total economic dependence, she is relegated to the position of a non-person in the family and community.

"i. Motherhood: If she is married and has children she is not considered fit to look after them, which naturally deprives her of a role important for her emotional satisfaction and personal dignity.

"j. Severe frustration, inferiority complex: Lack of opportunities and access to education and training for self-improvement and independence destroys the self-confidence, self-image and self-esteem due to the concept of her physical body image dominating the socio-cultural pattern.

"k. Non-involvement in self-help movements at all levels."

3.5 Aging And Disability

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," "wear and tear," and the point at which a person enters the group of moderately and severely disabled people is not easy to decide. CBR programmes should address the needs of senior citizens with disability.

3.6 Summary

A legal provision for ensuring employment opportunities for the disabled was given in the form of the Convention Concerning Vocational Rehabilitation and

Employment (Disabled Persons) (No. 159) passed by the International Labour Organization (ILO) in 1983. The convention provides for vocational rehabilitation measures for all categories of disabled persons. It also provides for equal opportunities for the disabled and general workers. Apart from the fact that social justice calls for equalization of opportunities for disabled persons, from the economic policy of view, it is imperative that the disabled are provided an enabling environment so that they can participate in economic activities. It is also imperative that the disabled person be integrated into the day-to-day activities of the household and community.

Attempts are being undertaken through Community Based Rehabilitation to integrate the disabled with the mainstream of the society. Employment opportunities for disabled rural women must be contextual to their socio-cultural set-up in order not to further jeopardize their integration within the community. At the same time, there is need for community education to counter discrimination and isolation of the disabled. Disabled persons should be the ultimate decision-makers in matters affecting rehabilitation. Therefore careful needs assessment should be made taking into account gender differentials, custom, age, marital status etc.

3.7 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)

[ ]

3.8 Assignment/Activity

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

2.12 References / Further Readings

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UNIT 4: PROBLEM SOLVING AND LEARNING BY DOING APPROACH FOR VISUALLY IMPAIRED STUDENTS

STRUCTURE

- Introduction
- Objectives
- Legal and policy framework
- General obligations
- Convention on the Rights of Persons with Disabilities
  - Article 5 - Equality and non-discrimination
  - Article 6 - Women with disabilities
  - Article 7 - Children with disabilities
  - Article 10 - Right to life
  - Article 12 - Equal recognition before the law
  - Article 34 - Committee on the Rights of Persons with Disabilities
- Summary
- Check Your Progress
- Assignment/Activity

- **Points For Discussion And Clarification**
- **References / Further Readings**

o Introduction

From February 2010 to March 2011, UNMIT's Human Rights and Transitional Justice Section (HRTJS) conducted research on the rights of persons with disabilities. This report shares the preliminary findings of this research. Reflection on these rights is critical to undertake now. Fulfilling the rights of persons with disabilities is part of achieving the objectives in Timor-Leste's National Development Plan and the Millennium Development Goals (MDGs).

Understanding and implementing programmes to promote and protect the rights of persons with disabilities will also strengthen the capacities of the justice, health and education sectors to respond to the needs of vulnerable groups. This report anticipates future debates in Timor-Leste on the proposed national policy on disability and the possibility of signing the Convention on the Rights of Persons with Disabilities (CRPD). To provide background for these debates, discussion is specific to Timor-Leste and covers a range of human rights issues affecting persons with disabilities. However, this report only introduces and raises awareness on some key concerns. It does not purport to provide a comprehensive analysis of the situation of persons with disabilities. Rather, it advocates for more research and discussion on this topic, so Timor-Leste can implement national and international standards on the rights of persons with disabilities. Persons with disabilities participated in the research and drafting of recommendations for this report, and their perspectives are featured. Their voices and vision will lead the way toward a future in which the rights of all citizens of Timor-Leste are fulfilled.

- **Objectives**

  - To identify various Human Rights for disability persons
  - To study about Legal and policy framework
  - To identify General obligations

- **Legal and policy framework**

Timor-Leste has ratified seven core human rights treaties that encompass the promotion and protection of rights of persons with disabilities. Among those treaties, the Convention on the Rights of the Child (CRC) stipulates specific obligations for States to protect the rights of persons with disabilities that are binding in Timor-Leste. In addition, a number of international standards and guidelines exist, though not all are legally binding, which further explain state duties to promote and protect the rights of persons with disabilities. These laws and standards will be referenced in more detail throughout the report, where pertinent to specific cases and issues. Timor-Leste's Constitution explicitly provides for non-discrimination and equal treatment for persons with mental or physical disabilities. The Penal Code classifies the mistreatment of a person with a disability by a caretaker as a crime punishable by up to six years' imprisonment.8 In addition, several organic laws and regulations provide a basis for the realization of the rights of disabled persons in.

- **General obligations**

1. 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, States Parties undertake:

a. To adopt all appropriate legislative, administrative and other measures for the implementation of the rights recognized in the present Convention;

b. To take all appropriate measures, including legislation, to modify or abolish existing laws, regulations, customs and practices that constitute discrimination against persons with disabilities;

c. To take into account the protection and promotion of the human rights of persons with disabilities in all policies and programmes;

d. To refrain from engaging in any act or practice that is inconsistent with the present Convention and to ensure that public authorities and institutions act in conformity with the present Convention;

e. To take all appropriate measures to eliminate discrimination on the basis of disability by any person, organization or private enterprise;

f. 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;

g. To undertake or promote research and development of, and to promote the availability and use of new technologies, including information and communications technologies, mobility aids, devices and assistive technologies,

suitable for persons with disabilities, giving priority to technologies at an affordable cost;

h. 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;

i. 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.

3. With regard to economic, social and cultural rights, each State Party undertakes to take measures to the maximum of its available resources and, where needed, within the framework of international cooperation, with a view to achieving progressively the full realization of these rights, without prejudice to those obligations contained in the present Convention that are immediately applicable according to international law.

4. In the development and implementation of legislation and policies to implement the present Convention, and in other decision-making processes concerning issues relating to persons with disabilities, States Parties shall closely consult with and actively involve persons with disabilities, including children with disabilities, through their representative organizations.

5. Nothing in the present Convention shall affect any provisions which are more conducive to the realization of the rights of persons with disabilities and which may be contained in the law of a State Party or international law in force for that State. There shall be no restriction upon or derogation from any of the human rights and fundamental freedoms recognized or existing in any State Party to the present Convention pursuant to law, conventions, regulation or custom on the pretext that the present Convention does not recognize such rights or freedoms or that it recognizes them to a lesser extent.

5. The provisions of the present Convention shall extend to all parts of federal states without any limitations or exceptions.

- **Convention on the Rights of Persons with Disabilities**
  - **Article 5 - Equality and non-discrimination**

1. States Parties recognize that all persons are equal before and under the law and are entitled without any discrimination to the equal protection and equal benefit of the law.
2. States Parties shall prohibit all discrimination on the basis of disability and guarantee to persons with disabilities equal and effective legal protection against discrimination on all grounds.
3. In order to promote equality and eliminate discrimination, States Parties shall take all appropriate steps to ensure that reasonable accommodation is provided.
4. Specific measures which are necessary to accelerate or achieve de facto equality of persons with disabilities shall not be considered discrimination under the terms of the present Convention.

- **Article 6 - Women with disabilities**

1. States Parties recognize that women and girls with disabilities are subject to multiple discrimination, and in this regard shall take measures to ensure the full and equal enjoyment by them of all human rights and fundamental freedoms.

2. States Parties shall take all appropriate measures to ensure the full

development, advancement and empowerment of women, for the purpose of guaranteeing them the exercise and enjoyment of the human rights and fundamental freedoms set out in the present Convention.

- **Article 7 - Children with disabilities**

1. States Parties shall take all necessary measures to ensure the full enjoyment by children with disabilities of all human rights and fundamental freedoms on an equal basis with other children.

2. In all actions concerning children with disabilities, the best interests of the child shall be a primary consideration.

3. States Parties shall ensure that children with disabilities have the right to express their views freely on all matters affecting them, their views being given due weight in accordance with their age and maturity, on an equal basis with other children, and to be provided with disability and age-appropriate assistance to realize that right.

- **Article 10 - Right to life**

States Parties reaffirm that every human being has the inherent right to life and shall take all necessary measures to ensure its

effective enjoyment by persons with disabilities on an equal basis with others.

- **Article 12 - Equal recognition before the law**

1. States Parties reaffirm that persons with disabilities have the right to recognition everywhere as persons before the law.
2. States Parties shall recognize that persons with disabilities enjoy legal capacity on an equal basis with others in all aspects of life.
3. States Parties shall take appropriate measures to provide access by persons with disabilities to the support they may require in exercising their legal capacity.
4. States Parties shall ensure that all measures that relate to the exercise of legal capacity provide for appropriate and effective safeguards to prevent abuse in accordance with international human rights law. Such safeguards shall ensure that measures relating to the exercise of legal capacity respect the rights, will and preferences of the person, are free of conflict of interest and undue influence, are proportional and tailored to the person's circumstances, apply for the shortest time possible and are subject to regular review by a competent, independent and impartial authority or judicial body. The safeguards shall be proportional to the degree to which such measures affect the person's rights and interests.
5. Subject to the provisions of this article, States Parties shall take all appropriate and effective measures to ensure the equal right of

persons with disabilities to own or inherit property, to control their own financial affairs and to have equal access to bank loans, mortgages and other forms of financial credit, and shall ensure that persons with disabilities are not arbitrarily deprived of their property.

- **Article 34 - Committee on the Rights of Persons with Disabilities**

1. There shall be established a Committee on the Rights of Persons with Disabilities (hereafter referred to as "the Committee"), which shall carry out the functions hereinafter provided.

2. The Committee shall consist, at the time of entry into force of the present Convention, of twelve experts. After an additional sixty ratifications or accessions to the Convention, the membership of the Committee shall increase by six members, attaining a maximum number of eighteen members.

3. The members of the Committee shall serve in their personal capacity and shall be of high moral standing and recognized competence and experience in the field covered by the present Convention. When nominating their candidates, States Parties are invited to give due consideration to the provision set out in article 4.3 of the present Convention.

4. The members of the Committee shall be elected by States Parties, consideration being given to equitable geographical distribution, representation of the different forms of civilization

and of the principal legal systems, balanced gender representation and participation of experts with disabilities.

5. The members of the Committee shall be elected by secret ballot from a list of persons nominated by the States Parties from among their nationals at meetings of the Conference of States Parties. At those meetings, for which two thirds of States Parties shall constitute a quorum, the persons elected to the Committee shall be those who obtain the largest number of votes and an absolute majority of the votes of the representatives of States Parties present and voting.

6. The initial election shall be held no later than six months after the date of entry into force of the present Convention. At least four months before the date of each election, the Secretary-General of the United Nations shall address a letter to the States Parties inviting them to submit the nominations within two months. The Secretary-General shall subsequently prepare a list in alphabetical order of all persons thus nominated, indicating the State Parties which have nominated them, and shall submit it to the States Parties to the present Convention.

7. The members of the Committee shall be elected for a term of four years. They shall be eligible for re-election once. However, the term of six of the members elected at the first election shall expire at the end of two years; immediately after the first election, the names of these six members shall be chosen by lot by the chairperson of the meeting referred to in paragraph 5 of this article.

8. The election of the six additional members of the Committee shall be held on the occasion of regular elections, in accordance with the relevant provisions of this article.

9. If a member of the Committee dies or resigns or declares that for any other cause she or he can no longer perform her or his duties, the State Party which nominated the member shall appoint another expert possessing the qualifications and meeting the requirements set out in the relevant provisions of this article, to serve for the remainder of the term.

10. The Committee shall establish its own rules of procedure.

11. The Secretary-General of the United Nations shall provide the necessary staff and facilities for the effective performance of the functions of the Committee under the present Convention, and shall convene its initial meeting.

12.. With the approval of the General Assembly, the members of the Committee established under the present Convention shall receive emoluments from United Nations resources on such terms and conditions as the Assembly may decide, having regard to the importance of the Committee's responsibilities.

13. The members of the Committee shall be entitled to the facilities, privileges and immunities of experts on mission for the United Nations as laid down in the relevant sections of the Convention on the Privileges and Immunities of the United Nations.

Summary

The rights of persons with disabilities are critical to consider now, as Timor-Leste builds its nation and strives to become a regional leader in human rights. Fulfilling the rights of persons with disabilities can play a key role in ensuring inclusive national development in Timor-Leste and in the Asia-Pacific region.

From 2010 to 2011, UNMIT's Human Rights and Transitional Justice Section (HRTJS) conducted research on the rights of persons with disabilities. The preliminary findings of this research and recommendations are shared below to facilitate discussion on how government, civil society, and international actors can work together to promote and protect the rights of persons with disabilities. As the first public report by a peacekeeping mission on the rights of persons with disabilities, it beckons further reflection and action by the United Nations.

Persons with disabilities from Timor-Leste participated throughout the research and drafting of the report's recommendations. Their voices and vision will lead the way toward a future in which the rights of all persons are fulfilled - in Timor-Leste and beyond.

- **Check Your Progress**

- **Assignment/Activity**

- **Points For Discussion And Clarification**

  After going through this Unit you might like to have further discussion on some points and clarification on others

  - **Points for discussion**

  - **Points to Clarification**

4.9 References / Further Readings

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UNIT 5: EVALUATION PROCEDURE WITH PARTICULAR REFERENCE TO PRACTICALS AND ADAPTATIONS IN EXAMINATION QUESTIONS

STRUCTURE

- Introduction
- Objectives
- Impacts of cultural beliefs on rights of persons with disabilities
- Poverty, disability and development
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

5.1. Introduction

Disability is an important public health problem especially in developing countries like India. The problem will increase in future because of increase in trend of non-communicable diseases and change in age structure with an increase in life expectancy. The issues are different in developed and developing countries, and rehabilitation measures should be targeted according the needs of the disabled with community participation. In India, a majority of the disabled resides in rural areas where accessibility, availability, and utilization of rehabilitation services and its cost-effectiveness are the major issues to be considered. Research on disability burden, appropriate intervention strategies and their implementation to the present context in India is a big challenge. Recent data was collected from Medline and various other sources and analyzed. The paper discusses various issues and challenges related to disability and rehabilitation services in India and emphasize to strengthen health care and service delivery to disabled in the community.

5.2. Community-Based Rehabilitation

Alma Ata declaration on 1978 stated that comprehensive primary health care should include promotive, preventive, curative, and rehabilitative care. There are three approaches to rehabilitation, namely institution based, outreach based, and community based. The major objective of Community Based Rehabilitation (CBR) is to ensure that people with disabilities are able to maximize their physical and mental abilities, have access to regular services and opportunities, and achieve full integration within their communities. CBR is a comprehensive approach at primary health care level used for situations where resources for rehabilitation are available in the community. In addition to transfer of knowledge related to skill development in various types of rehabilitation methods, community also will be involved in planning, decision making, and evaluation of the program with multi-sectoral coordination. Besides, referral system will be there for those disabled who cannot be managed at community level and referred to district, provincial, and national levels.

Disability limitation at early stage when they are amenable to preventive and rehabilitative measures, so that progression to severe disability can be minimized is a vital component in rehabilitation of disabled. It has shown that very few disabled people gets benefit from rehabilitation services in India. In general, of people with disability, 1/3 needs no rehabilitation, 1/3 can be helped through CBR alone and 1/3 needs specialized referral services. Basic principles of a CBR program for the disabled include inclusion, participation, sustainability, empowerment, and advocacy. These principles are overlapping, complementary, and interdependent and they cannot be addressed in isolation.

There are many measures initiated by Ministry of Social Justice and Empowerment and Health and Family Welfare in India.

1. District Rehabilitation Center (DRC) Project started in 1985.
2. Four Regional Rehabilitation Training Centers (RRTC) have been functioning under the DRCs scheme at Mumbai, Chennai, Cuttack, and Lucknow since 1985 for the training of village level functionaries and DRCs professionals, orientation and training of State Government officials, research in service delivery, and low cost aids. Apart from developing training material and manuals for actual field use, RRTCs also produce material for creating community awareness through the medium of folders, posters, audio-visuals, films, and traditional forms.
3. National Information Center on Disability and Rehabilitation
4. National council for Handicapped Welfare
5. National Level Institutes—NIMH, NIHH, NIVH, NIOH, IPH.
6. A new scheme District Disability Rehabilitation Centre for persons with disabilities launched by the Hon'ble Minister of Social Justice and Empowerment, Government of India in Jan/Feb. 2000 is a step towards providing rehabilitation services and implementation of Persons with Disability Act. 1995. The Government has decided to set up District Disability Rehabilitation Centres (DDRCs) in a phased manner. Presently, 199 DDRCs have been sanctioned and 100 new DDRCs are to be set up during the remaining two years of the 11th Plan. The DDRCs were established with the objective of providing comprehensive services to the persons with disabilities at the grass root level. The services include awareness generation, survey, identification and early intervention, counseling, assessment of need for assistive devices, provision/fitment of assistive devices, and their follow up/repair, therapeutic services like Physiotherapy, Occupational Therapy and Speech Therapy, referral and arrangement for surgical correction through Government and Charitable Institutions, facilitation of issue of Disability Certificates and bus passes, sanction of bank loans, and promotion of barrier-free environment.

7. The National Policy for Persons with Disability 2005 is the recent development and welcome step by the Government of India.

5.3. Impacts of cultural beliefs on rights of persons with disabilities

Some traditional beliefs in Timor-Leste support community-based care and healing, which are encouraged by the CRPD. Positive perceptions of persons with disabilities are also encouraged in some traditional beliefs and practices, even though at times these beliefs may reinforce stereotypes of persons with disabilities. For example, some persons with disabilities are assigned sacred roles as healers, musicians, seers, or artists based on their capabilities. On the other hand, some cultural beliefs in Timor-Leste can stigmatize persons with disabilities.

For example, persons with disabilities are reportedly perceived by many adherents to traditional belief systems as being punished by spirits because they have broken a cultural taboo. These traditional beliefs assign blame to an individual with a disability, rather than seeking to understand the ways society creates obstacles to his or her full participation. The practice of traditional medicine to "cure" persons of their disability can prevent persons receiving proper diagnosis, treatment and communal acceptance of their differences. For example, HRTJS monitored one case in 2010, in which a person with a disability was reportedly denied access to medicine by his family which could have significantly improved his condition, because they preferred the use of traditional treatments. Traditional practices that rely on hierarchies based on kinship, gender or age can also act as an

obstacle to fulfilling the right to consent of persons with disabilities, and make women and children with disabilities especially vulnerable. Under the CRPD, among other human rights treaties and international guidelines, persons with disabilities have the right to the highest attainable standard of health. Free and informed consent is also required, and is not forfeited because a person has a disability.

Women and children are granted special consideration to ensure equality and protection. Preferences by families of persons with disabilities for traditional cultural practices do not negate the right of persons with disabilities to decide their course of treatment, and is not a legitimate justification for denying the highest attainable standard of health. Awareness-raising campaigns may promote the benefits of modern medical treatment, while also addressing some of the negative impacts of culturally-based assumptions about persons with disabilities and building on positive ones. Further research is required to identify cultural understandings of disability in Timor-Leste and the ways that rights may be promoted and protected effectively within this context.

5.4. Poverty, disability and development

Although the nation is taking positive strides towards economic recovery, poverty is endemic. TimorLeste ranks 120 out of 169 countries in the Human Development Index. According to the most recent UNDP Human Development Report on Timor-Leste, the World Bank predicts 41 percent of the population is estimated to live below the poverty line based on derivations from data collected in a 2007 demographic and health survey. Some indicators of the degree of poverty and vulnerability include: 45 percent of children are underweight and the growth of 33 percent of children under five is severely stunted. In this environment, the number and intensity of competing needs for development are high, and susceptibility to disability is increased. Poverty is both a cause and an effect of disability.

Presently, no data exists that indicates the percentage of persons with disabilities living in poverty in Timor-Leste. However, persons with disabilities in Timor-Leste reported in focus group discussions that they face fierce competition for resources, particularly for medicine, healthcare, transportation, and education. Comparative research suggests that rates of poverty are usually higher amongst persons with disabilities due to multiple related factors including lack of accessibility to public services and social exclusion. The Ministry of Social Solidarity provides some social assistance to combat poverty among persons with disabilities in the form of a monthly disability allowance for persons

determined by government assessment to be unable to work due to a severe disability. However, these payments reportedly are not always distributed or received on a monthly basis, and the paperwork and documentation required to register prevents many persons with disabilities from accessing this form of social assistance. In 2010, the Ministry of Social Solidarity also launched a programme that provides social assistance housing to vulnerable groups. Five persons with disabilities receive this housing assistance. The CRPD requires signatories to ensure access to public housing for persons with disabilities to fulfil the right to an adequate standard of living. In accordance with these international standards, persons with disabilities should continue to be a target group to benefit from the multiple, on-going public housing programmes in Timor-Leste. Employment is also an important means for persons with disabilities to escape from poverty and social exclusion. From 2009 to 2010, the Ministry of Social Solidarity (MSS) and NGO Ra'es Hadomi Timor Oan worked together to coordinate and organize 22 people with disabilities to receive vocational training for three months. MSS has continued to support the group with carpentry materials, workshop space, and funding in 2010. The group produces coffins that MSS buys to provide to families as part of its social assistance programme that helps impoverished families afford burial services. Programmes such as this one facilitate the right to work of persons with disabilities, in line with provisions included in the CRPD. Employment schemes are a key strategy to address the structural barriers that prevent persons with disabilities from actively participating in the workforce. The inter-relationship between poverty and disability means that investment in disability services may have a positive impact on a large portion of the

population, across multiple sectors including education, healthcare and economic development. Inclusive development programmes that combat poverty are recognized under the CRPD as playing a necessary role in fulfilling the rights of persons with disabilities. The CRPD also urges international cooperation across the range of activities that facilitate the exercise of the rights of persons with disabilities, including development aid and programming. Investment by international and national actors in services that fulfil rights of persons with disabilities may help break the poverty and disability cycle.

5.5. Summary

In particular, this volume focusing on Phase 1 presents the three main paths that were investigated during the large-scale survey and their main conclusions. The research obtained relevant results for the literature, and these are detailed in the following chapters of this volume. Firstly, the research aimed to understand and measure the overall role and impact of CBR in improving the quality of life of persons with different types of impairments, as well as different demographic, social and economic backgrounds. Quality of life is determined in the capability approach framework by the freedom of people to do and to be what they value (Sen, 1999). Therefore, we investigated the effectiveness of CBR programmes in improving the control that persons with disabilities have over their daily lives, participating in different aspects of community life (i.e. combating stigma and prejudice), and accessing various services, over the five domains of the CBR matrix (health, education, livelihood, social and

empowerment). Furthermore, we examined to what extent persons with disabilities involved in the CBR programmes are improving their socio-economic conditions, and therefore escaping from multidimensional poverty (Sen, 1992). We found that the CBR programmes have rather a positive impact on the well-being of persons with disabilities in the examined district in most areas of intervention: health, education, livelihoods (including opportunity for employment), disability rights, and social participation. It is also relevant to notice that the findings show that participation in CBR has an impact in terms of changing mentalities and fighting prejudice and exclusion. Secondly, we investigated the factors which constitute barriers to access CBR activities and support. The research should highlight whether the CBR programmes are completely inclusive of all groups of individuals with disabilities. The results on the CBR coverage are very relevant since they disentangle the question of inclusion and access to CBR activities. Almost 60% of persons with disability are part of CBR. Furthermore the persons who are not part of CBR are less poor, have more mild disabilities and are older. Thirdly we tried to capture spillover effects of CBR – i.e. if in the area of CBR activities there is an effect on the well-being of other persons from the community, such as the caregivers, and on the community social environment through the heads of villages, social workers and teachers. We found evidence of spillover effects in the community of the area of CBR both at village level and for individuals such as the caregivers.

- **Check Your Progress**

True/False:

- **Assignment/Activity**

- **Points For Discussion And Clarification**

After going through this Unit you might like to have further discussion on some points and clarification on others

- **Points for discussion**

- **Points to Clarification**

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BLOCK 4:

SOCIAL SCIENCE

UNIT 1: TECHNIQUES OF PREPARATION AND PRESENTATION OF ADAPTED TACTILE MAPS, DIAGRAMS, AND GLOBE

STRUCTURE

- Introduction
- Objectives
- Multi-Sectoral Approach in CBR
- Rationale for a multi-sectoral approach
- Problems in achieving a multi-sectoral approach to rehabilitation
- Difficulties in establishing a multi-sectoral approach: mongolia cbr programme
- The challenge of establishing multi-sectoral approach in rehabilitation
- General Approaches
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. Introduction

Whilst the architects of Community Based Rehabilitation (CBR) conceived of the approach as involving all sectors of the society, the majority of early attempts to translate the philosophy into practice grew out of health-based programmes. However, the goal of CBR is to contribute towards the empowerment of persons with disabilities, facilitating an independent lifestyle in which they participate in all aspects of community life. Multi-sectoral collaboration is therefore imperative if such a goal is to be achieved, as no one sector alone can achieve such a broad objective. The breadth of the challenge necessitates a partnership between various sectors including health, education, labour, vocational, housing, welfare, sports and agriculture, in collaboration with NGOs, Disabled Peoples Organizations (DPOs), and traditional and religious leaders within the community.

1.2. Objectives

- To identify various Problems in achieving a multi-sectoral approach to rehabilitation
- To understand Monitoring is a vital tool

1.3. Rationale for a multi-sectoral approach

In many ways the needs of persons with disabilities are the same as their able-bodied peers. Such needs cut across all sectors. Moreover, as the community represents disabled persons of all ages and at different stages of life, different sectors come into play. No one sector on its own can respond to the comprehensive needs involved in the rehabilitation process. CBR programmes should seek to meet the needs of disabled persons of various aetiologies and of all ages. If the initiating group does not have the expertise to address the needs of a specific target group, they should seek out the relevant partners to develop a more comprehensive approach.

1.4. Problems in achieving a multi-sectoral approach to rehabilitation

The one factor that unites disabled people throughout the world is the low priority they are given within their countries. Where a response has been forthcoming, it is often limited in effectiveness because of the lack of collaboration between government departments. A unified response has not been forthcoming for a variety of reasons including:

- Lack of political commitment, which is reflected in the absence of a national policy on disability issues;
- Rigid ministerial demarcations, which prevent collaboration as different sectors vie for resources;
- Ministries have often developed an inertia of their own characterized by a fixed way of doing things;

- Poor communication between ministries;
- Competition between sectors, each of which wants to be perceived as the 'lead' body;

Lack of a tradition of collaboration where the emphasis has been on vertical training, which emphasizes individual professional orientations.

1.5. Difficulties in establishing a multi-sectoral approach: mongolia CBR programme

In Mongolia, the national CBR programme was started in 1990 under the Ministry of Health. A CBR *co-coordinating* committee was established with a representative of the Ministry and three doctors.

After some time, the team realized that there were different government ministries as well as donor agencies working for rehabilitation programmes for disabled persons, and that some kind of coordination was needed. It was decided to organize, in 1994, a meeting of all the concerned organizations and departments working in the field of disability, to bring all the activities under a single cohesive strategy. This would serve to avoid overlapping and duplication of activities, as well as avoid destructive competition. In this meeting, the following organizations participated: the Ministry of Health and the Italian NGO AIFO, which work together for the national CBR programme; the Ministry of Special Education (MOSE) and the Danish agency DANIDA, which are co-operating in the training of teachers and

in providing special education for disabled children; and UNICEF and the British NGO SCF, which work at pre-school level and with mother and child care centers. This has been the first step towards a multi-sectoral approach in the CBR programme.

Monitoring is a vital tool

Community Based Rehabilitation Services (CBRS) is a non-governmental organisation (NGO) based
in Nepal's second city, Pokhara. It works in two districts – one urban and one rural. People often live many miles from the nearest road without easy access to government services, such as hospitals.
CBRS has as its vision: 'a society which respects the rights and dignity of disabled children and adults, giving them opportunities to fulfil their potential as equals.'
Our activities focus on disabled children and their families, and include:

- raising awareness of disability issues
- conducting home visits in a limited area and weekly counselling days for clients from outside this area
- using local people as trained and paid field workers
- forming parents' groups for mutual support and self-help activities
- supporting an NGO committee of local people and an advisory group of parents and disabled adults
- liaising with government officials to raise awareness and obtain allowances
- networking and referring.

In 1998 CBRS worked with 188 disabled people, most of whom were children under 14 years of age. One third of the children had physical problems. About half had learning difficulties, often in addition to other impairments.CBRS has 13 field workers, some of whom are relatives of disabled people. CBRS follows a process-oriented approach, focusing on how things are done, as well as what is done. Caritas Neerlandica, our present funder, asked us to evaluate our work for the past three years and suggested we could do the evaluation ourselves. This fitted with our own plans and ways of working. We wanted to look at what we had achieved and make future plans. In particular, we wanted to improve our current activities and consider whether to extend them to new areas. We already monitored our activities and did regular small-scale evaluations. However, this evaluation was larger, involved more people and brought a different perspective. Many people were involved in the evaluation – the management team, NGO committee, advisory group, field staff and staff from other organisations. We also used two external advisers who helped us set realistic objectives, facilitated group sessions and helped the management team write the evaluation report. The external advisers were active in community development, rather than disability, and brought in new ideas and perspectives. We found that we were able to use our regular records to check many aspects of our work. Minutes of meetings, reports and reviews of staff and activities, financial accounts, feedback forms from awareness sessions and parents' groups – all proved useful. A survey of parents of disabled children provided useful indicators to measure progess. Of course, records are only useful if they are regularly updated and accessible. Datafrom normal monitoring is always available.

The busy timetable was our main problem. We continued normal activities throughout. Staff didn't feel pressured or threatened, in fact the evaluation was a positive experience. We would have liked to spend more time on detailed planning. It has been hard to find time to follow up some aspects in detail. The management team has already used some of the recommendations from the

evaluation report to develop our policies and activities. We will implement recommendations on recruitment and training later. We are also looking at ways to improve monitoring. We already collect information but we don't always use it fully. We are considering using computer software programs such as OMAR or EpiInfo to assist us in keeping and making better use of the data we collect. Overall, we found that self-evaluation
worked well. It confirmed that we were working towards our aims and gave us ideas of how we could meet them better.It helped us to decide to continue to develop work in two districts, rather than move into new areas.

Jane Schofield Gurung and Bidur

Koirala, ,
Nepal

The challenge of establishing multi-sectoral approach in rehabilitation

An essential element in promoting a multi-sectoral approach is the creation of a National CBR Co-coordinating Committee. Where such committees have been effectively established, a foundation has been established for collaboration between the various sectors. This has been the experience in societies as different as the highly populated country of Vietnam in Asia and the sparsely populated island of Rodrigues in the Indian Ocean.

However, it should be recognized that in addition to the multi-sectoral collaboration at the national level, such collaboration must also be nurtured at the regional and local levels.

BOX 4

MULTI-SECTORAL APPROACH IN WEST JAVA PROVINCE OF INDONESIA

The West Java CBR programme was started in Bandung municipality in 1985 by a team composed of: Society for the care of disabled children (YPAC Bandung), Bandung community-based health organization (DSB), Family welfare movement (PKK) and seven Municipality Government sector (Health, Social Affairs, Education: P&K and Depdikbud, Labour, Social Welfare, and Community Development).

The programme is coordinated by the wife of the mayor of Bandung, who is also the head of Family Welfare Movement. Until now, the CBR team has been able to able to manage the CBR programme with local resources only (funds from local district authority and the communities).

After the success of the programme, the CBR team has been joined by two more Government sectors (Information and Religion). A similar team has been established at sub-district level. All the programme activities, like planning, implementation and evaluation, are carried out under the multi-sectoral approach.

1.6. GENERAL APPROACHES

Learning from the people

The first element in the approach to CBR is to learn from the people. In the conventional rehabilitation model, efforts had been made to transfer the technology, types of professionals and service systems existing in the industrialized world. This has largely failed. The essence of the CBR approach is to find out what is locally initiated, in terms of successful technology, service and management systems, in each developing country and to build on this experience. Not until the applied local approach builds on this general principle will the development be sustainable. Such a review of existing technology, service and management systems should not be confined to the disability area. There is a host of development projects initiated by local communities, and analysing their achievements as well as their failures will teach us a great deal. Such development projects may be concerned with, for example, community water supply, agriculture, primary health care and elementary schools. We should therefore set out by looking for the inventive parents who have successfully trained their blind child to walk around in the village, or their mentally retarded adolescent to work in the fields. We should seek the advice of the schoolteacher who has included disabled children in the local school, as well as that of the artisan who has made crutches and wooden legs.

DIGNITY for a disabled person is possible when:

- It is recognised that all human beings have equal worth and equal rights;

- All are willing - in the spirit of solidarity – to share the opportunities and means needed for self-actualisation;
- He or she is fully participating in the life of the community.

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

1.7. 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.

- **Check Your Progress**

True/False:

1. DPO is Disabled Peoples Organizations. [ ]
2. The first element in the approach to CBR is to learn from the people. [ ]
3. The West Java CBR programme was started in Bandung municipality in 1985 [ ]
4. DIGNITY for a disabled person is possible when [ ]
5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals].

- **Assignment/Activity**

- **Points For Discussion And Clarification**

  After going through this Unit you might like to have further discussion on some points and clarification on others

  - **Points for discussion**

  - **Points to Clarification**

6.8 References / Further Readings

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UNIT 2: PROCURING, ADAPTING AND USE OF DIFFERENT TYPES OF MODELS

STRUCTURE

- Introduction
- Objectives
- District ,Provincial And Central Level Referral
- Classification according to AAMR
- Facts And Fiction: The Need For Monitoring And Evaluation In CBR
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. Introduction

The training programme for the Mentally Retarded individuals converges around the development of adaptive behaviours ranging from self help skills to the development of vocational skills. Although there is some overlap, in general the focus of the educational programme varies according to the degree of retardation and the category the person belongs to. The lesser the degree of retardation the more is the emphasis on academic skills, and the greater the degree of retardation the more stress there is on the development of self help, and community living skills.

Basic to any training programme for the people with mental retardation, is the knowledge and skill regarding the 1) development of an Individualized Educational Programme (IEP). An IEP is training programme developed for each child. It is based on the assessment of the person with Mental Retardation in areas like Academics, ADL, Social skills, Personal skills, Vocational skills and Community skills and a plan for training is developed with objectives, strengths, weakness. In functional Academics, academics is taught to the student to function independently in his society eg. In functional reading the Mentally Retarded person is taught to read labels in grocery shops, names of stations, bus numbers, particular item's in news paper like TV programmes, access the telephone directory to get certain phone numbers etc. functional writing would entail writing one's name, address, telephone number, hand rudimentary banking eg. filling in deposit slips etc. Functional math would teach him enough number work to make small purchases, handle change, travel independently etc. 2) Task Analysis (TA) : Task Analysis is breaking down a task into its component steps / skills. It help in training people with retardation.

1.2. Objectives

- Facts and fiction: the need for monitoring and evaluation in CBR
- To classification according to AAMR

1.3. District ,Provincial And Central Level Referral

District (first-referral) level

The word *district* does not have the same meaning in all countries. In larger nations, it may encompass a population of one million people, while in a smaller country, a district may have a population of 100,000. In this guide, the term *district* refers to the area covered by the first-referral level hospital, and also to the most peripheral unit of local government and administration that has comprehensive powers and responsibilities.

There should be a district committee responsible for CBR to ensure that district-level services respond to community needs, and also to coordinate services. The district committee should be similar to the community committee in composition, but with an additional representative of the community committees. If the community development committee is responsible for CBR at the community level, then the district development committee should have this responsibility at the district level.

The district is a key point in the delivery of rehabilitation services. A district hospital or health centre will be accessible to most people in the area and can provide first-referral level services to disabled people. District-level rehabilitation staff can travel throughout the area to provide technical supervision, and district-level staff for health, education, and social services can coordinate their work in support of community activities.

The MOH may have mid-level rehabilitation workers (MLRWs) at the district hospital. The MLRW should be trained to work not only with people with locomotor disabilities, but also with people who have disabilities resulting from sensory or mental impairments. In addition to technical training for CBR, the MLRW is trained in management and supervision, including record keeping, reporting, and referral coordination. The MLRW also provides technical supervision of rehabilitation workers at the community level.

Other sectors involved in rehabilitation may have offices or centres at district level. An office for social welfare, for example, may be responsible for providing financial or material assistance to people with disabilities. In countries where the Ministry of Social Affairs (or Social Welfare) is responsible for rehabilitation, the district office may have a representative specifically for rehabilitation. At the district level, the Ministry of Education may also have resource teachers or a centre for special education. These teachers may be responsible for advising teachers in local schools how to integrate disabled children into regular classes.

Provincial (second-referral) level

For the purposes of this guide, only one level of health services between central and district levels is described. The term *provincial* is used to refer to the second-referral hospital and to the area covered by the health services under the administration of this hospital. Countries may use different terms, such as *regional* or *state,* to refer to this level. Countries may also have more than one level of service and administration between the first-referral and national levels.

At the provincial level, there should be a provincial committee responsible for CBR. The committee should be similar to the district and community committees in composition. If development committees have responsibility for CBR at other levels, then the provincial development committee should also have this responsibility.

The provincial health, educational, and vocational services are each distributed as evenly as possible. Staff based in provincial centres provide training and technical supervision for rehabilitation workers at the district level.

Within the medical services, routine procedures for rehabilitation are carried out by physicians, therapists, and prosthetists/orthotists. At the

provincial level, direct services are provided to clients referred from the district level. An important role for some of the rehabilitation staff is the training and supervision of rehabilitation workers at the district and community levels.

A few special schools and vocational training centres for the disabled may also be located in provincial capitals. These are likely to be managed by NGOs, but located according to a national plan for distribution of the services. Disabled people who wish to benefit from the education or training offered and who do not live in the larger cities must reside at the school or centre.

Central (third-referral) level

In this guide the term *central* is used to refer to the third-level referral services, such as speciality hospitals in major urban areas, which serve as national referral centres.

As noted above, a national coordinating committee for CBR should be established at the central level. The composition of the national committee should be similar to that of committees at other levels. In countries with centralized administrations, the national committee will be composed of the representatives who make policy and programme decisions related to their sectors. In countries with decentralized administrations, the national committee will act as an advisory group to the committees at provincial and district levels, and also promote national policies in support of rehabilitation.

In both types of administrations, the national committee should provide a forum for information exchange and identification of priorities at various levels. It also works to coordinate multisectoral activities, to identify gaps and redundancy in services, and to maintain communication between consumers and service providers to ensure that the services are actually responding to needs.

The MOH may have a medical rehabilitation centre or service located in a large central hospital. There may also be a university or private hospital that offers rehabilitation services. Within these services there will be physicians with specialties related to rehabilitation, such as orthopaedics, neurology, and psychiatry; physical, occupational, and speech therapists; and prosthetists/orthotists.

Within a national CBR programme, the MOH has a management team responsible for the distribution of rehabilitation services at all levels. In addition, staff at the central level provide specialized services to disabled people referred from other levels. The services within the central facilities should be coordinated. If services for people with a particular type of disability exist in several centres, it is preferable to review the location of these services in order to avoid redundancy. For example, services for

1.4. Classification according to AAMR

Given in this text is the classification of the people with Mental Retardation according to the AAMR with the corresponding curricular emphasis. Domains like Personal Social Skills and Career Education have been broken down into their sub-components for making the training process more learner friendly.

a) Mild MR – IQ range – 55 to 70. It is difficult to find out mild MR children among their peers. In the majority of such cases, we are unable to specify the exact cause of retardation. Programmes for these children focus on academic skills and vocational training. The educational experiences of these learners have been divided into 4 classes :-

- Pre – school classes (3-6 yrs)
- Primary 6 – 10 yrs – reading, writing, with, social training (sharing, peer helping etc.).
- Intermediate classes – 9 – 13 yrs – Along with academic skills this group also needs pre-vocational training and training in independent living skills to live independently in society.
- Secondary school level – above 13 yrs. All vocational and social skills, interacting with people at work place and other settings.

b) Moderate MR – IQ range 35-40 to 50-55. The education of these children generally focuses on the development of self help as well as

adequate communication and social skills to allow for semi-independent living. Education of these individuals is divided into 6 areas.

- Self help skills (ADL)
- Communication skills (get message across)
- Personal social skills (getting along with others)
    - Perceptual motor skills (visual, auditory and tactile perception skills).
- Functional academic skills (reading, writing, arithmetic)
- Vocational skills (help in work area).

c) Severe MR IQ range 20 – 25 to 35 –40 educational efforts usually focus on basic communication and self help skills.

d) Profound MR – IQ range – below 25

The emphasis for the above 2 is on daily living skills in the areas of physical development self-care, language, training (including training in non-speech systems) and social behaviors. Behaviours such as rocking, self – abusive behavior, head banging etc. are to be eliminated with help of behaviour modification techniques.

A sample of the curricular content for these children is presented here for clarification.

1.5. FACTS AND FICTION: THE NEED FOR MONITORING AND EVALUATION IN CBR

CBR has been rapidly evolving since the 'seventies', certainly in terms of theoretical development. When it was formally launched in the 1970s it was largely a practical programme disseminating useful rehabilitation knowledge and skills to mainly rural disabled people. Nowadays it has become an inclusive development strategy in order to alleviate poverty (see article Khasnabis20 in this issue). While many claims are being made about the quality, the appropriateness, the effectiveness and the efficiency of CBR, little scientific evidence exists as to what extent CBR is offering individual beneficiaries a better prognosis for recovery and restoration of function in order to improve their quality of life; better opportunities for participation in community life and better acceptance within the community (see also the article in this issue by Velema et al.21). Furthermore, there is hardly any scientific evidence that CBR programmes are efficient, sustainable and appropriate. However, there is at least some evidence for a number of claims that are frequently being made about CBR. Such evidence comes mainly from multidisciplinary models of community based care or community based rehabilitation in Western societies. Powell et al.12 describe a randomised controlled treatment trial of traumatic brain injured clients in the United Kingdom, and come to the conclusion that community based rehabilitation, even years after injury, yields benefits which outlive the active treatment period. Trends in North America over the past years have been to shorten inpatient rehabilitation, while enhancing the provision of community based interventions18. Similarly,

reports from the UK state that significant benefits are reported of post-discharge support to clients with mild or moderate traumatic brain injury.17 However, rehabilitation budgets in low- and middle income countries are so low that it is pointless to apply evaluation research as executed in wealthy Western societies. Wirz & Thomas19 have, amongst others, argued that the lack of accepted evaluation instruments hinder a meta-analysis of CBR programmes and therefore leave the claims of CBR unproven and disputable. In line with earlier work done on developing indicators for the monitoring and evaluation of CBR2,3,4,5,10. Wirz & Thomas19 propose the development of a set of 'robust and easy to use' indicators for the use of evaluation of CBR programmes. Until now, such indicators have not been developed and unless front-line CBR workers ask for it, they are unlikely to make any difference for CBR development and management. It means that development of such indicators should be a joint effort of front-line CBR workers, managers and academics. The necessary information that is needed to develop and manage CBR can be learned from key informants, from walking around the community, from ethnographic descriptions, and can be tested during baseline surveys. On top of the different contexts in which CBR evolves, it is the different orientations and developmental stages of CBR programmes that make it not feasible to compile one list of indicators to be used in every project. Consequently it was decided to restrict ourselves in this article to the description of a working process only. Besides, it is evident that most indicators provide only indications of what is happening. As such, whatever set of indicators are developed it means that such sets will have their limitations and will never be able in themselves to give a comprehensive view of reality. Therefore, more qualitative research is

needed to answer some fundamental questions about issues such as quality of life, well-being and self-actualisation.

1.6. Summary

Monitoring and evaluation within the context of CBR largely should try to focus on the measurement of development. The proposed framework reflects in fact four important aspects of development. These four components include: . Development of individual people in terms of functional improvement, well-being as well as dignity and individual rights; e.g. what was their condition prior to rehabilitation and what is their condition a year after discharge from rehabilitation . Development in terms of power (balances), whereby attention is given to involvement and participation of beneficiaries in decision making processes concerning their own rehabilitation process and programme; e.g. how did rehabilitation professionals communicate rehabilitation goals and activities with beneficiaries during the baseline and how do they negotiate rehabilitation plans three years after new approaches were introduced . Development of public society in terms of change that occurs in society regarding attitudes and practices towards disabled people, but also social change in terms of for instance emerging progressive legislation; e.g, what were existing practices regarding disabled people during the baseline and how have they changed over time . Development of partnerships such as referral systems, collaboration, networking and information sharing; e.g. what networks did exist during the baseline and how did these networks evolve during the project period.

- **Check Your Progress**

- **Assignment/Activity**

- **Points For Discussion And Clarification**

  After going through this Unit you might like to have further discussion on some points and clarification on others

  - **Points for discussion**

  - **Points to Clarification**

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UNIT 3: ORGANIZING FIELD TRIPS

STRUCTURE

- Introduction
- Objectives
- People Taking Care of Themselves
- Sustainability
- Education and training
- The debate over modeling disability
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. Introduction

India has more than one billon population distributed over 27 States & 7 Union Territories that are further divided into 557 administrative units called districts. About 78% population lives in rural areas. There are about 5% of persons with disabilities (estimated disabled population 6 crores). These are relatively conservative estimates. Some sources estimated 10-11% of the total population with disabilities, implying 100-110 millions. About 15% of people who live in urban areas have access to some kind of rehabilitation service whereas in rural areas it is only 1%. On average 5-10% person with disabilities has access to basic rehabilitation services.

Earlier understanding was Impairment leads to Disability but the most significant aspect of the change in present days, is the recognition, that role of people with disabilities can be limited in their participation in family, community and societal roles not merely because of physical or mental impairments, but because of societal attitudes and environmental barriers.

1.2. Objectives

- To Identify Education And Training
- To Discus Regarding People Taking Care Of Themselves

1.3. People Taking Care of Themselves

- All the Activities that disabled people, their family members and community members do in their community for disabled persons such as general care, adaptation of family members to disabled, education, health etc using whatever they know, whatever they have, in whatever circumstances
- 'A Concept and an Ideology'
- CBR promotes decentralized approach to service delivery
- It is based on the assumption that community members are willing and able to mobilize local resources and provide appropriate services to disabled people. This concept was tried in many CBR programmes in developing world by using governmental machinery but has remained as an ideology and proved unrealistic in most cases.

1.4. Sustainability

Experience suggests, that externally motivated development projects frequently fail to sustain themselves, once the initial level of project support or inputs diminish, or, are withdrawn. Participation is seen as being able to counter this . In CBR, sustainability is seen through the ability of the community and family to maintain the delivery systems and to maintain the status of community awareness and involvement in disability issues, with little, or no external support. Currently, the CBR programme is over thirteen years old in Zimbabwe. Its continued existence and activity is still very dependent on external inputs, albeit, with a different focus to the original role played.

1.5. Education and training

The need-based training of community based workers such as village community workers (VCW), community health workers, family members, the person with disability, community members and community leaders was carried out. The areas of concern most often were education on the types and causes of disability, and training in the processes and interventions involved in rehabilitation. A key component in the training methodology was to inspire positive attitudes toward PWDs.

1.6. 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.

1.7. Summary

Sustainability and community participation are linked strongly by the literature. The arguments that link sustainability with participation are largely economic i.e. "the maintenance of an acceptable flow of benefits from the project's investments after its completion". Some include project ownership, political support, and/ or the maintenance of delivery systems. In CBR, all these things are crucial to meeting the multifaceted needs of the person with disability. The flow of benefits can be both material, but other qualitative benefits are of significant importance for the sustainability of the programme. One notable benefit that has been observed, is the sustenance of good and positive community attitudes in promoting community participation and sustaining CBR. In conclusion, there are two points made by the authors. Firstly, that although some authors believe that it is difficult to tell whether genuine community participation has been initiated , it has been found that the communities' participation in CBR is clear, as far as the family and the community workers are concerned. The difficulty arises from the many grey areas in translating this participation to the entire health system and the total CBR programme. Secondly, do community leaders and the systems of community development including health, really embrace participation into the mainstream development? The understanding of the types and process of community

participation will be enhanced by an in depth analysis of specific systems within the CBR process.

Finally, the authors propose that planners and implementers of CBR need to develop a comprehensive model of enhancing community participation around three sets of fundamentals described in this paper. These are:

- The obstacles to participation,
- The emerging issues against participation,
- The arguments for participation.

1.1. Check Your Progress

The question asked in CBR is:

Q.1 Are community programmes sustainable, if left entirely alone?

Q.2 is the input of external catalysts necessary, provided their role does not remain static, but changes to suit the stage of development of the community?

1.2. Assignment/Activity

1.3. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.3.1. Points for discussion

1.3.2. Points to Clarification

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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UNIT 4: TEACHING SKILLS: DRAMATIZATION, NARRATION, EXPLANATION, STORY-TELLING, AND ROLE PLAY

STRUCTURE

- **Introduction**
- **Objectives**
- **United Nations Commission on Human Rights**
- **World Programme Of Action Concerning Disabled Persons**
- **The debate over modeling disability**
- **1986: National Year Of Disabled Persons**
- **Standard Rules On The Equalisation Of Opportunities For Persons With Disabilities**
  - Aims Of The Standard Rules
  - Objectives Of The Standard Rules
- **Summary**
- **Check Your Progress**
- **Assignment/Activity**
- **Points For Discussion And Clarification**

- **References / Further Readings**

1.1. 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.

1.2. Objectives

- To identify human rights issue regarding
- To discuss about People with disability in the driver's seat not outsiders.
- To identify National Year of Disabled Persons.
- To understand the Standard Rules On The Equalizations Of Opportunities For Persons With Disabilities

1.3. UNITED NATIONS COMMISSION ON HUMAN RIGHTS

UNITED NATIONS COMMISSION ON HUMAN RIGHTS

From an international policy perspective, resolution 1998/31 of 21 April 1998 of the United Nations Commission on Human Rights, "Human rights of persons with disabilities" sets forth a number of recommendations related to disability as a human rights issue, paragraph 11 in particular:

> **"Encourages all the human rights treaty monitoring bodies to respond positively to its invitation to monitor the compliance of States with their commitments under the relevant human rights instruments in order to ensure full enjoyment of those rights by persons with disabilities, and urges Governments to cover fully the question of the human rights of persons with disabilities in complying with reporting obligations under the relevant United Nations human rights instruments."**

People with disability in the driver's seat not outsiders

It was an important day and I was looking forward when after seven long years of CBR work the community was talking the full responsibility of sustaining CBR in Varthur, a village in Karnataka. The village community arranged a small function. They were, of course, very thankful to me and my team for all our efforts, especially in bringing smiles to so many faces who otherwise did not enjoy a full life. There was also a special thanks because I had an all- women CBR team. At the end of the programme I insisted, "please tell me where we went wrong. What are the lessons we need to keep in mind in future programme?" They were in no mood to talk about our shortcomings. But after insisting, I got this piece of advice from one of the self-help group members: ***"If we had known this is what is expected of the community we could have achieved what you have in half the time you have taken and a quarter of the money you spent!!"*** I learnt a great lesson, the best way to do CBR is:

The idea of CBR should be

a. Conceived by the community,

b. Delivered by the community and

c. Nurtured by the community.

Source: My CBR experiences by

Indumathi Rao

CBR and Primary health care

In the mid-' 70s the World Health Organization (WHO) recommended the provision of essential services and training for disabled people through Community Based Rehabilitation (CBR) as part of the ' Health For All' campaign. The principles and reasoning behind the original concept of CBR are very similar to those of PHC. There has been a lot of discussion about the appropriateness, or otherwise, of locating CBR programmes within the context of PHC and about the relationship that should exist between the two. Opinion is also divided about whether CBR is a health issue at all, and in some countries it is regarded as a social welfare or civil rights issue.

Only rarely has CBR developed from within PHC. More commonly it co-exists with PHC under separate management and tends to be seen as a low priority. It is a struggle for CBR staff to gain recognition from the ministries of health when CBR is perceived as the poor relation. Not surprisingly, many CBR implementers choose to develop services separately from PHC in order to avoid a 'watering down' of services for disabled people.

1.4. WORLD PROGRAMME OF ACTION CONCERNING DISABLED PERSONS

1981 was declared the International Year of Disabled Persons by the United Nations. This year was not recognised by the South African government. It was, nevertheless, promoted by the NGO sector whose adopted theme was 'Full Participation and Equality'. It was this that gave rise to the development of a disability rights movement in this country. The most important outcome of the International Year of Disabled Persons was the adoption of the World Programme of Action Concerning Disabled Persons during the UN Decade of Disabled Persons (1983-1993). The purpose of the World Programme of Action was to promote effective measures for the prevention of disability, rehabilitation and the realisation of equal opportunities for persons with disabilities.

1.5. 1986: NATIONAL YEAR OF DISABLED PERSONS

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.

1.6. STANDARD RULES ON THE EQUALISATION OF OPPORTUNITIES FOR PERSONS WITH DISABILITIES

1.6.1. AIMS OF THE STANDARD RULES

The aims of the standard rules are as follows:

1. They imply a strong moral and political commitment by the State to take action for the equalisation of opportunities for persons with disabilities.

2. They offer an instrument for policy-making and action. The purpose is to ensure that all persons with disabilities may exercise the same rights and obligations as other citizens.

3. They outline crucial aspects of social policies in the disability field, and provide models for the political decision-making process required for the attainment of equal opportunities.

4. They propose national mechanisms for close collaboration between the State, organs of the UN, NGOs and DPOs.

1.6.2. OBJECTIVES OF THE STANDARD RULES

The objectives of the Standard Rules are to:

1. Stress that all action in the field of disability presupposes adequate knowledge and experience of the conditions and special needs of persons with disabilities;
2. Emphasise that the process through which every aspect of the organisation of society is made accessible to all is a basic objective of socio-economic development;
3. Outline crucial aspects of social policies in the field of disability, including, as appropriate, the active encouragement of technical and economic co-operation;
4. Provide models for the political decision-making process required for the attainment of equal opportunities, bearing in mind widely differing technical and economic levels, and the fact that the process must reflect keen understanding of the cultural context within which it takes place and the crucial role of persons with disabilities in it, and
5. Propose national mechanisms for close collaboration among states, the organs of the UN system, other inter-governmental bodies and organisations of persons with disabilities.

1.7. Summary

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.

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.

- **Check Your Progress**

True/False:

1. 1986 is a national year of disabled persons [ ]

1. The idea of CBR should be a. Conceived by the community, b. Delivered by the community and c. Nurtured by the community.

   [ ]

2. Do not enable the person to safeguard himself from machines, tools and other equipment in a work situation [ ]

3. To enable the person to be Aware of the potential danger while he/she is on the street and avoid it

   [ ]

4. In the mid-'70s the World Health Organization (WHO) recommended the provision of essential services and training for disabled people through Community Based Rehabilitation (CBR) as part of the 'Health For All' campaign.

[ ]

5. NGOs working in the area of disability, representatives of family or parent associations and experts and professionals [ ]

1.1. Assignment/Activity

1.2. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.2.1. Points for discussion

1.2.2. Points to Clarification

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UNIT 5: EVALUATION OF CONCEPTS AND SKILLS IN SOCIAL SCIENCE WITH PARTICULAR REFERENCE TO GEOGRAPHY

STRUCTURE

- Introduction
- Objectives
- Social Relationship
- Mean by "Social Relationships"
- Social Relationships Benefit Health
- How Do Relationships Benefit Health
    - Behavioral Explanations
    - Psychosocial Explanations
    - Physiological Explanations
- The Dark Side Of Social Relationships
- Cumulative Advantage And Disadvantage
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. INTRODUCTION

The "Independent Living" movement was started in USA about 20 years ago, by groups of persons with moving disabilities. It is a broad concept to free persons with disabilities from the physical, psychological and economic dependency on others. Research has been carried out by several authors and resulted in the confirmation of a positive outcome regarding "living arrangements" (abilities of daily life to dress, feed and bathe by oneself, use a public telephone and deposit money in a bank account).

1.2. OBJECTIVES

After studying this unit you should be able to

- To meaning of "social relationships"
- How Do Relationships Benefit Health
- To brief about Behavioral Explanations, Psychosocial Explanations and Physiological Explanations
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.3. SOCIAL RELATIONSHIP

Social relationships—both quantity and quality—affect mental health, health behavior, physical health, and mortality risk. Sociologists have played a central role in establishing the link between social relationships and health outcomes, identifying explanations for this link, and discovering social variation (e.g., by gender and race) at the population level. Studies show that social relationships have short- and long-term effects on health, for better and for worse, and that these effects emerge in childhood and cascade throughout life to foster cumulative advantage or disadvantage in health. This Unit describes key research themes in the study of social relationships and health, and it highlights policy implications suggested by this research.

1.4. MEAN BY "SOCIAL RELATIONSHIPS"

Social scientists have studied several distinct features of social connection offered by relationships (Smith and Christakis 2008). *Social isolation* refers to the relative absence of social relationships. *Social integration* refers to overall level of involvement with informal social relationships. such as having a spouse, and with formal social relationships, such as those with religious institutions and volunteer organizations. *Quality of relationships*includes positive aspects of relationships, such as emotional support provided by significant others, and strained aspects of relationships, such as conflict and stress. *Social networks* refer to the web of social relationships surrounding an individual, in particular, structural features, such as the type and strength of each social relationship. Each of

these aspects of social relationships affects health. We discuss the broad effects of these features of relationships for health, and, for ease of discussion, we use the terms "social relationships" and "social ties" interchangeably throughout this unit.

1.5. SOCIAL RELATIONSHIPS BENEFIT HEALTH

Many types of scientific evidence show that involvement in social relationships benefits health. The most striking evidence comes from prospective studies of mortality across industrialized nations. These studies consistently show that individuals with the lowest level of involvement in social relationships are more likely to die than those with greater involvement (House, Landis, and Umberson 1988). For example, Berkman and Syme (1979) showed that the risk of death among men and women with the fewest social ties was more than twice as high as the risk for adults with the most social ties. Moreover, this finding held even when socioeconomic status, health behaviors, and other variables that might influence mortality, were taken into account. Social ties also reduce mortality risk among adults with documented medical conditions. For instance, Brummett and colleagues (2001) found that, among adults with coronary artery disease, the socially isolated had a risk of subsequent cardiac death 2.4 times greater than their more socially connected peers.

In addition to mortality, involvement in social relationships has been associated with specific health conditions as well as biological markers indicating risk of preclinical conditions. Several recent review articles provide consistent and compelling evidence linking a low quantity or quality of social ties with a host of conditions, including development and progression of cardiovascular disease, recurrent myocardial infarction,

atherosclerosis, autonomic dysregulation, high blood pressure, cancer and delayed cancer recovery, and slower wound healing (Ertel, Glymour, and Berkman 2009; Everson-Rose and Lewis 2005; Robles and Kiecolt-Glaser 2003; Uchino 2006). Poor quality and low quantity of social ties have also been associated with inflammatory biomarkers and impaired immune function, factors associated with adverse health outcomes and mortality (Kiecolt-Glaser et al. 2002; Robles and Kiecolt-Glaser 2003). Marriage is perhaps the most studied social tie. Recent work shows that marital history over the life course shapes a range of health outcomes, including cardiovascular disease, chronic conditions, mobility limitations, self-rated health, and depressive symptoms (Hughes and Waite 2009; Zhang and Hayward 2006).

1.6. HOW DO RELATIONSHIPS BENEFIT HEALTH

Once the clear link between social relationships and health was established, scientists devoted themselves to explaining how this occurs. Generally speaking, there are three broad ways that social ties work to influence health: behavioral, psychosocial, and physiological.

1.6.1. Behavioral Explanations

Health behaviors encompass a wide range of personal behaviors that influence health, morbidity, and mortality. In fact, health behavior explains about 40 percent of premature mortality as well as substantial morbidity and disability in the United States (McGinnis, Williams-Russo, and

Knickman 2002). Some of these health behaviors—such as exercise, consuming nutritionally balanced diets, and adherence to medical regimens—tend to promote health and prevent illness, while other behaviors—such as smoking, excessive weight gain, drug abuse, and heavy alcohol consumption—tend to undermine health. Many studies provide evidence that social ties influence health behavior. For example, Berkman and Breslow's (1983) prospective study in Alameda County showed that greater overall involvement with formal (e.g., religious organizations) and informal (e.g., friends and relatives) social ties was associated with more positive health behaviors over a ten-year period. Being married (Waite 1995), having children (Denney 2010), and ties to religious organizations (Musick, House, and Williams 2004) have all been linked to positive health behaviors (although, notably, as we will discuss below, marriage and parenthood have also been associated with behaviors that are not beneficial to health—including physical inactivity and weight gain).

Social ties influence health behavior, in part, because they influence, or "control," our health habits (Umberson et al. 2010). For example, a spouse may monitor, inhibit, regulate, or facilitate health behaviors in ways that promote a partner's health (Waite 1995). Religious ties also appear to influence health behavior, in part, through social control (Ellison and Levin 1998). Social ties can instill a sense of responsibility and concern for others that then lead individuals to engage in behaviors that protect the health of others, as well as their own health. Social ties provide information and create norms that further influence health habits. Thus, in a variety of ways, social ties may influence health habits that in turn affect physical health and mortality.

1.6.2. Psychosocial Explanations

Research across disciplines and populations suggests possible psychosocial mechanisms to explain how social ties promote health. Mechanisms include (but are not limited to): social support, personal control, symbolic meanings and norms, and mental health. While most studies focus on only one or two of these mechanisms, it is clear that connections between mechanisms are complex, and that these interconnections may explain the linkage between social ties and health better than any single mechanism (Thoits 1995; Umberson et al. 2010).

Social support refers to the emotionally sustaining qualities of relationships (e.g., a sense that one is loved, cared for, and listened to). Hundreds of studies establish that social support benefits mental and physical health (Cohen 2004; Uchino 2004). Social support may have indirect effects on health through enhanced mental health, by reducing the impact of stress, or by fostering a sense of meaning and purpose in life (Cohen 2004;Thoits 1995). Supportive social ties may trigger physiological sequelae (e.g., reduced blood pressure, heart rate, and stress hormones) that are beneficial to health and minimize unpleasant arousal that instigates risky behavior (Uchino 2006). *Personal control* refers to individuals' beliefs that they can control their life outcomes through their own actions. Social ties may enhance personal control (perhaps through social support), and, in turn, personal control is advantageous for health habits, mental health, and physical health (Mirowsky and Ross 2003; Thoits 2006).

Many studies suggest that the *symbolic meaning* of particular social ties and health habits explains why they are linked. For example, meanings attached to marriage and relationships with children may foster a greater sense of responsibility to stay healthy, thus promoting healthier lifestyles (Nock 1998; Waite 1995). Studies on adolescents often point to the meaning attached to peer groups (e.g., what it takes to be popular) when explaining the influence of peers on alcohol, tobacco, and drug use (Crosnoe, Muller, and Frank 2004). The meaning of specific health behaviors within social contexts may also vary. For example, Schnittker and McLeod (2005) argue that racial-ethnic identity may correspond with the meaning of certain health behaviors, such as consuming particular foods or avoiding alcohol, in ways that promote and sustain those behaviors. Moreover, the notion of "meaning" may help explain health behavior contagion across social networks: for example, the spread of obesity across social networks appears to be influenced by perceptions of social norms about the acceptability of obesity and related health behaviors (e.g., food consumption, inactivity) among network members who are socially close, rather than members who are simply geographically close (Christakis and Fowler 2007; Smith and Christakis 2008). In a more fundamental way, greater social connection may foster a sense of "coherence" or meaning and purpose in life, which, in turn, enhances mental health, physiological processes, and physical health (Antonovsky 1987).

Mental health is a pivotal mechanism that works in concert with each of the other mechanisms to shape physical health (Chapman, Perry, and Strine 2005). For instance, the emotional support provided by social ties enhances psychological well-being, which, in turn, may reduce the risk of

unhealthy behaviors and poor physical health (Kiecolt-Glaser et al. 2002; Thoits 1995; Uchino 2004). Moreover, mental health is an important health outcome in and of itself. The World Health Organization identifies mental health as an essential dimension of overall health status (World Health Organization 2007). However, the prevalence of mental disorders and their consequences for individuals and societies are often underappreciated by policy makers and private insurers. Data from the National Comorbidity Survey Replication indicate that 26.2 percent of noninstitutionalized U.S. adults suffer from a mental disorder in a given year (Kessler et al. 2005). As the leading cause of disability in both low- and high-income countries, mental disorders account for over 37 percent of the total years of healthy life lost due to disability (Mathers et al. 2006).

1.6.3. Physiological Explanations

Psychologists, sociologists, and epidemiologists have contributed a great deal to our understanding of how social processes influence physiological processes that help to explain the link between social ties and health. For example, supportive interactions with others benefit immune, endocrine, and cardiovascular functions and reduce allostatic load, which reflects wear and tear on the body due, in part, to chronically overworked physiological systems engaged in stress responses (McEwen 1998; Seeman et al. 2002;Uchino 2004). These processes unfold over the entire life course, with effects on health. Emotionally supportive childhood environments promote healthy development of regulatory systems, including immune, metabolic, and autonomic nervous systems, as well as the hypothalamic-pituitary-adrenal (HPA) axis, with long-term consequences for adult health

(Taylor, Repetti, and Seeman 1997). Social support in adulthood reduces physiological responses such as cardiovascular reactivity to both anticipated and existing stressors (Glynn, Christenfeld, and Gerin 1999). Indeed, continuously married adults experience a lower risk of cardiovascular disease compared with those who have experienced a marital loss, in part due to the psychosocial supports conferred by marriage (Zhang and Hayward 2006).

1.7. THE DARK SIDE OF SOCIAL RELATIONSHIPS

While social relationships are the central source of emotional support for most people, social relationships can be extremely stressful (Walen and Lachman 2000). For example, marriage is the most salient source of both support and stress for many individuals (Walen and Lachman 2000), and poor marital quality has been associated with compromised immune and endocrine function and depression (Kiecolt-Glaser and Newton 2001). Sociological research shows that marital strain erodes physical health, and that the negative effect of marital strain on health becomes greater with advancing age (Umberson et al. 2006).

Relationship stress undermines health through behavioral, psychosocial, and physiological pathways. For example, stress in relationships contributes to poor health habits in childhood, adolescence, and adulthood (Kassel et al. 2003). Stress contributes to psychological distress and physiological arousal (e.g., increased heart rate and blood pressure) that can damage health through cumulative

wear and tear on physiological systems, and by leading people of all ages to engage in unhealthy behaviors (e.g., food consumption, heavy drinking, smoking) in an effort to cope with stress and reduce unpleasant arousal (Kassel, Stroud, and Paronis 2003). The propensity to engage in particular risky health behaviors in response to stress appears to vary over the life course. For example, stress is associated with more alcohol consumption in young adulthood and greater weight gain in mid-life.

Relationship stress also undermines a sense of personal control and mental health, both of which are, in turn, associated with poorer physical health.

It may seem obvious that strained and conflicted social interactions undermine health, but social ties may have other types of unintended negative effects on health. For example, relationships with risk-taking peers contribute to increased alcohol consumption, and having an obese spouse or friend increases personal obesity risk.

This "social contagion" of negative health behaviors operates via multiple mechanisms. One key mechanism is social norms. Perceived social norms about drinking behavior influence alcohol consumption among young adults, and friendship norms about dieting influence unhealthy weight control. Unsupportive social ties may also present barriers to improving health behaviors and outcomes. For example,Nagasawa and colleagues (1990) found that negative social environments and their perceived barriers predicted poor compliance to medical regimens among diabetes patients.

Caring for one's social ties may also involve personal health costs. For example, providing care to a sick or impaired spouse imposes strains that undermine the health of the provider, even to the point of elevating mortality risk for the provider (Christakis and Allison 2006). Caring for a sick or impaired spouse is associated with increased physical and psychiatric morbidity, impaired immune function, poorer health behavior, and worse health for the provider (Schulz and Sherwood 2008). Moreover, the recipient of care may be negatively affected by interpersonal interactions with stressed caregivers (Bediako and Friend 2004). Middle-aged adults, particularly women, often experience exceptionally high caregiving demands as they contend with the challenge of simultaneously rearing children, caring for spouses, and looking after aging parents (Spain and Bianchi 1996). The combination of smaller families (to share in the care-giving of aging parents) and an aging population mean that the multigenerational demands of social ties may become more pronounced in the future.

1.8. CUMULATIVE ADVANTAGE AND DISADVANTAGE

All Americans are not at equal risk for risky health behaviors, morbidity, and premature mortality. Throughout life, we are exposed to social conditions that promote or undermine health, and over time these exposures accumulate to create growing advantage or disadvantage for health in socially patterned ways. Thus, social variation in relationships/health processes provides information that may be used to address social disparities in health.

The most salient social ties for health vary over the life course, with parents having the greatest influence on children's health, peers becoming particularly important in adolescence, intimate partners becoming most important in adulthood, and adult children taking an elevated role in later life (Umberson et al. 2010). The principal explanatory mechanisms may also vary over the life course. For example, stressful family interactions may have their greatest impact on children's health, while peer pressure and the social meaning of health habits (e.g., pressure to experiment with tobacco, alcohol, and drugs) may have their greatest impact in adolescent relationships, and social control of health habits may be most important in adult relationships.

Some effects of social ties are more immediate, while others slowly build over time. For example, at any given point in time, ongoing social ties affect mental health and health behavior—for better or for worse. These effects may or may not dissipate over time, but recent work on the effects of distressed, disrupted, and emotionally unsupportive childhood environments on adult health shows that these effects reverberate throughout the life course (Crosnoe and Elder 2004; Palloni 2006; Shaw et al. 2004). Certainly, chronic isolation or strain in social ties take an increasing toll over time on a host of health indicators including allostatic load (Seeman et al. 2002), blood pressure (Cacioppo et al. 2002), physical health (Umberson et al. 2006), and mortality risk (Berkman and Syme 1979).

1.9. Special Needs Education Of Children With Disabilities

To set targets for provision of education of children with disabilities is difficult. From certain studies it appears that in some schools in the industrialised world more than 10 per cent of children are experiencing problems, which need to be addressed by the school. At least 20 per cent of all children entering primary school in the developing countries will have difficulties passing their examinations. Of these, a large group is composed of children with psychological complications as a result of family problems.
Other groups are made up of children with delayed development, or of children belonging to underprivileged sections of the population and those with general learning or speech difficulties or social behaviour problems.

Estimating the needs for the education of this group is further complicated by the fact that existing institutions provide a combination of functional training and schooling. For some children, the principal content of the education they receive is, in fact, functional training. The estimated needs for those services are already included above.
We have opted for using the prevalence rate for moderately and severely disabled children aged 5
to 14 as the basis for calculating the target. In 2000, the prevalence is 28 million children in the developing countries. In 2035, their number will be 32 million. Some of these have some verybasic problems in school, related to severe reduction of vision or hearing, or to mental retardation.
In addition, there is a proportion of children with development delay or, with social and family problems and or on behaviour problems, etc.
In trying to set a target for these needs of education, We have assumed that, during the period when they are in the age group 5 to 14, the disabled children (in 2000 = 28 million) will receive schooling for a total average period of seven years. Using these estimates, the size of the target group, in 2000, will be 19.6 million (28 million multiplied by 7/10); in 2035, it will be 22.4 million (32 million multiplied by 7/10).
The target group of disabled children with needs for special education is currently forecast To increase by about 10 per cent between 2000 and 2035. This relatively modest increase is explained by the projected considerable decline in the natality rate over the same period.

On the other hand, the scope of special needs education may be expected to widen with economic development, as more children with special needs (such as those mentioned above) are included. As a result, the increase might very well exceed the estimate of 10 per cent.9

It should be mentioned that there are also many adult disabled people who are illiterate and wish to have education. Given the virtually total absence of field studies on the number of such people and the scarcity of resources available for them today, We have refrained from estimating the size of this group.

1.10. Summary

The "Independent Living" movement has made great advances. It has brought awareness about abilities that disabled people were often discouraged from using. It has focused on the lack of public support and the important role that environmental barriers play for those with moving difficulties. But looking beyond the physical and economic factors, this movement has served to strengthen unmet needs of self-esteem, recognition by others and self-fulfillment. There are now, in developing countries, small groups of organisations for independent living. We are likely to see more of them in the future.

1.11. Check Your Progress

Q.1 How Do Relationships Benefit Health?

Q.2 Explain three kinds of Explanations in brief?

1.12. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.12.1. Points for discussion

1.12.2. Points for clarification

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BLOCK 5: TEACHING OF CHILDREN WITH LOW VISION

UNIT 1: VISUAL STIMULATION: CONCEPT AND PROCEDURE

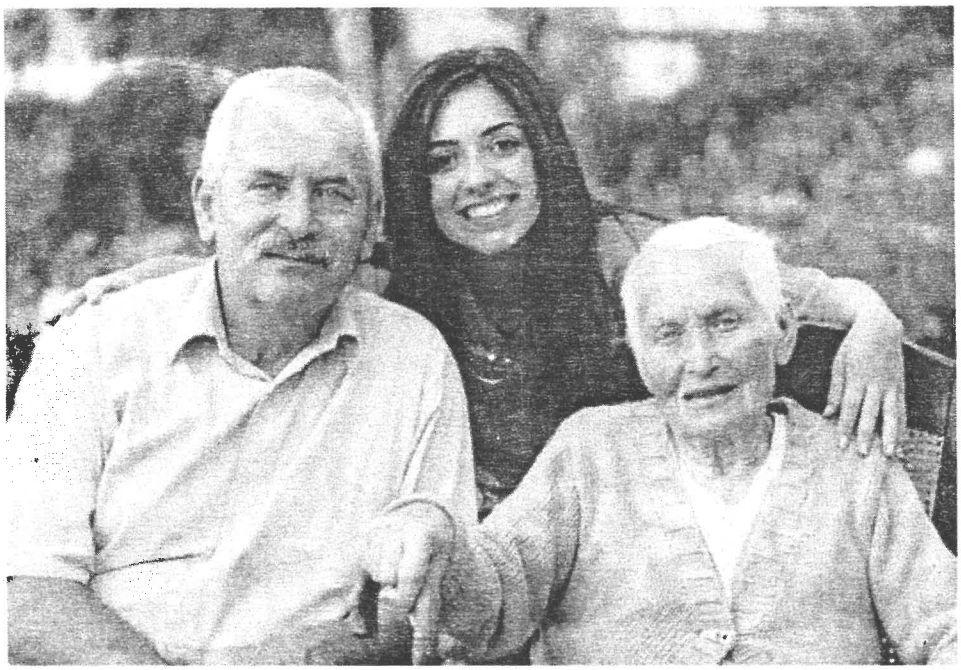
STRUCTURE

- **Introduction**
- **Objectives**
- **Understanding assistance and support**
- **When are assistance and support required?**
- **Needs and unmet needs**
  - Community support and independent living
  - Communication support
  - Respite services
- **Consequences for caregivers of unmet need for formal support services**
- **Provision of assistance and support**
- **Summary**
- **Check Your Progress**
- **Assignment/Activity**
- **Points For Discussion And Clarification**
- **References / Further Readings**

1.1. Introduction

For many people with disabilities, assistance and support are prerequisites for participating in society. The lack of necessary support services can make people with disabilities overly dependent on family members – and can prevent both the person with disability and the family members from becoming economically active and socially included. Throughout the world people with disabilities have significant unmet needs for support. Support services are not yet a core component of disability policies in many countries, and there are gaps in services everywhere. No one model of support services will work in all contexts and meet all needs. A diversity of providers and models is required. But the overarching principle promoted by the **United Nations Convention on the Rights of Persons with Disabilities (CRPD)** is that services should be provided in the community, not in segregated settings. Person-centred services are preferable, so that individuals are involved in decisions about the support they receive and have maximum control over their lives. Many persons with disabilities need assistance and support to achieve a good quality of life and to be able to participate in social and economic life on an equal basis with others. A sign language interpreter, for instance, enables a Deaf person to work in a mainstream professional environment. A personal assistant helps a wheelchair user travel to meetings or work. An advocate supports a person with intellectual impairment to handle money or make choices. People with multiple impairments or older persons may require support to remain in their homes. These individuals are thus empowered to live in the community and participate in work and other activities, rather than be marginalized or left fully dependent on family support or social protection . Most assistance and support comes from family members or social

networks. State supply of formal services is generally underdeveloped, notfor-profit organizations have limited coverage, and private markets rarely offer enough affordable support to meet the needs of people with disabilities. State funding of responsive formal support services is an important element of policies to enable the full participation of persons with disabilities in social and economic life. States also have an important role in setting standards, regulating, and providing services . Also by reducing the need for informal assistance, these services can enable family members to participate in paid or income-generating activity.



1.2. Objectives

- To understanding assistance and support.
- When are assistance and support required?
- To Identify Needs and unmet needs.
- To identify various Provision of assistance and support

3.3. UNDERSTANDING ASSISTANCE AND SUPPORT

This unit uses the phrase "assistance and support " to cover a range of interventions labelled elsewhere as "informal care", "support services", or "personal assistance", but as part of a broad category which also includes advocacy, communication support, and other nontherapeutic interventions.

Some of the more common types of assistance and support services include:

■ Community support and independent living – assistance with self-care, household care, mobility, leisure, and community participation;

■ Residential support services – independent housing and congregate living in group homes and institutional settings;

- Respite services – short-term breaks for caregivers and people with disabilities;
- Support in education or employment – such as a classroom assistant for a child with a disability, or personal support in the workplace;
- Communication support – such as signlanguage interpreters;
- Community access – including day care centres;
- Information and advice services – including professional, peer support, advocacy, and supported decision-making;
- Assistance animals – such as dogs trained to guide people with a visual impairment.

3.4. When are assistance and support required?

The need for assistance and support can fluctuate, depending on environmental factors, the stage of life, the underlying health conditions, and the level of individual functioning. Key factors determining the need for support services are the availability of appropriate assistive devices, the presence and willingness of family members to provide assistance, and the degree to which the environment facilitates participation of people with disabilities, including older persons. When individuals with disabilities can independently get to a bathroom, for instance, they may not require another person to help them. When they have a suitable wheelchair, they

may be able to negotiate their local environment without assistance. And if mainstream services are accessible, there will be less requirement for specialized support. The need for assistance and support changes through stages of the lifecycle. **Formal support may include:**

- in childhood – respite care, special needs assistance in education;
- in adulthood – advocacy services, residential support, or personal assistance in the workplace;
- in old age – day centres, home-help services, assisted living arrangements, nursing homes, and palliative care. Often, problems in service provision occur between these stages – such as between childhood and adulthood.

3.5. Needs and unmet needs

Data are sparse on the needs for national formal support services. Most of the evidence about support services and assistance in this chapter comes from developed countries. This does not imply that formal assistance and support are not equally relevant in low-income settings; it suggests instead that they are rarely provided formally or that data about them are not collected. Population surveys in Australia, Canada, New Zealand, and the United States of America have shown that between 60% and 80% of people with disabilities generally have their needs met for assistance with everyday activities. Most of the support in these countries is from informal sources, such as families and friends.

For example, a survey of 1505 non-elderly adults in the United States with disability found that:

■ 70% relied on family and friends for assistance with daily activities, and only 8% used home-health aides and personal assistants; 42% reported having failed to move in or out of a bed or a chair because no one was available to help;

■ 16% of home-care users reported problems paying for home care in the previous 12 months;

■ 45% of participants in the study worried that caring for them would become too much of a burden on the family;

■ 23% feared having to go into a nursing home or other type of facility . For most countries, including developed ones, and for many disability groups, there are large gaps in meeting needs for support:

3.5.1. Community support and independent living. In China there is a shortage of community support services for people with disabilities who need personal care and lack family support. In New Zealand a household disability survey of 14 500 children with physical disabilities reported that 10% of families reported unmet need for household care, and 7% for funding for respite care.

3.5.2. Communication support. Deaf people frequently have difficulties in recruiting and training interpreters, particularly in rural or isolated communities. A survey on the human rights situation of Deaf people found that 62 of the 93 countries that responded have sign language interpreting services, 43 have some kind of sign language interpreters training, and 30 countries had 20 or fewer

qualified sign language interpreters, including Iraq, Madagascar, Mexico, Sudan, Thailand, and the United Republic of Tanzania.

3.5.3. Respite services. In the United Kingdom a large study of family caregivers of adults with intellectual disability found that 33% had a high but unmet need for respite services and 30% a high but unmet need for home-based services (28). A 2001 United States cross-sectional survey of children with special health care needs found that of the 38 831 respondents, 3178 (8.8%) reported a need for respite care in the prior 12 months, especially among younger children, mothers with low education, lowincome households, and minority race or ethnicity .

3.6. Consequences for caregivers of unmet need for formal support services

Informal care can be an efficient and cost-effective way of supporting people with disabilities. But exclusive reliance on informal support can have adverse consequences for caregivers.

■ **Stress.** The demands of caring often result in stress for families, particularly for women, who tend to be responsible for domestic labour, with care for family members with disability representing a significant share. In older age, men may also care for spouses. Factors contributing to stress – and possibly affecting the caregiver's personal health – include increased time spent on care for the person with a disability, increased housework, disruptions to sleep, and the emotional impact of care. Caregivers also report isolation and loneliness Fewer opportunities for employment. Where employment would otherwise be an option, caring for

a family member with a disability is likely to result in lost economic opportunities, as caregivers either reduce their paid work or refrain from seeking it. An analysis of the General Household Survey in the United Kingdom found that informal care reduced the probability of working by 13% for men and 27% for women. In the United States members of families of children with developmental disabilities work fewer hours than members in other families, are more likely to have left their employment, have more severe financial problems, and are less likely to take on a new job.

- **Excessive demands on children**. When adults acquire a disability, children are often asked to help. Male children may be expected to enter the workforce to compensate for a parent who is no longer working. Female children may be expected to contribute to domestic tasks or to help support the parent with a disability. These increased demands on children may impair their education, and their health. In Bosnia and Herzegovina children aged 11–15 years whose parents were experiencing health problems or a disability were 14% more likely than other children in that age group to drop out of school . There are many examples, mainly from Africa, of children having to drop out of school because of a parent developing AIDS. In Uganda, among children aged 15–19 years whose parents had died of AIDS, only 29% continued their schooling undisrupted, 25% lost school time, and 45% dropped out of school.

- **Greater difficulties as family members age.** As parents or other family members contributing to care grow older and become frail or die, it can be difficult for the remaining family to continue providing care. The increased life expectancy of children with intellectual disabilities, cerebral palsy, or multiple disabilities suggests that parents may eventually be unable to

continue providing care for their disabled family member. This is often a hidden unmet need, as families may not have sought formal support when the disabled individual was younger, and may find it hard to seek help later in life. The needs of such families have not been adequately addressed in most countries, including such high-income countries as Australia and the United States.

3.7. Provision of assistance and support

Assistance and support are complex, because they are provided by different suppliers, funded in different ways, and delivered in different locations. In supply, the main divide is between informal care, provided by families and friends, and formal services, provided by government, non-profit organizations, and the for-profit sector. The cost of formal support can be met through state funding, raised through general taxation, through social insurance contributions by those covered by the scheme, through charitable or voluntary sector funding, through out-of-pocket payment to private service providers, or through a mixture of these methods. The services can be provided within a family setting or single occupancy, or congregate living in group homes or institutional settings. While formal organized support services and programmes for people with disabilities are common in high-income countries, they are a fairly new concept in many low-income and middle-income countries. But even in countries with well-developed systems of support, informal care and support from families and friends predominates, being indispensable and cost-efficient. In all countries family support is essential. Across high-income countries families meet around 80% of the support needs of older people. In the United States more than 75% of people with disabilities receive assistance

from unpaid informal caregivers. Among adults with developmental disabilities more than 75% live at home with family caregivers, and more than 25% of these caregivers are 60 years or older, with another 35% aged between 41 and 59 years. Fewer than 11% of people with developmental disabilities were living in supervised residential settings in 2006.

3.8. Summary

Many persons with disabilities need assistance and support to achieve a good quality of life and to participate in social and economic activities on an equal basis with others. Across the world most of the assistance and support services are provided informally by family members or social networks. While informal care is invaluable, it is sometimes unavailable, inadequate or insufficient. Formal provision of assistance and support services, by contrast, is insufficient, especially in low-income settings: state supply of services is generally underdeveloped, not-forprofit organizations have limited coverage, and private markets rarely offer enough support to meet the needs of people with disabilities. The result is significant unmet need for assistance and support services.

3.9. Check Your Progress

Q.1 what are various Excessive demands on children?

Q.2 what is stress?

3.10. Assignment/Activity

3.11. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

3.11.1. Points for discussion

3.11.2. Points for clarification

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UNIT 2: SELECTION OF AN APPROPRIATE MEDIUM OF READING AND WRITING

STRUCTURE

- Introduction
- Objectives
- Explanation of the term "Employment"
- Explanation of the term "Economic Rehabilitation"
- Income Generation
- Vocational Rehabilitation
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1 Introduction

There is a general consensus the world over that employment is the most essential but the toughest aspect of rehabilitation. Employment of the visually impaired is a more potent problem in India due to: ı higher incidence of visual impairment; ı near non-existence of social security benefits; ı higher prevalence of visual impairment in the working age group; ı limited education and training facilities; ı majority of them are illiterate, confined to their homes, ı high rates of unemployment and rampant underemployment. Most visually impaired persons and their families come from the poorest rungs of society. In fact, studies have revealed a very high correlation between poverty and disability. The cost of maintaining such persons in the family adds to the financial burden. Thus their economic rehabilitation does not remain an individual need; many a times it becomes a question of survival of the family.

1.2 Objectives

- To study about general consensus the world over that employment
- To Explanation of the term "Employment"
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.3 Explanation of the term "Employment"

It is essential to expatiate the term 'employment' which has different connotations for different people. Employment per se does not mean formal, secured or regular employment only. It also means: ı any trade, economic activity or profession; ı in the organized as well as unorganized sector; ı any trade that would provide with some monetary remuneration. The term employment used by rehabilitation planners generally ignores a vital aspect that the community itself offers a wide spectrum of opportunities where visually impaired persons may be absorbed in gainful occupations. Rehabilitating a 50 year old lady in a remote village in India, for example, means helping her to take care of her household activities as she used to perform prior to her visual impairment or more importantly to perform the same tasks that the sighted women perform. Majority of women in rural areas are expected to perform the following activities: ı Cook meals for the family ı Perform household activities ı Take care of children and the elderly ı Fetch water ı Undertake rural occupations or the family trade Thus they enable the other family members to undertake income generating activities and in the process they contribute indirectly towards family earning. This is what is meant by gainful occupation and thus economic rehabilitation. Work is essential for every human being, not only for the sake of money and for economic independence, but also because it contributes to self esteem and self dignity leading to an abiding joy for life. For persons with disabilities, it is still more important as the self esteem and financial gains generated out of it

would offset to a great extent the negative impact of disdainful attitude of the society.

1.4 Explanation of the term "Economic Rehabilitation"

Economic rehabilitation aims at developing and enhancing the functional abilities of a person with disabilities so that he/she is gainfully occupied resulting in economic contribution to self and the family. In fact, economic rehabilitation is the principal objective of the existing approach to CBR - a concept initiated and promoted by Rural Activities Committee of the National Association for the Blind all over the country. Economic rehabilitation includes any trade, economic activity or profession which enables an individual to make any tangible or intangible contribution; any monetary or non-monetary service support to the family or community in the organized as well as unorganized sector.

1.5 Income Generation

The income generation activities on the other hand are a subset of economic rehabilitation and these mean direct monetary or tangible gains derived on a regular basis for services rendered or goods provided. Vocational training should generally lead to promotion of income generation or many a times economic rehabilitation. In general

parlance, vocational training aims at promoting open employment of the individual. It refers to skill development through a structured and formal training programme which aims at placement of a person in open competitive wage employment in the organized sector.

1.6 Vocational Rehabilitation

Vocational rehabilitation is an outcome of the employment process. It may be achieved through open, self or sheltered employment, gainful occupation or income generation. ILO Recommendation No. 99, Paragraph 1 (a) reads: "For the purpose of this recommendation the term 'vocational rehabilitation' means that part of the continuous and coordinated process of rehabilitation which involves the provision of those vocational services e.g. vocational guidance, vocational training and selective placement, designed to enable a disabled person to secure and retain suitable employment"

1.7 Summary

Successful sustainable employment is the ultimate goal in any rehabilitation program. Economic independence of a person with disability is one of most important factors that lead a person with a disability on the road of empowerment. Economic independence protects human rights. Financial independence facilitates a person to lead a life with respect and dignity.

Counselling can help families with a child with disability or persons with a disability to move towards new goals, and develop more effective

ways of coping with those issues, which may at present seem unmanageable.

1.8 Check Your Progress

1.9 Assignment/Activity

1.10 Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.10.1 **Points for discussion**

1.10.2 **Points for clarification**

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UNIT 3: TECHNIQUES AND PROCEDURES FOR DEVELOPING READING AND WRITING SKILLS

STRUCTURE

13.11. Assignment/Activity

13.12. Points For Discussion And Clarification

13.13. References / Further Readings

UNIT 4

TO PLAN VOCATIONAL TRAINING IN THE CHOSEN TRAITS

- **Introduction**

Youth benefit from a well-defined assessment process that assists them in making informed choices and achieving desired post-school employment outcomes. This process should include effective practices and the gathering of helpful planning information. To collect all needed data, assessment activities should include observations, interviews, record reviews, and testing/performance activities.

- **Objectives**

- To study about an Individual's Assessment Needs
- To Explanation of the term "Employment"
- Understand the conceptual differences between the terms

Provide suitable examples to describe each term

Meeting an Individual's Assessment Needs

As a result, many youth have not had the opportunity to pursue career options that they found motivating and satisfying. Today, vocational programs for youth in transition focus on the skills, knowledge, and abilities that youth can contribute to the work place. A large part of this effort lies in accurately identifying a youth's assets and sharing this information with the youth and those who work with him or her.

Many young people leave high school uncertain of their interests and abilities and unprepared to choose or pursue a career. Effective career planning and assessment for transition-age youth allows them to consider multiple options, act with self-advocacy, bridge academic and career plans, and equip themselves with critical information (Borgen & Amundsen, 1995). Career planning and assessment focuses on four distinct domains:

- Academic
- Psychological
- Medical
- Vocational

Assessment Activities

Youth benefit from a well-defined assessment process that assists them in making informed choices and achieving desired post-school employment outcomes. This process should include effective practices and the gathering of helpful planning information. To collect all needed data, assessment activities should include observations, interviews, record reviews, and testing/performance activities.

Observation is the process of watching or listening to an individual's behavior and performance and recording relevant information. This process can be structured or

unstructured, formal or informal, obtrusive or unobtrusive. Observation has elements of the objective and the subjective, but objectivity should be emphasized. Also, because different observers may come to different conclusions, it may be important to have more than one observer.

Interviews are structured or unstructured conversations intended to gather information from an individual through a verbal question-and-answer format. Like observations, interviews can also be formal or informal. An interviewer can quickly gather key information about an individual, while at the same time build trust and a shared vision for the career planning process.

Record Reviews incorporate prior assessment results and should include records from schools and care providers, as available. A review of records can provide background information about academic achievement and performance, previous career planning and goals, and family involvement and support systems. Care should be taken that the information is up-to-date and from sources that have properly gathered the data. Legally obtained releases of information are usually required, and confidentiality is essential when reviewing any assessment data or other protected records.

Testing and Performance Reviews account for a large share of the most common assessment activities of youth in transition. Testing "consists of administering a particular set of questions to an individual...to obtain a score" (Salvia &Ysseldyke, 2004, p. 6). Typically, scores are intended to be used for quite specific purposes. This type of data collection is generally more formal and structured and frequently requires specially trained persons to administer and/or score the test. It is important to note that accommodations are of particular concern when using criterion-referenced or norm-referenced instruments. The goal should be to change the way that a test is taken without changing the validity of the test results.

Performance reviews are activities that look at a whole spectrum of what has been learned and are more subjective, holistic, and qualitative in nature (Salvia & Ysseldyke, 2004, p. 252). Work experiences and related activities often are best evaluated using performance reviews. It is very helpful to have some written, objective standards for individuals to use in measuring behaviors. Observation rating forms are

particularly valuable for recording behaviors and outcomes on various tasks and work experiences.

o Choosing and Using Published Tests and Assessments

Compiling sufficient data for career planning may require the use of commercially prepared and published tests. These assessments must be chosen with the ultimate goal of helping the individual — this includes considering the effects of an individual's disability on the results of the testing process.

There are a number of factors to consider when choosing tests and assessments. The ideal assessment instrument is: (a) reliable; (b) fair; (c) valid; (d) cost-effective; (e) of appropriate length; (f) well-matched to the qualifications of the test administrator; (g) easy to administer; (h) able to provide easy-to-understand results; and, (i) appropriate for the individual's needs. Test publishers often provide information on these factors on Web sites or in technical manuals.

In addition to considering the factors above, youth service professionals must choose tests that fulfill the specific needs of the individual. After reviewing available records and conducting informal interviews, planning should determine some short-term, and possibly longer-term, goals. Eligibility assessment can be conducted at this point along with diagnostic or achievement testing to determine where an individual may belong in classes or in training programs. Here, more formal assessments may be used to answer some questions. For our purposes, formal assessments are defined as published instruments with specified administration procedures.

Formal testing is used to assess seven areas related to career planning:

1. Academic Performance or Achievement
2. Cognitive Abilities
3. Behavior, Social, and Emotional Issues

4. Vocational Interests
5. Vocational Aptitudes
6. Certification of Occupational Competencies
7. Physical and Functional Capacities

Individual youth may need assessment in a few or several of these areas. Older youth with established academic credentials or clear vocational goals may not need extensive testing to measure achievement or uncover vocational interests. Plans can be amended and updated depending on testing outcomes, and the youth's input should be considered as much as possible.

o Vocational Domain—Interests, Aptitudes, Skills, and Certification Testing

Purposes of Assessment in Work and Career Planning

One of the greatest challenges facing youth service professionals is helping youth match interests, values, and abilities to suitable jobs, occupations, and career opportunities. Given their limited employment and life experiences, many youth need guidance to identify their vocational interests. Additionally, youth often have a limited understanding of the marketplace and the qualifications needed in their areas of interest. The ability of youth to benefit from work experiences, training, or employment opportunities depends largely on their interest in these activities.

Neubert (1985) and Leconte (1986) have identified seven major uses of informal and formal work and career assessment data:

- Determination of career development: To find out where the student stands in terms of career awareness, orientation, exploration, preparation, placement, or growth/maintenance;
- Measurement: To identify abilities, interests, capabilities, strengths, needs, potentials, and behaviors within the areas of personal/social

functional/academic, community/independent, employment, and employability;

- Prediction: To match an individual's interests and abilities with appropriate training, community employment, or postsecondary training;
- Prescription: To identify strengths and needs, and to recommend types of adaptive techniques and/or remedial strategies that will lead to improved career preparation and development;
- Exploration: To try out different work-related tasks or activities and to determine how interests match abilities for work-based experiences, community jobs, postsecondary, or other adult activities;
- Intervention: To implement the techniques or remedial strategies that will help a student explore career or work options; and,
- Advocacy: To develop a career profile to help students, their families, and others identify concrete ways to assist students in achieving their goals.

o Interest Testing

A variety of assessment inventories and tools are available to assist youth in recognizing their predominant interests and preferences. When used properly, these surveys can help youth understand how their interests have direct application to making good academic and career choices. Most career interest inventories are designed to assist youth (and adults) to identify and better understand their interests and connect them to specific job fields or occupational clusters. Interest testing can provide youth with a starting point to further study a range of job possibilities.

Some of the more common interest tests sold commercially include the Campbell Interest and Skill Survey (CISS), Career Exploration Inventory (CEI), COPSystem Interest Inventory (COPS), and the Harrington-O'Shea Career Decision-Making System (CDM-R). The Pictorial Inventory of Careers DV-2000 (PIC) and the Reading Free Vocational Interest Inventory 2 offer "reading-free" interest testing for youth who lack reading or English literacy skills.

A majority of interest inventories are surveys of self-reported interests and skills. When selecting interest inventories for youth, it is important to examine the test manuals to ensure the chosen test is appropriate for the age and grade level of the youth being assessed. It is also helpful to review the survey to determine the skills needed to take it, such as reading ability.

Computer software programs are being developed by both commercial and public service agencies to help match an individual's career interests and KSAs (knowledge, skills, and abilities) with specific careers or employment fields. These computer software programs can be helpful in a number of ways. First, electronic software programs can help to identify KSA clusters that are relevant to a spectrum of jobs and occupational fields. Secondly, these products enable youth service professionals to quickly match a youth's career interests and KSAs with a range of possibilities under consideration by a youth and his or her advisors.

There are a number of high profile job search Web sites that offer career matching software programs for job seekers and employers alike. Some commercial companies such as Monster Board, or Career Builderoffer useful job search tools. Career-interest and job-match

software programs are sponsored in the public domain by Federal agencies such as the Department of Labor (DOL). For example, DOL's Career OneStop,CareerInfoNet, America's Job Bank, and Employer Assistance and Referral Network are useful sites with many assessment tools used by career advisors serving youth throughout the United States. Finally, many state job service agencies, universities and colleges, and One-Stop workforce centers administer career-interest and customized job-match programs in the public domain to help job seekers, employers, and career counselors find current information about labor markets, economic trends, and emerging workforce issues.

- **Assessing Aptitudes, Work Behaviors, and Skills**

Although aptitudes, work behaviors, and skills should be looked at distinctly, it is difficult to separate them when it comes to assessment. Formal and informal assessments can identify an individual's ability to perform specific jobs and to exhibit behaviors and habits that match the work culture. By measuring these areas with paper and pencil, audio-visual, or computer-based assessment, and by analyzing physical activity, insight can be gained regarding an individual's potential.

- **Aptitude Testing**

The ability to identify a youth's KSAs is fundamental to planning and using academic and vocational assessment information. Identifying aptitudes, or potential to learn, provides meaningful information for youth and service

providers to inform future career exploration. By design, an aptitude test measures the vocational potential or capacities of an individual to succeed in future career endeavors. Specific aptitude tests, such as the Armed Services Vocational Aptitude Battery (ASVAB) and Occupational Aptitude Survey and Interest Schedule (OASIS) measure an individual's aptitudes to succeed in specific areas. These may include a youth's capacities for numerical or abstract reasoning, mechanical proficiencies, form perception, verbal or language abilities, or other innate or learned talents under study.

When used with other assessment tools, aptitude testing can contribute to a more complete vocational profile and offer guidance concerning suitable secondary and postsecondary options. This is especially true in identifying career development pathways where specific academic or job strengths are known to be crucial and relevant. The use of aptitude assessment isolated from other vocational assessment information tends to screen out youth with significant disabilities. However, aptitude tests may be helpful when used as tools to identify customized job training, supports, or accommodations that may be needed by an individual to succeed in an occupation of high interest.

Keep in mind that aptitude means *potential* to learn. Aptitudes and skills should always be correlated with interests (and to a lesser degree, temperaments). For example, a youth may be interested in engineering but have poor academic skills and aptitudes — or another may perform poorly academically but have high interest and motivation for welding. Young people with high motivation may eventually succeed despite low reading or math achievement or aptitude scores.

Learning style preferences should also be determined in order to assist youth in understanding and articulating how they best receive or process information. A youth who is an auditory learner may not perform as well when given written instructions or assessments, and as a result his or her scores may not accurately represent his or her performance

- **Situational Work Assessments**

Occupational skills and work behaviors can be assessed in situational work assessments and include capacities and competencies to perform essential job duties

of specific competitive employment positions. For example, the measurement of a youth's keyboarding proficiency may be predictive of his abilities to succeed in a job where the duties require minimum standards of speed for data entry or word processing. Allowing youth to try essential job functions of different jobs will help them decide if they really enjoy the work and if they have the stamina to meet work requirements.

In a similar way, situational skills assessment can be used to assess the KSAs of youth for a wide range of competitive jobs. This is accomplished by determining the core job competencies and duties required of a skilled worker and then comparing the actual performance of a youth who is being assessed. For example, a competitively employed housekeeper may be required to clean ten hotel rooms over an eight-hour work period. In this instance, the skills and productivity of a youth can be measured by comparing his capacity to clean a similar number of rooms while meeting the hotel's standards for cleanliness and job performance quality. Similarly, an assessment can be designed to measure other skills such as those needed to write a computer program used in business or manufacturing.

The outcomes of occupational skills assessment are not entirely predictive of future success in a competitive job situation but they often can lead to job skills training, apprenticeships, or internships that help youth to increase their competency and productivity. They can also lead to the development of creative, individualized job placement plans such as customized employment or "job carving" — a restructuring of job duties or tasks so that a youth with documented KSAs can successfully perform job functions of high interest. Typically, job carving is provided for people who cannot, for a variety of reasons, perform the entire job or the whole range of skills required.

In special education programs and community rehabilitation organizations, situational work assessments are also often used to study the "soft skills" needed in employment. They include an assessment of basic work behaviors and skills through practical hands-on work experiences. Situational work assessments are often supervised by trained vocational evaluators, educators, or community rehabilitation professionals.

Situational work assessments are ideally provided in partnership with community businesses but may also be offered in settings controlled by education or youth service providers. Business settings work well because they offer a more accurate

view of a youth's performance within the context of normal business rules and practices. Situational work assessments can lead to the development of baseline data and assist youth service professionals in engaging customized job training or other work supports a youth may need to obtain a satisfactory job placement outcome.

- **Vocational/Medical Domains—Physical and Functional Capacities Testing**

Assessing Work Capacities

In some instances, it may be helpful to assess the muscular strength, endurance, motor coordination skills, and other physical capacities of youth. This is particularly true for youth who are physically or medically fragile due to chronic diseases, progressive illnesses, and other health conditions that limit physical strength or motor capacities. For example, a youth's ability to manage a full-time work schedule or perform tasks that demand physical exertion, strength, or motor skills coordination is very important information for matching a student to suitable employment or career fields. This information is also critical to identifying needs for accommodations so a youth who is physically or medically fragile can handle the essential functions of a job or participate successfully in a postsecondary education program. It is important to remember that youth may eventually develop physical capacities as they grow and mature physically.

Work capacities testing can also give some indication if a particular type of work is appropriate for an individual based on age or maturity level. For example, an immature youth may not be ready to function in a job with high

social demands and responsibilities such as a nursing assistant or child care aide. Or a youth who is lacking in emotional maturity may not be ready to manage the hectic pace of a typical lunch hour at a local fast-food restaurant chain.

The following assessment techniques are used to assist in identifying a youth's physical capacities:

Work Tolerance and Functional Capacities Assessment – Work tolerance testing (also known as work hardening assessment) is a structured process for examining and measuring the physical endurance, strength, motor coordination skills, and emotional capacities of a worker when performing essential job tasks. These types of assessments are commonly used for people who have serious medical problems or who have had significant injuries, often job-related. The goal of work tolerance testing is to measure whether a worker can manage a regular job routine or full-time work schedule and perform essential job tasks without excessive fatigue or pain. Work tolerance testing also measures range of motion, lifting and carrying, manual dexterity, and motor coordination skills that are necessary to do a job successfully.

Work tolerance and functional capacities assessments can be conducted in formal as well as informal testing formats. A number of commercially developed testing strategies are available to assess physical capacities, and work tolerance assessments also can be conducted in real job settings in ways similar to situational work assessments. In these instances, the assessment of physical and emotional work capacities is achieved by observing and recording the job performance of youth in competitive business environments. Standardized work samples are sometimes used to measure a worker's ability

to perform specific physical movements (e.g. stooping, reaching) or coordination of motor skills (e.g., hand-eye coordination).

Work tolerance testing is normally conducted by trained vocational evaluators who are skilled in these assessment methods and procedures. Job coaches, occupational therapists, physical therapists, and rehabilitation engineers are often knowledgeable about assistive technologies or accommodations that can enhance the functionality of people with physical or emotional limitations. Care must be taken to follow a physician's guidelines in order to prevent harm or additional physical or medical injury to the youth.

Motor Skills and Manual Dexterity Testing – Some standardized assessment tests, such as the Crawford Small Parts Dexterity Test or the Purdue Pegboard Test, can measure a youth's finger dexterity, manual dexterity, or hand-eye coordination. These dexterity tests can help to measure a youth's capacities to move hands, fingers, arms (gross movement), or to control the movement and manipulation of small objects. This information may be helpful to youth with complex physical disabilities who are considering careers or job opportunities in fields that require good manual dexterity. Also, these tests can help to determine needs for assistive technology or accommodations that may enable a youth to perform the essential functions or tasks of a desired job.

Assessing Assistive Technology Needs and Making Accommodations – Sometimes youth can improve their skills or behaviors through education or training so they can manage the essential functions of a desired job. And sometimes tasks can be restructured or workplaces can be modified so a youth can perform the essential functions of a desired job. Assistive technologies can also be introduced to bridge gaps in a youth's functional skills

or capacities, thereby enabling her to perform the essential functions of a desired job.

The Rehabilitation Act of 1988 first acknowledged the rights of youth with significant disabilities to obtain assistive technology assessments in order to determine their ability to benefit from vocational rehabilitation services. According to the Act, "assistive technology means any item, piece of equipment, or product system, acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities." The Assistive Technology Act of 2004 further defined the rights of people with disabilities to access needed technologies by: "(1) identifying Federal policies that facilitate payment for assistive technology devices and assistive technology services, (2) identifying Federal policies that impede such payment, and (3) eliminating inappropriate barriers to such payment."

Assistive Technology Assessments – The field of rehabilitation engineering and assistive technology is rapidly evolving and is contributing amazing quality of life enhancements for people with disabilities. The expertise of rehabilitation engineers and technologists, occupational therapists, vocational evaluators, and supported employment professionals may be helpful in the technology assessment needs of youth with significant disabilities. The goal is to examine how commercially made products or custom-designed technologies can be used to improve the functionality and capabilities of youth with complex physical, intellectual, or emotional disabilities.

Assistive technology assessments can offer valuable information about the functional capacities of youth and whether technology can be effectively used to ameliorate the effects of a disability. For example, assistive technology applications can include high-tech equipment such as hearing devices, robotic

arms, or talking computers. However, a majority of assistive technologies involve low-tech applications such as the use of Braille or lowering the height of a work table for someone in a wheelchair. Frequently, low-tech devices can solve accommodation issues.

In summary, assistive technology assessments can examine and improve a youth's opportunities for integration so he or she can: (a) participate and succeed in mainstream educational programs; or (b) perform the essential functions of desired jobs in the competitive labor market. The use of assistive technology in the classroom and workplace requires creative problem-solving skills and ingenuity and access to an expert.

Assessing Postsecondary Training and Workplace Accommodations – Youth with disabilities often need adaptations in classrooms or worksites to accommodate or minimize the affects of their disability. Vocational assessments can lead to practical ideas for job or training accommodations at businesses or in postsecondary training programs. Such accommodations might include modifications to a job, restructuring of tasks, use of job coaches to assist with training, use of interpreters, or alternative methods of communication. Assessing the need for accommodations often goes hand-in-hand with assessing assistive technology needs. For comprehensive information regarding workplace accommodations,

Medical and Physical Capacities Testing – The use of medical diagnostic testing information may, in a few cases, assist in effective career planning for youth with serious health and physical disabilities. The use and integration of medical and physical capacities information may help in determining the suitability of career development goals and any specific needs a youth may have for accommodations in education, training, or employment settings. For example, the presence of chronic diseases or progressive illnesses such as

multiple sclerosis, muscular dystrophy, diabetes, cancer, cystic fibrosis, or heart disease can have serious career development implications.

The use of diagnostic testing and the expert guidance of a physician or other medical specialist (e.g., a heart surgeon, oncologist, or physical therapist) may offer new information about functional or capacities limitations that may be associated with specific conditions. Medical professionals can also be instrumental in helping youth with chronic medical conditions monitor their situations and perform their own health care tasks.

Physical, Speech, and Occupational Screening – Some youth with disabilities may need assistance in developing the physical, speech, or daily living skills they need to obtain desired academic or vocational goals. Many local education agencies and therapeutic service programs offer screening services to assist youth in identifying and measuring specific physical, speech, and functional living skills capacities. These diagnostic screening services are provided by therapists and clinicians who are trained in their respective disciplines (e.g., speech, audiology, or occupational therapies). Therapeutic screening support is often helpful to youth with some disability conditions in planning for needed supports as they pursue their postsecondary education, training, employment, and independent living goals.

- **Summary**

Youth with identified behavioral disorders can benefit greatly from situational work assessments. In a work setting with appropriate supports and careful supervision, youth with behavior problems can often experience success. If work assessments are provided in local businesses, it is very important to educate employers about working with youth with disabilities. This may mean receiving permission from a youth and her guardians to share information with a business before it agrees to host a situational work assessment.

- **Check Your Progress**

True/False:

- **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

  - **Points for discussion**

- **Points to Clarification**

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UNIT 4: ORIENTATION AND MOBILITY FOR LOW VISION CHILDREN

STRUCTURE

- Introduction
- Objectives
- Livelihood Opportunities for Persons with Disabilities (PwDs)
- Micro Finance in India
- Review of Government Livelihood Schemes
- Documentation of Good Practices (Government and Non-governmental)
- Summary
- Check Your Progress
- Assignment/Activity
- Points For Discussion And Clarification
- References / Further Readings

1.1. Introduction

People living with disabilities encounter many disadvantages in society and are often subject to stigma and discrimination. Marginalized and disproportionately poorer, people living with disabilities are particularly vulnerable to crisis. Further, they remain largely excluded from political and civil processes and voiceless on crucial issues that affect them and their society.

The Government of India's 11th Five Year Plan and the Approach Paper to the 12th Five-Year Plan envisaged an inclusive approach towards persons with disability and promised special attention to differently-abled people, among other vulnerable groups. Nevertheless, in India, skills and potential of most people living with disability remain untapped, under-utilized or under developed. People living with disabilities are amongst the most impoverished communities in the country.

1.2. Objectives

- To undertake a desk review of the Government livelihood schemes those have three percent reservation for the PwDs as well as the three percent reservation in Government jobs with

the aim to understand the implementation status at the ground level and identify the gaps.

- To undertake documentation of good practices from various Government and non-government agencies in the area of livelihood of PwDs with the aim to understand the current situation and disseminate the relevant know how. This included a process study of the organisational interventions that led to individual successes in gaining livelihoods. Drawing out of these processes, individual case studies were documented.

- To undertake documentation of good international practices from different parts of the world, in particular from the Asia Pacific region with the aim to share the lessons learned and explore the possibilities of simulating similar efforts in India.

- Understand the conceptual differences between the terms

- Provide suitable examples to describe each term

Livelihood Opportunities for Persons with Disabilities (PwDs)

In 2008, UNDP, India in partnership with the Planning Commission launched the Livelihood Promotion Strategies Project in the country focused on seven states. The project recognizes that the seven UN focus States (Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh) have relatively higher concentration of poor and disadvantaged groups than other States.

These disadvantaged women and men have limited livelihood options and are highly dependent on agriculture and the informal economy.

Empirical evidence also shows that 'Disabled people living in poverty' have always suffered from double disadvantage and are also at a higher risk of becoming even poorer. The same is true for all people living in poverty, who have a higher risk of facing a disabling condition due to their limited access to basic services such as health, education, and sanitation and higher rates of exposure to hazardous working conditions. 'Women with disabilities' suffer a double discrimination, both on the grounds of gender and of impairment. The consequences of deficiencies and disablement are particularly serious for women. Women are subjected to social, cultural and economic disadvantages, which impede their access to, for example, health care, education, vocational training and employment. If, in addition, they are physically or mentally disabled, their chances of overcoming their disablement are diminished, which makes it all the more difficult for them to take part in community life. All women and men with disabilities can and want to be productive members of society. In both developed and developing countries, promoting more inclusive societies and employment opportunities for people with disabilities requires improved access to basic education, vocational training relevant to labour market needs and jobs suited to their skills, interests and abilities, with adaptations as needed. Many societies are also recognizing the need to dismantle other barriers, making the physical environment more accessible, and providing information in a variety of formats, and challenging attitudes and mistaken assumptions about Persons with Disabilities (PwDs). It is

in this context that the UNDP, New Delhi and the Indian Planning Commission, commissioned a review and research study in September 2010 to document the status and consolidate existing experiences and innovations of the various government and non-government initiatives that are taking forward effective programmes and processes of creating livelihood opportunities for PwDs. It was felt critical to document the success stories and case studies of livelihood improvement for PwDs, which will help inform and give insights into the barriers and challenges to employment and livelihood promotion. This knowledge will then help design, execute and monitor better poverty reduction and livelihood promotion programmes and polices. It would also provide the relevant knowledge base required to influence policy makers, state governments and financial institutions for extending credit to PwDs for microenterprise development. The findings of the study and its recommendations will also support the national and state governments in their progress towards social inclusion and poverty reduction. The report will also feed into the XIIth FYP on measures for inclusion and livelihood improvement of Persons with Disabilities.

1.3. Micro Finance in India

Microfinance sector has travelled a long journey from micro savings to micro credit and then to micro enterprises and now entered the field of micro insurance, micro remittance and micro pension. This gradual and evolutionary growth process has given a great opportunity to the rural poor in India to attain reasonable economic, social and cultural empowerment, leading to better living standard and quality of life for participating households. Financial institutions in the country continued

to play a leading role in the microfinance programme for nearly two decades now. They have joined hands proactively with informal delivery channels to give microfinance sector the necessary momentum. Since 2006-07, NABARD has been compiling and analysing the data on progress made in microfinance sector, based on the returns furnished by Commercial Banks (CBs), Regional Rural Banks (RRBs) and Cooperative Banks operating in the country. The banks operating, presently, in the formal financial system comprise Public Sector CBs (27), Private Sector CBs (22), RRBs (82), State Cooperative Banks (31) and District Central Cooperative Banks (370). Most of the banks participating in the process of microfinance have reported the progress made under the programme. NABARD has been instrumental in facilitating various activities under microfinance sector, involving all possible partners at the ground level in the field. NABARD has been encouraging voluntary agencies, bankers, socially spirited individuals, other formal and informal entities and also government functionaries to promote and nurture SHGs. The focus in this direction has been on training and capacity building of partners, promotional grant assistance to Self Help Promoting Institutions (SHPIs), Revolving Fund Assistance (RFA) to MFIs, equity/ capital support to MFIs to supplement their financial resources and provision of 100 per cent refinance against bank loans provided by various banks for microfinance activities.

1.4. Review of Government Livelihood Schemes

The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, has ensured a reservation of 3 percent of jobs for PwDs in the formal sector as well as in various

poverty alleviation programmes and schemes, both in rural and urban areas.

The schemes that have been identified and reviewed to understand their impact and efficacy with respect to outreach to the PwD beneficiaries include:

1. Swarnjayanti Gram Swarozgar Yojana (SGSY)

2. Sampoorna Grameen Rozgar Yojana (SGRY)

3. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

4. Swarna Jayanti Shahari Rozgar Yojana (SJSRY)

5. Prime Ministers Employment Generation Programme (PMEGP)

6. Compliance on three percent reservation for PwDs in Government and PSU jobs. While the Act has mandated a minimum of three percent job reservation the Governments of Chhattisgarh and Madhya Pradesh have earmarked six percent for PwDs. The desk review of the schemes was undertaken with the aim of understanding the progress and the gaps to enable further improvement.

7. The Apprenticeship Training Scheme.

1.5. Documentation of Good Practices (Government and Non-governmental)

A "good practice" is commonly defined as "a technique or methodology that, through experience and research, has proven reliably to lead to a desired result. A "good practice" is "knowledge about what works in specific situations and contexts, without using inordinate resources to achieve the desired results, and which can be used to develop and implement solutions adapted to similar health problems in other situations and contexts". Documentations of good practices from the field have been selected from 6 States with the help of partner agencies involved in the project for the respective States. While individual livelihood intervention cases have been documented from 5 States (Andhra Pradesh, Chhattisgarh, Maharashtra, Odisha and West Bengal), the Rajasthan Mission on Skills and Livelihoods in Rajasthan is purely a process intervention study, which is a collaborative effort of the Government of Rajasthan and UNDP to promote strategies for skills development and livelihoods promotion in the State with a focus on disadvantaged groups and regions. Efforts have been made to include as much diversity as possible.

The main focus while gathering the good practices has been on:

1. Representation of the five major disabilities (OH/HH/ VH/MH/1 multiple disability and deaf-blind) as defined by the 1995 PwD Act.

2. Representation of urban as well as rural areas.

3. Gender specific representation.

The areas of good practices in the case studies are individual or in conjunction with each other with the following focus:

1. Skills training /development and placements

2. Inclusion in Government poverty reduction schemes

3. Self help groups / support groups

4. Microfinance and linkages

5. Rural livelihood options

6. Sheltered employment

7. Public Private Partnerships (PPP)

1.6. Summary

The study will include an analysis of livelihood schemes and uncover some of the existing good practices with respect to livelihood opportunities and strategies for the disabled in India. The above knowledge gained will be used to make recommendations to support the National and State governments in its progress towards social inclusion and poverty reduction.

- **Check Your Progress**

- **Assignment/Activity**

- **Points For Discussion And Clarification**

After going through this Unit you might like to have further discussion on some points and clarification on others

- **Points for discussion**

- **Points to Clarification**

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UNIT 5: CLASSROOM MANAGEMENT – SEATING ARRANGEMENT, ADJUSTABLE FURNITURE, ILLUMINATION, NON-REFLECTING SURFACES AND COLOUR CONTRAST

STRUCTURE

- **Introduction**
- **Objectives**
- **To Identify Children Using Screening Tools**
  - Denver Development Screening Test
  - The DENVER II Developmental Screening Test
- **Talking and listening**
- **Summary**
- **Check Your Progress**
- **Assignment/Activity**
- **Points For Discussion And Clarification**
- **References / Further Readings**

INTRODUCTION

Rehabilitation needs are specific to disabled people. In the developing countries, rural communities are often very well organised, their members sharing the same values and traditions, with a close-knit network of social relations providing support and protection. This does not work to quite the same extent for marginal urban settlements, but even there one finds a local culture and a power structure, but far less social control. For anyone intending to study the needs of disabled people, it is essential to have an under-standing of the social structures, the cultural traditions, the organisation and the lines of authority prevailing in the communities where they live. This knowledge can only be acquired from people who have been living in the particular community for a long time, who share the culture, and who are familiar with local conditions. Outsiders will need many years of experience, and to evaluate the specific needs of disabled people they must work with the local people. Where a rehabilitation programme is to be man-aged by the community, utilising its own resources, it is vital for it to be planned, structured and implemented in line with local customs and needs. This implies that any general rehabilitation programme should be described in such a way as to allow both adaptations to local conditions and preservation of local influence. It should build on existing technology, allow for a service delivery system opted for by the community and apply a management system that fits into traditional approaches.

1.13. OBJECTIVES

After studying this unit you should be able to

- To Identify Children Using Screening Tools
- Theory about Denver Developmental Screening Test (DDST)
- Understand the conceptual differences between the terms
- Provide suitable examples to describe each term

1.14. TO IDENTIFY CHILDREN USING SCREENING TOOLS

1.14.1. Denver Development Screening Test

The Denver Developmental Screening Test (DDST) is a widely used assessment for examining the developmental progress of children from birth until the age of 6, devised in 1969. The DDST was originally designed at the University of Colorado Medical Center, Denver, USA.

There were concerns raised from that time about specific items in the test and, coupled with changing normal values, it was decided that a major revision of the test was necessary in 1992 (the DENVER II)

DEVELOPMENTAL DELAY

Developmental delay occurs in up to 15% of children under 5 years of age. This includes delays in speech and language development, motor development, social-emotional development and cognitive development.

Parents are usually the first to pick up signs of possible developmental delay, and any concerns parents have about their child's development should always

be taken seriously. However, the absence of parental concern does not necessarily mean that all is well.

The main purpose of developmental assessment depends on the age of the child:

- Tests may detect neurological problems such as cerebral palsy in the neonate.
- Tests may reassure parents or detect problems in early infancy.
- Testing in late childhood can help detect academic and social problems early enough to minimise possible negative consequences (although parental concern may be just as good a predictor for some problems)

The move to targeted examinations at ages 2 and 3.5 years, rather than routine, has raised concerns that some conditions (eg, pervasive developmental disorder) may be missed No developmental screening tool can allow for the dynamic nature of child development. A child's performance on one particular day is influenced by many factors. Development is not a linear process - it is characterised by spurts, plateaux and, sometimes regressions.

Screening has gradually been replaced by the concept of developmental surveillance. This is a much broader concept. It involves parents, allows for context and should be a flexible, continuous process.

1.14.2. The DENVER II Developmental Screening Test

Test design

The test consists of up to 125 items, divided into four parts:

- Social/personal: aspects of socialisation inside and outside the home - eg, smiling.
- Fine motor function: eye/hand co-ordination, and manipulation of small objects - eg, grasping and drawing.
- Language: production of sounds, and ability to recognise, understand and use language - eg, ability to combine words
- Gross motor functions: motor control, sitting, walking, jumping, and other movements

Ages covered by the tests range from 2 months to 71 months.

Application

- No special training is required.
- The test takes approximately 20 minutes to administer and interpret.
- There may be some variation in time taken, depending on both the age and co-operation of the child.
- Interviews can be performed by almost anyone who works with children and medical professionals.
- The items are recorded through direct observations of the child plus, for some points, the mother reports whether the child is capable of performing a given task.
- Younger infants can sit on their mother's lap.
- The test should be given slowly.

Interpretation of the test

- The data are presented as age norms, similar to a growth curve.
- Draw a vertical line at the child's chronological age on the charts; if the infant was premature, subtract the months premature from chronological age.
- The more items a child fails to perform (passed by 90% of his/her peers), the more likely the child manifests a significant developmental deviation that warrants further evaluation

Referral

Concerns should prompt referral to a general or developmental paediatrician:

- Most paediatricians would prefer to see children early rather than late.
- If development appears normal then reassuring anxious parents is always rewarding. On the other hand, if there is developmental delay, intervention at the earliest possible time can make a significant difference to outcome.

Sensitivity rates are reported as between 56-83% for the DENVER II, but specificity may be as low as 43%, rising to 80%.[6] There is a danger of unnecessary referral.

However, children over-referred (false positives) because of developmental screens may perform lower on measures of intelligence, language, and academic achievement than other children. These children may therefore also benefit from interventions such as intensive, supported nusery places.

1.15. Talking and listening

There are many times in our lives when all of us really feel we need someone to listen. **This is basically what counselling is: someone to listen to families with a child with a disability or persons with disabilities.** Feeling as if we are being heard properly can be really

important *for families with a child with disability or persons with disabilities.* Families with a child with disability and persons with disabilities may be feeling a bit lost amongst all the treatments and visit to doctors. And they are probably finding it difficult to deal with being diagnosed with a disability.

Of course, many of us have people who listen to our worries and problems almost every day - families with a child with disability or persons with disabilities and friends, a religious leader or a caring neighbour. But sometimes this is not enough. Sometimes, it is easier to talk to someone who does not know families with a child with disability or persons with disabilities quite as well. The more serious the things families with a child with disability or persons with disabilities have to discuss, the more likely this is to be true.

There are several advantages to talking to a counsellor who is outside families immediate circle of family and friends:-

- Families with a child with disability or persons with disabilities will not have to worry about upsetting them
- They will not judge families with a child with disability or persons with disabilities or what families with a child with disability or persons with disabilities have done
- Families with a child with disability or persons with disabilities may find it easier to sort out and talk about the deepest feelings of families with a child with disability or persons with disabilities
- Everything families with a child with disability or persons with disabilities say will be confidential. Their counsellor won't tell anyone else.
- They will not say what they think families with a child with disability or persons with disabilities want to hear!

But there are some things families with a child with disability or persons with disabilities may be used to getting from family and friends that families with a child with disability or persons with disabilities will not get from a counsellor:

- Ready-made solutions to the problems of families with a child with disability or persons with disabilities - "If I were you I'd... "
- Opinions about families with a child with disability or persons with disabilities, other people or their actions - "Well I don't think he should have... "
- More talking and less listening

So what do we mean by counselling?

By counselling, we mean talking to someone who is properly trained to give counselling and is supervised. Usually, families with a child with disability or persons with a disability would have an specific time to see a CBR counsellor for an hour at a regular time every week. Families with a child with disability or persons with a disability have a weekly session for either a set period of time (often 6 or 8 weeks) or for as long as families with a child with disability or persons with disabilities and their counsellor agree. The family counsellor will try to:

- Listen properly to what families with a child with disability or persons with disabilities are saying
- Do not interrupt
- Help families sort out and untangle their feelings and worries
- Provide families or persons with a disability with insight into how families with a child with disability or persons with a disability really think and feel
- Help families or persons with a disability deal with emotions in families with a child with disability or persons with a disability in their own way
- Help families or persons with a disability work out families with a child with disability or persons with a disability own solutions to problems
- Help families with a child with disability or persons with a disability accept what cannot be changed

- Help and support families or persons with a disability while families with a child with disability or persons with a disability do all this

Who is a good counsellor?

It is important to take a little care in finding someone families with a child with disability or persons with a disability will feel comfortable with. All professional counselors will offer families with a child with disability or persons with a disability a first appointment where families with a child with disability or persons with a disability discuss what families with a child with disability or persons with a disability are looking for and hope to get out of the counseling. They will not be offended if families with a child with disability or persons with a disability decide that families with a child with disability or persons with a disability do not want counseling with them and will be happy to help families with a child with disability or persons with a disability to find someone else.

There are other things to look out for as well as whether families with a child with disability or persons with a disability get on. Unfortunately there are some (often well meaning) people who are not proper counselors, but think they can help. Sometimes they can. But frequently they may do more harm than good by getting in more deeply than they can handle. If that happens, families with a child with disability or persons with a disability could find families with a child with disability or persons with a disability have opened up an emotional wound and the help families with a child with disability or persons with a disability need to heal may not be there.

If families with a child with disability or persons with a disability have important issues to get to grips with, then families with a child with disability or persons with a disability will do best with professional help. Here are some things families with a child with disability or persons with a disability should ask about

- Has the counselor taken a properly recognised training course?
- Does the counselor work to a recognised 'code of practice'?
- Does the counselor have professional clinical supervision?
- Does the counselor go on regular training courses to keep up-to-date?

Training

If families with a child with disability or persons with a disability counselor has completed an approved course, then families with a child with disability or persons with a disability know that they have the skills they need to help families with a child with disability or persons with a disability properly.

Code of practice

A 'code of practice' means the counsellor has certain standards to keep to. There are different codes of practice. Counsellors who are recognised by the British Association of Counselling, for example, keep to their code of practice. The code should include things like confidentiality as well as the other points included here such as training and supervision. Other professionals will have their own codes which families with a child with disability or persons with a disability may wish to ask them about

Clinical supervision

Clinical supervision is really necessary for the counsellor to stay detatched from their clients problems. It means that the counsellor sees another professional counsellor or therapist regularly to talk about how their work is going. The supervisor can help the counsellor to keep an open mind about the things families with a child with disability or persons with a disability are both dealing with. It won't help families with a child with disability or persons with a disability if families with a child with disability or persons with a disability both get tangled up in the difficulties and emotions families with a child with disability or persons with a disability are dealing with. This doesn't mean that families with a child with disability or persons with a disabilityr counselling is not confidential. The supervisor won't know families with a child with disability or persons with a disability and families with a child with disability or persons with a disabilityr counsellor won't give families with a child with disability or persons with a disabilityr full name. The supervisor is also bound to keep what is discussed confidential.

Ongoing training

Regular training is a good thing because it means the counsellor is always looking to improve how they do their job. Keeping their skills up to date and learning new ones can only help families with a child with disability or persons with a disability as the person being counselled.

So how do I find a counsellor?

There are a few ways to go about this. Families with a child with disability or persons with a disability need to find a list of counselling organisations or individual counsellors in families with a child with disability or persons with a disabilityr area. Families with a child with disability or persons with a disability could contact the British Association for Counselling. They will be able to send families with a child with disability or persons with a disability a list of approved counsellors in families with a child with disability or persons with a disabilityr area. Or families with a child with disability or persons with a disability could look in families with a child with disability or persons with a disabilityr local phone book for a list of counselling organisations. The local library or Citizens Advice Bureau may also be of help. Some GPs now employ counsellors, so it may be worth asking families with a child with disability or persons with a disabilityr own doctor. Also, the Disability Centre when families with a child with disability or persons with a disability are having families with a child with disability or persons with a disabilityr treatment may have a list of local, experienced counsellors.

What is having counselling like?

One of the important things to remember is that going to see a counsellor

- Is not a sign of weakness
- Does not mean that families with a child with disability or persons with a disability can't cope
- Doesn't mean families with a child with disability or persons with a disability are 'cracking up' or 'going mad'

1.16. 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.

1.17. Check Your Progress

Q.1 What differentiates the DENVER II from other screening tests?

- It enables the tester to compare a child's development with that of over 2,000 children who were in the standardised population, like a growth curve.
- It consists of items in which a sub-sample (race, less educated parents, gender and place of residence), which varied a clinically significant amount from the composite sample, are identified and their norms provided in the DENVER II Technical Manual.
- It provides a broad variety of standardised items to give a quick overview of the child's development.
- It also contains a behaviour rating scale.

The test is primarily based upon an examiner's actual observation rather than parental report

Q.2 So what do we mean by counseling?

1.18. Points For Discussion And Clarification

After going through this Unit you might like to have further discussion on some points and clarification on others

1.18.1. Points for discussion

1.18.2. Points for clarification

1.12 References / Further Readings

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