Unit-3 ❑ Implication of Visual Impairment and Needs of Visually Impaired

Structure :

3.1 Introduction

As much as 90% of what we know is learned through vision. Children with no', partial or distorted vision will have difficulty in accessing information, leading to a typical knowledge and skill development. Unless aggressive efforts are made to Compensate for the reduced access to the environment, Children with visual impairment may have limited development of concepts and the world around them.

There is no separate psychology of persons with visual impairment. There are some psychological effects which emerge because of disability. A teacher should necessarily study the psychosocial implication of blindness in order to guide the children properly. The process of growth and development for any individual child is at same time similar to and different from that for any other child. It is similar because growth is sequential, with identifiable stages through which all children progress; it is different because each child progress at his own unique rate as a result of his own individual needs. This principle applies visually impaired children as well, and in general their similarities are greater than their difference from sighted children. The rate of growth of visual impaired children is affected by the visual impairment. However, visual impairment has either direct or indirect influence on the rate of growth and development of visual impaired children.

Development is normally defined as a continuous process of change. Studies on child development primarily focus on language development, motor development, personality development, emotions, cognitive functions, and the inter-relationship between them. Development in these areas is considered essential for every child

irrespective of his/her disability. However, blindness results in some implications on the psycho-social developments of these children. This chapter enumerates the developmental stages in the life of the child, psycho-social aspects of visual disability, mannerisms and verbalisms, and the implications of blindness on education.

The Success of students with visual impairment is measured by their ability to adapt to the regular curriculum and classroom expectations, and to perform the same way as their peer Although academic success is important, it should not be the only yard stick in measuring a student's future success at employment, life after school and personal independence.

Special educators for children with visual impairment recognize that a unique, specialized or disability specific curriculum is essential for all children with visual impairment to ensure optimal access to the academic curriculum in the schools, as well as future success in life.

Development is normally defined as a continuous process of change. Studies on child development primarily focus on language development motor development, Personality development, emotions Cognitive functions and the. inter relationship between them. Development in these areas is considered essential for every child irrespective of his disability. But Blindness results in some implication on the psycho-social development of these children.

Blindness is a medical phenomenon. It relates to impaired sense of vision. Stated simply, it only means that the person suffers from the loss of sight.

But the matter is not so simple. Blindness in all countries through ages, has come to develop as a connotative word; it evokes different emotional reactions in different persons. The societies, across the globe have developed their own perspective of blind persons, regarding their capabilities and their limitations.

Parents, as part of the community, share social ways and attitudes but when a blind child is born to them, they find their personal ways to cope.

The visually impaired person and his/her family face serious social challenges. Directly and indirectly visual impairment interferes with many daily activities. In the case of adults the possibilities for gainful employment are severely limited as is their participation in many activities. To this is often added a loss of social status and self-esteem. The physical limitation and psychological implications of visual impairment

cannot be measured in exact monetary terms. Nevertheless, it is clear that they diminish the quality of life not only for blind persons but for their families as well.

As a person with visual impairment adjustment to life in a seeing world is a complex process. After carrying out a review of studies on psychological adjustment of low vision children, Morse (1987) concluded that children with low vision tend to be more unsettled by the limits of their vision than compared to those whose handicap are more severe. The dynamics which impels one to adjust is necessity. But blind persons vary in their response to this demand of necessity due to various factors, among which are - i) age of onset of blindness, ii) Degree of vision and type of vision and type of vision loss iii) Prognosis and iv) Socio economic status of the family.

The visual system's immediate and simultaneous processing of extended spatial information affords fundamental information of depth, object permanence and constancies, brightness, and color. Loss of vision requires the successful integration of successive stimulus information from intact sensory systems, primarily touch and hearing. Such loss impacts negatively on perceptual, motor, cognitive, as well as social interpersonal behavioral development.

The amount of visual difficulty depends on the eye condition, so some babies and children have more difficulty than others. Most babies with limited vision tend to see very little in the early months, though the vision of most will improve. The rate and degree of improvement of vision varies in each child. In a very few eye conditions it is known from early on that the child will not develop any more vision. For most children with limited vision, there is uncertainty and it is important with these children to help them develop their vision to its maximum potential.

The possible effect of visual impairment on attachment and socialization has also been suggested, and the increased prevalence of specific emotional and behavioral problems, as well as developmental delays, among visually impaired children has been established Therefore the mutual effect of emotional problems on the development of visually impaired children, and vice versa, is of great importance. Such an understanding may influence treatment strategies that are related to development at different ages, particularly among infants and young children like these are.

3.2 Objectives :

After studying this unit the teacher trainees will be able to -

- Describe the psychosocial implication of blindness.
- Discuss the implication of child blindness for the parents and the family.
- Analyze the effects of family and community attitudes on the blind child.
- Explain his or her own role as a teacher in relation to the visually impaired child, parents and the community.
- Describe the factors affecting implications of visual impairment.
- Enumerate the effect of visual impairment on growth and development.
- Identify the educational needs of visual impaired children.
- Describe the needs for expanded core curriculum for the visual impaired children.
- Differentiate between blindness and low vision.
- State the educational needs of children with low-vision.

3.3 Psycho SociaI Implications of Visual impairment :

3.3.1 Basic Effects of Blindness :

The effects of Blindness are basically cognitive, since blindness relates to the sensory deficit of vision and because senses are the gateway to knowledge. Moreover vision is the most actively used sense of man and hence his knowledge grows chiefly from his visual experiences. The resulting effects have been discussed widely but the most accepted interpretation has come from Dr. Berthold Lowenfeld. In his own words, “Blindness imposes three basic limitations on the individual”.

1. In the range and variety of experiences
2. In the ability to get about
3. In the control of the environment and the self in relation to it.

These three obstacles to independence and self-fulfillment are responsible for the special educational provisions for the blind child. A brief look at the three limitations may be helpful in understanding the losses in depth.

It has been estimated that 90 – 95% of all experiences comes through the eyes. Vision is the major mode of acquiring information about people, places and processes. Therefore, the blind child, by definition, is experientially deprived.

The blind child learns in pieces. He learns in a fragmentary way. He requires enough time to put, these bits and pieces together to a clarity Concept which is not exactly like ours but which is enough like ours so that we can communicate. And that is the restriction in the 'range and variety of experiences'.

Secondly blindness tends to create a very sedentary kind of existence. A blind person will just sit unless he is pulled out, motivated to get out and move about independently. He sits because of fear. He sits because of lack of skill in using information available in his environment and lack of skill in moving about within it. Certainly the ability to get about is restricted.

Thirdly a blind person talks loudly in a room that is too small for a loud voice or he talks to a corner, or to an empty chair rather than to another person, the common reaction is akin to a silly man. But it is not silly. If simply shows how a blind person is very much at his disadvantage. Not knowing where one is, being unable to control one's environment and oneself in relation to it is a significant deficit.

Verbalism :

Verbal learning without adequate concrete experience is considered to be a significant problem in the education of the blind. The visually impaired child frequently accepts verbal descriptions from the sighted instead of having them based on his own concrete experience. This is not surprising since he has limitation in exploring the world around him and at the same time, he is tagged constantly in visual term. In gaining concrete experience he cannot touch objects that the sighted can see, such as the moon, waterfall, a rainbow, certain animals, fire or lightening and he cannot conceive of colours therefore, he must accept many visually oriented verbal descriptions from the sighted. The sense of sight permits much greater perceptual activity than the sense of touch. Although in time he is able to describe visual concepts well verbally he still may have a hazy, partial and inaccurate understanding of them. This phenomenon is called verbalism which is closely related to concept formation.

Mannerism:

The psychological implication is that blindness does not mean 'loss of life' since

blind persons are more like than unlike sighted persons in terms of basic needs. The educational implication is that the reduction of experience caused by blindness can be overcome by appropriate training to the affected individual. Education and rehabilitation programmers for visually disabled children are growing in large numbers in the present scenario and the independence of disabled person is assured in every respect. These objective effects certainly result in some mannerism such as head movement, tapping on the floor, clapping to find the way out etc. Conscious efforts must be made by the teachers to teach the visually disabled child, what mannerism is acceptable and which ones are unacceptable for his/her inclusion in the society.

Community Attitudes and Reactions :

Unfortunately the deficits are caused by the community as they occur to the individual. The reactions, however, vary from community to community depending on its traditions, culture and belief. Certain communities used to kill a disabled child as the community which depends on skills of war for its survival could not accord a place to a handicapped child. As the society progressed towards becoming a welfare state rather than warfare state, so did the changes occur in the total outlook. The blind person became members of the society who needed to be looked after but not at the equal level with others they were to live on 'charity'. It has also an under tone of religious belief. Today, the scenario is changing. The Community is based on the principles of equality and fraternity. Later is a rare phenomenon. The motto is equal opportunities for all including handicapped people. But this motto is a recent development.

It is dangerous to generalise without sufficient experience and exposure to the characteristics of blind. As one comes across very few blind person in life-time, we tend to generalise about blindness on the basis of limited experiences. Due to the place accrued to the blind being that of 'charity' general tendency is to perceive a blind person as one who can make a livelihood only through begging, hence, blindness implies low level of living. They depend on senses of hearing and touch as the light is denied.

People need to be educated to write about blindness accurately and carefully. The public needs information not only on the realities of blindness but also on the techniques which make both the blind and the sighted person comfortable. How do you manage a blind person? How do you behave when you teach a blind person? How do you show a blind person where to sit down? How do you talk to some of one who is blind?

Need For Community Orientation :

People need to be educated about visual disability. There is a need to present the positive sides of the lives of disabled persons too, to change the stereotype attitude of the society. The community needs information not only on the realities of visual impairment but also on the techniques which make both the visually impaired and sighted person comfortable. Print and non-print material on themes such as how do you manage a visually impaired person? etc. need to be developed for orientation of the community.

Some people are so inhabited that they hesitate about being with a visually impaired person. They also become hyper sensitive. They are afraid to use certain words such as 'see' and 'look'. Regular classroom teachers are frequently faced with this problem and instead of saying "look at this to mean explore and learn to understand this". Most people are well intended but miss-directed in this way. They do not want to offend a visually impaired person. Proper community education is the answer to these misplaced misconceptions.

Parental Reaction to Blindness :

We form our reactions to unknown and inexperienced on the basis of our general impressions. Blindness causes many types of reactions. When we come across a blind child, the general attitude is of sympathy or at times neutrality but seldom of empathy. The reason is the general reaction "Such things happen to others and not us". But when it does happen, the parents feel at a loss. For so many social-Personal and psychological reasons, the reactions occur on a continuum of neglect to over protection.

Due to inability of most parents to understand the implications of an impairment, the impairment is perceived as a handicap. On one extreme is the response of neglect, because it is felt that a blind person is devoid of all normal human functions of being an active Member of the society. Not only this, even parents at times feel the birth of a blind child to be the result of some sin. Hence in their own frustration, the child is ignored and naturally, 'the expectancy prophency' come to be true, the child develops into a person who cannot contribute socially or economically to the society.

Neglect causes certain personality problems but the child has to learn certain basic living skills. Over protection is more dangerous. It denies the child of all the natural demands or expectations of the society.

The social structure is such that we try to say or act what is socially acceptable. Real feelings are rarely expressed especially when they are contrary to the socially desirable ones. The parents of a blind child at times, pose the full acceptance of the blind child as an overt behavior because today society expects parents to stand by their children. But it is difficult to accept a child who becomes a liability, a reason for social talk and criticism. Overt rejections is manageable but covert rejection does not deceive a child. It hurts him psychologically. It affects not only his growth and social relationships but also his own self-concept, the very basic of a person's development.

Role of peer groups :

Peer group influence is substantial in the making of individuals whether it is in the childhood, adulthood or in old age. A disabled individual should have better interaction with other disabled persons of the same age group. Experiences have revealed that disabled children integrated with the mainstream programme tend to accept the disability condition and move forward for constructive life. Therefore, disabled persons should be main streamed as early as possibly to experience the positive effects of personality development on the individual with disability.

Role of Teachers :

The teachers should help the parents to observe disabled children in the classroom setting and notice the nature of training he or she requires—proper language, Cognitive, motor, emotional and social developments. The teachers should encourage parents to ask questions and clarify doubts. Moreover, the parents should be oriented by the teachers to identify the areas where the child needs maximum assistance. In general. The close collaboration with the teachers and parents of disabled children could cast a tremendous impact on the overall development of the child.

Often, teachers are looked upon by parents and disabled children as the major source for guidance. As teachers are trained to handle children with disabilities in the professional way, their influence on the personality development of the child is undisputable. They should act as mentors for children with disabilities and their parents. If possible, making visits to the families of children with disabilities and interacting with the child, their parents and siblings may have a positive influence on the personality development of the child.

Psycho-Social Effects on the child :

Really speaking, psycho-social development of a blind child is not affected so much by blindness as it is disrupted by the emotional overtones of blindness, for the parents and the community. It is now a well-known fact from research that children tend to achieve as much and only as much as their parents aspire them to achieve or the significant persons in their environment expect them to achieve. But, once, the community does not treat them as individuals they are lost in a crowd, the crowd of blind persons-beggars, musicians or do whatever they like. Once, the parents stop treating the child as a developing individual, once they refuse to accept his capabilities and limitations both, in a realistic and positive manner, his self-concept is bound to be severely affected. Overprotection robs him of his independence, neglect turns him to undesirable behaviour.

3.4 Factor affecting implications of Visual impairment: Age of onset, degree of vision, type of vision loss, prognosis, and socio economic status of the family.

3.4.1. Age of Onset :

Development "norms" are based on observation of sighted children. Although it - appears to be true that the more likely he/she is to develop at a normal rate there is little research to support a direct comparison of blind children to sighted norms. In fact current research suggests that blind children may have their own set of norms (i.e. they may not follow all of the same sequences, in the same order, at the same time, as sighted children). Human life can be divided into four broad stages; Infancy, childhood, adolescence and adulthood - the first three of which correspond roughly to the Piagetian stages of sensory-motor (0-2), Pre-operational(2-7), Concrete operation(7-12) and formal operation (12 onward). The stages can again be divided into early and late sub-stages. In shaping personality and attitude each stage has its own contribution to make.

Orientation is the ability of the visually impaired child to perceive and understand his/her position and location within a given environment. Mobility is the ability to move within a given environment. This ability does not suddenly appear at a specified time or age, but has an underlying conceptual foundation which begins at birth. For visually impaired infants, many factors contribute to the qualities of these emerging

conceptual foundations. Initial mobility factors are largely motor based, and depend to a great extent on the development of the motor system. Milestone skills such as head control, sitting unsupported, independent hand/arm use (as in grasping and reaching) creeping / crawling, standing alone and walking independently are all pre-mobility skills.

In childhood - the period between 6 and 12 the chaotic and disorganized emotional life of the infants becomes more stable, and definite social relations are established. The main characteristic of this period is socialization of the child owing to more diversified, and at the same time, more selective activities.

A child who loses his sight during this period is suddenly pushed off the track which he was following so long. Emotional disturbance may not be as severe as we understand in the adult sense, but social bonds being snapped, his ability to establish social relation may become less effective. Isolation from the peer group and lack of activities tend to produce anxiety and tension which, when unresolved may lead the child to non-coping and non-adjective, mannerist behaviour and verbalism.

The effect of onset of blindness in adolescence period is more complex. Theoretically it may be true that, as the individual has already passed through the previous stages undisturbed there would not be great developmental deficits in the psychomotor and cognitive areas due to blindness, but from the personality point of view, the effect may be highly damaging.

The human being who is getting ready both physically and mentally to become a full-fledged individual in this world, suddenly becomes a non-person at the blow of blindness - at least, he or she feels so. The budding self-image and self-concept of the adolescent, who already having the normal quota of "Storm and Stress" of this period is shattered with the onset of blindness. An adult also experiences almost the same emotional instability after losing eyesight.

3.4.2. Degree of vision:

Visual impairment refers to a significant loss of vision in both eyes which may vary significantly, which means that each student with low vision or blindness needs individual adjustments to learn most effectively. There are two main categories of visual impairment: Low vision and blind.

The classification of visual impairment varies worldwide. The "WHO" classifies levels of visual impairment based on visual acuity and visual field limitation, and

defines blindness as profound impairment. The "WHO" definition of blindness specifies visual acuity less than 20/400 and or remaining visual field less than 10 degrees in the better Seeing Eye. Visual acuity of 20/70 to 20/400 (inclusive) is considered moderate visual impairment of or low vision. The national eye institute defines low vision more loosely as a visual impairment not correctable by standard glasses, contact lenses, medication or surgery that interferes with the ability to perform activities of daily living.

Though the dictionary meaning of blindness is lack of sight that is total absence of vision, in reality we find blind persons not all of them are totally blind but with varying degree of visual loss. We would get different degree of visual ability in the intermediate stages like "light perception" (the ability to differentiate between light and darkness) "light projection" (the ability to detect the direction and source of light), and gradual increase in low vision up to 20/200 ft.. Different degrees of visual disabilities affect the individual adjustment to their handicapped differently. Every case requires individual attention.

3.4.3. Type of Vision Loss:

There are some children who are not blind in the medical or legal sense of the term but their visual impairment is serious enough to call for special help in education. They are called partially sighted. They are not admitted in to the institutions for the visually handicapped as they do not generally use touch as the main mode of learning. With the help of optical and mechanical aids, they can read prints. But due to constant pre- occupation with vision and efforts to see a little better, the partially sighted child, who acquires somewhat abnormal gaits and posture, may become self-centered and sluggish in social behavior.

Most of eye disorders is considered to affect the human being which is most commonly of two types. One is adult vision problems which consist mostly.

i) blurred vision (Called refractive errors) ii) Age related macular degeneration iii) Glaucoma iv) Cataract v) Diabetic retinopathy.

On the other hand, most of childhood vision problems are like (i) Blurred Vision (called refractive errors) (ii) Crossed eyes (called strabismus) (iii) Lazy eye (called amblyopic) (iv) Albinism.

Blurred Vision (Refractive errors) :

- Near sightedness (called myopia) is when we can see clearly the close ups but blurry in the distance.
- Farsightedness (called hyperopia) is when we can see clearly in the distance but blurry ups close.
- If you are older than 40 and have trouble reading small print or focusing a close-up this is usually due to a condition called Presbyopia.
- Astigmatism is another condition that causes blurred vision but it is because of the shape of the cornea.

Crossed eyes (Strabismus) :

Strabismus occurs when the eyes do not line up or they are crossed. One eye however, usually remains straight any given time. Common forms of strabismus include -

- Esotropia: One or both eyes turn inward toward the nose.
- Extropia: One or both eyes turn out, also called wall -eyed.
- Hypertropia: One or both eyes turn up.
- Hypotropia: One or both eyes turn down.

Lazy Eye (amblyopia):

Amblyopia often called lazy eye is a problem that is common in children. Amblyopia is a result of the brain and the eyes not working together. The brain ignores visual information from one eye, which causes problems with vision development.

Treatment for amblyopia works well if the condition is found early. If untreated, amblyopia causes permanent vision loss.

Albinism:

Albinism is a pigment deficiency causing several physical condition including vision problems. People with albinism often have low vision including severe light and glare sensitivity.

Effects on Vision : Albinisim is a non-progressive condition and so as the individual ages it will not. Albinism can cause Photophobia (an aversion to bright light) A student may notice their vision is worse in bright light and better in dim light (especially central vision). Along with light sensitivity the student may also have astigmatism, lowered visual acuity and nystagmus (side to side rhythmic eye movement).

Cataracts:

Cataracts are the leading cause of preventable blindness worldwide. They are responsible for over 50% of the world's blindness, over 20 million people. Cataracts are a clouding of the lenses of the eye that cause light to be diffused as it enters the eye impacting the clarity of the visual image. Most cataracts are a natural result of aging out they can also happen due to trauma to the eye.

Effects on Vision : The lens of the eye is affected by cataracts. Often the lens becomes cloudy and prevents light from refracting onto the retina at the back of the eye.

Retinopathy of Prematurity

Retinopathy of prematurity is characterized by the abnormal growth of blood vessels in the retina of some premature infants. The use of oxygen administered to premature babies in incubators was suspected as a possible cause of the abnormal growth of the blood vessels. Other factors include low birth weight, premature birth 32 weeks or younger and the baby being severely ill at birth.

Effects on Vision: The retina is affected because blood vessels do not reach the edges so blood flow is disrupted. If there is normal growth of the blood vessels, the area is well supplied with nutrients and oxygen.

The optic nerve and macula are affected as well as the mid and far periphery. Retinopathy of prematurity can range from a mild reduction in visual acuity to complete retinal detachment and blindness.

Glaucoma:

Glaucoma is the most common eye disease, affecting more than 80 million people worldwide. Glaucoma involves damage of the optic nerve, usually caused by

fluid buildup and increased pressure inside the eye. The result is a loss of peripheral vision and often difficulty seeing in dim lighting.

Effects on Vision: Early detection and intervention can control the pressure and reduce the impact on vision.

Blindness can occur in a few cases, the combination of eye structures affected with the addition of amblyopia caused by visual deprivation in the formative years contribute to the visual impairment. Peripheral vision often first affected as nerve fibres from the peripheral retina are most susceptible to raised pressure. Some students experience photophobia.

Age related Macular Degeneration (AMD) :

Age related Macular Degeneration (AMD) is the foremost cause of Vision loss among all over the world people who are 60 and older. AMD involves damage to the macula in the back of the eye, resulting in loss of central vision to effect on many tasks, including reading and writing. This can result in a loss of independence.

Retinitis Pigmentosa(RP) :

Retinitis Pigmentosa is the general name given to a wide range of genetic eye conditions predominantly characterized by problems with the rod photoreceptors, however in advanced cases the cones may also be compromised. Specific eye conditions associated with Retinitis Pigmentosa are Rod Cone Dystrophy, Leber's Amaurosis and Usher's Syndrome. RP usually progresses slowly. Cataracts and retinal swelling are also associated with retinitis pigmentosa.

Effects on Vision: Usually the rods are more affected than the cones meaning night vision and movement of things are compromised. There will also be a loss of peripheral vision. If the cones are affected then there will be central and colour vision loss.

Stargardt Disease :

Stargardt disease is the most common form of inherited juvenile macular degeneration, occurring in one in every 8000 to 10,000 people worldwide; It causes gradual loss of central vision. It usually develops during childhood or adolescence resulting in a loss of the center part of the visual field.

3.4.4 Prognosis

What is Prognosis? :

"Prognosis means what is expected in the future?" In general vision loss does not improve over time. There are exceptions of course such as when you are correcting a problem such as amblyopia or near sightedness. In addition, as a visually impaired infant grows and develops, they may be better able to use their vision and demonstrate what they see, so that it appears as though improvement has been made. But vision loss that is present from birth or early childhood, particularly when it occurs with other disabilities will usually not get better. However with the right training, technology and other assistance, a child can live a full life even with vision loss.

Children with vision impairment may have some delay in development related specifically to not being able to interact with their environment visually since much of what a child learns comes from visual clues. As a child receives vision supports and early intervention services, these gaps will close.

If a child has other disabilities, along with vision loss, one can still give one's baby a high quality of life through early intervention services, adaptive devices and other methods of treatment.

3.4.5 Socio economic status of the family :

The family plays in shaping our personality. It is the first social environment that a child gets in its life. It has been proved that the adjustment problems of each individual member in the family are usually related to inter dependencies with other members. The culture, socio-economic status, the educational level of the family particularly the parents and their relation with the visually handicapped child determines the level and quality of adjustment of the child to his own disability and to the society. The role of the parents, especially the mother, is most crucial in this process.

An analysis of the global distribution of visual impairment shows a dis-proportionately large prevalence in low income developing countries. In these countries cataract and trachoma are the greatest causes of avoidable blindness. The lack of and inequity of access to prevention and eye care services severely limit in these regions of the world.

The lack of economic development is a factor that aggravates the prevalence of visual impairment. For this reason, blindness prevention programmes must concern

themselves not only with the elimination of avoidable blindness but also with concurrent economic development. The cost of rehabilitation and care provided to the visually impaired are the most obvious. Less apparent but just as significant however is the indirect cost resulting from the loss of productivity.

Family can be the most important factor in a child's success in recalling his or her full potential. The efforts of a child family to provide life experiences and obtain necessary services can make a tremendous difference. In addition to finding knowledgeable, medical and educational professionals who can help meet the needs of their children. Families can help a visually impaired or disabled child grow and develop by having expectations that their child will in fact do exactly that. When children are a part of family life, they learn about the world around them about the people in that world and about themselves as a person as well.

For that reason, It is important for a child to be involved in meal times in home, even if she may not eat solid food using a fork, knife, or spoon, sitting at the table with the rest of the family gives her the chance to be social and to communicate. Perhaps you may need feed her before everyone else because she's on a particular schedule or is to be fed, but finding ways to bring her to the table when the rest of the family eats can be important for her and for all as family.

3.5 Effect of visual impairment on growth and development: Physical, Motor, Language, Socio-emotional, and cognitive development.

3.5.1. Physical Development

The child's rate of physical growth begins to taper off after toddlerhood, the period when physical development is at its greatest. Yet body proportions continue to change, and motor skills continue to be refined at a relatively fast rate, enabling children become more adept at dealing with their own needs and coping with their physical surroundings. By the age of 5, the average child stands 43 inches tall (about 3.5 feet), which is just over double the birth length, and weight 42.8 lbs., approximately five times the weight at birth. At birth, the head measures between 12 to 14 inches in circumference. By the first year it has increased 33 percent, and at the fourth year the head has increased approximately 48 percent. And by the end of the sixth year,

the head has attained almost 90 percent of its adult size. The brain, growing in relation to cranial growth, has attained 75 percent of its adult weight by the fifth year, as the billions of nerve fibers become increasingly myelinated and the dendrites in all layers of the cortex increase in both size and number. These maturation processes will enhance the connectivity and transmission of nerve impulses, which is critical to more complicated brain functions.

Physical Changes during Preschool Years

By the time children enroll in nursery school or kindergarten, there have been noticeable physical changes in their bodies. This is largely due to a growth spurt that affects height, as well as to the preschooler's participation in numerous and diverse physical activities, which affect muscular growth and body building. Changes in postural patterns also become quite evident during the early years.

Force of gravity. The force of gravity affects the body (the center being the trunk), whether sitting, standing, or running. Each child must maintain equilibrium in order to produce good posture and balance. With age, body proportions change, and the centre of gravity drops lower in the trunk. This makes it easier for the child to maintain equilibrium in the standing position

Type of body build. Posture is also affected by the child's body build. Correct posture is also influenced by the strength of the bones, the firmness of the muscles, and the kinesthetic sense.

Course of development. The stages of the child's development are another factor to consider the early phases ofiocomotion, for example, influence certain parts of the body, such as the neck muscles or the lumber curve in the lower part of the back. When walking, the weight of the body falls on the inner part of the foot, resulting in the foot's sagging in the area of the ankle.

Interactions with the environment. Environmental factors, such as nutrition, rest, and activity also are important to posture. The child now has incentives to excel in certain areas, such as sports, to be physically attractive, or to perfect certain motor skills. All of these may encourage a child to learn proper body balance and posture.

3.5.2. Motor Development

Generally, either no delay or only slight delays have been reported in motor-skills of blind children that require stable, in-place movement (such as sitting, rolling, and standing alone). However, more severe delays have been reported for those associated with locomotion (holding-up head, crawling, creeping and walking). There can be a longer delay between crawling and walking for children who are blind relative to their peers with vision.

Motor skill development rapidly accelerates in the physical play world through such activities as jumping, climbing, running, and tricycle riding. Knowing what preschoolers are physically capable of undertaking and their degree of efficiency is important not only to parents but also to day-care and nursery-school teachers, people who will be structuring their physical activities. Adults need to develop children's motor skill activities so that they may alleviate any frustration.

Hand

Although the hands are a major perceptual organ, a blind infant has significant developmental delays in his ability to employ his hands functionally. Even at 5 months a blind infant's hands will be fisted and held at shoulder height. There will be no mutual fingering, no engaging at the midline. At this age, a sighted child practise coordinated reaching and transference of objects from one hand to another. This delay in hand utilization will result in delayed fine motor and gross motor development.

Body

A blind infant usually achieves control of his posture at approximately the same age as sighted Infants through the following normal progression:

- sits alone momentarily
- rolls from back to stomach
- sits alone steadily
- takes stepping movements when hands are held
- stands alone
- bridges on hands and knees

However, the achievements that require self- initiated mobility are significantly delayed:

- elevated on arms in prone
- raising to a sitting position
- pulling to a stand
- walking alone

Until a blind child will reach out to grasp a sound cue (12 months), he will not move out in space either on hands and knees or feet.

Milestone's in Preschool Motor Developments.

Age	Gross Motor Skills	Fine Motor Skills
2.5-3.5 years	Walks well; runs in straight line; jumps in air with both feet	Copies a circle; scribbles; can use eating utensils; stacks a few small blocks
3.5-4.5 vears	Walking stride 80 percent of adult; runs at one-third adult speed; and catches large ball, but stiff-	Buttons with large buttons; copies simple shapes; makes simple representational drawings
4.5-5.5 years	Balances on one foot; runs far without falling; can swim in water for short distance	Uses scissors; draws people; copies simple letters and numbers; builds complex structures with blocks

3.5.3. Language Development

The foundation of communication starts in the earliest days, when babies express their feelings and parents respond to their cries or vocal sounds. This helps babies learn to influence their parents and to attract their attention. During the first year they become more purposeful in communicating their wishes and needs. This is done through vocal and emotional expressions, eye contact and/or body movements. In the second year, children start using language to communicate their wishes and needs, to request and refer to things and to draw attention to events of interest.

The toddler years are typically the time of great language development as children begin to make connections and verbally label and identify objects. Children who are

blind or visually impaired will not have the same opportunity to casually observe and make connections with gestures and materials in their environment. Unless the student was intentionally taught through direct experiences paired with language, their language development will undoubtedly be delayed. To encourage the student to develop language, it is important for the student to be exposed to good language models in active learning environment. The following strategies can help a student develop their language skills:

- Pronounce the language properly.
- Speak with grammatical accuracy.
- Build vocabulary.
- Understand and produce longer stretches of speech, such as stories, directions, or instructions.
- Use the language to accomplish purposes and get things done.
- Use words and ways of speaking appropriate for different situations.
- Interact with other people appropriately when talking with them.
- Understand more about what the people are like and why they behave the way they do.

Verbalism

It is common for a student to talk about people, objects, and events without having the understanding of the concepts. Because they haven't had the experiences related to the topic, but have heard others talk about the said topic. Having a vocabulary or language without the understanding is called verbalism. It is the ability to talk about a subject without the concepts or understanding related to it.

Echolalia

Many students who are blind or visually impaired learn to talk by echoing or copying phrases or sentences even if they do not understand it. They may echo what they just heard, or have delayed echolalia where they repeat language heard earlier in association with a particular subject.

Sustaining Conversations

Students who are blind or visually impaired also can have difficulty sustaining conversations. They can tend to focus on their own interests and not appear to have

an interest in others. Students may need explicit instruction in participating in conversations.

Preschooler's language development can be improved responding to an encouraging young child's speech, Adults can do a great deal to help facilitate overall language development. Adults should consider the following suggestions: (1) Establish a satisfactory speech model. (2) Encourage verbal and nonverbal communication. (3) Provide experiences that will make words meaningful (4) Encourage listening and attention skills. (5) Encourage speech as a substitute for action (6) Use exact terminology and talk with children at their level.

3.5.4. Socio-emotional development

During early childhood, children start to develop a "self-concept", the attributes, abilities, attitudes and values that they believe define them. By age 3,(between 18 and 30 months), children have developed their categorical self, which is concrete way of viewing themselves in "this or that" labels. For example young children labels themselves in terms of age "child or adult", "gender", physical characteristics "short or tall" and value, "good or bad." The labels are used to explain children's self-concept in very concrete, observable terms.

Children's social-emotional development influences all other areas of development: Cognitive, motor, and language development are all greatly affected by how a child feels about herself and how she is able to express ideas and emotions. Professionals sometimes define healthy social-emotional development in young children as early childhood mental health. Healthy social-emotional development includes the ability to:

1. Form and sustain positive relationships
2. Experience, manage, and express emotions
3. Explore and engage with the environment

Children with well-developed social-emotional skills are also more able to : Express their ideas and feelings

- Display empathy towards others
- Manage their feelings of frustration and disappointment more easily

- Feel self-confident
- More easily make and develop friendships
- Succeed in school

Social-emotional development provides the foundation for how we feel about ourselves and how we experience others. This foundation begins the day we are born and continues to develop throughout our lifespan.

The greatest influence on a child's social-emotional development is the quality of the relationships that he develops with his primary caregivers.

Positive and nurturing early experiences and relationships have a significant impact on a child's social-emotional development. They also influence how the young child's brain develops.

Social interaction

Several researchers have noted that whereas sighted children spend most of their playtime interacting with other children, children who are blind spend about half their time in solitary play. Children who are blind are also more likely to choose to spend playtime with adults than age-peers. Blind children in nursery school were observed to have severe difficulty in social interactions with sighted peers. In contrast to normal exploration, behaviours such as eye-pressing, body-rocking, and head-nodding can present serious problems. Such behaviqrs, which are described as "stereotyped behaviours", "blindisms," or "mannerisms," are prevalent among children who are blind or visually-impaired, although they are not found only in this population. The behaviours usually decrease with age, but can persist to adulthood. Possible reasons for these behaviors include monotony, boredom, stress, and excitement.

3.5.5. Cognitive Development

A general issue relevant for school aged children is the possible impact of vision impairment on areas of cognitive development that are associated with interpreting information available to the senses. Examples of such areas are classification, conservation, spatial knowledge, and memory.

Cognitive development refers to such skills as reasoning, storing and remembering information, seeing relationships and differences, classifying things, defining and

describing, evaluating, comparing and contrasting, inventing, problem solving and other higher order skills. Non-disabled children of this age group are usually able to perform the following tasks.

1. Asking question for more information
2. Building blocks
3. Identification of basic colours
4. Awareness of age and name of self
5. Symbolic and thematic kinds of play activities
6. Creative responses
7. Matching three dimensional objects and pictures
8. Imitating adults

Visually impaired children have the same potential for cognitive development as non-disabled children during this age.

Construct of World

The blind child has limited ability to coordinate and organize elements into higher levels of abstraction, and to verify the information. Therefore, he constructs a reality that is different from the sighted child's. The process of establishing concept-defining attributes and relationships is more problematic for the blind child and less accessible to guidance. The blind child is continually involved in problem solving, but this process, which is essential to future development, is more difficult and less rewarding for him.

Object Permanence

A stable visual field is the basis of object permanence and other conceptual tasks. Object permanence cannot be obtained by a blind child until he has the ability to reach for objects based on sound cue alone. It is acquired nearly a year later than in sighted children.

Causal Relationship

Since the results of actions cannot be seen, the blind child may not be motivated to action. He may not understand his ability to cause things to happen or to retain pleasurable stimuli.

Constancy

Understanding how to align blocks or orient his hands on a page in order to duplicate a pattern will be difficult ifhe hasn't observed objects in various orientations to know that an object is the same regardless of its position in space.

3.6 Educational needs of the Visually Impaired and Need for Expanded Core Curriculum for Visually Impaired children

3.6.1. Educational needs for the Visually Impaired Children

The challenge for educators of visually impaired children, including those with other disabilities, is how to teach skills that sighted children typically acquire through vision. Visually impaired students have used a variety of methods to learn to read, write, and acquire other skills, both academic and nonacademic. For example, for reading purposes, some students use braille exclusively; others use large print or regular print with or without low vision aids. Still others use a combination of methods, including braille, large print, low vision aids and devices with computer-generated speech, while others have sufficient functional vision to use regular print, although with difficulty.

Parents along with other team members are responsible for providing opportunities at various stages to identify variables to be considered and decisions to be made as the challenges increase. As progress is made and children become more responsible, the focus gradually changes to the individual for more involvement in educational and personal decisions.

Promoting education for children with visual impairment

- Determine what medium is best for an individual child through the Learning Media Assessment.
- This may be braille, print, dual media, auditory strategies, objects, symbols, or some combination.
- Provide books and literacy tools in a format that is accessible to the child.
- Read aloud using stories and books that are interesting and appropriate for the child.
- Create a literacy-rich environment, in which the child knows that others are reading and writing. There are a variety of methods that students with visual

impairments use to read. Often a single student will use different strategies in particular settings or for specific materials or content.

There are six stages in development in which parents and various team members are involved as children's educational development.

1. Infants and Parents, (from Birth to 2 years)

Parents are dealing with emotional issues of shock, trauma, and grief associated with the first diagnosis of visual impairment. Confusion and uncertainty cloud their thinking until they can begin to understand and accept the reality of the situation. By then, they need to seek information though support systems, reading and learning what to do.

Certified Orientation and Mobility Specialists (COMS) begin to teach infants orientation to touch, sound, and visual objects. They give checklists of activities for parents to follow, and model teaching to reach, learning to sit alone, to crawl, and later to encourage walking. They also teach body parts, body positioning, spatial concepts, and body movements.

2. Preschoolers, (from 2-4 years)

This is the stage when a child is striving for independence. Parents (or primary caregivers) are still the primary members of the team. The major decision is to determine who gives the regular care during the day; parents, another family member, or day care. One-on-one teaching of skills and language is a necessity.

Preschool teachers begin to be the leaders for learning development and diagnostic assessments and report to parents and therapists. It may best for the student to be placed in a regular classroom with a consulting teacher of students with visual impairments (TVI) or a special classroom, whichever is most appropriate for the child.

3. The Primary Grades, (from 5-7 years)

Parents, in consultation with teachers have important decisions to make in regard to placement and instructional service delivery depending upon the child's readiness for and progress in the general and YI- specific expanded core curriculum. The visual status of the child is not the only determinant in placement. At home, the parents are challenged to encourage more independence in personal and home activities. Play opportunities with peers are especially critical as is time with parents to talk about incidents of the day.

The Educational Diagnostician is part of the team to develop educational and cognitive measures as indicated, and share assessment data with parents and teachers to develop the individualized educational programme (IEP).

4. Middle to Late Elementary School, (from 8-12 years)

The key challenge is to develop the learning scope and efficiency of the students as a priority to make maximum progress possible. Instructional decisions based upon student achievement will determine the type and amount of Vl specialized instruction. New skills to be emphasized are keyboarding for the computer and other technology-related instruction. Social skills are important to enhance communication and interaction with peers and teachers, and as a means to effect natural independence as a prelude to middle and high school.

5. Middle School and High School, (from 12 to 18 years)

The early and later teen years indicate the need for additional members of the previous teams to ensure a broader scope of academic, vocational and job-seeking considerations. Rehabilitation counselors and/or job coaches, adults with visual impairments as role-models, and extended family members are valuable members of the team.

6. Transition to Adulthood, (from 18 years and beyond)

The major decisions center around, i. what now? ii. Where do I live? iii. Where can I work? iv. Should I pursue further education? When an individual has other disabling conditions, these decisions require consultation with team members about the optimal situation for each individual. Some may be unable to live away from home or other protected environments. Creative personal living and working situations, including sheltered or supported employment, may be suitable for those with limited independence.

So there are various range of inclusive teaching strategies that can assist all students to learn but there are some specific strategies that are useful in teaching a group which includes students with visual impairments. In considering alternative forms of assessment, equal opportunity, not a guaranteed outcome, is the objective. You are not expected to lower standards to accommodate students with a disability, but rather are required to give them a reasonable opportunity to demonstrate what they have learned. Disability-specific compensatory skills refer to the use of strategies, techniques, and adapted materials that students with visual impairments need to access the general education and common core curricula.

BLINDNESS AND ITS IMPLICATION FOR EDUCATION

1) In learning visually disabled Children to perceive an idea through 'structure' rather than 'form' as in the case of sighted children. Therefore, visually disabled children are likely to miss specific information of the learning activities.
2) Visually disabled children may take more time for forming a concept Since the tactile and auditory perception cannot replace visual perception and not even match the experiences formed out of visual perception, visually disabled children tend to attain reduced experiences.
3) The visually disabled child may need to be given direct assistance to learn systematically even the simple skills which sighted children learn almost spontaneously through imitation and contact with the environment.
4) Due to the lack of visual feedback, the visually disabled child may skip a number of intervening steps of an activity which requires more visual orientation.
5) The visually disabled child may have difficulty in forming exact concepts as he has to manipulate from part to whole.
6) The visually disabled child may develop verbal expression without associating proper meaning for that expression.
7) The visually disabled child may show deficiencies in some subjects when he is untaught.

   Predictions should not be made that he is unteachable. Efforts are necessary to teach him difficult concepts too
8) A misconception that visually disabled children possess extra power in their auditory and tactile ability should be overcome. They need sufficient practice for developing these skills in them.

3.6.2. Need for Expanded Core Curriculum for Visually Impaired Children

The expanded core curriculum (ECC) is used to define concepts and skills that often require specialized instruction with students who are blind or visually impaired in order to compensate for decreased opportunities to learn incidentally by observing others. In addition to the general education core curriculum that all students are taught, students with visual impairments, starting at birth, also need instruction in

the ECC. The ECC areas include needs that result from the visual impairment that enable the student to be involved in and make progress in the general education curriculum and other educational need that result from the child's disabilitiy"

The Expanded Core Curriculum, first developed by Halted (1997), defines the concept and skills typically learned incidentally by sighted students that must be sequential presented to the blind students or low vision. Components of the expanded core Curriculum have been adopted as the essential core curriculum for student with visual impairment.

These unique curriculum areas need to be included in the personal programme plan.

Concept Development

Students with blindness need assistance in making the connection between vocabulary and real objects, body movements and abstract ideas.

- Pre-teach vocabulary and key concepts which relate to the curriculum through verbal The explanations and concrete experiences using a multisensory approach.
- Pre-teaching can be provided by someone other than the teacher, such as a peer, an older student, a teacher assistant or a parent.
- After the student has participated in pre-teaching and classroom instruction, it is crucial to review concepts and vocabulary.

Organizational Skills

- Organizational skills are an integral part of student success and are essential for the student with blindness.
- Have the student organize, use and take responsibility for his/her personal work space.
- Provide the student with a definite place to put things, with the expectation that the student uses this space.
- Use containers and zippered pencil cases to store objects.
- Use techniques for safely locating and searching for dropped objects.
- Attach braille labels to binders and folders for the student.

- Provide sufficient space for materials and equipment. Often a special room is required for storage and use of specialized equipment. A desk may need to be adapted to provide a larger working area.
- Brailled texts require more storage space and should be stored upright.

Communication

Listening Skills

A student with blindness learns through listening, so it is important that he/she develops good listening skills. Listening skills are taught as an integral part of the language arts curriculum in the elementary grades and a student with blindness will benefit from these activities.

- Discriminate between different sounds;
- locate the direction of sounds; and
- Associate sounds with objects and situations.

Listening and interpreting oral information:

- to listen for sequence;
- to listen for details;
- to listen for main ideas;
- to listen to follow instructions; and
- New vocabulary. Check that the vocabulary is within the student's experience and has meaning.

Listening to audiocassettes:

- minimize distractions to increase attending;
- read the questions to be answered before listening to the information;
- listen to the pertinent parts of the tape prior to the lesson;
- play a short portion of the tape, then stop to write notes; and
- adjust the speed of the recorder.

Listening to a reader:

- Having someone read to the student has the following advantages:

- the student has immediate access to the same reading material as other students;
- the reader can scan the text to find appropriate material;
- the reader can give information on spelling and punctuation; and
- this is an option when taking tests.

Braille Reading Skills

The student will require a pre-braille and braille reading program, in addition to participating in the regular reading programme.

Writing Skills

- Teach a student who uses braille to write his/her signature. Raised lined paper and signature guides are available.
- Teach keyboarding skills (grade 3 or 4) after the braille writing skills are established.
- Provide access to a computer at an early age. Adaptations may be necessary.
- The student should be able to spell words letter by letter as well as by using braille contractions.

Speaking Skills - A student should:

- look directly at the speaker;
- learn to participate in a discussion;
- learn when to speak;
- learn to use and interpret voice modulation;
- learn to initiate and contribute to a conversation;

Mathematics Skills

There may be a number of gaps in the student's general knowledge that would normally have been gained through visual observation. Math for the student with blindness is prepared in Nemeth code.

- Speed may be improved by adapting or shortening assignments.
- Make or purchase braille flash cards.
- Raised pictures, diagrams and concrete objects are necessary to develop concepts. Simple raised outlines are preferred.

Independent Living Skills

This area of the expanded core curriculum is often referred to as "daily living skills." It consists of all the tasks and functions persons perform, in accordance with their abilities, in order to lead lives as independently as possible. These curricular needs are varied, as they include skills in personal hygiene, food preparation, money management, time monitoring, organization, etc. Some independent living skills are addressed in the existing core curriculum, but they often are introduced as splinter skills, appearing in learning material, disappearing, and then re-appearing. This approach will not adequately prepare blind and visually impaired students for adult life. Traditional classes in home economics and family life are not enough to meet the learning needs of most visually impaired students, since they assume a basic level of knowledge, acquired incidentally through vision. The skills and knowledge that sighted students acquire by casually and incidentally observing and interacting with their environment are often difficult, if not impossible, for blind and visually impaired students to learn without direct, sequential instruction by knowledgeable persons.

Recreation and Leisure

Recreation and leisure activities will vary with the student's age and functional vision. These activities may range from pretending and playing with toys to artistic abilities and using technology, equipment and tools. Recreation and leisure offer opportunities for students to use their abilities, be active, feel self-worth, release tension, show others what they can do, get along with others and receive recognition or rewards. Many recreation and leisure activities promote lifetime skills that play an important part in developing a satisfactory life. Recreation and leisure activities provide opportunities for students to integrate and apply skills acquired in many curricular areas. Students with blindness need additional encouragement to pursue these activities. The student should develop:

- an awareness of leisure activities and the skills to manage leisure time well;
- skills for solitary play and solitary leisure activities;
- skills for social play and social leisure activities;
- an interest in learning about or joining a community club or group;
- an interest in physical play, physical games, physical fitness and sports;
- an enjoyment of pets and nature;
- an enjoyment of music and dance;
- an interest in a hobby;

- skills for reading, writing, speaking and drama as leisure activities;
- skills for using science and technology for leisure purposes;
- an interest in taking lessons (music, gym, drama, swimming, dance); and
- an interest in attending camps.

Knowledge of the Eye Condition

A student needs to understand and be able to tell others comfortably about the cause of his/her blindness. Understanding of the following leads to acceptance and dealing with the blindness:

- Name, cause, implications and prognosis ofthe student's eye condition;
- Genetics counseling;
- Eye care and service; and
- Knowledge of factors secondary to the eye condition (diet, medication).

Orientation and Mobility

Orientation and mobility (O & M) instruction prepares a student with visual impairment to travel independently and safely. Orientation skills help a student to be aware of his/her own body in space and the surrounding environment. Mobility skills are specific techniques used to enable a student to move easily from one place to another. Orientation and mobility includes both mental orientation and physical locomotion.

Orientation and mobility skills contribute to development in social skills, mental and physical interactions and the general well-being of the student. These skills are needed for the student with low vision as well as the student with blindness.

As a part of the expanded core curriculum, orientation and mobility is a vital area of learning. Teachers who have been specifically prepared to teach orientation and mobility to blind and visually impaired learners are necessary in the delivery of this curriculum. Students will need to learn about themselves and the environment in which they move - from basic body image to independent travel inrural areas and busy cities. The existing core curriculum does not include provision for this instruction. It has been said that the two primary effects of blindness on the individual are communication and locomotion. The expanded core curriculum must include emphasis on the fundamental need and basic right of visually impaired persons to travel as independently as possible, enjoying and learning from the environment through which they are passing to the greatest extent possible.

Orientation & Mobility should be incorporated into the student's Programme and timetable. An individual program is determined by considering the following factors:

- diagnosis and degree of visual impairment;
- prognosis of visual impairment;
- functional vision;
- presence of other disabilities;
- age;
- cognitive functioning;
- general health;
- school and community environment; and
- family, school and community resources.

Technology

Technology is a tool to unlock learning and expand the horizons of students. It is not, in reality, a curriculum area. However, it is added to the expanded core curriculum because technology occupies a special place in the education of blind and visually impaired students. Technology can be a great equalizer. For the braille user, it allows the student to provide feedback to teachers by first producing material in braille for personal use, and then in print for the teacher, classmates, and parents. It gives blind persons the capability of storing and retrieving information. It brings the gift of a library under the fingertips of the visually impaired person. Technology enhances communication and learning, as well as expands the world of blind and visually impaired persons in many significant ways. Thus, technology is a tool to master, and is essential as a part of the expanded core curriculum.

Technology for Students with Blindness

A computer system for a student with blindness will include a computer or laptop with the following components.

- ✓ Screen Reader/Speech Synthesizer
- ✓ Voice Access
- ✓ Scanner
- ✓ Optical Character Recognition Software

- ✓ Electronic Braillewriters
- ✓ Print-to-Braille Software
- ✓ Braille Printer or Embosser
- ✓ Calculator
- ✓ Cassette Recorder
- ✓ Descriptive Video Service (DVS)
- ✓ Language Master

Career Education

There is a need for general vocational education, as offered in the traditional core curriculum, as well as the need for career education offered specifically for visually impaired students. Many of the skills and knowledge offered to all students through vocational education can be of value to visually impaired students. They will not be sufficient, however, to prepare students for adult life, since such instruction assumes a basic knowledge of the world of work based on prior visual experiences. Career education in an expanded core curriculum will provide the visually impaired learner of all ages with the opportunity to learn first-hand the work done by the bank teller, the gardener, the social worker, the artist, etc. It will provide the student opportunities to explore strengths and interests in a systematic, well-planned manner. Once more, the disadvantage facing the visually impaired learner is the lack of information about work and jobs that the sighted student acquires by observation.

Because unemployment and underemployment have been the leading problem facing adult visually impaired persons, this portion of the expanded core curriculum is vital to students, and should be part of the expanded curriculum for even the youngest of these individuals.

Self Concept and Socialization

Social and life skills that other students can learn naturally through observing others and modeling, must be taught specifically to the student with blindness.

- ⇨ Teach the student to turn and face the speaker.
- ⇨ A student with blindness may have mannerisms, such as rocking or repeatedly

rubbing the eyes. Such mannerisms can interfere with social interactions. This is a sensitive issue; professional advice should be sought.

- ⇨ Encourage the student to initiate a conversation or play activity. The student will often wait silently until someone else takes the initiative.
- ⇨ Help the student to understand and respect the personal space of others. The student will also need to be able to ask others, in a courteous way, to respect his or her personal space.

Social interaction skills needed to respond appropriately and participate actively in social situations, such as:

- shaking hands
- turning toward others when speaking or being spoken to
- using language to make a request, decline assistance, or express a need
- expressing emotion and affection appropriately
- participating appropriately in conversations in various situations

3.7. Implications of Low vision and needs of Children with low visions

3.7.1 Low Vision

Students with low vision exhibit a wide range of visual impairment. Teachers should be aware of that no two students with low vision have the same functional vision. Even if they are diagnosed as having the same eye condition and similar acuity. Vision may fluctuate and be influenced by such factors as fatigue, light glare, lighting conditions and time of day. Therefore special attention must be given in assessing the needs of the students with low vision and A 1 education of them requires unique strategies.

Definition of low vision :

"Persons with low vision" in the PWD act means persons with impairment of visual functioning even after treatment or standard refractive correction but who uses or is potentially capable of using vision for the planning or execution of a task with appropriate assistive device.

The points to be emphasized from the definition of low vision are:

- There is significantly reduced vision.
- This can affect the performance.
- The vision can be used for various purposes including reading.
- There is need for assistive devices.
- Assessment has to be made of the distance and near visual acuity and other visual functions such as contrast, light sensitivity, colour vision and visual field.

Difference between blindness and low vision:

a) Blindness can be defined as having no vision or no significant usual vision while low vision involved significant usable residual vision.

b) Blindness mean visual acuity of less than 3/60 and low vision means visual acuity of less than 6/18 but equals to or better than 3/60.

Some of the characteristics of low vision children that are important for a teacher to know are :

- Limited opportunities for incidental learning.
- Limitation in the range and variety of experience.
- Limitation in the ability to get around.
- Limitation in interaction with the environment.

Specific implications of low vision

For each person it is necessary to

- Determine the activities normally done by the person with low vision and other people in the same community and what visual skills are required to carry these out. This may be at school, in the village, or at work. The person should be assessed in a place appropriate for those tasks.
- Analyze the visual elements of a task so that the task can be modified and the environment adapted to the special equipment used
- Observe the visual environment and assess/observe the person under different environmental conditions. Vary aspects of the environment also, e.g. distance from the task, lighting, contrast, colour and time allowed.

- Determine which sense is the most efficient for a particular task. For example, vision, enhanced vision, auditory, tactual, or some combination of these senses.

In order for students with low vision to achieve high levels of academic and social success, the following recommendations must be incorporated into the educational prograr:/for these students. Families, teachers, and students need to recognize the unique skills tliat students who have low vision must be taught and maintained throughout their formal education.

1. *Students with low vision must be given opportunities by teachers and family members to understand and communicate their visual impairment and their visual needs to others*. Beginning in the preschool years on, it is incumbent that professionals and families work together to assist students who have low vision to understand and to communicate their vision needs in a straight-forward manner to their teachers, peers, and members of the community. Initially students should be able to identify the name of their visual impairment. As students mature and gain more social competence, they must be able to explain their visual impairment to others. Students should also be able to communicate their needs resulting from visual impairment in a succinct and straight-forward manner, given their age and developmental levels.
2. Students with low vision must receive guidance in strategies to promote effective interactions in a variety of social situations. This is especially important for students with low vision who have additional disabilities.

   Strategies and curricula must be provided to help students with low vision to become more socially competent in the following areas:

- Developing effective interaction skills that include social initiations, turn taking, gaining entry into a group, using auditory cues to assist with the interpretation of body language.
- Learning to use a combination of senses to help support and interpret social encounters with peers, family members, and co-workers.
- Asking for assistance when needed in social situations.
- learning effective communication techniques to promote confidence in a range of situations
- Providing opportunities for the students with low vision to practice communicating A I their needs and concerns with family members in a safe, nurturing environment.

3. *Students with low vision need guidance to develop strategies to promote self-advocacy skills in schools, communities, and vocational settings.*

   Students with low vision, including those with multiple disabilities, need to be able to ask for assistance, and make their needs known in a clear and socially-acceptable manner. Teachers, families, and other professionals can support students in this area by providing the following opportunities:

- Meeting and interacting with role models who have similar visual impairments.
- Engaging in consumer-related activities through organizations such as the All India Council of the Blind, the National Federation of the Blind, and the National Association for the Blind.
- engaging in role play situations in which the need to use self-advocacy skills, such as asking for front row seating at a concert, or the opportunities to use low vision devices in school situations.
- Providing information regarding modifications for accessible materials and clinical low vision evaluations.
- Providing direction and advice in a range of real life experiences where students can learn to cope with a variety of independent activities.
- Providing effective strategies to ask for assistance from others.
- Learning strategies to promote positive social relationships in work situations.
- Encouraging families to provide safe situations in which students must advocate for themselves.

4. *Students with low vision must be supported in establishing an identity that is unique to themselves that is neither as a blind individual or an individual who is sighted. Ongoing support is required for students whose vision loss is progressive and who may eventually require sight substitution techniques.*

   It is essential that students who are low vision have an identity that is their own. Identifying oneself as low vision should not be viewed as a negative, but rather as a unique part of the student as an individual entity. Promoting oneself as an individual with low vision enhances social and emotional stability. The following strategies may help to support the importance of establishing a strong identity as a person with low vision:

- Engaging in activities that promote a positive self-image by having students identify their strong attributes.

- Providing opportunities for the students with low vision to enhance their physical appearance through the selection of clothing, use of make-up, use of attractive low vision devices, and by learning strategies to improve body stance and posture, gestures, and facial expressions.
- Providing experiences that allow students with low vision to discuss their visual impairment with peers and trusted adults in a safe and nurturing environment.
- Providing experiences that allow students with low vision to excel and to demonstrate specialized skills or strengths.
- Allowing students who are low vision to feel comfortable with identifying themselves as a person with low vision, and promoting their status as an attribute.
- Providing opportunities for students with low vision to discuss strategies for disclosing their visual impairment to others.
- Providing experiences for students with low vision to drive, and to develop strategies for non-driving.
- Encouraging families to provide opportunities in the home environment for students to take responsibility for chores, homework assignments or projects, and personal belongings.

3.7.2 The needs of people with low vision

This includes individuals trying out different optical and electronic aids in their home environment. The challenge is in finding the right balance between visual performance, comfort and aesthetics so that people can easily and happily integrate the right solution for them in their daily life.

Lighting

Lighting is one of the most important and simple aids. One of the key aspects of any low vision assessment is to check the lighting to ensure there is the right lighting and it is positioned correctly. Some types of light will work better than others depending upon the eye disease. Having good lighting while reading, writing or undertaking fine work is very important; it can make a huge difference to the ability to see the task being undertaken.

Talking aids:

There is a large range of talking aids available including talking scales, timers, clocks, watches, calculators, good thermometers, key chain alarms, key ring voice memo devices, vibrating and beeping liquid level indicators and talking colour detectors.

Large Print Books:

Large print books are usually printed in 16 or 18 point font and this can be a good option if sight allows for this level of print size. A selection may be available from the local library or a low vision service to borrow or purchase.

Reading:

Reading guides are simple devices that enable better focus when reading either normal or large print. They are simple black cards or sheets with a block cut into them to guide the writer or reader. Reading stands and lap desks with built in lighting can help with correct positioning while reading.

Writing :

There are a number of writing aids available including large print or tactile address books, diaries, organizers and notebooks along with:

- Writing frames or simple rail line guides, available in various formats including envelopes guides and signature guides, raised line or bold writing paper
- A range of thick felt tip pens

Optical Magnifiers:

There is a large range of optical magnifiers in different magnification strengths and sizes. The more powerful magnifiers are smaller, and need to be held close to the eye when being used.

- Hand-held magnifiers, some with built-in lighting
- Bar magnifiers that can magnify one line of writing at a time
- Dome magnifiers which many find easier to use
- Fixed stand magnifiers which keep your hands free for reading, writing and

other activities such as signing a cheque.

- Spectacle binoculars available in clear or tinted colour for reading or close detail work.

Primary Aids : Canes

Many people with low vision may never need or use a cane but it can be very useful for negotiating the environment. Many people find that a cane gives them much greater confidence to move about.

Technologies

Audio Books

Audio books or talking books are available from a range of providers including low vision agencies, council libraries and audio book websites. Some local newspapers are also available in audio format.

Television

To help with TV viewing there are large screen televisions and universal remote controls with large buttons.

Electronic magnifiers

Electronic magnifiers are excellent for high magnification reading and writing to support a wide range of daily living

Computers

There is a range of ways to assist those with low vision to use a computer including a large screen to increase the viewing area and ways to increase the size of items on the screen. For those with low vision, simple fonts without decorative curves are easier to read (eg Arial or Calibri) and use upper and lower case instead of typing in all capitals. Also, when typing, try to add extra spacing between words and lines of text so the breakdown of sentences and paragraphs is clearer.

Close Circuit Television (CCTV): An electronics projection magnifier that enlarges reading materials by projecting on the screen.

Talking Calculator:

Calculators with voice output allow studenfto do a wide variety of mathematical calculation.

Screen Enlarger

Screen enlarger software programmes display information on a computer screen in a variety of magnification levels. The entire screen, a portion of the screen or just one line may be enlarged. Students with low vision may benefit from these programmes (ZoomText, MAGic, VisAbility).

Screen Reader/Speech Synthesizer

Screen readers provide auditory feedback when using the keyboard as well as auditory access to information displayed on the monitor. These systems consist of a software programmes and speech synthesizer. The software programmes sends information from the computer to the synthesizer, where phonemmes are combined into words and the words are spoken. Most systems allow choices in volume, voice quality and speed of output. Students with limited vision will find these devices useful, especially when connected to a regular printer for output (JAWS, Intellitalk, IBM ScreenReader/DOS).

Voice Access

Voice access systems allow the user to interact with the computer screen by using voice commands instead of the keyboard. They are particularly useful for students who have difficulties with fine motor control as well as visual impairments. These systems include special software and sound cards to allow for voice output of information on the screen. As with screen readers, they can be connected to braille and regular printers for output (DragonDictate, Naturally Speaking).

Scanner

The scanner will scan print text of good quality. It must be used in conjunction with optical character recognition software. Then the scanned text can be saved to be printed in braille or accessed through a speech synthesizer.

Cassette Recorder

Cassette recorders can be used as writing tools as well as reading tools. Students with no vision, as well as those with limited vision can benefit from the use of cassette recorders.

3.7.3 Teaching Implication :

★ A programme plan is usually develop on an annual basis by the student's support team and is reviewed regularly.

- ★ Talk while you teach. The student may miss visual clue and written.
- ★ Make the lesson attractive by using colourful sketches pictures and charts.
- ★ Teach in close proximity to the student when doing demonstration or using visual aids.
- ★ Allow the student to go up to the board or move the desk closer in order to view or copy the material.
- ★ Check regularly to ensure that the student is making accurate notes.
- ★ Replace the print with large size if there is a need or use appropriate spacing, contrast or a projection device.
- ★ Never use glossy paper as it has glare. Putting a transparent sheet on the pages can reduce the glare.
- ★ Alternate visual task with nonvisual task to avoid eye fatigue.
- ★ Provide extra time to the student he/she will take longer to complete most tasks. The quantity of work required may be decreased.
- ★ The good contrast light yellow-red, light blue-red in visual materials like charts diagrams make these accessible to a low vision child. Contrast light brown-maroon are of no use of these children.
- ★ Use of bold line paper can help in keeping the lining of writing straight. It is the darkness and not the thickness of the lines that helps a low vision child in writing.
- ★ Question papers can be written with felt-tip pens for low vision children.
- ★ Some cases oral exams or a scribe to write exam answer.
- ★ Encourage use of tape recorders talking books whenever there is need.
- ★ Teacher has to encourage and motivate the child to continue his/her reading and writing.
- ★ The student's with low vision may need extra explanation of some materials.
- ★ The child may have difficulty reading cursive hand writing. A void using it on the black board.
- ★ The studen's ability to participate in certain activities such as physical,

Educational, Science, labs and visual arts may be affected by his/her functional vision. Modification may be required.

- ★ Use real life objects concrete and tactile materials as much as possible. This provides opportunities for kinesthetic and tactile learning.
- ★ Never allow student to continue struggling with print.
- ★ The light from the lamps should never come from the front. It should always fall on the back from left or right side or even from behind the child.

Glossary

Assessment: A procedure to determine self-sufficiency of low vision involving functional and clinical measurements.

Braille: A tactile method of reading and writing, generally used by the blind. It involves combinations of six raised dots punched into paper, which can be read with fingertips.

Cane: A mobility aid that helps in knowing the obstacles while the person is moving.

Close Circuit Television (CCTV) **-** An electronic magnifier that enlarges reading material by projecting on the screen.

Disability: Results from a loss of physical functioning or difficulties in learning and social adjustment that significantly interferes with growth and development.

Field of Vision: defects of degree of an angle that a person can see without turning his/her head or moving the eyes. includes the limits of peripheral sight or that which lies to the sides of straight ahead

Filters: Illumination control device used to provide excellent protection from glare. They can be used with most optical aids systems.

Functional Vision: the level and use of residual vision to cope up with requirement of daily life.

Handicap: Refers to a disadvantage imposed by the environment and the person's capacity to cope up with the disadvantage.

Impairment: Refers to identifiable defect in the function of the organ. Subject of medical profession.

Individualized Educational Plan (IEP): - An educational plan tailored to an individual students needs.

Magnifiers: Use of deep plus lens to magnify small objects so that they can be seen more easily.

Non-Optical Aids: Aids used to enhance vision through non-optical means, for example illumination, contrast etc.

Ophthalmologist: Medical personnel involved in examining a person with visual impairment and prescribing medical treatment.

Optical Aids: Lenses placed between an eye and an object to alter the retinal image of the object.

Orientation: Understanding of one's own relative position in space that restricts movement.

Pinhole Aperture: A device to control illumination. Placing it before an eye reduce blur.

Retina: Neural tissue that sends impulses to the cortex (brain) via the optic nerve for visual perception.

Tactile Clues: Learning about various objects in the environment through the sense of touch.

Tracking: Concentrate .following of the objects with eyes.

Typoscopes: A piece of black cardboard with a slit in it, to block out all but the line of print view while reading.

3.8 ‘‘Check your Progress’’

I. Choose the correct response

1. The ability to locate one self in one's environment is known as

   a) Orientation.

   b) Daily living activities.

c) Sensory training.

d) Mobility.

2. The ability to move in the environment from one place to another is called as

a) Orientation.

b) Daily living activity.

c) Sensory training.

d) Mobility.

3. Introduction of daily living skills to a visually impaired child depends on the assessment of his :

a) Social achievements.

b) Maturity level.

c) Independent mobility.

d) All the above.

4. Language development mainly depends on

a) Understanding of syntax

b) Ability to hear to sound properly

c) Reading great classics

d) Proper attention

5. 'Verbalism' develops in visual impaired children due to

a) Poor vocabulary.

b) Good vocabulary.

c) Lak of personal direct experience.

d) Misunderstanding word meaning.

6. Communication with the blind child in the initial years must be through

a) Dialogue

b) Imitation

c) Facial expression

d) Direct physical contact

7. Stereo type attitude means

a) Conventional behaviour

b) Unhealthy behaviour

c) Aggressive feeling

d) Favourable towards blindness

8. Reduction in the range and variety of experiences

a) Is a subjective effect of blindness

b) Is an objective effect of blindness

c) Is impersonal loss of visual impaired children

d) Reduction in experience provided to children

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

1. Blind persons do not have to learn special technique for all the activities of the daily living.

2. 'Orientation mobility' is essential for independent living of the visual impaired persons.

2. Senses are the gateway to knowledge. Hence the effects of blindness are not basically cognitive.

4. All blind are special talent like musical talent and fantastic memory.

5. Although blind children may have delayed physical development due to their inability to do some physical activities, they typically do not differ in physical ability from normally seeing children.

III Answer the following questions

1 Observe any six manneristic behaviours which are found in visually impaired children and investigate why souch behaviours are present in them?

2 Verbalism is mostly found in V.I.C. Investigate why such behaviour present in them?

3 Compare the concept development skills of non-disabled clildren and visually impaired children with additional disabilities?

4 Identify one object in your surrounding, which you find that a visually impaired child differently and modify it to him needs.

5 Discuss with five visually impaired to find out the extent of their social and emotional development.

6 Prepare a case study of a visually impaired child's language development processes.

7 Anita lives in a urban slum area. She was detected with central vision loss at birth. Discuss how his psychological development will be affected.

3.9 Let us Sum up

- The societies, across the globe have developed their own images of blind persons, oftheir capabilities and of their limitations. Even beyond that, they have developed their own ways of coping with the capabilities and/or limitations of the blind.
- All low vision children are different from each other and there functioning level depend on what area of their visual system is damaged.
- Presence of just one or two symptoms does not indicate low vision.
- Verbalism and word-mindedness is reported to be exhibited by the visually impaired children due to absence of sight.
- Visually impaired children may experience developmental delays in acquiring concepts because of their visual loss.
- Low vision children with additional disabilities have more learning problems and psychological problems as well.
- The doctor has to indicate whether the vision will deteriorate further or remain as such. The decision to learn braille, use of magnifiers in some cases or reading prints can also depend on this.
- Children's with peripheral vision can read and write but may find moving about difficult.

- Whether a child with low vision enters adulthood with an inferiority complex or with a positive self-concept depends on his/her teacher, parents and other significant people in his life. The child should be treated normally like any other child except for having special needs.
- No one educational plan is beneficial for all low vision persons.
- Each individual child has to be comprehensively assessed.
- 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.
- Development of proper mannerism contributes to the social integration of the visually disabled child. Unwanted mannerisms of visually disabled children could be controlled through timely invention and substitute activities.

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