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## **UNIT 2 CHILDREN WITH SENSORY AND SPEECH DISABILITIES**

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### **2.1 INTRODUCTION**

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Generally, sensory disabilities are those in which sensory organs of human beings are affected. You know the importance of sensory organs in learning. Among the five senses, vision and hearing are predominantly used in the class room. Tactile/kinesthetic sense is also used but to some extent. As a student teacher, you should know the three-main sensory disabilities i.e. Visual, Hearing and Speech impairment. In this unit, we will discuss these sensory disabilities, their nature, needs, assessment, intervention and teaching strategies in detail.

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### **2.2 OBJECTIVES**

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After reading this chapter/unit, you will be able to:

- Provide an overview of students with sensory impairments/disabilities.
- Describe the concept of visual impairment, hearing impairment and speech impairment.
- Describe the characteristics of students with various sensory disabilities.
- Describe various educational needs of students with sensory disabilities.

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### **2.3 VISUAL IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES**

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According to the census, 2011 children with visual impairments comprise the largest number of children in any one category served. The development of concepts, the understanding of spatial relations, and the use of printed material depends on children's ability to use vision. According to Li (2004) "Vision is intimately involved with 70% to 80% of all tasks that occur in our educational programmes". Therefore, we may say that 80-90% of all information is received by our visual sensory organ i.e. eye.

Here we will try to understand the definition, nature and needs, educational interventions and teaching strategies for children with visual impairments in detail.

## **Definition and Types of Assessment of Vision**

According to the Rights of Persons with Disability Act 2016, **Blindness** “blindness” means a condition where a person has any of the following conditions, after best correction— (i) total absence of sight; or (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or (iii) limitation of the field of vision subtending an angle of less than 10 degree;

### **Low-Vision**

“low-vision” means a condition where a person has any of the following condition’s, namely: — (i) visual acuity not exceeding 6/18 or less than 20/60 up to 3/60 or up to 10/200 (Snellen) in the better eye with best possible corrections; or (ii) limitation of the field of vision subtending an angle of less than 40 degree up to 10 degree.

### **Assessment of Visual-Impairment**

Assessment is an important part for planning the educational programme. The two types of assessment of vision are clinical and functional assessment. Based on visual acuity and field of vision as given in the definition, if assessment is done by an eye doctor with the help of equipment and machines, it is called as clinical assessment of vision. Visual acuity is the ability of the eye to see the distant objects clearly. If one is suffering from visual impairment in terms of visual acuity i.e. the has loss of visual acuity compared to normal vision in terms of 3/60 Mts. or, 10/200 Ft. after clinical remedy. This is measured by Snellen chart or, through computerised machine. The field of vision is also limited to 10 degree as compared to sighted person. On the other hand, if we assess based on visual task, it is called as functional assessment of vision.

### **Identification of Student’s with Visual Impairment**

To identify children with visual impairment by teachers or parents in school or at home, it is important to follow ‘ABC’. It is generally done based on appearance (A) of eye, behaviours (B) of students and complaints (C) of students. The teachers hence, need to be aware and knowledgeable about the behavioural manifestations of children with partial and full visual impairment. They are as follows:

- Frequent watering of eyes.
- Frequent red or inflamed eyes.
- Jumpy and un-synchronized eye movements.
- Difficulties experienced in moving around, bumping into things, doors and other objects.
- Difficulty experienced in reading small print, or identifying minute details in pictures or illustrations.
- Complaints of dizziness after completing a visual task like reading, drawing or writing.
- Needs to exert, and change positions, e.g. tilting of the head, or squinting to focus better.
- Frequent complaints of headaches or eye infections.

- Difficulties in coordinating both the eyes i.e. a tendency to use one eye more than the other.
- Clumsy movements.
- Severe problems with mobility and orientation. Mobility refers to the ability to move around in the environment. Orientation refers to the ability to know one's place or position in the environment i.e. Am I near a railway station? Is the fish market to my left? And so on.
- Repetitive stereotypic movements, referred to as "blindisms" e.g. rocking, hand weaving, head rolling. It is believed that these behaviours are due to under stimulation. Babies and young children who are sighted are more observant while a lack of visual feedback deters a blind child to explore. By increasing infant stimulation these behaviours could be reduced or eliminated.

Immature social behaviours / skills, Lack of visual feedback and appropriate intervention results in the poor social maturity of children with visual impairment. However, adequate intervention makes them develop appropriately, later. Poor understanding of feelings and emotions is also observed in these children.

Visually Impaired children's early language development tends to be more self-centred and they talk less about other people and objects. They also tend to be very self-conscious when with other people.

### **Teaching Strategies and Intervention for Children with Visual Impairment**

Visual impairment is caused by absence of sight and/or impaired vision. We know that eye is the biggest gateway (sense organ) of information from the external world in our body. We receive more than 80% of knowledge through the sense of seeing (vision). This means that those who cannot see are deprived of the opportunity of gaining this knowledge directly from surroundings. But, the shining stars on the horizon in the history of education of the blind who were themselves visually impaired achieved great heights in scholarship despite their visual impairment. For example, Homer, the Greek poet, Milton, an English poet, Nicholas Sanderson, the great mathematician and Helen Keller who was both deaf and blind attained name and fame in literature and mathematics. Surdas from India and AbdulAllam UIAlmaria from Baghdad are also well known for their contribution to human development. There are several others who were blind, have made their contribution in our society and world.

Indeed, Vision serves the purpose of integrating the information received by other modalities and is important in the formation and refinement of concepts. Absence of vision deprives a person of such a privilege. It is often said that 80% of knowledge is gained through vision and 95% knowledge is received through vision and hearing. This implies that in the absence of vision and hearing, learning may not take place at all. It is a myth, as many people in the absence of sight have acquired a great degree of success in all spheres of human learning. But to taste this success, an additional effort is required. Therefore, we must say that vision is an important sense but one can do and serve the society without vision.

### **Principles of Using Instructional Materials**

Children with visual impairment learn the same content as that of non-disabled but the mode through which it is taught is different. The instructional material used to explain a concept are specifically designed / modified so that the child with visual impairment learns using other senses or with the residual vision. Most of all, selection

of the right teaching learning material (TLM) is important, depending on the nature and needs of the person with visual-impairment.

In order to give the blind child knowledge of realities around him, the teacher must aim at providing him with a wide variety of **concrete experiences**, thus making up to a certain extent for the limitation in the range and variety of his experiences. Concreteness in teaching can be achieved essentially in two ways: by having the children observe/experience the object or situation itself, or by providing them with a model of the object. Wherever possible, real experiences are preferred. Children must be given sufficient time for observation and experiences. Diagrams and embossed maps are most valuable from the early school years onwards in developing spatial concepts and basic relationships needed for orientation and other purposes.

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

Because of their blindness and because of the environmental reactions to this impairment, blind children have significantly less opportunities for **self-activity**. Therefore, special attention must be given at home and in school to encourage blind children to do as many things for them as are desirable and compatible with a well-conceived time economy. The general approach of teachers should be to encourage blind children to learn to do things by themselves with as little assistance as possible. The teacher needs to distinguish between tasks and skills that are essential for the child to perform at a given stage of his development and those which must be left for later days or need not be mastered at all. About creative activities of blind children, educators should not impose their 'seeing taste on blind children but let them create things according to their own concepts and emotions.

We need to understand the nature and needs of visual impairment so that we can impart education to them. The instructional methods will be adapted as per the needs of visual impairment. We should give information through the remaining sense organs. In fact, blindness reduces the confidence in the remaining senses and therefore, adequate training would be necessary to orient the children to use other sense organs. Many key areas for sensory training could be essential to compensate the experiences which are based on the visual ideas. In addition to this, the discussion of the non-visual experience to visual idea should consider the following implications towards blindness.

### 1. Sense of Hearing

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

- Awareness and attention to sounds
- Response to specific sounds
- Sound discrimination and recognition

- Recognition of words and interpretation of connected speech
- Selective listening to verbal instructions
- Auditory processing and listening for learning

Since exploration of an object is worth thousand words used for explanation, this area becomes very vital. Objects perceived through touch determine the definiteness of the object and help the individual to form a neat conception of them.

### 2. Sense of Smell

A good nose voluntarily offers the information of the objects which could be smelt. Smell is a sensible clue for a traveler. During his travel, the smell of a gutter, the smell of smoke from a chemical industry, smell of flowers of a garden, smell of kitchen and so on, are sources of information for him to locate where he is.

### 3. Sense of Taste

This skill helps a child with visual impairment to associate the names of substances with the taste. For example, sweet, sour or hot could be associated with the substances which provide such experiences.

### 4. Tactual Sense

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

### 5. Kinesthetic Sense

The feeling of the body when responding to the external stimuli, which is otherwise known as the kinesthetic sense, enables the child to get certain information like cold, heat, breeze, elevation of surface and so on.

#### Check Your Progress 1

**Notes:** a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

1. Define blindness as defined in the RPwD Act,2016

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2. Mention the criteria to identify children with visual impairment?

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## 2.4 HEARING IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES

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Another efficient and important sensory organ is ear. We receive 15-20% information of total information through our ears. Without hearing ability, it is very difficult to be part of the society. In class room learning situation, hearing and vision are the two major senses that receive information and hence a child with hearing impairment will have difficulty learning like other children. Teachers have to be sensitive to the needs of these children so that they learn optimally. Here, we will try to understand the definition, nature, needs, hearing ability, educational intervention and strategies for teaching children with hearing impairment.

### Definition and types of Hearing Impairment

Hearing impairment refers to hearing loss that prevents a person from totally receiving sounds through the ear. If the loss is mild, the person has difficulty hearing faint or distant speech. A person with this degree of hearing impairment may use a hearing aid to amplify sounds. If the hearing loss is severe, the person may not be able to distinguish any sounds. We generally use various terms for hearing loss such as hard of hearing, deafness, hearing impairment or minimal hearing loss. **Deafness** means a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification and that adversely affects a child's educational performance (IDEA, 2004). **Minimal Hearing Loss (MHL)** which is not included in the federal definition of hearing impairment but which can cause problems for students is defined as a loss between 16 and 25 dB (Kardaravek & Pakulski, 2002).

According to the Rights of Persons with Disabilities Act, 2016, Hearing impairment— (a) “deaf” means persons having 70 DB hearing loss in speech frequencies in both ears; (b) “hard of hearing” means person having 60 DB to 70 DB hearing loss in speech frequencies in both ears;

### Assessment and Classification of Hearing Impairment

Assessment of hearing impairment may be categorized into two type informal and formal assessment.

#### Informal Assessment

Teachers have an ideal opportunity to conduct informal assessment related to hearing impairment. Informal assessment focuses on observing students for signs that might indicate a hearing loss. Hence this assessment is totally based on listening ability of students that is observed by parents, family members, teachers and others.

#### Formal Assessment

If there is a reason to believe that the child has a hearing impairment, a more formal assessment should be provided. Hearing sensitivity of each ear is measured separately and the severity/degree of hearing impairment/hearing loss is generally classified in six categories as per Goodman's (1965) classification and an additional category—slight hearing loss is added between the normal hearing and mild hearing loss especially when assessing the hearing sensitivity of young children.

The most common method of evaluating hearing is the use of **pure-tone audiometry**, in which sounds of different frequencies are presented at increasing levels of intensity. This assessment determines the hearing threshold of the student for different frequency

pure tones in each ear. Another type of formal hearing assessment is **tympanometry screening**, also known as impedance audiometry. Tympanometry screening can detect defects in the middle ear, which could significantly impact education (Salvia & Ysseldyke, 2010).

**Table: 1**

**Classification of Severity of Hearing Impairment**

Classification	PTA range in dHBL
Normal Hearing Loss	-10 to 15
Slight Hearing Loss	16 to 25
Mild Hearing Loss	26 to 45
Moderate Hearing Loss	46 to 55
Moderately Severe Hearing Loss	56 to 70
Severe Hearing Loss	71 to 90
Profound Hearing Loss	91 & More

Source: Status of Disability, RCI, 2007

**Table: 2**

**Grades of Hearing Impairment**

Grade of Impairment	Audiometric ISO Value	Impairment Description
0 (No Impairment)	25 dBHL or Less (Better Ear)	No or very slight hearing problems, Able to hear Whispers
1 (Slight Impairment)	26-40 dBHL (Better Ear)	Able to hear and repeat words spoken in normal voice at 1 metre
2 (Moderate Impairment)	41-60 dBHL (Better Ear)	Able to hear and repeat words spoken in raised voice at 1 metre
3 (Severe Impairment)	61-80 dBHL (Better Ear)	Able to hear some words when should into better ear
4 (Profound Impairment Including deafness)	81dBHL or greater (Better Ear)	Unable to hear and understand even a shouted voice

Source: [http://www.who.int/healthinfo/statistics/bod\\_hearingloss.pdf](http://www.who.int/healthinfo/statistics/bod_hearingloss.pdf)

**Characteristics and Behavioural Manifestations**

**During Infancy**

1-3 months old	No response to sudden sound such as banging of door or ringing of doorbell
4-6 months old	Unable to locate the sound source.
7-9 months old	Unable to look at the person who make sounds
10-12 months old	No response to their names

## During Childhood

- Delayed response to sound
- Cannot hear clearly what others are saying
- Shows difficulty in locating the sound source
- Pays more than usual attention to speakers' facial expression and lip movement while listening
- Gives irrelevant answers or misinterprets instructions
- Requests for repetition during conversation
- Shows poorer ability to understand speech in a noisy environment
- Tends to turn up the sound volume of television
- Incorrect pronunciation
- Delayed language development
- Poor attention in class
- Frequent use of gestures to express themselves, e.g. pointing to what they want
- Easily irritated because of communication difficulty

## Types of Hearing Loss

There are four types of hearing loss; i. Conductive, ii. Sensory neural, iii. Mixed and iv. Central. If any part of the hearing system is unable to perform the result is hearing loss.

### i. Conductive Hearing Loss

A conductive hearing loss is caused by any condition or disease that impedes the conveyance of sound in its mechanical form through the middle ear cavity to the inner ear. A conductive hearing loss can be the result of a blockage in the external ear canal or can be caused by any disorder that unfavorably affects the middle ear's ability to transmit the mechanical energy to the stapes footplate. This results in the reduction of one of the physical attributes of sound called intensity (loudness), so the energy reaching the inner ear is lower or less intense than that in the original stimulus. Therefore, more energy is needed for individuals with a conductive hearing loss to hear sound, but once it is loud enough and the mechanical impediment is overcome, the ear works in a normal way. Generally, the cause of conductive hearing loss can be identified and treated resulting in a complete or partial improvement in hearing. Following the completion of medical treatment for causes of the conductive hearing loss, hearing aids are effective in correcting the remaining hearing loss.

### ii. Sensorineural Hearing Loss

Sensorineural hearing loss results from inner ear or auditory nerve dysfunction. The sensory component may be from damage to the organ of Corti, an inability of the hair cells to stimulate the nerves of hearing or a metabolic problem in the fluids of the inner ear. The neural or retro cochlear component can be the result of severe damage to the organ of Corti that causes the nerves of hearing to degenerate or it can be an inability of the hearing nerves themselves to convey neuro chemical information through the central auditory pathways. The reason for sensorineural hearing loss



sometimes cannot be determined. It does not typically respond favorably to medical treatment, and it is typically described as an irreversible, permanent condition. Like conductive hearing loss, sensorineural hearing loss reduces the intensity of sound, but it might also introduce an element of distortion into what is heard resulting in sounds being unclear even when they are loud enough. Once any medically treatable conditions have been ruled out, individuals with a sensorineural hearing loss can be fitted with hearing aids to give them access to speech and other important sounds.

### iii. Mixed Hearing Loss

A mixed hearing loss can be thought of as a sensorineural hearing loss with a conductive component overlaying all or part of the audiometric range tested. So, in addition to some irreversible hearing loss caused by an inner ear or auditory nerve disorder, there is also a dysfunction of the middle ear mechanism that makes the hearing worse than the sensorineural loss alone.

The conductive component may be amenable to medical treatment and reversal of the associated hearing loss, but the sensorineural component will most likely be permanent. Hearing aids can be beneficial for individuals with a mixed hearing loss, but caution must be exercised by the hearing care professional if the conductive component is due to an active ear infection.

### iv. Central Hearing Loss

Central hearing loss is caused by a problem with the auditory nerve or sound centers. Sound waves may travel through the ear but this nerve pathway is unable to send electrical impulses to the brain. As a result, the hearing centers do not receive the signals correctly. Central hearing loss can be a result of a head injury or a disease. A common symptom is the ability to detect sound but not being able to understand it.

## Teaching Strategies and Intervention for Children with Hearing Impairment

Education of children with hearing impairment in India is just a little over a hundred years old. At present, over 500 schools for the hearing-impaired children are established in the country. The Government established some schools whereas the NGOs run many others. In understanding hearing impairment, from an educational perspective, one needs to consider the age of the onset of the hearing loss and the degree of the hearing loss. Both these have a direct bearing on the child's educational programme. If the loss is pre-lingual i.e. occurs before he learns to speak, the effect is more severe than one who lost hearing later in life. If there was a normal language development till he lost hearing, there would be a lot he has learnt, on which his future learning could be based. This support is totally absent with the pre-lingual deaf child.

The characteristics of children with hearing impairment are as follows:

- **Delayed language development.**

Very limited use of spoken language, and very un-intelligible speech. This is linked to the degree of hearing loss. It is much more difficult for a pre-lingual deaf child to learn to speak than those who have acquired deafness post lingual. (Pre-lingual = before 2 yrs. Post-lingual = after 2 yrs. of age). This is because of the absence of an auditory feedback from the sounds they make. Though Hearing-Impaired child too babbles like his normal peers, he soon abandons it because the child does not get any auditory feedback from his own sounds. It is this lack of feedback among the hearing-impaired children, which is the primary cause for them experiencing severe difficulties with the learning of speech.

- Concentration on lips of the speaker as an attempt to listen.
- The student turns his head towards the speaker to listen, or cups his ears.
- No response when called from the back.
- Turning the volume high while watching TV or listening to the radio.
- Frequent complaints of ear aches, ear discharges, or ear infections.

### **Problems in interpersonal relations because of communication problems**

- Lack of fluency in language comprehension and expression affects his/her cognitive processes like assimilation, abstraction categorization and generalization. Hence learning at an abstract conceptual level i.e., “subjects like geometry, becomes challenging for children with Hearing Impairment (more so with pre-lingual deaf children).
- Hearing Impaired children are also handicapped in varying degrees in the educational achievement.
- Developing reading skills is challenging for these children. This is because of the lack of auditory feedback on which reading is superimposed. With children with hearing impairment, language itself being impaired, achieving reading success is difficult.
- Serious Arithmetic / Math difficulties too have been observed in these children. This is attributed to the subject being totally abstract and the deficient language comprehension of the child with hearing impairment. It is not that they are incapable of learning arithmetic. But what it points to is the need of a greater intensive instruction programme.
- Social Adjustment problems are frequently observed in children with Hearing Impairment. Because of a deficit in communication, many children grow up in relative isolation which results in some developing adjustment problems. They tend to be excessively shy, have difficulties making friends specially those who have nobody to interact with non-verbally. However, when they are with people with Hearing Impairment they mix easily. There is also a ‘Deaf community’ in the world formed by persons with hearing impairment.

The early intervention centres can motivate the family members to take part in the education of hearing impaired children which helps them develop early verbal language skills. In some cases, parents and family members have assumed the responsibility of educating hearing impaired infants and young children with the help from sources such as ENT clinics, speech and language professionals and special educators. They help the children develop early verbal language skills and join mainstream schools.

#### **Activity II**

1. Prepare a report on causes of hearing impairment among children.
2. Visit early intervention center in your locality and prepare a report

#### **Check Your Progress II**

**Notes:** a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

3. How do you identify children with hearing impairment in the classroom?

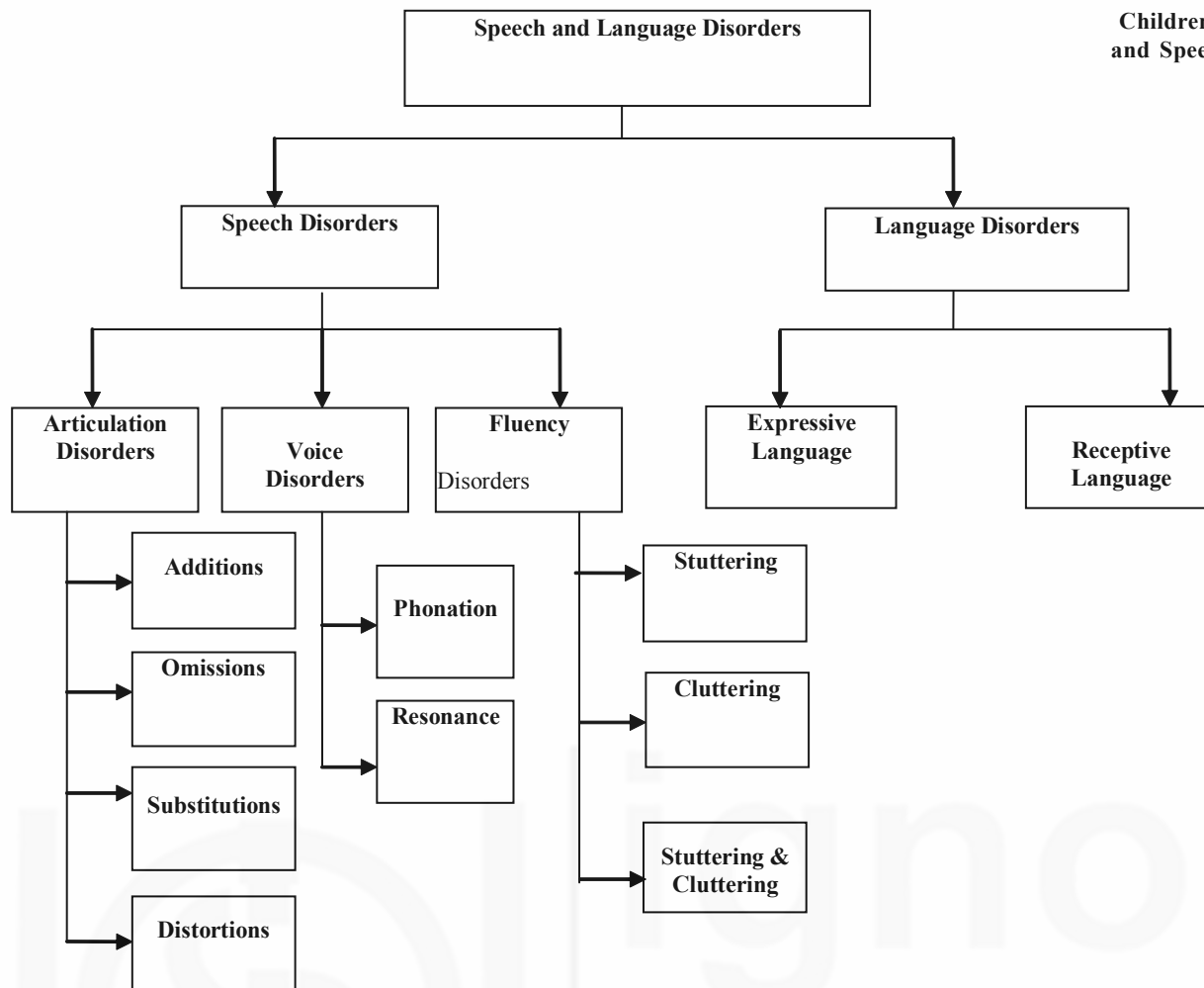
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4. What are the major types of hearing loss?  
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**2.5 SPEECH IMPAIRMENT: NATURE, NEEDS, ASSESSMENT, INTERVENTION AND TEACHING STRATEGIES**

Communication is an important means to connect each other. There are two types of communication namely, verbal and non-verbal. Effective verbal communication requires speech or, speaking ability. Among many causes, if any disorder appears in voice producing organs, it may result in speech impairment and can interfere in learning. In this section, we will try to understand the standard definition, nature, needs, educational intervention and teaching strategies for students with speech impairment. Social-communicative skills, require the child to integrate basic skills from more fundamental developmental domains: language, cognitive, affective, and motor development. Social-communicative skills must be employed to solve interpersonal problems in the context of specific social tasks (Hadley & Schuele1998). Children with language and Speech impairment frequently have social difficulties that limit their inclusion in learning contexts and make it difficult for them to form positive social relationships (Brinton& Fujiki ,2004), which further leads to communication disorders.

**Definition and types of Speech and Language Impairment**

Adolescents with impaired language comprehension and formulation skills often have trouble keeping up with the linguistic and social demands of peer interaction (Brinton& Fujiki, 2004). The Individuals with Disabilities Education Act, (IDEA), defines the term “speech or language impairment” as a communication disorder, such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a child’s educational performance” (IDEA Act, 2007). As per NSSO (2002) “Speech disability refers to person’s inability to speak properly. Speech of a person is judged to be disordered if the person’s speech is not understood by the listener. Persons with speech disability include those who could not speak, spoke only with limited words or those with loss of voice. It also includes those whose speech is not understood due to defects in speech, such as stammering, nasal voice, hoarse voice and discordant voice and articulation defects. The Rights of Persons with Disabilities Act, 2016 defines speech language disability as a permanent disability arising out of conditions such as laryngectomy or aphasia affecting one or more components of speech and language due to organic or neurological causes.



**Fig: 1 Showing Categorization of Speech and Language Disorder**

**Source:** Aram, D.M. & Nation, J.E. (1975). Patterns of language behaviour in children with developmental language disorders. *Journal of Speech and Hearing Research*, 18, 229–241

Speech impairments where the child produces sounds incorrectly can be categorized as follows:

**Articulation**

Articulation refers to correct production of speech sounds of a language. About 3 out of 5 all speech impairments occur due to articulatory disorders (Karanth, 2009).

**Distortions**

Sounds changed so that the intended sound is recognized, but sounds incorrect, speech of a person with a lisp.

**Substitutions**

Substituting one sound for another (i.e. “doze” for those)

**Omissions**

Omitting certain sounds (i.e. “cool” for school or “pos” for post)

**Additions**

Addition of extra sound (i.e. “buhrown” for brown)

## **Fluency**

Speech impairments where a child's flow of speech is disrupted by sounds, syllables, and words that are repeated, prolonged, or avoided and where there may be silent blocks or inappropriate inhalation, exhalation, or phonation pattern.

## **Stuttering**

Rapid fire repetitions of consonant or vowel.

## **Cluttering**

Rapid speech with extra sounds or mispronounced sounds

## **Stuttering vs. Cluttering**

Involves both cluttering and stuttering.

## **Voice**

Abnormal production or absence of vocal quality, pitch, loudness, resonance and/or duration, which is appropriate for an individual's age or sex." (ASHA, 1993). Speech impairments where the child's voice has an abnormal quality to its pitch, resonance, or loudness can be divided into two distinct categories:

## **Phonation Disorder**

Causes the voice to sound hoarse, husky or strained. Severely, there is no voice at all.

## **Resonance Disorder**

Too many sounds coming out through the air passages of the nose (hyper nasality) or not enough resonance of the nasal passages (hypo nasality).

## **Language**

Language impairment where the child has problems expressing needs, ideas, or information, and/or in understanding what others say. It includes deficiency in receptive language skills to gain information; deficiency in expressive language skills to communicate information; and deficiency in processing (auditory perception) skills to organize information

## **Incidence and Prevalence**

Sreeraj Konadath (2013) found that the prevalence of individuals at risk of communication disorders was 6.07% in India. Among those at risk, and who attended phase II of the study, the prevalence of audio logical and/or ontological disorder was found to be 90.58% and that of speech and language disorder was 9.42%.

## **Assessment and Classification of Speech Impairment**

Several standardized tests and alternative assessment methods have been developed to provide a more in-depth assessment of children who have a possible communication disorder. These tests are intended to further evaluate children when a communication disorder is considered possible due to risk factors and clinical clues, parent or professional concerns, and/or positive screening test results. In-depth assessment can be used in several ways to assess children with possible communication disorders to:

- determine if a communication disorder is present

- establish a specific diagnosis, and assess the severity and specific attributes of the communication disorder
- determine if intervention is indicated, and aid in planning intervention strategies and selecting treatment targets
- establish a baseline for measuring progress and evaluating treatment outcomes

**Assessment of Speech or Language Impairments shall include the following**

**Language Impairment** – a significant deficiency in language shall be determined by:

An analysis of receptive, expressive, and/or composite test scores that fall at least 1.5 standard deviations below the mean of the language assessment instruments administered; and a minimum of two measures shall be used, including criterion-referenced and/or norm-referenced instruments, functional communication analyses, and language samples. At least one standardized comprehensive measure of language ability shall be included in the evaluation process.

**Levels of Language**

**1) Phonetics/Phonology**

This is the level of sounds. One must distinguish here between the set of possible human sounds, which constitutes the area of *phonetics*, and the set of system sounds used in each human language, which constitutes the area of *phonology*. Phonology is concerned with classifying the sounds of language and with saying how the subset used in a language is utilized, for instance what distinctions in meaning can be made based on what sounds.

**2) Morphology**

This is the level of words and endings, to put it in simplified terms. It is what one normally understands by grammar (along with syntax). The term *morphology* refers to the analysis of minimal forms in language which are, however, themselves comprised of sounds and which are used to construct words which have either a grammatical or a lexical function. *Lexicology* is concerned with the study of the lexicon from a formal point of view and is thus closely linked to (derivational) morphology.

**3) Syntax**

This is the level of sentences. It is concerned with the meanings of words in combination with each other to form phrases or sentences. , it involves differences in meaning arrived at by changes in word order, the addition or subtraction of words from sentences or changes in the form of sentences. It furthermore deals with the relatedness of different sentence types and with the analysis of ambiguous sentences.

*Language typology* attempts to classify languages according to high-order principles of morphology and syntax and to make sets of generalisations across different languages irrespective of their genetic affiliations, i.e. of what language family they belong to.

**4) Semantics**

This is the area of meaning. It might be thought that semantics is covered by the areas of morphology and syntax, but it is quickly seen that this level needs to be studied on its own to have a proper perspective on meaning in language. Here one touches, however, on practically every other level of language as well as there exists lexical, grammatical, sentence and utterance meaning.

## 5) Pragmatics

The concern here is with the use of language in specific situations. The meaning of sentences need not be the same in an abstract form and in practical use. In the latter case, one speaks of utterance meaning. The area of pragmatics relies strongly for its analyses on the notion of speech act which is concerned with the actual performance of language. This involves the notion of proposition – roughly the content of a sentence – and the intent and effect of an utterance.

**Evaluation of language abilities shall include** hearing screening; receptive language: vocabulary, syntax, morphology.

**Expressive language:** mean length of utterance, syntax, semantics, pragmatics, morphology; and

**Auditory perception:** selective attention, discrimination, memory, sequencing, association, and integration.

**Documentation:** including observation and/or assessment, of how Language Impairment adversely impacts his/her educational performance in his/her learning environment. **Articulation Impairment** – a significant deficiency in articulation shall be determined by one of the following:

- articulation error(s) persisting one year beyond the highest age when 85% of students have acquired the sounds based upon current developmental norms; evidence that the child’s scores are at a moderate, severe, or profound rating on a measure of phonological processes; or
- Mis-articulations that interfere with communication and attract adverse attention. Assessment of articulation abilities must include, appropriate formal/informal instrument, stimulus ability probes, oral peripheral examination and analysis of phoneme production in conversational speech. Documentation, including observation and/or assessment, of how Articulation Impairment adversely impacts his/her educational performance in his/her learning environment.

**Voice Impairment** – Assessment of vocal characteristics shall include the following:

- hearing screening;
- examination by an otolaryngologist;
- oral peripheral examination; and
- documentation, including observation and/or assessment,

**Fluency Impairment** – Assessment of fluency shall include the following:

- hearing screening
- Information obtained from parents, students, and teacher(s) regarding non-fluent behaviours/attitudes across communication situational peripheral examination; and documentation, including observation and/or assessment.

### Characteristics and Behavioural Manifestations

Communication Disorder is impairment in the ability to receive, send, process and comprehend concepts or verbal, nonverbal and graphic symbols systems. A communication disorder may be evident in the process of hearing, language and/or speech.” (American Speech-Language-Hearing Association, 1993). Language impairment refers to an impaired ability to understand and/or use words in context.

A child may have an expressive language disorder viz. difficulty in expressing ideas or needs, a receptive language disorder i.e. difficulty in understanding what others are saying, or a mixed language disorder. Some characteristics of language disorders include:

- improper use of words and their meanings,
- inability to express ideas,
- inappropriate grammatical patterns,
- reduced vocabulary, and
- Inability to follow directions.

Information shall be gathered from the following persons in the evaluation of a Speech or Language Impairment includes: the parent; the child's class teacher; speech-language pathologist or speech-language pathologist; a special educator, when appropriate; a licensed otolaryngologist (for voice impairments only); and other professional personnel, as indicated.

Speech-language pathologists assist children who have communication disorders in many ways. They provide individual therapy for the child; consult with the child's teacher about the most effective ways to facilitate the child's communication in the class setting; and work closely with the family to develop goals and techniques for effective therapy in class and at home. The speech-language pathologist may assist vocational teachers and counselors in establishing communication goals related to the work experiences of students and suggest strategies that are effective for the important transition from school to employment and adult life. Thus, in addition to diagnosing the nature of a child's speech-language difficulties, speech-language pathologists also provide individual therapy for the child; work as a consultant with the child's teacher about the most effective ways to facilitate the child's communication in the class setting; and works closely with the family to develop goals and techniques for effective therapy in class and at home. Speech-language pathology services includes—

- Identification of children with speech or language impairments:
- Diagnosis and appraisal of specific speech or language impairments:
- Referral for medical or other professional attention necessary for the facilitation of speech or language impairments:
- Provision of speech and language services for the facilitation or prevention of communicative impairments:
- Counselling and guidance of parents, children, and teachers regarding speech and language impairments.

### **Teaching Strategies and Intervention for Children with Speech Impairment**

- Concepts using actual objects and progress from the concrete to the abstract.
- Seating positions that facilitate the use of prompts, cues or other strategies during learning and teaching.
- Important to ensure that the student's attention has been secured.
- Slower speech rate to facilitate the processing of information.



- Use of gestures to help students with severe receptive language disorder understands the meaning of a word that symbolizes an object or an action.
- Age appropriate instructions help to involve the students in selecting the strategy that works best for them
- Use of pictures or photographs to reinforce and to develop vocabulary of the students.
- Radio/television broadcasts, puppetry, telephoning, and role playing can be used to develop oral language activities.
- Co-operative learning model can be applied to enhance skills
- Avoiding the role that misunderstanding can have social problems.
- The Speech-Language Pathologist (SLP) provides classroom teachers with information regarding communication development and possible communication concerns through team meetings and training sessions.
- The SLP also provides suggestions for addressing specific areas of concern through modelling and examples of expansion and other techniques.
- Teacher or parent may bring communication concerns to the Student Support Team (SST) for consideration. If a student presents with an obvious disability, the SST should expedite the referral for a Full and Individual Evaluation (FIE).

**Activity III**

1. Interview a Special Educator working in the field of speech and language impairment and list out challenges faced by him/her and proposed solution to it.
2. How do you help children with speech and language disorders of your class prepare a report.

**Check Your Progress III**

**Notes:** a) Write your answers in the space given below:

b) Compare your answers with those given at the end of the Unit.

5. What percentage of school age population has been identified with speech and language impairments?

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6. What Classroom Adaptations you suggest for Students with Speech and Language Impairments?

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## 2.6 LET US SUM UP

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You would have understood about several types of sensory disabilities as Visual impairment, Hearing impairment, Speech impairment etc. A child with visual impairment has limited vision or may have no vision. We may identify the visually impaired based on appearance (A) of eye, behavior of child (B) and complaint (C) made by child. On the other hand, child with hearing impairment shows delay response in language development, listening activity, cannot hear clearly what others are saying etc. Based on physical appearance, listening activity, we can identify, detect and intervene the child with hearing impairment. The education of children with hearing impairment may provide with language development and suited strategy for them. The other sensory disability is very common as speech and language disorder. Children with speech and language disorder have inability to communicate and include impairment of phonology, voice and fluency, with phonological disorders being the most common. The assessment of this disorder is very particular. It would be based on clinical and functional assessment. Teachers can make numerous accommodations and modifications for students with speech disorders. For example, building a positive classroom environment is an important accommodation for these students.

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## 2.7 UNIT END QUESTIONS

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1. How will you identify early the symptoms of visual-impairment in school going children?
2. How will you help students with speech and language disorders in the classroom?
3. How language comprehension and expression is affected in hearing impaired?

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## 2.8 ANSWERS TO CHECK YOUR PROGRESS

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1. “Blindness” means a condition where a person has any of the following conditions, after best correction— (i) total absence of sight; or (ii) visual acuity less than 3/60 or less than 10/200 (Snellen) in the better eye with best possible correction; or (iii) limitation of the field of vision subtending an angle of less than 10 degree.
2. Generally we identify the visual-impairment based on three criteria (i) Appearance of eye, (ii) Behaviors of visually impaired and (iii) Complaint by visually impaired.
3. Hearing impaired children are identified based on following symptoms in the classroom
  - Delayed response to sound
  - Cannot hear clearly what others are saying
  - Show difficulty in locating the sound source
  - Pay more than usual attention to speakers’ facial expression and lip movement while listening
4. The four types of hearing loss; i. Conductive, ii. Sensory neural, iii. Mixed and iv. Central
5. About 2% of the school-age population has been identified as having speech or language impairments.

6. Classroom Adaptations for Students with Speech and Language impairments includes building a positive classroom environment, Specific, individualized intervention and instructional modifications (e.g. Storytelling, facilitative play, classroom arrangement).

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## 2.9 REFERENCES AND SUGGESTED READINGS

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