

ASSISTIVE & ADAPTIVE TECHNOLOGIES IN EDUCATION

CBA & AED



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CBA & AED

DISORDERS

LESSON OUTLINE



Communication disorders



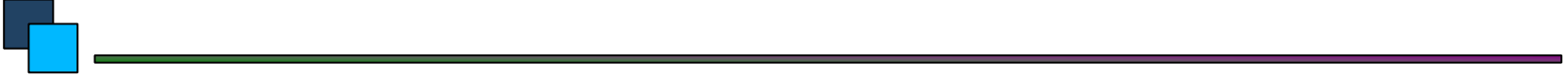
Language disorders



Speech disorders

Understanding DISORDER

- This is rather broader term in disability that refers to a general disturbance in mental, physical, or psychological functioning (Hardman, Drew, & Egan, 2005).
- Relates more to a limitation in mental function than a physical function



Communication Disorders

Persons with CD



Communication

- It is the interactive process involving exchange of ideas, opinions, or facts between sender(s) and receiver(s).
- Communication requires that a sender
 - composes & encodes the message
 - transmits a message through a medium
 - the receiver decodes or understands the message
 - A response (feedback) is then generated.

CONT.

Communication comprises four elements

The **message**

The **sender** who expresses the message

The **medium** through the message is sent

The **receiver** who decodes and understands the message.

Forms of Communication

Speech

- This is the audible representation of a language. It represents the vocal sounds used in language. It has two parts:
 - Oral - the aspect that is spoken
 - Aural - the aspect which is heard

Cont.

Language

- This represents a **formal system** of **arbitrary codes** used by a **group of people[conventional]** for giving **meanings** to sounds, words, gestures, and other symbols to enable communication to occur with one another.

It includes

- **Verbal Language** – spoken language
- **Non- verbal language** (gestures, sign language, body language, art, facial expressions etc)
- **Written** - allows information to be recorded so that it can be referred to at a later date.

Parts of Brain controlling language

- **Broca's Area** is located in the left hemisphere, primarily involved in the *encoding* of speech (speech production).
- **Wernicke's area** is located in the left hemisphere and plays the major part in *comprehension* of speech
- **Motor cortex** governs movements of the *articulatory* organs
- **Arcuate fasciculus** forms a connection between Wernicke's area and Broca's area. A damage results in an ability to understand language but an inability to respond properly to it


Communication Disorder (CD)



- an impairment in the ability to receive, send, process, and comprehend concepts or verbal, non-verbal and graphic symbol systems.
- A communication disorder may be evident in the processes of hearing, language, and/or speech.
- It may range in severity from mild to profound.
- The child may also struggle with word choice, word order, or sentence structure.

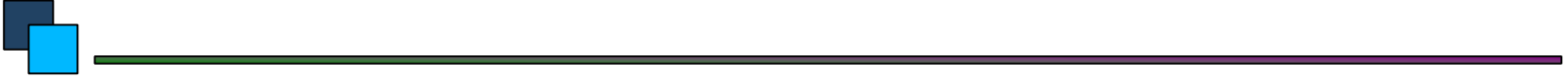
Causes of CD



- Biological (genetic/congenital)
 - Exposure to poisons (toxins) during pregnancy such as street drugs or lead
 - Physical problems such as problem in brain development
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Effects of CD

- Child is not able to make him/herself understood
- Child cannot comprehend ideas that are spoken to him/her by others
- Transmission and or perception of message is faulty
- The child is placed at a learning disadvantage
- The child is place at a social disadvantage
- There is negative impact on the child's emotional growth
- There is problem with speech and language



Language Disorder

Stages of Language Acquisition

- Prelinguistic Period : Birth -10 months
- Holophrastic Period : 12 months- 18months
- Telegraphic Period : 2 years to 3 years
- Complex period : 3 years to 5 years



Language Disorders

- It occurs when there is serious disruption of the language acquisition process or irregular development involving comprehension or expression pertaining to written or spoken language.

CONT.

- Problems may occur in one or more of the **Five [5]** components of language
 - **Phonology** (the speech sounds)
 - **Morphology** (forms such as root words, affixes, parts of speech, intonations and stresses)
 - **Syntax** (grammar)
 - **Semantics** (meaning of words)
 - **Pragmatics** (communication functions – **informative, expressive & directive**)

Types of Language Disorder

Receptive language disorders

- This involves difficulties in comprehending what others say. Being inattentive as if not listening, slow to respond, and problem in language processing (listening and interpretation)

Expressive language disorder

- It involves difficulties in language production, having limited vocabularies, immature speech, and interaction difficulties.

Cont.



Mixed Receptive-Expressive Language Disorder

- a prelude to later significant learning problems because of how difficult it is to learn when you can't understand or communicate easily

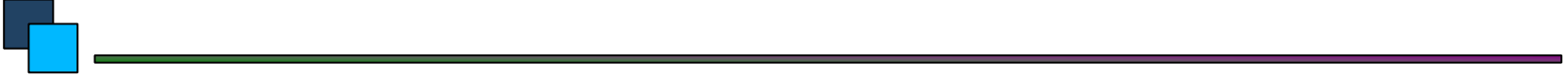
Aphasia

- Loss of the ability to speak, it is marked by impairment in language comprehension, formulation and use.
 - Broca's Aphasia [Expressive Aphasia]
 - Wernicke's Aphasia [Receptive Aphasia]

Cause of Language Disorder



- Hearing impairment
- Cognitive limitations such as Intellectual disabilities
- Autism
- General developmental delays
- Physical disabilities e.g. CP causes damage to motor areas of the brain
- Learning disabilities
- Serious brain injury leading to aphasia
- Lack of stimulation and reinforcement
- Lack of good language models
- Neurological disorders e.g. Cerebral palsy
- Drug abuse
- Environmental deprivation
- Vocal abuse or misuse e.g. teachers|singers



Speech Disorders

Speech Disorder

- An impairment of **voice**, **articulation of speech**, **fluency** or a **combination**
- These impairments are observed in the transmission and use of speech
- Speech is defective when it
 - does not follow the rules of grammar
 - is unintelligible
 - is abusive of the speech mechanism (e.g. Shouts, yelling)
 - interferes with communication

Cont.



Mainly involve:

- **Delayed Speech** (the ability to understand and speak develops more slowly than is typical expected age)
- **Articulation disorders** (difficulty with use of speech organs)
- **Voice disorders** (inappropriate pitch, loudness, quality)
- **Fluency disorders** (inappropriate flow of verbal utterance)

- **READ MORE ON THESE DISORDERS**

Causes of Speech Disorders - Biological

Structural abnormalities

- Face and mouth deformities (weak facial muscles, facial palsy, stroke)
- Cleft lip/palate
- Dental/jaw irregularities – no alignment (overjet, underjet, malocclusion)
- Down's syndrome- drooling, funny face, short neck, ducked feet and palm, large tongue

Hereditary factors

- Presence of communication disorders in the family tree
- stutterer could be imitated

Causes of Speech Disorders - Biological



Sensory abnormalities

- Hearing impairment
- Visual impairment
- ID - Cognitive problems, cannot retain correct pronunciation
- Brain damage to language/speech area
[Aphasia]


Causes of Speech Disorders - Environmental

- Extreme language deprivation
- Physical abuse which prevents children from socializing
- Television viewing >2 hours a day
 - Language may sound unnatural/ rapid for learning
- Chronic illness or hospitalization

management

- **Speech therapy** at clinic, home and school
- Exposure to **good speech /language models** from teachers and significant others
- Speech discrimination training to unlearn wrong models
- **Environmental modification** - extra time during school-based discussions or oral test situations to more adequately formulate responses.
- Create more **interactive opportunities** in the classroom
- Do not tolerate **teasing or bullying**
- Never **mimic** the child
- **Motivate** children

Cont.

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- **Adaptation** - children may be encouraged to use mnemonic strategies (adaptive coping behavior) to help them remember facts relevant to their school performance.
 - Provide **guidance/counselling** to parents and children on career options for children with communication disorders
 - **Referral for Medical intervention** to rectify structural abnormalities – clefts, tongue tie, tonsillitis, jaw alignment etc.



धन्यवाद