PEER FOR PROGRESS

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COURSE FOR MENTORS

(HEARING IMPAIRMENT)

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UNIT 1. HEARING IMPAIRMENT

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INTRODUCTION

In our society, a large part of the information and communication is received through listening (conversation, classes, radio, television, audio-visuals, music, notices, emergencies, telephony, internet channels ...). These everyday activities for a hearing person can become a challenge for a person with hearing problems, being accentuated when the person has profound deafness and birth.

Today, technology has contributed to solving and alleviating many of these problems by helping and improving the lives of deaf people on a personal, educational, social, and professional level. However, it should be noted that hearing impairment is one of the invisible disabilities.

1.1. HEARING PROCESS

1.1.1 Anatomy of the human ear

Human ear, organ of hearing and equilibrium that detects and analyses sound by transduction (or the conversion of sound waves into electrochemical impulses) and maintains the sense of balance (equilibrium).

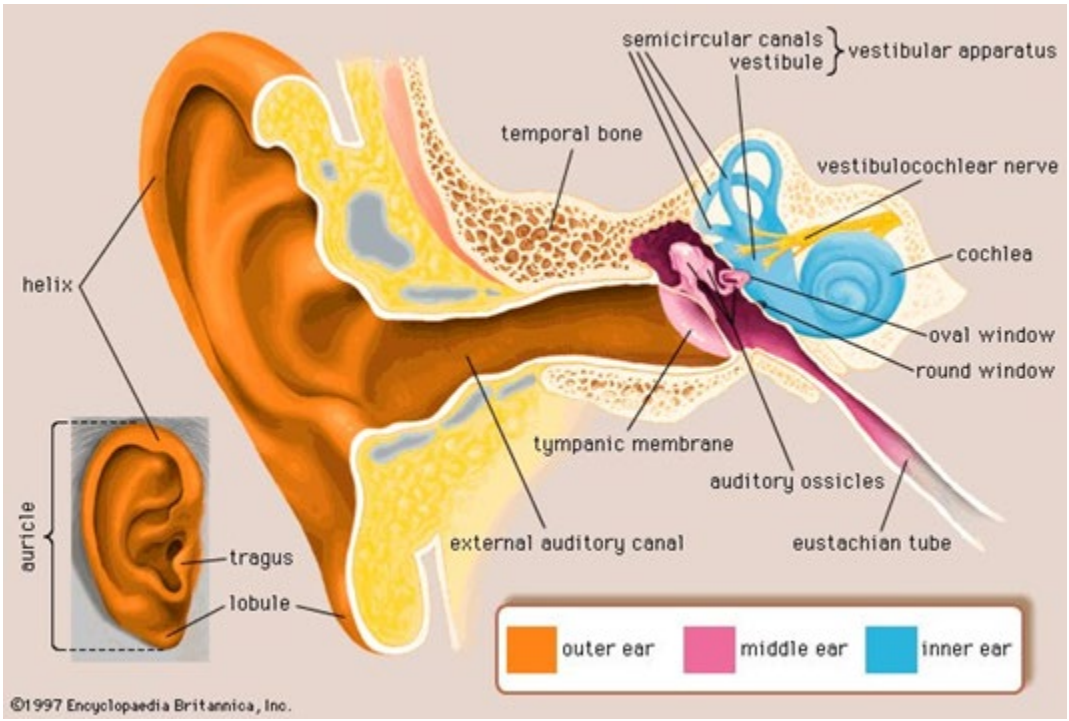

Illustration. Structure of human ear

The human ear, like that of other mammals, contains sense organs that serve two quite different functions: that of hearing and that of postural equilibrium and coordination of head and eye movements.

Anatomically, the ear has three distinguishable parts: the outer, middle, and inner ear.

● **The outer ear** consists of the visible portion called the auricle, or pinna, which projects from the side of the head, and the short external auditory canal, the inner end of which is closed by the tympanic membrane, commonly called the eardrum. The function of the outer ear is to collect sound waves and guide them to the tympanic membrane.

● **The middle ear** is a narrow air-filled cavity in the temporal bone. It is made up of a chain of three small bones: the malleus (hammer), incus (anvil), and stapes (stirrup), collectively called the auditory ossicles. This ossicular chain conducts sound from the tympanic membrane to the inner ear, which has been known since the time of Galen (2nd century CE)

as the labyrinth. It is a complicated system of fluid-filled passages and cavities located deep within the rock-hard petrous portion of the temporal bone.

● **The inner ear** consists of two functional units: the vestibular apparatus, consisting of the vestibule and semi-circular canals, which contains the sensory organs of postural equilibrium; and the snail-shell-like cochlea, which contains the sensory organ of hearing. These sensory organs are highly specialized endings of the eighth cranial nerve, also called the vestibulocochlear nerve.

1.1.2 The physiology of hearing

Hearing is the process by which the ear transforms sound vibrations in the external environment into nerve impulses that are conveyed to the brain, where they are interpreted as sounds. Sounds are produced when vibrating objects, such as the plucked string of a guitar, produce pressure pulses of vibrating air molecules, better known as sound waves.

The ear can distinguish different subjective aspects of a sound, such as its loudness and pitch, by detecting and analysing different physical characteristics of the waves. Pitch is the perception of the frequency of sound waves—i.e., the number of wavelengths that pass a fixed point in a unit of time. Frequency is usually measured in cycles per second, or hertz. The human ear is most sensitive to and most easily detects frequencies of 1,000 to 4,000 hertz, but at least for normal young ears the entire audible range of sounds extends from about 20 to 20,000 hertz. Sound waves of still higher frequency are referred to as ultrasonic, although they can be heard by other mammals.

Loudness is the perception of the intensity of sound, the pressure exerted by sound waves on the tympanic membrane. The greater their amplitude or strength, the greater the pressure or intensity, and consequently the loudness, of the sound. The intensity of sound is measured and reported in decibels (dB); it is the unit that expresses the relative magnitude of a sound on a logarithmic scale. Stated in another way, the decibel is a unit for comparing the intensity of any given sound with a standard sound that is just perceptible to the normal human ear at a frequency in the range to which the ear is most sensitive. On the decibel scale, the range of human hearing extends from 0 dB, which represents a level that is all but inaudible, to about 130 dB, the level at which sound becomes painful.

In order for a sound to be transmitted to the central nervous system, the energy of the sound undergoes three transformations. First, the air vibrations are converted to vibrations of the tympanic membrane and ossicles of the middle ear. These in turn become vibrations in the fluid within the cochlea. Finally, the fluid vibrations set up traveling waves along the basilar membrane that stimulate the hair cells of the organ of Corti. These cells convert the sound vibrations to nerve impulses in the fibres of the cochlear nerve, which transmits them to the brainstem, from which they are relayed, after extensive processing, to the primary auditory area of the cerebral cortex, the ultimate centre of the brain for hearing. Only when the nerve impulses reach this area does the listener become aware of the sound.

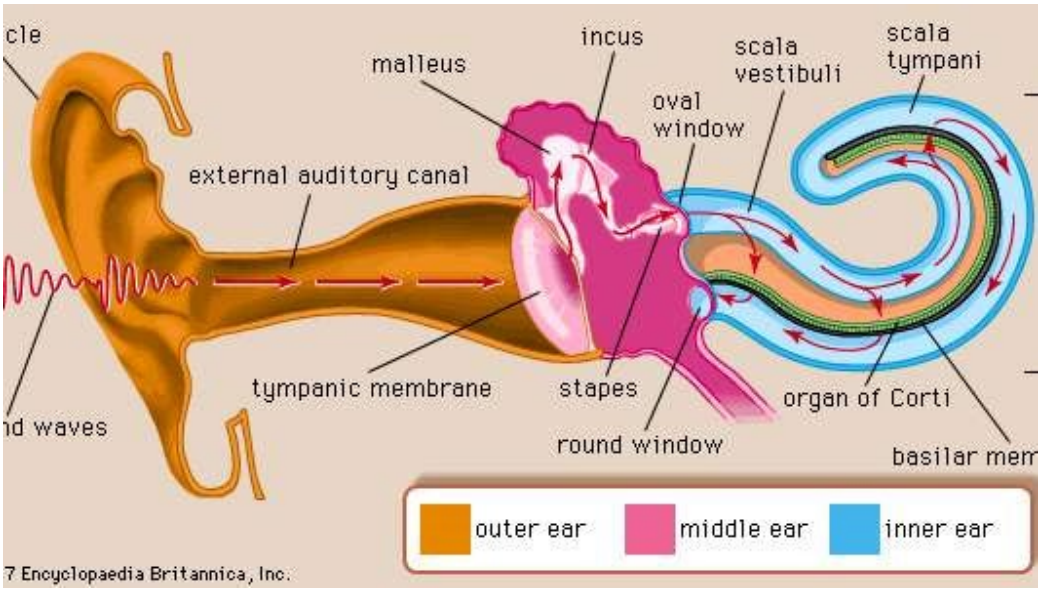

Illustration: the mechanism of hearing

Sound waves enter the outer ear and travel through the external auditory canal until they reach the tympanic membrane, causing the membrane and the attached chain of auditory ossicles to vibrate. The motion of the stapes against the oval window sets up waves in the fluids of the cochlea, causing the basilar membrane to vibrate. This stimulates the sensory cells of the organ of Corti, atop the basilar membrane, to send nerve impulses to the brain**.**

In essence, our ears work to alter the acoustic stimulus that enters and move through our ear canals, into a form of neural code that our brains can decipher process and comprehend.

Here are six basic steps to how we hear:

1. Sound transfers into the ear canal and causes the eardrum to move
2. The eardrum will vibrate with vibrates with the different sounds
3. These sound vibrations make their way through the ossicles to the cochlea
4. Sound vibrations make the fluid in the cochlea travel like ocean waves
5. Movement of fluid in turn makes the hair cells. The auditory nerve picks up any neural signals created by the hair cells. Hair cells at one end of the cochlea transfer low pitch sound information and hair cells at the opposite end transfer high pitch sound information.
6. The auditory nerve moves signals to the brain where they are then translated into recognizable and meaningful sounds. *It is the brain that "hears".*

Our hearing process truly connects us to the soundscape of our surrounding environment. Our hearing system provide us with an amazing ability to identify and comprehend the most minuscule acoustic cues. In fact, our brains can store the neural equivalents of acoustic

patterns like music, voices, danger sounds, and environmental sounds. This similarity makes it much easier for us to recognize and process both familiar and unfamiliar sounds.

Hearing loss occurs when sounds, that are typically loud, become softer and less intelligible; this is a result of our brain being misled through a loss of audibility. Information also becomes distorted as it reaches the brain, disrupting the quality of our hearing.

Head trauma, neurological disease, medical disorder or the process of simply aging, can result in alterations in the ability of the brain to process stimuli effectively. This can lead to symptoms that reflect hearing loss; such symptoms may include inattention, inappropriate responses, and confusion. Our brain works with our ears in an incredible way, processing neural events into our hearing and all that it involves.

1.2. CLASSIFICATION OF HEARING IMPAIRMENT

There are various causes of hearing loss that affect people of all ages, which makes it important to know the key signs that are associated with each type. Hearing loss can be due to hereditary reasons, certain medications, aging, infections, continuous exposure to excessive noise at work, and even an alarming loud blast or injury can affect the state of your hearing. Without adequate protection for your ears, even certain hobbies can damage one's hearing with time; these might include hunting, motorcycling, musical events, or skeet shooting.

The main types of hearing loss are sorted into three categories:

- **Sensorineural hearing loss**, which means there is a problem occurring in either the inner ear or the auditory nerve, which delivers sound to the brain.
- **Conductive hearing loss**, which means sound is not reaching the inner ear, usually due to an obstruction or trauma
- **Mixed hearing loss** means the hearing loss is being caused by a combination of the two.

Sensorineural hearing loss

The most common type of hearing loss is sensorineural. It is a permanent hearing loss, that occurs when there is damage to either the tiny hair-like cells of the inner ear or the auditory nerve itself, which prevents or weakens the transfer of nerve signals to the brain. These blocked nerve signals carry information about the loudness and clarity of sounds.

Causes

If a child is born with sensorineural hearing loss, it is most likely due to a genetic syndrome or an infection passed from mother to fetus inside the womb, such as toxoplasmosis, rubella or herpes.

When sensorineural hearing loss develops later in life—which is more typical—it can be caused by a wide variety of triggers.

Most common causes:

- Normal aging (known medically as presbycusis, or age-related hearing loss)
- Exposure to loud noises, often acquired on the job

Less common causes

- Heart diseases and diabetes
- Infections such as mumps

- Meniere's disease
- A side effect from medicines
- Acoustic neuroma or other cancerous growths in the inner ear
- Traumatic injuries that damage the inner ear or auditory nerve
- Autoimmune diseases

Symptoms

The symptoms of sensorineural hearing loss affect both the loudness and the clarity of sounds. For many people, they will have high frequency hearing loss, resulting in the following issues with hearing:

- Speech of others may seem slurred or mumbled, or a feeling of you can hear but not understand
- Difficulty following a conversation when two or more people are speaking at the same time
- A consistent ringing or buzzing in the ears (tinnitus)
- Problems listening in noisy environments (e.g., train stations, construction sites, convention centers, sports arenas, etc.)
- Difficulty hearing women's or children's voices and other high-pitched sounds
- Certain speech sounds are difficult to hear during conversations (e.g., the "s" or "th" sound)
- Noises may seem too loud or too quiet (yes, too loud!)
- A feeling of being off-balance or dizzy

People with sensorineural hearing loss often say they can hear people speaking, just not clearly.

Treatment

There is no medical or surgical method of repairing the tiny hair-like cells of the inner ear or the auditory nerve if they are damaged. However, sensorineural hearing loss can be treated with hearing aids or cochlear implants, depending on the severity of the loss.

Assistive listening devices, like alerting devices, vibrating alarm clocks and captioned phones help provide a complete hearing solution. For people with severe-to-profound hearing loss, power hearing aids can help.

Conductive hearing loss

A less common type of hearing loss is conductive hearing loss, which occurs when there is an obstruction or damage to the outer or middle ear that prevents sound from being conducted to the inner ear. Conductive hearing loss may be temporary or permanent, depending on the cause.

Causes

The causes of conductive hearing loss can be differentiated by which part of the ear they affect—either the outer or the middle ear:

Outer ear

- Stenosis or a narrowing of the ear canal
- Wax impaction
- Exostoses (bone-like protrusions that can develop inside the ear canal and cause potential cause blockages)
- Otitis externa (also known as swimmer's ear)
- Obstructions caused by foreign bodies inserted into the ear
- Microtia

Middle ear

- A breach in the tympanic membrane (ear drum) caused by injury, ear infections or extreme and rapid air pressure changes
- Tympanosclerosis, a thickening of the tympanic membrane
- Otitis media (ear infection) and/or a build-up of fluid in the middle ear
- Blockages in the Eustachian tube, which connects the middle ear to the back of the nose and throat
- Otosclerosis, which affects the tiny middle ear bone known as the stapes
- Abnormal growths or tumours that form within the middle ear, such as cholesteatoma or glomus tumours
- Ossicular chain discontinuity, or a break in the connection between the bones of the middle ear, caused by injury or heavy trauma

Symptoms

Because the sensitive inner ear and auditory nerve are intact, an individual suffering from conductive hearing loss primarily has difficulty with the overall loudness of sounds, but not the clarity. Individuals with this kind of loss often find that turning up the volume of the radio

or television is all it takes to improve their ability to hear. The following symptoms are also consistent with this type of loss:

- Easier time hearing out of one ear than the other
- Pain in one or both ears
- Sensation of pressure in one or both ears
- Difficulty or frustration with telephone conversations
- A foul odor coming from the ear canal
- A feeling that one's own voice sounds louder or different

Treatment

There are sometimes medical or surgical treatments that can improve the hearing ability for those with conductive hearing loss. For example, conductive losses caused by wax impaction, foreign objects, abnormal growths, or ear infections can often be corrected with medical treatments, like extraction of earwax, antibiotics, or surgical procedures.

Conductive hearing losses caused by other abnormalities, like stenosis of the ear canal, exostoses, otosclerosis and ossicular chain discontinuity are more difficult to treat medically and may be considered a permanent hearing loss. These conductive losses may be treated with either standard hearing aids or bone-anchored implantable devices.

Mixed hearing loss

Mixed hearing loss is any combination of sensorineural and conductive hearing loss.

Causes

Mixed hearing loss commonly occurs when the ear sustains some sort of trauma. It also can happen gradually over time when other compounds one hearing loss. For example, a person with a long-standing conductive hearing loss might experience age-related hearing loss as they age. Alternatively, a person with age-related hearing loss may have a temporary mixed hearing loss due to wax impaction.

Symptoms

The symptoms of mixed hearing loss will be some combination of those listed above for the other two types of hearing loss.

Treatment

Treatment options for mixed hearing loss will depend on whether the loss is more sensorineural or conductive in nature. If a greater portion of the loss is caused by a conductive component, surgical procedures and other medical treatments might be more effective in correcting the hearing concerns. If a greater portion of the loss is sensorineural, hearing aids or implantable devices may be the best option.

The degree of hearing loss can range from mild to profound:

Mild Hearing Loss - a person with a mild hearing loss may hear some speech sounds but soft sounds are hard to hear.

Moderate Hearing Loss - a person with a moderate hearing loss may hear almost no speech when another person is talking at a normal level.

Severe Hearing Loss - a person with severe hearing loss will hear no speech when a person is talking at a normal level and only some loud sounds.

Profound Hearing Loss - a person with a profound hearing loss will not hear any speech and only very loud sounds.

Classification table

CRITERIA	**TYPE OF HEARING LOSS**
Causes	• Genetic or hereditary • Acquired
Localization	• Conductive or transmission • Sensorineural or perception • Mixed
Degree of loss	• Mild • Medium or moderate • Severe • Profound
Acquisition moment	• Prelingual • Post lingual
Ears	• Unilateral (left or right) • Bilateral

Pre-lingual sensorineural hearing loss is the one that affects the most in the cognitive and verbal development of the child.

Most profound hearing loss is due to the destruction of the cochlea's cells and not an injuryto the auditory nerve.

1.3. HEARING DEVICES (HEARING AIDS, COCHLEAR IMPLANT)

Hearing aids are the instrument of choice for most people with hearing loss, but for those who are deaf or severely hard of hearing; cochlear implants may be a better option.

Both hearing aids and cochlear implants work best for people diagnosed with sensorineural hearing loss, meaning they have damage to the hair cells in the inner ear and/or the nerve pathways from the inner ear to the brain.

So, what is the difference between the two devices? A surgical specialist implants cochlear implant. They stimulate the auditory nerve to provide the sensation of sound for those who are deaf or severely hard of hearing. Hearing aids are removable and are used to amplify sound for people with residual hearing. The user takes them in and out of the ear canal.

1.3.1 Hearing aids

A hearing aid is a small electronic device that you wear in or behind your ear. It makes some sounds louder so that a person with hearing loss can listen, communicate, and participate more fully in daily activities. A hearing aid can help people hear more in both quiet and noisy situations. However, only about one out of five people who would benefit from a hearing aid uses one. A hearing aid has three basic parts: a microphone, amplifier, and speaker. The hearing aid receives sound through a microphone, which converts the sound waves to electrical signals and sends them to an amplifier. The amplifier increases the power of the signals and then sends them to the ear through a speaker.

Hearing aids are primarily useful in improving the hearing and speech comprehension of people who have hearing loss that results from damage to the small sensory cells in the inner ear, called hair cells. This type of hearing loss is called sensorineural hearing loss. The damage can occur because of disease, aging, or injury from noise or certain medicines.

A hearing aid magnifies sound vibrations entering the ear. Surviving hair cells detect the larger vibrations and convert them into neural signals that are passed along to the brain. The greater the damage to a person’s hair cells, the more severe the hearing loss, and the greater the hearing aid amplification needed to make up the difference.

However, there are practical limits to the amount of amplification a hearing aid can provide. In addition, if the inner ear is too damaged, even large vibrations will not be converted into neural signals. In this situation, a hearing aid would be ineffective.

There are three basic styles of hearing aids. The styles differ by size, their placement on or inside the ear, and the degree to which they amplify sound:

Behind-the-ear (BTE)

In-the-ear (ITE)

Canal aids

Although they work differently than the hearing aids described above, implantable hearing aids are designed to help increase the transmission of sound vibrations entering the inner ear.

A middle ear implant (MEI) is a small device attached to one of the bones of the middle ear. Rather than amplifying the sound traveling to the eardrum, an MEI moves these bones directly. Both techniques have the net result of strengthening sound vibrations entering the inner ear so that individuals with sensorineural hearing loss can detect them. A bone-anchored hearing aid (BAHA) is a small device that attaches to the bone behind the ear. The device transmits sound vibrations directly to the inner ear through the skull, bypassing the middle ear. Individuals with middle ear problems or deafness in one ear generally use bAHAs. Because surgery is required to implant either of these devices, many hearing specialists feel that the benefits may not outweigh the risks.

1.3.2 Cochlear implant

Cochlear implants are complex medical devices, which must be surgically implanted by a medical professional. These devices bypass the damaged portion of the inner ear to directly stimulate the auditory nerve. Cochlear implants do not restore hearing, rather, they provide the sensation of sound for those who are deaf or have profound hearing loss.

There are two main parts to a cochlear implant:

- The **external component** houses a microphone, speech processor and transmitter. A small wire links the microphone and speech processor to the transmitter, which is positioned outside the ear over the receiver.
- The **internal component** contains a receiver that is implanted under the skin just behind the ear, along with one or more electrode arrays which are implanted deep into the inner ear.

The two components are coupled using a strong magnet. Sound gathered from the microphone and speech processor is transmitted to the receiver, which converts it to electrical pulses and dispatches it to the electrodes. When these electrodes stimulate the auditory nerve, the brain receives a signal to process the sound.

Indicators for cochlear implant

a) To be a candidate for the implant, the following criteria must be met:

- Severe to profound bilateral sensorineural hearing loss
- Profound bilateral sensorineural hearing loss
- Profound unilateral sensorineural hearing loss
- No benefit with hearing aids after some time of use
- Prelingual and postlingual deafness
- Profound sensorineural hearing loss due to meningitis
- In the case of adolescents and adults, they must be motivated towards the implant
- Evaluation (psychological, paediatric, neurological) positive to the implant of the interdisciplinary team

Implementation phases

The CI technique is not only a surgical intervention, on the contrary, it requires a complete program where a multidisciplinary team intervenes in the different phases of:

1. Ear Nose and Throat Diagnosis
2. Audiological, neurological, psychological, vestibular study of the candidate
3. Surgery
4. Programming
5. Speech Therapy and Auditory training

DEAFNESS IS NOT CURED WITH A HEARING AID

RESOURCES UNIT 1

- Video about Hearing and How it Works https://www.youtube.com/watch?v=flIAxGsV1q0
- Video how do cochlear implant work. https://www.youtube.com/watch?v=k93lZHZT4yc
- Video Between Sound & Silence: How Technology is Changing Deafness | Op-Docs. https://www.youtube.com/watch?v=fY4G9mgHKQs&t=4s

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UNIT 2. PSYCHOSOCIAL IMPLICATIONS OF HEARING IMPAIRMENT

Objectives

• To know the communicative, social, and psychological repercussions that hearing disability involve in general terms.

• To become aware of the diversity in hearing impaired students.

Structure:

INTRODUCTION

2.1. COMMUNICATIVE ASPECTS

2.2. SOCIAL AND PSYCHOLOGY ASPECTS

2.3. DIVERSITY OF PEOPLE WITH DEAFNESS OR HEARING IMPAIRMENT

RESOURCES

REFERENCES

INTRODUCTION

It is essential to keep in mind that hearing-impaired students aged from 12 to 18 are teens just like their hearing peers. The hearing deficit is just another characteristic of these persons. Each teenager lives his/her hearing loss in a different way. Therefore, the interaction with these students should not be focused only in their hearing deficit. Students must be considered as a whole person; the deafness is one more feature on their human diversity.

Close to 80% of deafness is present at birth, and 95% of deaf children are born in hearing families, whose mother tongue is the oral language. This circumstance determines the way that parents communicate with their deaf children. Families must manage communicative interactions properly, to give security and confidence to their child.

Families must be informed about all the alternatives, communicative options, and educational models, to decide what is best for their children with hearing impairment.

Thus, the heterogeneity of students with hearing impairment must be stressed because these students may not share the same features and skills, nor the same familiar or social environment. Consequently, not all the students may require the same educational support.

Therefore, it is necessary to avoid stereotypes or previous judgments before attending to students with deafness. Knowledge of the individual characteristics will give teachers information about how to communicate and how to help their students in the educational environment.

The principle of freedom of choice the way of communication is essential to understand the heterogeneity of the group of deaf people or with hearing impairment.

2.1. COMMUNICATIVE ASPECTS

Communication and language cannot be confused as similar concepts. Language is considered as the main means of human communication; it is an auditory-verbal medium, but communication is a much broader term that involves other ways of relation among human beings (gestural, corporal, pictographic...).

Language is an essential tool for the transmission of information, communication between peers and to access to knowledge.

Language acquisition arises and grows through social interactions, but two competencies are essential for this:

- **Linguistic competence**: knowledge of formal aspects of a language (phonetics, morphology, syntax, lexicon)
- **Communicative competence**: ability to interact with an interlocutor through verbal and non-verbal resources to create a message.

Communicating is sharing an opportunity to express and understand the others.

Communication implications in hearing impairment

Children with profound deafness, whose residual hearing does not allow them to understand speech, they have serious problems to perceive all the grammatical and syntactic elements of the oral language. Children may keep information about known and frequent words that have semantic weight (substantives, verbs, and adjectives). However, prepositions, conjunctions, adverbs, verb forms, irregular verbs or monosyllables are more difficult to identify. This causes an interference in the compression of the message (Villalba, FIAPAS 2004).

Variables influencing language

It is difficult to establish detailed characteristics in the linguistic development of these students, because the following factors determine their communicative development, giving rise to the heterogeneity of students with hearing loss:

- Age of onset of hearing loss (pre-lingual, post-lingual)
- Age at diagnosis of hearing loss

- Unilateral or bilateral hearing loss
- Type of deafness and residual hearing
- Type of hearing aid (hearing aids, cochlear implant)
- Absence of hearing aids
- Attendance to the Early Care modality
- Auditory-verbal therapies / Speech therapy rehabilitation
- Mother tongue (oral language, sign language, bilingualism)
- Hearing or deaf parents
- Family involvement
- Educational modality

In a communicative act, the fundamental elements of communication are the transmitter, the receiver, message, channel, code, and context. When transmitter and receiver do not share the same linguistic code (oral language or sign language), the message may be incomplete or partial, which seriously affects the communicative act, even if the same context is shared.

Those students whose mother tongue is sign language, and their oral skills are insufficient, may have problems in interactions with hearing people, if they do not know sign language or have not help from an interpreter. Consequently, they often must support each other in writing or visual aids, this may result a situation of miscommunication.

About 97% of deaf children have hearing parents, whose mother tongue is oral language. This complicates the acquisition of sign language as natural language, because, parents can learn it, but they could not have the same skills in both languages. This should be necessary external support for learning and the child would learn it later in life.

It is important to know that bilingual education (oral and sign languages) for those who choose this educational model is not regulated model in many countries. However, in some educational centres exist bilingual programs according to the variability of students with hearing disabilities. To be bilingual, children must have skills and competencies in both languages in expression and comprehension level.

Implication in learning process

The acquisition of reading is not a natural activity for the human being like learning to speak. Learning to read is a process in which different brain areas intervene and requires formal and regulated training. When a hearing child access reading, he has previously been in contact with oral language and possesses the basic linguistic skills necessary for expression and understanding.

The difficulties that deaf students have in the acquisition of reading are not found in the codification reading process, but in reading comprehension. Not understanding what is read directly affects access to information, which affects the entire subsequent learning process.

Some of the causes that these students have in reading comprehension are due to:

- Little competence in oral language at the phonological, syntactic, and grammatical levels.
- Lack of motivation towards reading: reading without understanding generates frustration.
- Insufficient references on the content of what is read, due to lack of experience or lack of information.
- Reading-writing methods not suitable for the student's linguistic and communicative skills

Reading and writing skills will affect the curricular learning process to varying degrees. Therefore, students with deafness who integrate linguistic and communicative skills in their spontaneous interactions may have a better academic prognosis in the process of learning and acquisition of reading and writing.

The variability of hearing-impaired students makes difficult to define common communicative and linguistic aspects.

Reading is the tool that allows access to knowledge in an autonomous way

2.2. SOCIAL AND PSYCHOLOGY ASPECTS

How to live with a hearing loss will depend considerably on when it appears, what type of hearing loss is, and how the hearing loss has affected to cognitive, psychic, and social development. A hard hearing loss have not the same significance as a childhood, adolescence, maturity or elderhood hearing loss.

Students with neurosensorial, bilateral, severe or profound, and prelingual hearing loss may find more difficulties in the educative and social interactions. Nevertheless, better expectations are available for those who got early diagnosis, early intervention, proper hearing aids adaptations, and speech therapy, adapted to their audiological and communicative features.

Family as the first socializing core is of the greatest importance to open a way to the visibility of hearing impairment. The acceptance of the hearing loss, the affectivity, the communication tools and the collaboration with professionals and teachers, allow the family to participate and to promote the social inclusion, the self-esteem and self-concept of their child with hearing impairment.

Social aspects

Deafness or hearing loss can be considered from the clinical perspective as a disability that must be treated and rehabilitated. However, from the social perspective hearing loss can be a limited capacity in some contexts. In other words, when there are no adequate, reasonable accommodations hearing loss is more incapacitating. Some examples:

1. In an educational context, if a deaf student attends an exposition, as a complementary activity of his school, where resources to support oral communication (audio guide with subtitles, magnetic loop) or sign language (sign guide or sign language interpreter) are available, the hearing loss is not a high limitation to participate in this activity.

2. In a cultural context, if deaf young want to go to the cinema and the film is subtitled and the room is equipped with a magnetic loop, they will be able to enjoy a cultural activity just like the hearing person.

There is a percentage of deaf people who do not consider themselves as **'*disabled*'** about their hearing loss, some of the reasons they use are:

"Deafness is not a disease", "Deafness is not a dysfunction", "Deafness does not make me less capable", "Deafness does not prevent me from having a normal life"

In addition to this, there is a psychosocial rationale that deafness is a differentiating feature. Growing up a feeling of belonging to a social group called **"deaf community"**, where the deaf people share a sign language, not only as communicative tool, but also as a special social identity. Deafness is considered a social and linguistic feature.

However, it should be noted that most people with hearing loss do not feel part of this "deaf community". So, it is necessary to avoid classification of all people with hearing loss in an equally community, just for not hearing.

To respect the freedom to choose to be part or not of the "deaf community" is essential to accept the diversity of people with hearing loss whatever it may be.

The problems that people with hearing loss must face are **invisibility and misunderstanding**. As deafness is not perceived visually, in certain social contexts, people with hearing impairment are criticized for being ill mannered, unsociable, aggressive, or clumsy, simply for lack of communication.

In addition, it is frequent to believe that a person wears hearing aids become hearing persons, like person who wears glasses and can see well. However, this is not the reality of people with severe or profound hearing loss.

The neurological deafness cannot be cured

They need the environment to be accessible and facilitate communication. For instance, a student with hearing aids in a noisy environment, or if speaking turns are not respected in a conversation, may lose the thread of the conversation creating boredom, lack of interest, anger, or isolation.

On the other hand, if a student who uses sign language cannot properly see the interpreter, due to low light or obstacles to read the lips, participation in any activity or event will become complicated.

Psychological effects

There are not many studies focused on the psychological development of students with deafness. Some reasons may be:

- the heterogeneity of deaf or hearing-impaired people do not allow performing standard tests,

- the difficulty of audio verbal psychological tests for people with poor linguistic or communicative skills,
- the large number of variables that influence personal development.

Therefore, it is complicated to determine specific characteristics that may explain a common psychological profile. Having a hearing impairment does not cause a generic psychological profile.

Interactions with people around them (family, peers, and teachers) will be decisive for the emotional development and psychological evolution of the child, in order to reach the inclusion in society, in autonomous and independent way.

Although no psychological profiles have been established, some common psychological manifestations can be observed in some students with hearing loss such as isolation, insecurity, lack of attention, immaturity, frustration, irritability.

- **The deficits in communication** with their closest environment (family, friends, colleagues), if the same communication channel and code is not shared, affect the student, generating feelings of loneliness and isolation.
- **Parental overprotection** often diminishes the autonomy and independence of the adolescent who must face parental control and the parents' fear of the supposed vulnerability of their child.
- Wearing hearing aids, expression mistakes, or the use of sign language, realizes that they are different to the rest of their hearing peers. In the adolescent society, where the image is a mode of expression, this can make **some students with hearing problems to feel marked or isolated**.
- **Poor academic results** contribute to student's uncertainty with deafness, as their efforts are sometimes not compensated by grades.
- **Permanent attention to visual aspects interferes with the attention to other information** channels leading the student to lose interest, due to attentional overexertion. Sometimes, due to a lack of understanding of the situation, they lose interest in what is happening.
- **Lack of access to information and communication** involves a loss in access to knowledge, which may limit psychological maturity in some aspects, due to lack of experience.
- **The frustration for not understanding or not being understood** can generate situations of irritability, whose emotional expressiveness is evident in their non-verbal communication and in angry reactions.

Depending on the hearing loss and the degree of integration in their group class, hearing loss will affect the deaf students in their social relations with peers. At a stage where interactions are of vital importance in psychological, emotional, and cognitive development, is essential to find a way to help and solve their uncertainty, and to encourage their confidence, their abilities but not in their limitations. This will allow students with deafness to participate in the dynamics of the group class as any other more member who can contribute a different vision of the world.

Having a hearing impairment does not determine a generic psychological profile

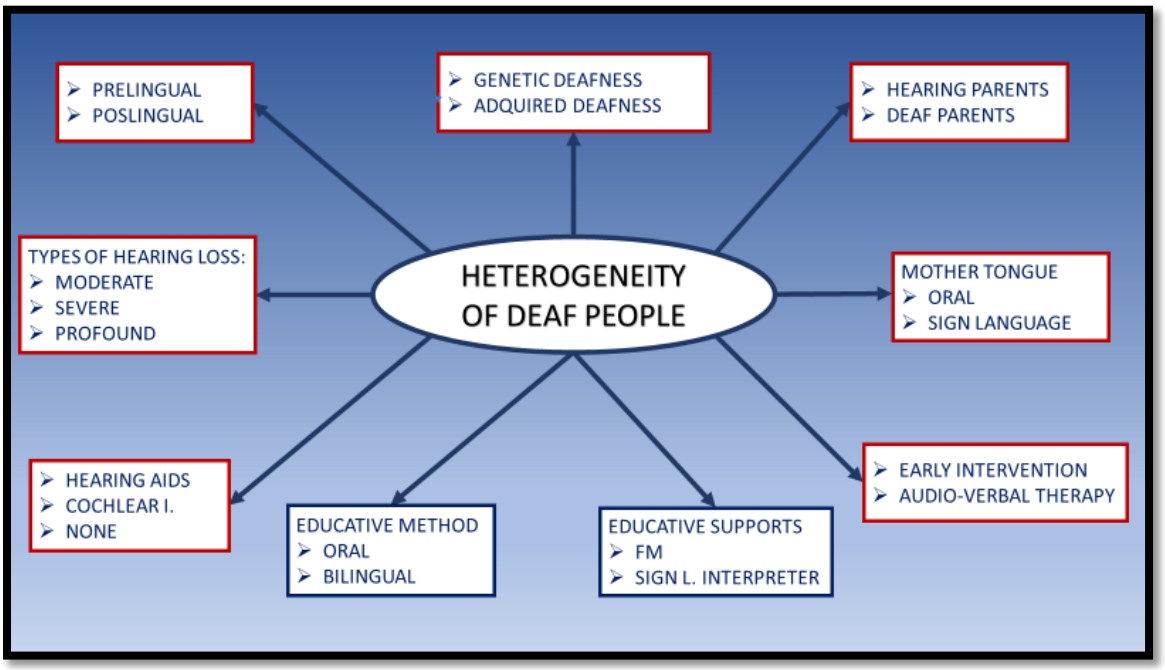
2.3. DIVERSITY OF PEOPLE WITH HEARING IMPAIRMENT

An enormous **social and communicative variability** characterizes the group of deaf or hard of hearing people. There is a growing heterogeneity of linguistic profiles reflected in the diversification of educational practices (Plaza-Pust, 2019) regardless these are aimed at oralism or bilingualism (oral language and sign language).

Therefore, it should not be assumed that all students with deafness share a similar familiar, educative, and social context; or that their interactions may contribute to similar cognitive and social experiences at individual level.

Due to deafness, no student must be recognised as part of a deaf identity or deaf culture. Hearing loss does not presuppose that all people become part of a differentiated community, with a culture and values that must be shared necessarily. **Having a hearing loss or deafness, does not obligate to communicate in sign language. The use of sign language is a personal choice**, and in the case of minors, this choice belongs to their parents as directly responsible for their education.

As has been repeatedly mentioned herein, many variables will influence the evolution of a person with deafness. The combination of all these factors has a direct impact on the overall development of hearing-impaired students. Therefore, it is possible to specify some standard communicative and social profiles, but it is complicated to define psychological profiles common to all students with deafness or hearing impairment.



**Diverse factors to consider that explain the variability of people with hearing loss.*

RESOURCES UNIT 2

- Teens with hearing loss: Learning to advocate for yourself: https://www.youtube.com/watch?v=lGDNdjkXtDM
- Young and Deaf: Dean's Story: https://www.youtube.com/watch?v=dHPOEFWgPy4
- Video: Challenges of Being Hard of Hearing: A Student's Perspective
- Video: Dear Hearing People - A Film by Sarah Snow & Jules Dameron
- Video: Navigating deafness in a hearing world | Rachel Kolb

- El mundo de Heather: Heather Artinian en TEDxGeorgetown: https://www.youtube.com/watch?v=jhm5OaXJVMQ
- Deaf People Tell Us Which Questions Annoy Them the Most | Deaf People Tell: https://www.youtube.com/watch?v=DuCx5N5VAZk

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- http://www.rinace.net/rlei/numeros/vol3-num1.html
- https://formacionasunivep.com/ejpad/index.php/journal/article/view/47/46

UNIT 3. ACCESSIBILITY IN COMMUNICATION AND INFORMATION

Objectives:

- To be aware of what type of communication deaf people use, so to have a good interaction
- To know what materials, human and technical resources exist in the attention to students with hearing impairment to guarantee accessibility to information.

Structure:

INTRODUCTION

"The human being's need for communication is prior to any formalized language." *(Torres, 1995)*

Society is made up mostly of hearing people, therefore the communication problems that deaf people face daily are invisible to most of the population.
Convention on the Rights of Persons with Disabilities (CRPD) (2008) is guided by a series of guiding principles among which are: accessibility, individual autonomy, inclusion in society, and equal opportunities.
For the right to equal opportunities to be fulfilled, in all areas of society, it is essential for people with hearing problems to have access to communication and information as an unquestionable right. There are many communication barriers that they must deal with daily in their relationship with the environment, which seriously hinders their autonomy and their inclusion in society on equal terms with those of hearing people.

The Convention defines reasonable accommodations as *"the necessary and appropriate modifications and adaptations when required in a particular case, to ensure to persons with disabilities the enjoyment or exercise, on equal basis with others, of all human rights and fundamental freedoms"*

Accessibility in communication and information is essential for people who are deaf or have hearing impairment. Language, in its broadest definition, is the main communication tool. Knowledge of a language, whatever it may be, enables personal interactions, the transmission of information and therefore access to knowledge, essential pillars for development, individual autonomy, and inclusion in society.

Thus, all reasonable adjustments that are developed and put in place so that information and communication are accessible, guarantee the full inclusion of the person in their relationship with the environment.

For students with hearing loss, it is necessary to know, understand and be able to express themselves in the vehicular language of instruction that is adapted to their mother tongue, considering that learning the skills of reading and writing in the official language of their country is a students' right.

The schooling of students with a specific need for educational support must be governed by the principles of inclusion and participation, quality, equity, non-discrimination and effective equality in access and permanence in the educational system and universal accessibility for all students, counting for this with the resources it needs (FIAPAS 2020).

An inclusive education must start from the previous knowledge of the different forms of communication and access to information that students with deafness or hearing loss have, to make reasonable adjustments in terms of adaptations and implementation of adequate resources in each case.

Depending on the mother tongue in the family and the vehicular language of training, the resources will be shared or individual in some moments of the teaching activity.

AN ACCESIBLE ENVIRONMENT ENABLES
AN INACESSIBLE ENVIRONMEN DISABLES

Figure 1. International logo for deaf people

3.1. ORAL COMMUNICATION

In any culture, children around 6-7 years dominate the language of their environment naturally. Oral language development is closely linked to hearing and auditory memory. Verbal comprehension, which involves the auditory cerebral cortex, depends on the perception of speech sounds, and acquired linguistic competence and performance (Torres, 1995).
Brain plasticity could be defined as the ability of the brain to change its structure and function. The specific period for oral language acquisition is the early years of child development, where language learning is more stable and dynamic thanks to the neural plasticity. For this reason, the adaptation of hearing aids or cochlear implants is recommended at very early ages to take advantage of the critical period of the auditory system, whose physiological development has a shorter phase. An adaptation or implantation after that specific period of brain plasticity, does not mean that the acquisition of oral language is ineffective, but it will be a slower and more difficult process for the child.

Obviously, students with hearing impairment show serious problems in the basic requirement of auditive perception and auditive memory when the residual hearing is not available with hearing device. Furthermore, severe and profound hearing loss hinder auditory access to information and may interfere in all successive psychological and cognitive aspects that are directly related with the learning process (attention, emotion, memory, motivation, thinking).

A) Oral language and hearing impairment

Deaf children follow the same cognitive and developmental processes than hearing children. However, acquisition of the oral language depends on access to spoken language, on communicative experiences, and on a series of variables that directly influence oral language development:

- Age of appearance of hearing loss (pre-lingual, post-lingual)
- Age at which hearing loss was diagnosed.
- Type of deafness and residual hearing
- Adaptation of hearing aids
- Type of hearing aid (hearing aids, cochlear implant)
- Absence of hearing aids
- Assistance to the Early Care modality
- Auditory-Verbal Therapies / Speech Therapy Rehabilitation
- Mother tongue (oral language, sign language, bilingualism)
- Hearing or deaf parents
- Family participation
- Educational modality

The acquisition of oral language is based, initially, on auditory education through auditory-verbal therapies to take advantage of residual or functional hearing provided by hearing devices. In parallel, it will be developed an individual program of speech therapy. Sometimes, methods that facilitate oral language in its phonological aspect (Cue Speech) or in its syntactic (Bimodal) may be needed, in addition to technical resources favorable to the use of hearing aids (FM, magnetic loop).

The acquisition of oral language requires effort on the part of children with hearing loss of deafness and their families. Wearing hearing aids does not necessarily guarantee natural oral language acquisition, as in hearing people.

A complete process of individual speech therapy rehabilitation is necessary, teaching and learning linguistic aspects (phonological, grammatical, semantic, metalinguistic) and communicative aspects at an expressive and comprehensive level, through immersion in communicative experiences. Everything from a natural approach where the child is helped to abstract, differentiate, synthesize, use, and integrate the linguistic and communicative rules starting from controlled situations to everyday ones.
For this purpose, the role of the family is essential as the first socializing environment. The goal is that oral speech is an integral part of student communication (pragmatic).

B) Access to oral communication
Some goals of the current methodologies to gain access to oral communication for students with deafness are:

- Improve hearing intelligibility
- Raise awareness of phonological aspects (intonation, volume, tone, melody, rhythm, pronunciation)
- Optimize lip reading for discrimination of phonemes with the same point of articulation
- Expand lexical content (expressive and comprehensive vocabulary)
- Raise awareness about the semantic relationships of words
- Acquisition of the grammatical aspects of oral discourse (verb tenses, prepositions, conjunctions, pronouns, articles ...)
- Ability to represent reality through their oral discourse
- Coherence and cohesion of oral discourse
- Coherence and cohesion in written expression
- Motivation and participation in oral communication
- Comprehensive reading of sentences and texts in their different formats

C) Lip reading

It is a technique used by some deaf or hard of hearing people to complement the information of the other person's message through the reading of the movements of their lips when they speak. This requires:

- good visual perception to observe the mouth of the speaker.
- training in this technique
- correct vocalization of the speaker for a good reading
- mental substitution to complete information, which cannot be read, through context.

However, not all deaf students have the same ability to develop this technique. It involves a series of difficulties when some phonemes that are articulated in the same position / p / / b / / m /, (e.g.: *mama-papa*, would have the same visual representation in the mouth). Another difficulty is the hidden phonemes that are articulated in the soft palate / k / / g / / j / (e.g.: *jam-ham, caught-hot...).*

For this reason, other complementary systems have been developed to reinforce oral language such as the Cue Speech and the Bimodal system.

Oral language competence is the first condition for access to effective reading. Understanding texts is the basis for a good school performance [...] The access to the oral language is crucial for acquisition and development of higher cognitive processes, such as learning and use of comprehensive reading. (FIAPAS, 2009)

3.2. SIGN LANGUAGE

Each country or geographic-cultural community develops its own sign language

Many countries have already recognised sign language as an official language.
Sign language is the language used by deaf signer people, deaf-blind people, and people who, for reasons of impairment, cannot express with oral language.
Sign language is a visual and gestural language in which the hands, facial expression and body language are used. Hand gestures follow a precise configuration, location, and movement.
Like oral languages it consists of a grammar, a syntactic structure, vocabulary, and pragmatic, specific for each language. Consequently, teaching and learning process are required to acquire the necessary skills in terms of expression and understanding. Sign language structure does not correspond to oral language. Instead, it is made up of minimum units with meaning (signs) and without meaning (keremas).

A) Dactylological Alphabet
It is the manual representation of the alphabet of the oral language (manual alphabet). It is performed in the air at chin level with the dominant hand. It should be stressed that it is not a signed language, but a sign language tool representing the oral language alphabet.
It is a tool used to spell words and to facilitate communication with:

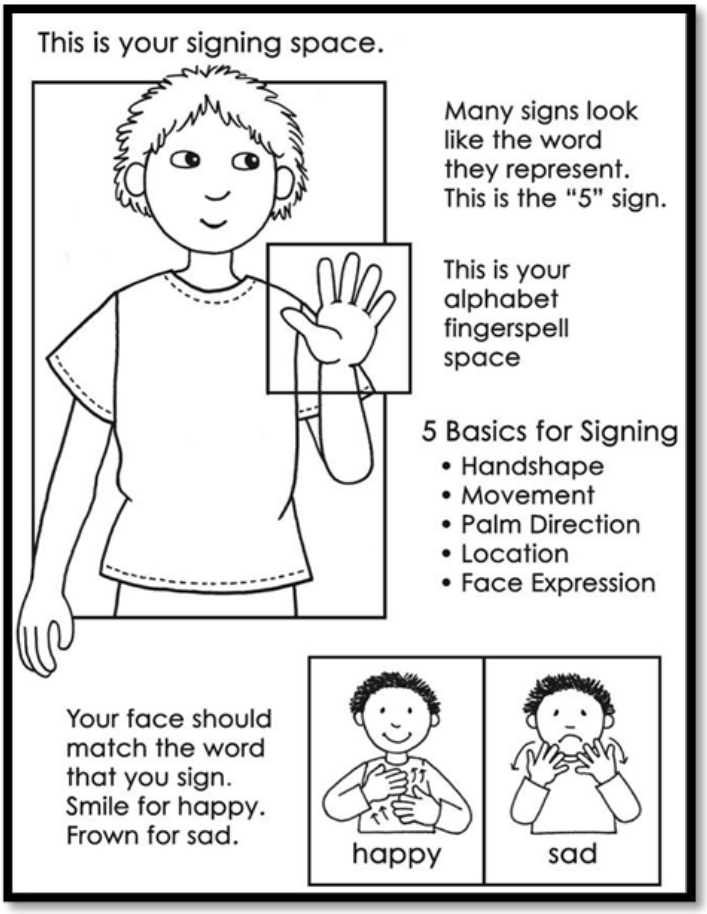
- a new, unknown, or complex word
- a word does not have an assigned sign, or
- when a person is introduced for the first time and has not his/her sign yet.

It is impossible to maintain a conversation by spelling letter by letter, unless it is the communication system of a person who is deaf-blind, then the manual alphabet would be supported on the hand palm of the deaf-blind person (palm alphabet).

B) Parameters of the signs
The signs can be:
a) **Iconic**: usually originated from common natural gestures, these signs are recognised for what they represent (ex.: me, eating, sleeping, drinking, numbers...)
b) **Arbitrary**: signs established by a community of deaf people signers which started from a previous common reference, but which is difficult to relate to their meaning.
Signs must follow a series of parameters in their execution.

- **Handshape**: the shape of the hand when making a sign.
- **Palm Orientation**: orientation of the hand palm in relation to the signer (down/up, left/right, towards the signer, towards the front)

- **Location or place of articulation**: place or height where the sign is performed in the body (head, shoulder, chest), the vertical usable space includes from the hip to the top of the head, and the horizontal space of the half-opened arms.
- **Movement:** the signs are not static, they include movement (turns, straight, semi-circular, zigzag, simultaneous with both hands)
- **Contact point**: the dominant hand touches a part of the body (other hand, face, head, chest, shoulder, waist...)
- **Non-manual component** includes facial expression, body expression, the articulation of words (lip reading), body movements accompanying the performance of gestures.



C) Paralinguistic elements

- Call the attention of a deaf person through a light touch on the shoulder or arm to start a conversation.
- Keep constant eye contact during conversation
- Facial expression should accompany the subject as an essential non-verbal communication needed in some cases to discern different meanings represented by the same sign.
- Visual connectors to hold the conversation: nodding, assertive gestures, close body posture, looks or smile depending on the topic of the conversation.

- Warn when the conversation is going to be momentarily interrupted
- Warn before closing the conversation with politeness, excusing ourselves, apologising
- Always speak to the deaf person, NOT to the sign language interpreter
- Sign language, as oral language, has an informal and a formal register depending on the social context.

SIGN LANGUAGE IS NOT UNIVERSAL FOR ALL DEAF PEOPLE

3.3. UNIVERSAL ACCESSIBILITY FOR PEOPLE WITH HEARING IMPAIRMENT

Nowadays, technology has undergone a substantial and qualitative advance in the new hearing devices models and cochlear implants. Nevertheless, deaf people need technical support in daily life situations to favour access to information and communication. These situations are often unnoticed by hearing people, but the intelligibility of the message for people with hearing loss is difficult.

A) Technical supports for students with hearing impairment

Visual helps: different devices or supports that help in the daily life of deaf people:

- Lighted sign, bells, and intercoms
- Visual and bright alarm and emergency systems
- Warning signs with text or signs
- Audiovisual technology with subtitles and sign language interpretation
- Explanatory posters, labels
- Mobile instant messages (WhatsApp, Messenger)
- Mobile video calls (WhatsApp, Skype, Zoom, Meet)
- Online video calls and video conferences (Skype, Teams, Zoom, Meet)
- Signal Guidance that combines video, audio, and text in the same device
- Subtitles of live public events in real-time: conferences, interviews, meetings
- Recorded subtitles: resource used to transcribe to text the spoken message and auditory information (sounds, onomatopoeias, noises) in television, cinema, theatre, museums, libraries

Auditory supports: devices and systems that improve the intelligibility of sound and message

- Sound Amplifiers
- Wireless Bluetooth microphones that connect with the hearing aid or cochlear implant
- Frequency Modulated System
- Magnetic induction system (magnetic loops)
- Audio-guides
- Voice-to-text recognition systems
- Subtitles and captions

B) Human/personal assistance for students with hearing impairment

Some professionals directly intervene as mediators in the communicative interaction between a deaf person and his/her environment.

a) **Sign language interpreter**: professional who interprets and translates information from oral and written language to national sign language and vice versa. The goal is to ensure the communication between deaf or hearing-impaired people (who use sign language and hearing person) and their social environment.

b) **Sign language tele-interpreter**: a professional who remotely interprets and translates information, using public video telephony (through fixed and mobile networks) or other technologies in a tele-interpretation centre. This enables a communication bridge between a person who uses oral language and another who uses sign language, making telecommunications services accessible.

c) **Guide-interpreter for deaf-blindness**: a professional who interprets and translates information from oral and written language to sign language or to different systems and means of communication support used by the deaf-blind person and vice versa.

d) **Stenotypist**: professional who makes possible subtitle up-to-the-minute, through a fast-writing system, which makes real-time transcription of the speech of a speaker to a written text. For this purpose, a stenotype keyboard and a word processor software are needed. The written text will be shown on the screen.

C) Communicative interaction strategies

A first step to communicate with a person with a sensory impairment is to know some basic communicative interaction strategies. These guidelines are general for all communicative environments.

Introducing the deaf classmate (if he or she agrees) to the class, is one of the first activities that the teacher can carry out, to encourage empathy among classmates. Information about the implications of hearing loss is provided, giving the student himself the opportunity to explain his/her needs and difficulties in class.

The interaction practices aim not to break the visual or auditory contact between the speaker and the receiver. Therefore, to favour access to information, several primary indications must be considered. These are evident and uncomplicated but relevant; the objective is to improve students' communication and access to information.

Introduction to communication

- Get their attention when with a light touch, a sign or by saying their name or touching their shoulder
- Start talking when you know there are eye contact and direct attention

- Always speak in front of the student
- Introduce the topic of conversation for the previous reference

In the Conversation

- Talk naturally, neither quickly nor slowly
- Vocalize well without exaggerating, with voice, but without shouting
- Use corrects, accurate phrases that do not lead to confusion
- Repeat if necessary
- Always respect the speaking time
- Always talk the person with hearing loss, not the sign language interpreter or companion
- Lip-reading is very important for people who are deaf or hearing impaired. Do not put any object or hand in front of the mouth while speaking
- Support on visual resources (natural gestures, images, drawings, written words)
- Help with fingerprinting for new terms or words with students who use sign language.

End of conversation

- Indicate when the conversation is over
- Do not turn around without reason you can confuse the student.

3.4. TECHNICAL RESOURCES FOR COMMUNICATIVE ACCESSIBILITY

A significant number of technical and technological resources help people with deafness or hearing loss to access information and in their communicative interactions. Some of these technological aids are aimed at users of hearing aids or cochlear implants, and others for deaf people in general.

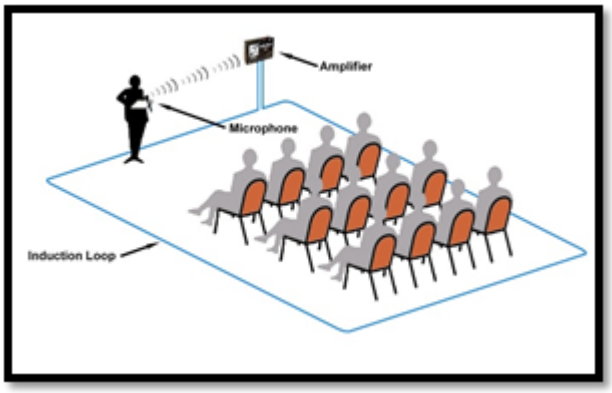
3.4.1. Magnetic Loops/hearing loops

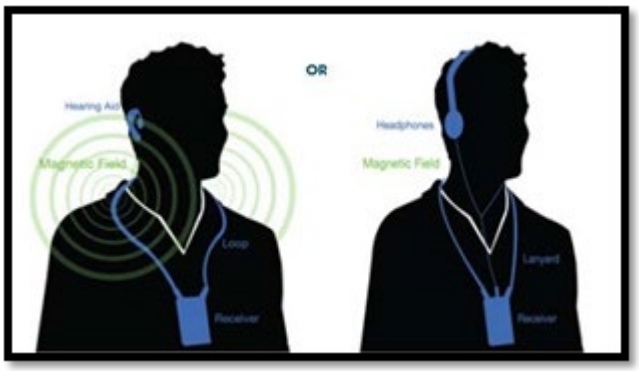
It is a hearing aid system, also called a magnetic induction loop. It is a system that connects the audio signal from a microphone to an amplifier that passes it to a cable (loop), creating a magnetic field, this signal is received by the hearing aid or cochlear implant with its Telecoil (position T). Everyone inside the area around the magnetic loop can benefit if they have the Telecoil activated, regardless of the type of hearing aid.

Its function is to eliminate ambient noise, the acoustic reverberation, and to transmit the sound signal clearly and without delay.

There are different types of magnetic loop depending on the target space:

- Room induction loop for large areas and collective use (auditoriums, cinemas, theatres, conference hall, museums, exhibitions)
- Counter induction loop for small spaces (customer service, counters, hotel reception) could be permanent in a desk or portable.
- Neck loop for individual use that can adjust to multimedia devices (mobile telephony, audio guides, sign guides)





This universal system that does not need updates. All spaces that have such a hearing accessibility system must be marked with the symbol that identifies it.

International logo for magnetic loop

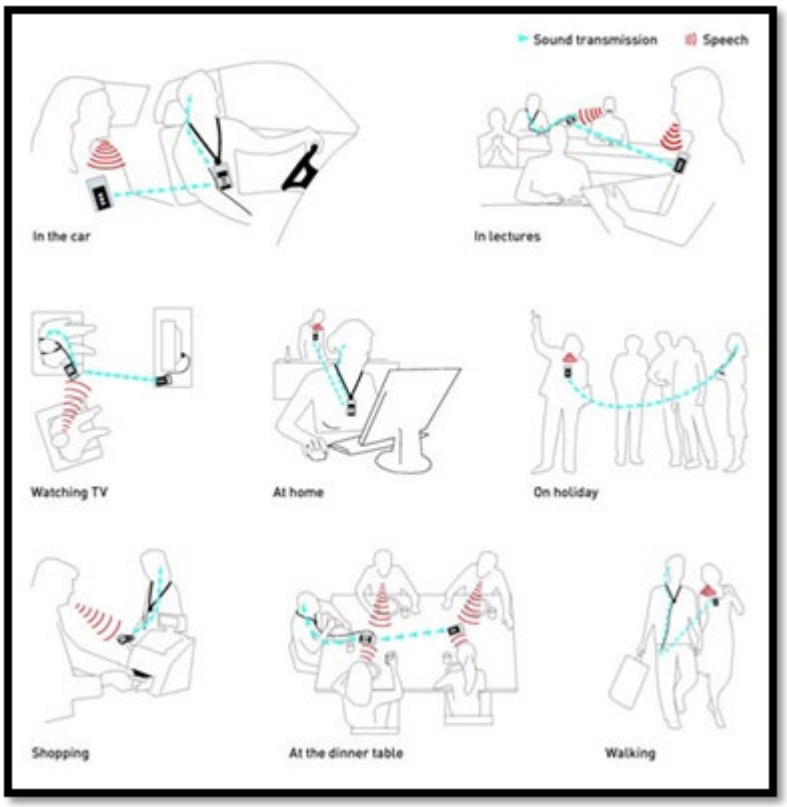
3.4.2. FM system

The distance between a sound source or speaker and the person with hearing problems affects the reception of the message. In addition to length, all ambient noises and reverberation can alter speech intelligibility.

FM devices are often used at school for students with hearing impairment who use hearing aids or cochlear implants.

FM system uses radio waves to deliver speech signals directly from the speaker's voice to the listener through a radio frequency designated for personal use. Personal FM system reduce the background noise and improve the clarity of messages.

FM system includes a transmitter microphone worn by the teacher or speaker. Most modern systems receive the signal from mobile devices such as tablets, loudspeakers. The microphone encodes their voice into a frequency-modulated signal. The receiver picks up the radio signals transmitted by the microphone to the hearing aids or C.I., up to 15 meters away.



Different uses of FM system

3.4.3. Captions and Subtitles

Subtitles are essential as a universal accessibility tool for people with hearing problems and for all those who do not speak a language or are in situations where ambient noise makes it difficult to receive audio.

Compensating the problems of access to auditory information in an audiovisual format through subtitles is of utmost importance for people with deafness or hearing loss. It could be a TV program, video hosted on the internet, platform films, cinemas, theatres, museum or exhibition audiovisuals, conferences ... There are many situations where information is auditory verbal.

The subtitles allow to transcribe audio and sounds to text:

- what it said
- who said what
- how it is said
- what is heard
- what is watch

Objectives for subtitling:

- Provide in text the sound information of an audiovisual
- Present the text long enough for it to be read
- Encourage comfortable reading
- Help identify the characters
- Understand the original dialogues
- Adapt the speed of exposure of the subtitles to the target audience (children, adults)

Types of subtitles

1. Automatic subtitling: Technique by voice recognition
2. Simultaneous subtitling: Technique of stenotype. Requirements for simultaneous subtitling are Stenotypist, Complete stenotype equipment and Computer technician

Captions and Subtitles ensures accessibility to the information for people with deafness or hearing loss because they allow to transcribe audio and sounds to text.

3.5. NEW TECHNOLOGIES

There is no doubt that new technologies have facilitated relationships for people with hearing difficulties through email, social networks and instant messaging (chats, video calls); both for deaf people who use oral language and those who communicate in sign language, giving them the opportunity to access information and knowledge in an autonomous, fast and dynamic way.

Digital technology is increasingly integrated into education. Education professionals learned to teach with methodologies that, in a short time, have become a bit obsolete for students who, for the most part, live daily in the digital world. This situation has shown that new strategies are needed to benefit both teachers and students in the teaching and learning process.

Recent studies indicate that more than 50% of students who are in primary school will have jobs that are currently unknown but linked to technology and the digital world. Consequently, training on IT (information technologies) for teachers and students is essential for future adults.

The current pandemic situation caused by Covid-19 has highlighted the importance of accessibility to online education due to the difficulties it has caused for students with hearing loss. It has been revealed that not all the students had an Internet connection or personal computing devices (computer, tablet), and accessibility in platforms and resources was poor.

***It is not necessary to create specific platforms for students with hearing impairment. The need for accessibility of these students must be considered to enable access to new learning methods with the same opportunities as their hearing peers*.**

There are several guidelines to be considered to make accessible the materials and resources for teaching, learning and assessment. These adjustments in information, communication and training will facilitate deaf students' accessibility to knowledge and development of their skills.

Digital learning tools must include all students, so it is necessary to consider:

- **Subtitles in all audiovisual formats:** videos, recorded classes and live classes**.**
- **Speech-to-text transcription through speech recognition applications or programs,** which can be installed on the devices of hearing -impaired students.
- **Video-calling programs that allow subtitles** (Skype, Google Meet, Webex Meetings) or the presence of an LS interpreter for students who need this resource.

There are some examples of students with hearing loss, how they use the new technologies in daily life:

- **Video: Deaf young people talk about NDCS Technology - Radio aids**
- **Video: Deaf young people talk about NDCS Technology – Headphones**
- **Video: Deaf young people share how they listen to music and TV**

RESOURCES UNIT 3

- Video: Alphabet in international sign language

- Web of sign language with different languages around the world https://www.spreadthesign.com/en.gb

- Video: How to communicate with people who have hearing loss (deaf awareness)
- Video: What is a Hearing Loop?
- Video: What is a loop system and how does it work?
- Video: Using an FM system
- Video: Using a FM system in classroom
- Video: Add your own closed caption (YouTube help)
- YouTube Chanel about TIC resources
- Reading: Universal design learning

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- YouTube **Chanel about TIC resources** https://www.youtube.com/c/FlippedClassroomTutorials/videos
- Web **BBC- Subtitles Guidelines** https://bbc.github.io/subtitle-guidelines/

UNIT 4. METHODOLOGICAL CONSIDERATIONS IN EDUCATIONAL AND TRAINING ATTENTION

OBJECTIVES:

- To understand methodological considerations in educational and training attention according to needs of people with hearing impairments in the educational environment.
- To learn communication strategies for hearing impairment students, at the same time to understand their educational and professional implications.
- To have information about National Sign Language, besides this to help professionals' learning about Augmentative communication systems.

Structure:

INTRODUCTION

In the education of hearing-impaired children, it is very effective to support the teaching of knowledge and skills with visual tools as much as possible, to organize educational environments and to enable peer interaction. In addition, considering the importance of learning by experience in the permanence of what has been learned, the importance of active learning based on practice in the education of the hearing impaired is quite remarkable.

4.1. COMMUNICATIVE INTERACTION STRATEGIES

Communication is the transfer of feelings, thoughts, or information to others in any way imaginable. The purpose of this process is to "be understood".
Communication is not an exchange of information. It is a different whole formed by the emotion and behaviour affecting the information given. It is a whole with verbal and non-verbal communication signs. Non-verbal components of communication are body language and tone of voice. Body language and tone of voice determine the style, attitude, and perception of what is said.

Body Language

Body language is our oldest communication tool in human history. Body language is the reflection of our feelings and thoughts. In the face-to-face relationship people establish, words are 10% important, tone of voice 30%, body language 60%.

Body Language Elements

- Body posture Gestures
- Mimics Eye contact
- Use of the head
- Use of the feet
- Place chosen to sit
- Seating style
- Distance
- Clothing used accessories.
- Care and make-up

Direct Eye Contact

One of the most important things to consider when talking to a person is where you are looking. Looking directly at the person you are talking to helps convey your sincerity to the other person and increases the impact of your message. Talking by looking down or looking away will be interpreted as accepting the superiority of the other person.

At the same time, it is necessary not to overdo it when making eye contact. Constantly looking into a person's eyes both causes discomfort for that person and is unnecessary.

Direct eye relationship can also be improved over time. For this, you need to focus your attention on your eye contact and be aware of the way you use your eyes when talking to someone.

Body Posture (Posture)

People have very different postures in their relationships with each other. The person who is discussing a very specific topic with someone leans forward slightly. An adult who speaks leaning to the child will find a much more cooperative child.

The person who directly faces the person with whom he is in a relationship and who has an upright posture will add a safe feature to his message.

Just as the bent, bowed, "sheepish" postures are erroneous, the body postures with the shoulders thrown back, the chest protruding, the head bowed, challenging, inviting to war are equally erroneous.

It is possible to talk and listen by holding the head and body upright, and by paying attention to develop the body posture towards safe attitude over time.

Distance and Physical Contact

In any society, social distance has a major effect on human relationships. Interpersonal distance or personal space is the invisible area that surrounds everyone in their dealings with others. It is the physical distance between two people that varies according to the relationship between those two people, the social and cultural context of each of them.

Intimate distance is a measure of the distance that everyone typically lives in an elevator, and you feel uncomfortable when you are close to people you don't know.

In any society, distance has an important effect on human relationships. Sitting too close to a person or standing close to him, putting his hand on his shoulder, on his back, touching his arm and hand add a certain "autonomy, closeness and warmth to the relationship between two people."

Attention should be paid to how the other person perceives the distance or bodily contact. Otherwise, uncomfortable comments and unwanted results will be inevitable.

Gestures

Gestures made in appropriate amounts and with appropriate intensity add strength to a conversation. It is important not to use gestures as a tool to complement the missing words in speech. Moreover, it should not be forgotten that harsh and angry gestures cause discomfort in the audience. Comfortable, calm, and soft gestures are interpreted as revealing the speaker's self-confidence and mastery of the subject he / she speaks.

Mimics

Nothing in human relationships is as important and meaningful as facial expression, perhaps. It is inappropriate to express sadness or anger with a smiling expression and joy with a scowl. A safe statement is a statement in harmony with the given message. An angry message or dissatisfaction can be conveyed most clearly with a dull expression.

Tone, Intensity and Fluency of Speech

The use of tone of voice is the most important part of verbal communication.

The smallest tension experienced in interpersonal relationships first reveals itself in the tone of voice. Most of the time, a lively, cheerful, and energetic tone of voice leaves a positive effect on people in everyday relationships. However, if there is tension and a problem, the soft and calm tone of the voice prevents conflict and facilitates cooperation.

With a monotonous, boring, and easily distracted speech style, the person will have difficulty in being persuasive, no matter how many original ideas they present.

The harsh and firm way of speaking often causes advocacy and discomfort in the listener. In addition, people who give an apologetic tone to their voices are easily rejected by others, or their statements are seen as unimportant.

Speech fluency must be accompanied by correct vocalization, since the hearing-Impaired person must follow the oral speech by using his/her functional auditory residual and lip-reading.

Considerations to communicate with hearing-impaired people

- When starting a conversation with someone who is hearing-impaired, or hard of hearing, make them aware that you are talking to them. Depending on the situation, you can point with your hand or touch the person's shoulder lightly.
- Try to understand how the hearing-impaired person prefers to communicate. Sign language, gestures, written or spoken communication can be. If you have difficulty understanding the speech of the hearing-impaired person, let them know.
- In situations that require long and complex conversations, it is necessary to use a sign language interpreter, such as a job interview, doctor's examination, or legal interviews. In simpler dialogues, it may be enough to get along with the text.
- If you are speaking to a hearing-impaired person through a sign language interpreter, talk by looking at the hearing-impaired person and establish eye contact with him or her. Rather than asking the person a question through his interpreter (such as "*What would Ms. Smith want?*"), Direct the question directly to her (such as "*Which colour do you prefer*?)
- A quiet and well-lit environment is ideal for effective communication. If you are in front of a light source such as a window and your back is facing the light source, the light can dazzle the person in front of you and make it difficult for the hearing-impaired person who tries to read your lips to choose your face.
- Try to express what you want to say differently instead of repeating sentences that the person does not understand. Speak slowly, in clear, understandable words. Thus, people with low hearing disabilities can read your lips. For this reason, do not chew gum, smoke, or cover your mouth while speaking.
- You do not need to shout to someone who is hearing-impaired or hard of hearing. If he is using hearing aids, your normal volume will be sufficient for him to hear you.
- Reserve space in front rows of conference rooms for the hearing impaired. Make sure that the living room has good lighting. Gestures and mimics are important for the hearing impaired to perceive the messages correctly.

4.2. EDUCATIONAL AND PROFESSIONAL IMPLICATIONS OF HEARING IMPAIRMENT

Some students who are hearing impairment feel socially isolated from others. It has been found that even a mild hearing loss may result in a profound communication barrier (50% to 60% of communication can be lost).
The emphasis should be on visual learning strategies for students who are hard of hearing or hearing impairment.

To enhance the learning environment, consider the following:

- If the student relies on lip-reading, repeat comments made by the other students in a discussion to ensure the student understands
- Introduce interpreters and computerized note-takers to the class and give them the opportunity to explain their role
- Be prepared for interruptions by note-takers and interpreters for clarification, should someone speak inaudibly, several people speak at one time, or a concept is not clear
- Do not say anything to the interpreter or computerized note-taker during class that you do not want communicated to the student
- Typing and interpreting take intense concentration and physical stamina, thereby requiring at least one 10-minute break for every 50 minutes of class time depending on the course content
- Speak at a reasonable pace, clearly and in a normal tone but be aware that interpreting and computerized note- taking requires a few second's delay
- If a class is cancelled or relocated ensure that all parties (student, interpreter and/or note-taker) are notified
- Access Ability Services can be contacted for more information on these methods of communication
- Be prepared to meet with interpreters and note-takers for consultation and planning
- Work closely with Access Ability Services to ensure a successful learning experience for the student
- Outline lesson at beginning of class and provide a list of content specific or technical terms to the student and interpreter before each class
- Reinforce verbal presentations with written text (any computer-generated document allows you to face the front)
- Use captioned videos where available
- Avoid movements which will distract or block the student's view of the interpreter or the computer screen
- When speaking, face the students, try to avoid back-lighting and remain in one place
- Restate or paraphrase if the student does not seem to understand
- Eliminate background noise and other distractions

SPECIFIC TIPS

- If you have an interpreter in your class: The interpreter is not a tutor or a teacher.
- The interpreter is there to facilitate communication between the instructor and the student and is part of the educational team.
- Interpreters belong to a professional group, bound by a Code of Ethics that stresses confidentiality, impartiality, and integrity.
- Situate yourself and the interpreter along one sight line so that hearing impairment students can follow any action
- Speak directly to the hearing impairment student, not the interpreter
- Look at the student not the interpreter when responses are being interpreted
- The interpreter (or student) will be happy to teach you a few ASL signs of greeting and instructions if you are interested
- Specific tips if you have a computerized note-taker in your class: An in-class computerized note-taker relays the lecture and class discussion.

The note-taker must have passed the College Computerized Note-taking Screening and must type at least 70 wpm. The staff of the Access Ability Centre regularly monitors the quality of notes for accuracy and thoroughness.

- Note-takers can transcribe audio materials such as video or audio tapes if given the materials in advance of the class
- Notes taken by the computerized note-takers are for the use of the hearing impairment or hard of hearing students only

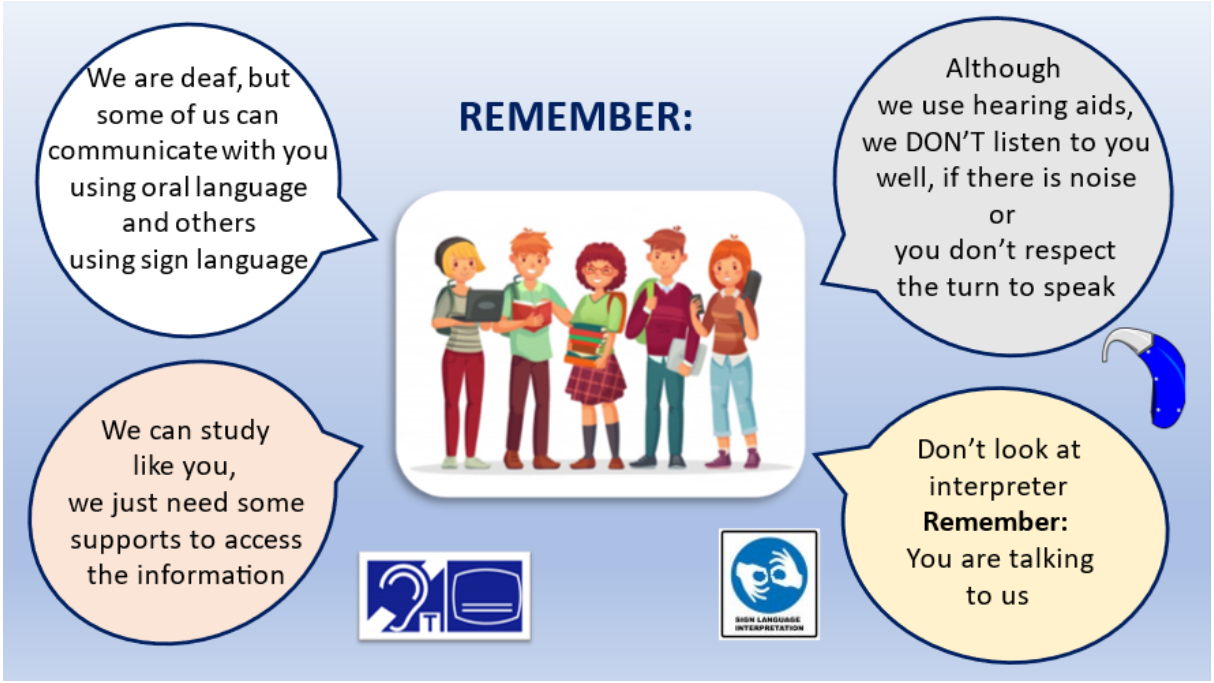
PEER INTERACTION AND COLLABORATIVE LEARNING

It is necessary to allow peer interaction. In the teaching process, it is important to create opportunities for students to interact with each other and to model each other when necessary, and to work together. Creating small study groups by bringing students from different levels together is also essential in collaborative learning.

For collaborative learning and peer support:

- Paying attention to bringing students of different characteristics and levels together while creating study groups,
- Each child in the group to know their own duties and responsibilities,
- Ensuring that every student takes an active role because of group work,

Care should be taken that students of different levels sit side by side. Thus, students will support each other in academic and social areas, and the teacher's classroom control will be easier.


We are deaf, but some of us can communicate with you using oral language and others using sign language
REMEMBER:
Although we use hearing aids, we DON'T listen to you well, if there is noise or you don't respect the turn to speak
We can study like you, we just need some supports to access the information
Don't look at interpreter
Remember:
You are talking to us

4.3. ORAL AND VISUAL COMMUNICATION SUPPORT FOR HEARING IMPAIRMENT

The biggest problem faced by the teacher who is responsible for the education of a child with hearing impairment is how to communicate with the child and how to teach the individual how to communicate with other people. There are different approaches to supporting oral communication in the education of people with hearing impairments.

- Oral, auditory-verbal methods
- Methods supported by gestures or signs.

A) ORAL AND AUDITORY COMMUNICATION METHODS

1. Natural Oral Hearing Method / Oralism

With this method, young children with hearing impairment access their mother tongue following the natural process of acquiring language such as listeners, although in the case of severe hearing loss this acquisition leads to a delay and some difficulties depending on the type of deafness. Children with hearing loss can develop their mother tongue through meaningful interaction with those around them.

The use of a hearing aid (hearing aids or cochlear implants) is a prerequisite for the development of this method. A properly adaptation of hearing aids allows the perception and understanding of oral language if children have a good residual and functional hearing. This method lets the development of auditory perception naturally, rather than teaching spoken language directly without rigid patterns.

2. Auditory Verbal Therapy

It is an early intervention method with hearing impaired hearing aid users for language development. It is based on developing auditory and communicative skills focusing exclusively on hearing. Family involvement is an essential part of such therapy. The most significant difference from the natural auditory-verbal approach is that lip reading, the dactyl alphabet, the Cue Speech are not used. It is a one-in-one methodological approach, only aimed at perception and auditory memory.

3. Structural Verbal-Oral Method

In this method, the language, structured with the idea that the language can and should be taught, is taught to children with certain patterns and in a certain order. This structuring covers all studies under the headings of speech training, articulation studies, hearing training, lip reading training, language, and speech training. Studies are carried out according to the idea that the language should be taught.

4. Lip Reading

It is a technique that some deaf people use to complement auditory information. They read on the lips the vocalization of the speaker. Training and skills are needed to be a good lip reader because some phonemes are visually similar and have the same articulation point, or

because some are not visible phonemes and can confuse, which requires contextual information for full message compression.

B) METHODS SUPPORTED BY GESTURES OR SIGNS

1. Dactylological alphabet/ finger alphabet

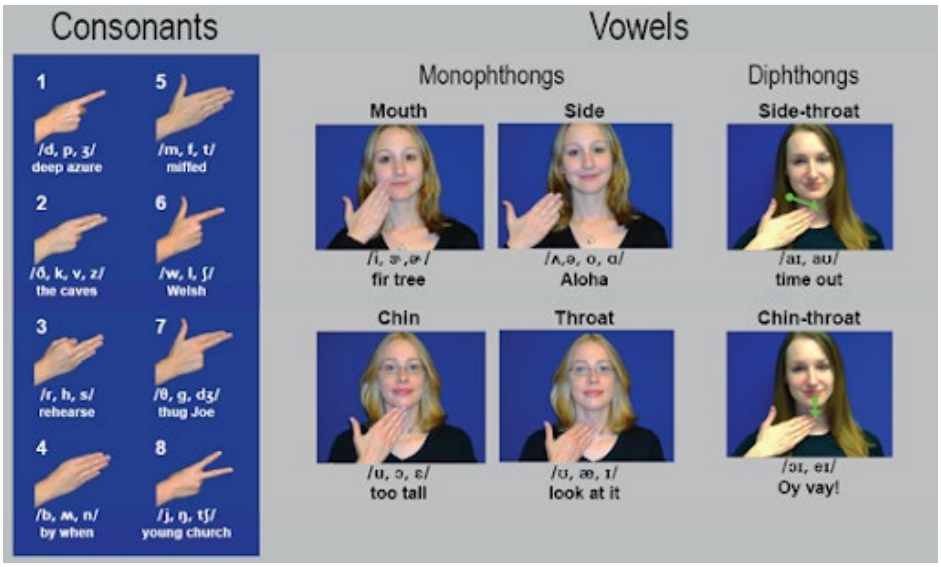
It is a manual alphabet that identifies every letter of the alphabet. It is a gestural method for visualizing the oral alphabet, but it is very limited to have a conversation. Used to spell new or complex words.

2. Phonetic support gestures/Hand cue technique

It is a technique used in speech therapy. It consists of a series of hand gestures that help the visual perception of some parameters of the vocalic and consonant sounds, either to improve pronunciation or discrimination of phonemes when they can be confused with others. Once the child has acquired phonological awareness, these gestures would be used in a timely manner to help with new or complex words.

3. Cue Speech

Total communication is an educational method based on using all the verbal, auditory, written and sign-based methods used in language acquisition. Advocates of this method are the educational method they use, asserting that children with severe and profound hearing loss should be supported with methods such as signs, lip reading, and writing, and suggest that all methods should be used together in the education of hearing-impaired children. For the child to be successful, both parents and teachers should receive sign language training and be able to use these skills effectively. Because this method focuses on sign language.



4.4. NATIONAL SIGN LANGUAGE

What is American Sign Language?

American Sign Language (ASL) is a complete, natural language that has the same linguistic properties as spoken languages, with grammar that differs from English. ASL is expressed by movements of the hands and face. It is the primary language of many North Americans who are hearing-impaired and hard of hearing and is used by many hearing people as well.

Is Sign Language the Same in Other Countries?

There is no universal sign language. Different sign languages are used in different countries or regions. For example, British Sign Language (BSL) is a different language from ASL, and Americans who know ASL may not understand BSL. Some countries adopt features of ASL in their sign languages.

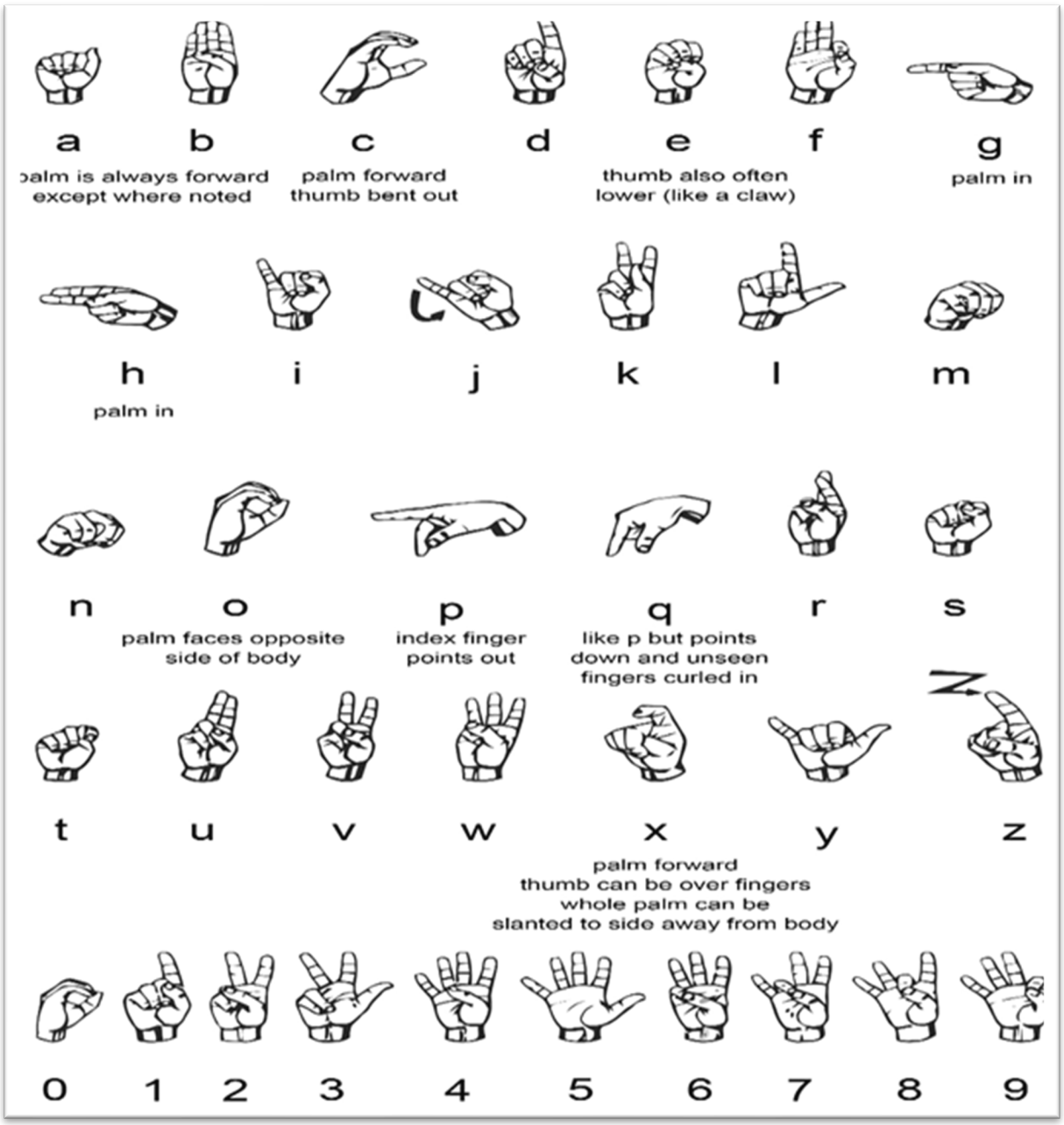
Where Did ASL Originate?

No person or committee invented ASL. The exact beginnings of ASL are not clear, but some suggest that it arose more than 200 years ago from the intermixing of local sign languages and French Sign Language (LSF, or Langue des Signs Française). Today's ASL includes some elements of LSF plus the original local sign languages; over time, these have melded and changed into a rich, complex, and mature language. Modern ASL and modern LSF are distinct languages. While they still contain some similar signs, they can no longer be understood by each other's users.

How Does ASL Compare with Spoken Language?

ASL is a language separate and distinct from English. It contains all the fundamental features of language, with its own rules for pronunciation, word formation, and word order. While every language has ways of signalling different functions, such as asking a question rather than making a statement, languages differ in how this is done. For example, English speakers may ask a question by raising the pitch of their voices and by adjusting word order; ASL users ask a question by raising their eyebrows, widening their eyes, and tilting their bodies forward.

Fingerspelling is part of ASL and is used to spell out English words. In the fingerspelled alphabet, each letter corresponds to a distinct handshape. Fingerspelling is often used for proper names or to indicate the English word for something.


a
b
c
d
e
f
g
palm is always forward
except where noted
palm forward
thumb bent out
thumb also often
lower (like a claw)
palm in
h
palm in
i
j
k
l
m
n
o
palm faces opposite
side of body
p
index finger
points out
q
like p but points
down and unseen
fingers curled in
r
s
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palm forward
thumb can be over fingers
whole palm can be
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TWO-LANGUAGE METHOD (BILINGUAL)

- It is a new method in the education of the hearing impaired.
- It is generally based on the simultaneous learning of two languages at an early age.
- From the perspective of the education of the hearing impaired, sign language can be defined as learning the first language and verbal language as the second language. There is no question of any language being superior to another.
- One of the starting points of the method is the thoughts that the "hearing impaired" due to hearing loss are not disabled but are a subgroup with their own distinct languages and identities.
- It is argued that sign language is a native language that meets the communication and needs of the hearing-impaired individual and is preferred by the hearing impaired.
- It is claimed that the hearing impaired should also learn the verbal language, because in today's world, a lot of information is presented in written form and illiteracy may result in the person being qualified as a disabled person in the society.
- Once the sign language is being spoken competently, the verbal language, especially the literacy dimension, needs to be taught.
- In this approach, it is thought that the child will learn sign language at an early age (such as 1 year old) and be ready for academic knowledge by solving all communication problems.

4.5. AUGMENTATIVE COMMUNICATION SYSTEMS

Augmentative and Alternative Communication (AAC) is a communication strategy for people who experience significant difficulties in speaking and communicating. They are an educational and speech therapy tool in cases where speech is very altered, either due to a combination of hearing impairment with other disabilities or due to a disorder (developmental, cognitive, or physical) that hinders the ability to express oneself orally or by signs.

The strategy or technique used by the individual aims to maximize the communication skills (i.e. production and comprehension) for the functional and effective communication of an individual's needs, preferences, and desires. An AAC system can be used permanently or temporarily.

There are two main types of AAC:

1. **Unaided AAC**: Communication techniques that do not require the use of external assistance: This means that the person uses what is available to him, usually his own body. Examples of unaided AAC include eye contact, facial expression, body language, gestures, and the use of manual gestures.
2. **Assisted AAC**: Any external element used to assist communication that can include:

- High technology systems (I -Pad, tablet, speech generating device)
- Low technology systems (real objects, communication books, pen and paper, pictures)

What are the key points to pay attention to?

- AAC is not a substitute for speech or language, but rather an approach that promotes the development of spoken language.
- The key to success in establishing an effective AAC system is to use an individual-centred approach. Involving the individual in the selection and testing of various systems will ensure that the systems match the individual's cognitive skills and personal preferences.
- A single AAC system or strategy may not always be sufficient to meet all their needs. A person with more complex needs may need a high-tech system, a low-tech system, or an unaided system, depending on where they are and with whom they are communicating.
- The effectiveness of AAC also depends on the person with whom the person communicates and how much support and training they have received. It is very important to provide a flexible communication environment.

- AAC systems may need to be replaced over time with additional pages of symbols or words or photographs created to reflect the person's activities and communication abilities.

Other available devices:

- Text messaging
- Telephone amplifiers
- Flashing and vibration alarms
- Voice loop systems
- Infrared listening devices
- Portable audio amplifiers
- TTY (Text Phone or teleprinter)

RESOURCES UNIT 4

- Top 10 Tips for Teachers of Students with Hearing Loss: https://www.youtube.com/watch?v=z2EfxREKmsA&t=9s
- American Sign Language 2: https://www.youtube.com/watch?v=B2c-BOYh7Vc&t=11s

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UNIT 5. PEER SUPPORT AND PEER MENTORING

Objectives:

- To introduce learners to the concept and parameters of the peer support and peer mentoring method.
- To give them a clear picture of the theory and practice of peer support as well as to define its advantages over other techniques.
- To provide them with knowledge and arguments for the effectiveness of the method, to acquaint them with the way of applying its techniques, focusing on the criteria and skills of the volunteer mentors.

Structure:

INTRODUCTION

Support methods of all kinds are becoming more and more popular. People have more and more problems and this makes them seek for solutions. When must solve a problem, we ask for help. This help is usually associated with a specialist. However, it has been proven that help given from people close to us, from our social circle, is the one we seek more easily and is more efficient when requested and given immediately.

Based on the above conclusion, a new set of specialized support techniques was developed. This series, which is associated neither with the help of an expert, nor with the help of a friend, is based on:

- Immediate interaction
- Equality
- Development of techniques for the application of the method

The set of these techniques is called peer support and peer mentoring.

Peer psychosocial support includes a series of steps and counselling techniques and is based on the idea of immediate experiential help based on the similarities of the participants.

5.1 PEER SOPPORT AND PEER MENTORING

5.1.1. DEFINITIONS

Peers are all the people involved in the support method. They do not have the role of an expert, but similarities among them, which can be:

- previous personal experience in relation to an event or situation
- social similarities
- economic similarities
- cultural similarities
- similarities in language
- similarities in sexual orientation
- similarities in the profession
- similarities in education
- similarities in age
- similarities in health status

Although there is no single definition, psychosocial peer support includes peers themselves, who try to solve their problems together and support each other, through their similarities, and based on their own strengths and skills.
It also includes volunteer mentors, those peers who contribute to its implementation, through training in the techniques of the method and their skills.

Peer psychosocial support includes the process by which a person without having a role of a specialist, provides voluntarily assistance to a peer, a fellow human being, who has some similarities, to solve a problem.

5.1.2. PRINCIPLES AND CHARACTERISTICS OF PEER SUPPORT AND PEER MENTORING

Some basic principles on which peer support and mentoring is based are:

1. The relationship of reciprocity based on similarities, the sense of coherence and the avoidance of hierarchical structure between peers.
2. The non-existence of a specialist and the role that separates him/her from the others, but the existence of the volunteer-counsellors who play their role, based on a common experience or similarity with the other peers.

3. Peer similarities must be useful for solving a problem in order to apply peer support and mentoring. If this is not the case, similarities, such as kinship or friendship, are not a prerequisite for applying the method.
4. The development of the parity principle and the establishment of a supportive relationship of equality between people who share similar life experiences, problems, and concerns.
5. The principle of empowerment and encouragement through responsibility, activation, and initiative, which reflects the belief that recovery from the difficulties, is possible, when we rely on our own strengths.
6. The principle of self-help and self-healing. Self-help is therapeutic both for the person receiving help and for the person helping.
7. The cultivation of teamwork, self-realization, personal development in problem solving and in the application of the method.
8. The development of the role of the supporter and the active listener, as well as the avoidance of any kind of assignment to others of the problems or their solution.

Based on the above principles, peer psychosocial support and mentoring have the following characteristics:

- Mutual and genuine support
- Equality and trust
- Experiential knowledge and understanding
- Experiential empathy
- Informal and non-hierarchical framework of interaction

In conclusion, the principles and characteristics described are related to the main result of the method, i.e., the ability of people to provide equal mutual and practical advice through their personal experience, being members of a community based on common characteristics.

This support is often considered more effective because:

- Differs partially or totally from what a specialist, or someone who takes on the role of solver, can give.
- Through the feeling of a more informal version, it becomes more easily perceived and accepted, since it is accompanied by the feeling of mutual understanding in a group of students with sensory disabilities.

Peer support is based on principles and characteristics related to parity, encouragement, shared experience, and mutual assistance.

5.1.3 ADVANTAGES OF PEER SUPPORT AND PEER MENTORING

Utilizing peer support and peer mentoring has advantages over other techniques such as:

- The sense of renewal and the different type of methods through differentiation from the basic role of a specialist and the support between people without other types of relationships.
- The greatest zeal and participation for peers in general, during the implementation and participation in the model.
- The greatest zeal and participation for the volunteer mentors, since it has less requirements regarding their required number and responsibility of their role, compared to other methods.
- The widest range of methods that can be applied and the wider horizon of results, through the role of peers themselves.
- The expanded number of support requests that can be met, as it is a set of methods based on volunteering, participation, and personal experience.

Peer support has advantages over other techniques that broaden the horizons of application, direction, and effectiveness.

5.2 CRITERIA SKILLS OF PEER MENTORS

5.2.1 CRITERIA

To become a volunteer mentor, you need to answer two key questions:

- What is the reason for applying such a method when working with students with sensory disabilities (visual impairment, hearing impairment or both)?
- What is the goal and the desired result of such an application?

By answering the above questions, we come to some criteria that you must have as volunteer-mentors:

1. The motivation both during the preparation and during the application of the method.
2. The feeling of constant involvement in the application of the method.
3. Coordination and interaction with peers, the community, and other counsellors.
4. Corresponding to the role of the mentor and evaluating its effectiveness.
5. The definition of intermediate and final objectives in the results of the method.
6. The highlighting of the advantages of the method itself
7. Highlighting the advantages of the community itself.
8. Develop and stimulate a sense of cohesion.
9. A good understanding of the reasons for applying the method.
10. The reversal of possible prejudices in relation to the effectiveness of the method based on volunteers and not specialists.
11. The existence of a sufficient number of volunteer-counsellors and the avoidance of difficult situations.

The criteria for the volunteer-mentors are related to the activation of the stakeholders, their key role, the coordination of the whole model as well as the coherence of the peer group.

5.2.2 SKILLS OF PEER MENTORS

To perceive yourself as a peer counsellor or peer mentor, you need to improve the following skills:

1. Self-knowledge

To be able to effectively support another person, it is important to start by better understanding yourself: Who you are as a person, the way you think, and you react to your interpersonal relationships.

Awareness of personal thoughts and feelings is the first step you need to take in trying to become an effective peer counsellor and mentor. If you become aware of your personal beliefs and feelings, you will be able to manage them more easily, without affecting the beliefs and feelings of the person you are going to support.

2. Personal biases

It is necessary to understand your personal biases in various issues, especially in those that are characterized by heterogeneity of views. Personal prejudices inevitably colour the way we perceive everything that happens in our daily lives. Bias concerning sensory impairments should be examined.

3. Acceptance

When we try to help another person, we need to convey the message that we accept and respect him/her as he/she really is. It is necessary to make him/her feel safe to share and investigate his problems, without the threat of embarrassment or shame. We build an atmosphere of acceptance and respect for other people through:

- the acceptance of all that he/she is
- respect for his/ her beliefs
- appreciation for himself/herself and his views
- non-critical attitude
- active listening
- the observance of confidentiality for what is confided to us

4. Authenticity

To help other people effectively, you need to be genuine and honest. The foundations of such an attitude lie in authenticity. We communicate our genuine interest in other people and cultivate trust in each other when we are:

- Genuine

- Straight
- Honest
- Clear

5. Empathy

The simplest definition of empathy is being able to put ourselves in another person's shoes. We often confuse empathy with sympathy, but it is not the same. Empathy is the path that temporarily introduces us to another human world, while at the same time we remain in our own. It is the ability to see with our own eyes, to feel the peer's feelings, while controlling our own and remaining impartial, without judging or sympathizing with him/her. Empathy is different from compassion and sympathy, just as it is different from emotional involvement or arbitrary drawing of conclusions.

It is the ability to perceive things from another person's point of view and the effort to understand the meaning he/she gives to them. We share our effort to understand the unique situation, in which another person finds himself/herself, when:

- We are really interested in understanding what is happening to him/her
- We ask appropriate questions related to the situation he/she is facing
- We think, act, and feel guided by his interest
- We avoid coming to arbitrary conclusions and evaluations

6. Non-verbal communication

When we think about ourselves, we could think we are good listeners. The following exercises will help you determine if you are indeed a good listener, what may make it difficult for you to listen to what is being said and how you can improve. Try to think of the following two questions:

- How do you feel when you want to say something, but no one is listening?
- How do you know that someone is not really listening to you? What are the signs?

Your answers to the first question (e.g., frustration, anger, sadness, irritability, etc.) will help you understand how the peer may feel if he/she realizes that you are not really listening to him/her.
In the second question, your answers may include some of the following:

- Lack of eye contact
- Daydreaming - looks elsewhere, such as out the window
- His facial expression shows that he/she is bored
- Shows nervous or that something is bothering him/her

- Lack of interest
- Changes the topic of discussion
- Makes jokes
- He/she looks at his watch
- Suggests solutions without listening to the problem

7. Distraction of internal conversations

The inner conversation (the conversation we have in our mind, while at the same time talking to another person) can seriously distract us. When you first start peer psychosocial support, this internal conversation may include questions like, "Did I have to say this?", "What time is it?", Or "I know nothing about this!". It is important to accept them because of your stress and lack of experience. But it is also important to encourage ourselves to get back into the discussion quickly.

8. Active listening

To listen means the following:

- *I am not anxious to find something to say*
- *I am not in a hurry, and I do not interrupt him/her*
- *My attention is focused on what he/she is telling me*
- *My posture shows that I am there and that I am listening to him/her.*
- *My smile, exclamations and nods are appropriate and harmonious in terms of the conversation.*
- *I try to isolate my own personal issues from the discussion (worries, fears, anxiety).*
- *I avoid distractions*
- *I try to find out his personality*
- *I avoid coming to hasty conclusions*
- *I do not judge or evaluate him/her*
- *I resist the desire to find a solution to his problem*

9. Identification of the main problem and focusing.

The main goal of active listening is to understand everything that the peer conveys you about the problem he/she is facing. Then, as a peer counsellor, you will help him/her to clarify the individual elements that compose the situation he/she is facing and wants to resolve:

- What is the situation - what has happened (facts)?

- Dominant thoughts – Which is the way the student thinks about the problem?
- Emotions - how does the student feel about the problem?
- Behaviour / actions - what has the student does or does not do to solve the problem?

To identify a problem, we need to illuminate its important dimensions and focus our attention on individual details. So, start by keep having in mind the main areas around which information is needed and guide the student to focus on them using appropriate prompts and motivations.

10. Reflection

Reflection is the skill through which repetition reflects a thought or emotion that has just been expressed by the peer.

To apply the reflection, you must:

- Choose an important element from the experience described by the peer and repeat his last phrase or last words as a feedback or mirroring.
- Formulate your answer as a question that motivates and urges the peer to tell you more
- Through this way you can:
- Make him/her understand that you are watching him/her carefully without your interest be distracted.
- Shows empathy that is important to your relationship
- Focus on something important to him/her during the discussion.
- Encourage him/her to talk to you more.

11. Paraphrasing

Paraphrasing is the skill through which everything has just been said is restated. So, using this skill, you will essentially repeat in your own words the message that you just heard.

To apply paraphrasing skills, keep in mind the following guidelines:

- Use your own words. Spontaneous repetition is not a paraphrase.
- Try to coordinate with the language used by the assistant. When you need to describe an event or a situation, it is better to refer to the exact term he/she used, e.g., "Wounded" and not "crushed".
- Do not add your own assumptions to the paraphrase - Avoid interpretations and personal evaluations - Stick to the content of what you have heard.
- Be honest - Do not pretend to understand if this is not the case.

- Be short and direct.

12. Summarizing

Through the skill of summarizing, you can connect the main points the peer mentions and summarize them in a comprehensive context. Thus, you can:

- Summarize the main information you gathered from the discussion
- End your appointment
- Introduce yourself to your next meeting
- Give the impetus to discuss some issues more
- Focus on the various dimensions that make up a problem
- Fill in the blanks in the discussion
- Give time for thinking, both to the peer and yourself

13. Questioning: open-ended and close-ended questions

When communicating with the peer you will use two main types of questions: the closed questions and the open questions. Each species serves specific purposes.

The following will help you understand their purpose, so that you can decide what kind of question you need to ask according to the flow and goals of the discussion.

- **Closed-ended questions**: As a rule, such questions are answered monosyllabically or with "yes" or "no". For example: "How old are you?" or "Are you thinking of working abroad?"
- **Open-ended questions**: Questions of this type of lead to complete answers and make exploring issues easier. Their goal is to gather more data and details to clarify the problem. When you use open-ended questions, the peer will have the opportunity to work out the facts in more detail, behaviours and feelings associated with his difficulties.

14. Self-disclosure

This skill is sharing your personal thoughts and experiences with the students with sensory disabilities (visual impairment, hearing impairment or both). Its goal is to normalize the feeling that the peer may be the only one who has difficulties related to the direction of studies he/she will choose or his confusion about his professional status or his future or anything else that concerns him/her.

In addition, the goal of this skill is to build hope and faith that difficulties can be overcome, similarly to your own experience. A condition for its implementation is that a relationship of mutual respect has been formed between you.

To be effective, self-disclosure must be done with care and under the following conditions:

- It should be done to empower the peer. This means that you should avoid self-disclosure that will focus on you and the way you think about the same problem.
- It should not impose a ready-made solution (e.g., "I went to a career counsellor to deal with it. Go too!"). Its goal is to create reciprocity and equality in the relationship, not to direct the helper to the solution you used.
- It is good to make a self-disclosure about an issue that you have managed quite satisfactorily. Not for something that still bothers you or you have not faced it. Otherwise, there is a risk of mistakenly giving the message that there is no hope or drawing attention to yourself. Self-disclosure should create optimism and the hope that difficulties can be overcome. Self-disclosure is not the same as the help given by friends, using interventions such as: "Tell you what happened to me" or "In your position would try to…"

15. Reframing

It is a consulting skill that aims to modify or to change the way of thinking related to the problem, suggesting alternative interpretations or new meanings. Using this skill is saying to the student: "Let's look at the situation from another angle". You can explain that every day we see what is happening to us through a framework. This context determines the interpretation or the meaning we give to our experiences. Thus, when the context is strict or one-dimensional, it can lead us to corresponding interpretations.

16. Decision making and problem solving

Through this technique you can support the peer to face various difficulties, such as low performance, absences, low motivation. It can also support him/her to make plans about his professional career. In addition, through this technique you can train students to learn and apply it to any problem he/she faces, so it helps to improve his daily life in general. It is defined as the ability to identify the problem, formulate goals, and implement appropriate strategies to reduce the severity of the problem or achieve the goals set.

Taking care of yourself, is as important as the above skills:

- Be kind to yourself – Have in mind that you have taken on the role of peer mentor and not the role of miracle worker!
- Get support from your own social network - friends, relatives, classmates, etc.
- When you can and need it, make small changes to your schedule and daily routine.
- Learn and use relaxation techniques.
- Encourage and reward yourself for all the effort you put in every day.
- Remember that you cannot change anyone.

- Every day focus your attention on something good that you did or that happened to you.
- Ensure that you eat healthy and balanced, exercise regularly and get enough sleep.
- Take short breaks from everyday life, even if you need to plan them. Make sure you relax and have a good time during these breaks.

The skills of peer mentors are related to motivation for their role, to their credibility, to preventing and resolving potential problems that may arise during the application of the method.

Good luck in your work!

RESOURCES UNIT 5

Mentoring for Deaf Youth

- Reading: *Supporting Deaf Youth Through Mentoring*

https://www.nationaldeafcenter.org/sites/default/files/Supporting%20Deaf%20Youth%20Through%20Mentoring.pdf

- Reading: *GUIDELINES FOR MENTORING AN NIH TRAINEE WHO IS DEAF OR HARD OF HEARING*

https://www.training.nih.gov/assets/Guidelines_for_Mentoring_an_NIH_Trainee_Who_Is_Deaf_or_Hard_of_Hearing.pdf

Mentoring in general

- Peer Mentoring. Elements of Effective practice for Mentoring https://www.mentoring.org/wp-content/uploads/2020/08/Peer-Mentoring-Supplement-to-the-EEP.pdf
- Elements of Effective practice for Mentoring https://www.mentoring.org/wp-content/uploads/2019/11/Final_Elements_Publication_Fourth.pdf

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UNIT 6. ADVICE FOR GOOD MENTORING FOR HEARING-IMPAIRED STUDENTS

Objectives:

- to ensure that the people who will participate in the mentor training get to know individuals with hearing impairment more closely
- to benefit from some methods and techniques to ensure hearing impaired students' success in their educational and social environment

Structure:

INTRODUCTION

In this course, we will examine some of the studies that have been done about how to strengthen communication with our students with sensory disabilities, give them a sense of achievement and increase their motivation. We'll also talk about some techniques for how we can empathize with these students. Again, at the end of this lesson, we will have a short summary and a mini exam so that we will have the opportunity to reinforce what we have learned.

6.1. COMMUNICATIVE, EFFECTIVE AND MOTIVATION

In this chapter we will examine:

- Students' personal motivation development techniques
- Transfer motivation and courage to students
- To convey the sense of responsibility
- To ensure their belief in success
- To improve the effort capacity of students

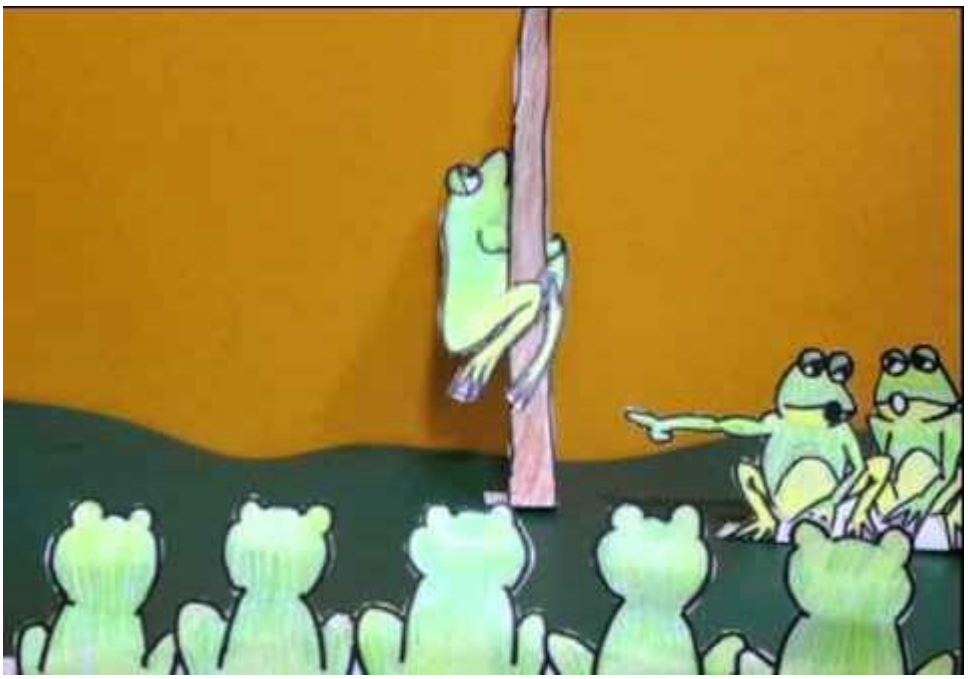
Although there are some general techniques, we will have the opportunity to take a closer look for individuals with hearing impairment

6.1.1. TECHNIQUES TO DEVELOP THE PERSONAL MOTIVATION OF STUDENTS

There are some stories that we watched on TV in our childhood, were told to us, or read while in primary education. In those years, when we heard or watched these stories, some moods arose. We would even try to put ourselves in the main character's shoes. So these kinds of stories would have some impression on us.

Let's start with a story like this:

One day there was a race of frogs. The goal was to climb to the top of a very tall tower. Lots of frogs also gathered to watch their friends. And the race has begun. In reality, none of the audience believed that the contestants could climb to the top of the tower.
Only from spectator frogs; "Poor ones! They will never succeed! " His voice could be heard. When the frogs that started the race could not reach the top of the tower, they started to quit the race one by one. Only one of them was stubbornly and undaunted trying to climb the tower.
The audience were shouting "Poor ones! They will never succeed!"
In the end, all but one frogs lost hope and gave up. But the last remaining frog struggled with great effort and managed to climb to the top of the tower.
Others, to their amazement, wanted to know how he managed this job. A frog approached him and asked how you did this job.
At that moment they realized that the frog that climbed up the tower was deaf frog! Whether we are aware of it or not, when we try to do something on our own, we often encounter negative messages from the people around us telling us that we cannot achieve.



Types of motivation

1. **<u>Intrinsic Motivation</u>**

It is the desire to be successful within one's own will. Intrinsic motivation is considered to be the best mobilizing motivation: needs, desires, interests, love ...

* For example, a child who is interested in mathematics is motivated internally if he is studying mathematics because he wants to, without being told to "do".

The most important factors that motivate and push the individual supporting intrinsic motivation are:

- Caressing the back,
- Encouraging tasks,
- Desire to overcome certain skills,
- Supportive working / living environment,
- Willingness of the person,
- Satisfaction with work / education life,

- Believing in their skills,
- Avoiding hopelessness,
- Creating opportunities for success,
- Evaluating people as individuals,
- Creating a perception of oneself as valuable,
- Social supporters,
- Encouraging risk taking behavior,
- Desire for information,
- Adding interest to communication,
- Curiosity,
- Confidently accept,
- Identification, internalization
- Autonomy - Activities of their own choice,
- Improving insight,

2. **Extrinsic Motivation**

External motives are motives that activate the individual with the help of environmental stimuli such as:

- Awards,
- All effects reflected on the behavior from the environment,
- The environment controlling the behavior.

** For example, the child who started eating his food after his mother said "You cannot play if you do not eat his / her food" is externally motivated. The reason for this child's motivation is not his liking to eat, but his use of food as a tool to play.*

The most important factors that motivate and push the individual supporting extrinsic motivation are:

- Grade (performance score), Reward,
- Award,
- Certificate,
- Trophy,
- Medal,
- Club and association membership,
- Competition,
- Desire to be affirmed or adopted,
- Peer pressure.

6.1.2. HOW TO CONVEY MOTIVATION AND COURAGE TO STUDENTS

A motivating environment should be created with a lot of effort and careful thought. According to "Teaching Hearing Impaired Kids" written by Danielle Sanders, the first thing to do is to be aware of your students' background. It's important to build trust with your students so they will feel good in the learning process. *"It is important to listen to your students and learn about them, what interests them and what prevents them. It is important to accept their feelings, fears, and disappointments*." (Sanders, 1988). All this is necessary to create a comfortable environment, an environment where everyone can feel comfortable is the basis of learning.

The main part of motivating students is helping them develop their self-esteem. According to "Today's Hearing Impaired Child" by Vira Froehlinger, there is a strong relationship between self-concept and school success. "Strengthening the self-concept is an important method of improving academic performance." One study even tried this in a hearing impaired kindergarten classroom. When they graded the child's self-concept, this accurately predicted the child's reading achievement at school. (Froehlinger, 1981)

Let them have a sense of accomplishment often so they will be encouraged to finish the task and learn more. This can be created based on their interests and by finding things that are interesting and valuable to them. Giving students something they want to do gives them an inner sense of accomplishment. Success gives the child an intrinsic reward, a high type of motivation. If a child thinks they are likely to be successful, they will be encouraged to participate willingly in everything. So if you have a child who thinks he will be successful, you will have a child with a developed self-esteem.

After a task is completed in the classroom, it is important to let your student know what he or she has learned. Let them know they've accomplished something they didn't know before. It is important that they complete and accomplish a task set before them. A very interesting statement I read helped clarify how important communication is with a child. "Now I look more carefully at not only what children say, but how they say it. My answers are more precise because I listen better. More visual stimuli have been included in my teaching. Every child learns in a unique way. The combination of paths and stimuli can only improve the learning process." 1981) After reading this, I realized that not only every child is different, but their learning styles are also different. We need to listen to our students and find teaching ways that work for the individual. If a child is satisfied with the teacher's teaching style, they are more likely to be more open and motivated to learn.

Another way to motivate a hearing impaired child in the classroom is to set realistic goals. If both expectations for the hearing impaired are too low or too high, the child will likely have feelings of frustration and failure. "The rule of thumb in the classroom is to go just one step beyond the expectation level and observe how the child is performing. Often this leads to more individual motivation and progress. With this strategy, it is likely that the child will develop academically and at the same time feel his success.

6.1.3. HOW TO CONVEY THE FEELING OF RESPONSIBILITY

If a teacher has a classroom with children with sensory disabilities, it is important to treat all children equally. While this may seem almost obvious, it is often forgotten. It is important to help the child develop responsibility. Encourage them to do some work for you ,for example send messages to the administration by them. You want the child to gain a sense of self-worth. All children love nothing more than a teacher's assistant. Include your hearing impaired child. Remember that their only obstacle is to hear. All children should be given the opportunity to learn to communicate with different people in different situations. If the child thinks you are confident, their self-image and motivation are likely to improve..

6.1.4. HOW TO CONVEY BELIEF IN SUCCESS

Thanks to the educational programs adapted for hearing impaired or hearing-impaired students, their success can increase their self-confidence.The curriculum framework usually arrives at our disposal. However, teachers adapt the curriculum in line with the needs of their students. They could adapt within the specified framework.

In the adaptation of the curriculum:

- The developmental characteristics and learning needs of the student should be taken into consideration.
- Learning environments should be structured according to the characteristics of the student.
- It should be applied in a certain time period and in line with a certain plan.
- Appropriate materials,methods and techniques should be used.
- The process should be evaluated.
- Educational content to suit the age and developmental characteristics and level of each student should be planned, necessary unit and concept analysis should be done.
- The plan prepared by the teacher is designed to be flexible and suitable for students' learning pace and must have structure;
- Topics should follow an order from easy to difficult, from simple to complex.
- Units must support each other.
- Subject contents should be related to students' daily lives.
- Goals and guidelines should be clearly defined.
- Creative methods such as drama or games that make learning permanent should be used.
- Care should be taken to choose topics that can be supported by different materials and auxiliary tools.
- Adapting the curriculum to the classroom environment by considering individual differences will provide;
- Self-confidence,
- Problem solving skills,
- Acceptance in the classroom setting,
- Strengthening the sense of usefulness,
- The feeling of being appreciated,
- Developing positive behaviors,
- Responsibility awareness,
- Communication skills,
- Integration with their peers.

As can be seen, the fact that the curriculum is flexible and adaptable will greatly contribute to the success of all students, including individuals with hearing impairment.
In the video below, you will watch the working life of 3 doctors with hearing, vision and physical disabilities, which we consider as inspiration.

6.1.5 HOW TO DEVELOP THE STUDENTS' EFFORT CAPACITY

Hearing impaired people miss many of the daily opportunities to learn and understand information. Therefore, the point where hearing impaired students have difficulty is language. Since most of the lessons are given orally, such lessons can be particularly problematic. The child who can not learn, will stop making efforts to learn after a while. For this, we can increase the student's interest and effort towards the lesson with some changes we will make in the classroom.

Example
It can be difficult for hearing impaired students to read lips and take notes at the same time.
A few tips for the classroom:

- Describe foreign terminology or technical terms
- Write new words and use examples to explain new ideas
- Summarize information often to reinforce learning
- Allow time for students to learn and understand new information. Lip-reading students may miss a lot of information
- Notify when you switch to new information to avoid confusion
- Write down important information and key points

- Use visual cues where possible
- Make sure the lighting in the classroom is appropriate and make sure students can see each other's faces.
- Reduce external noise as much as possible
- Use clear and simple language
- Always seek feedback to make sure they are keeping track of what is happening.
- With such changes that we will implement in the classroom, we can increase the student's sense of achievement and effort capacity.

6.2. RECOMMENDATION FOR MENTORING

A mentor is a person with professional or personal experience who counsels and guides a younger or less-experienced person. The mentor-mentee relationship can be an informal personal or career connection, or part of a formal mentoring program administered by a company, school program, or community group.In this section, we will examine how we can empathize with individuals with sensory disabilities for effective mentoring.

6.2.1. TECHNIQUES TO EMPATHISE WITH THOSE WITH SENSORY DISABILITIES

It is easier to empathize with people with hearing impairments (if they have no other disabilities) than with other people with disabilities.

Hearing impairment can be imitated in a number of ways, with ear wax or plastic earplugs being the simplest to mimic a general hearing loss.

Some activities can be organized so that we can understand the hearing impaired better. For example, the "Dialogue in Silence" event, which is organised in Turkey, can be attended with students so everyone can experience the feeling of not hearing. Earplugs or wax plugs can be used in the classroom and a certain part of a lesson can be taught together with students.

Again, a simple experiment can be designed with students. A demijohn's air is taken by means of a pump that provides air intake, a phone is placed in it and then called. Since the sound does not spread in an airless environment, nobody can hear the sound, which makes empathy for only one of the difficulties that a deaf person will face in daily life.

In order to discover the world of people with hearing problems and their perspective on the world, it is necessary to know their past experiences such as family life, social environment, education life. Understanding the difficulties they face and how they struggle against these difficulties will only be possible with the empathy method. Helping those whose world we understand or meeting their desires will make their relationship with life as normal as any other human being.

Let's end our lesson now with this poem by Mike Wilson:

If a hearing-impaired child lives with criticism, he learns to condemn.
If a hearing-impaired child lives with hostility, he learns to fight.
If a hearing-impaired child lives with mockery, he learns to be shy.
If a hearing-impaired child lives in shame, he learns to feel guilty.
If a hearing-impaired child lives with tolerance, he learns to be patient.
If a hearing-impaired child lives with courage, he learns trust.
If a hearing-impaired child lives with praise, he learns to appreciate it.
If a hearing-impaired child lives with justice, he learns justice.
If a hearing-impaired child lives in safety, he learns to believe.
If a hearing-impaired child lives with approval, he learns to love himself.
If a hearing-impaired child lives with acceptance and friendship, he learns to find love in the world.

Mike Wilson

6.2.2. GENERAL REVIEW

Intrinsic and extrinsic motivation techniques can be used to increase the motivation in individuals with hearing impairment.
It should not be forgotten that the effect of intrinsic motivation is more than extrinsic motivation.
It contributes greatly to the development of the success, anchor capacity and sense of responsibility of a hearing impaired student with high motivation.
If we have a student with hearing impairment, the first thing to do is to get to know him. The best method we can develop this is empathy.
After getting to know this student, we should assign him tasks that will enable him to help us, so he will both adapt to the class and be more motivated.

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