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Teaching Arabic to Hearing-Impaired Learners in Light of Language Acquisition and Communication Theories – A Linguistic Approach –

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Abstract:

Total or profound deafness is among the more severe types for which conventional equipment proves ineffective, thus necessitating cochlear implantation as early as possible in a child's life—whether the deafness is acquired or congenital—to ensure optimal care, integration, and improvement in quality of life. Speech therapy involves several essential phases implemented through specific strategies and methods, using various tools and media. This process begins with learning to hear and progresses toward language development and spontaneous speech—particularly for children who are deaf but otherwise developmentally typical.

To what extent, then, can speech therapy for a child with a cochlear implant enable that child to acquire language and communicate with their surroundings?

Keywords: Deafness; Language; Communication; Integration; Cochlear Implant.

Introduction

The field of education is vast in its rules and foundations; it is a branch of applied linguistics, which is a scientific field concerned with studying methods and ways of teaching. It focuses on achieving specific goals in the learning process such as skill development and enhancing thinking. It has several names ranging from language teaching to didactics to the science of teaching. Therefore, in the first section of this chapter, we will address the most important main concepts that serve this field.

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Education

1-1 Definition of Education:

There are many definitions of the term education as a term and as a scientific specialization in its own right. These definitions are divided into linguistic and terminological.

1-1-1 Linguistically:

In Lisān al-'Arab dictionary, under the root (ع ل م), it is stated: "Knowledge is one of the attributes of God Almighty: teaching, the Knower and the All-Knower. God Almighty said: 'And He is the Creator, the All-Knowing,' and said: 'Knower of the unseen and the witnessed,' and said: 'All-Knower of the unseen'... Knowledge is the opposite of ignorance. He knew,

knowledge, he taught himself, and a man who is knowledgeable and knowing is from the people who possess both".[1]

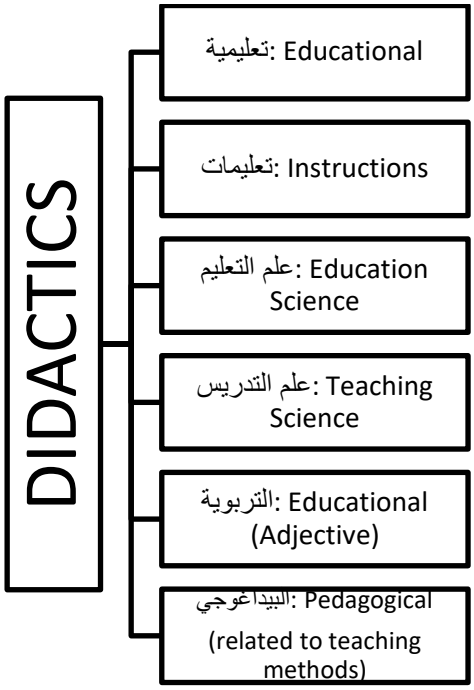
Education is a word derived from the verbal noun "ta'līman," so we say: 'to know,' 'to teach,' 'teaching.' Also, according to the Wasit dictionary under (علم), it is defined as: "To teach someone a sign: to give him a mark by which he recognizes it. The doer is the teacher and the object is the taught, and to teach someone something means to make him learn it. [2] To know something means to be aware of it and comprehend its reality. [3] From this, we understand that the meaning of the word 'knowledge' points to its uses in different contexts. It came to mean specification, indicating that the teacher assigns a certain sign to the learner that enables him to recognize information or skills. The doer 'the teacher' is the person who teaches, and the object 'the taught' is the person who receives the education. Generally, this phrase highlights the concept of education derived from teaching and how knowledge is transferred from teacher to learner through signs that contribute to understanding and perception.

1-1-2 Terminologically:

The term education was used in the educational field to indicate the scientific study of language teaching. This term appeared in France in 1554 and was used to provide a methodological description of all that is presented. In 1967, it was employed as a synonym for the art of teaching or education, or didactics, or the science of teaching, which is a science whose subject is the study of teaching methods and techniques. Accordingly, it is defined as: "The summary of components and relationships between educational situations, their subjects, and their means. It is a science concerning the planning of the pedagogical situation, how to implement it, monitor it, and modify it when necessary". [4] From this definition, we understand that education is the sum of activities and knowledge that we resort to for preparing, organizing, and improving teaching situations.

Mohammed Drij defined didactics in his book *Analysis of the Educational Process* as follows: "It is the scientific study of teaching methods and techniques and the forms of organizing educational situations to which the learner is subjected in order to achieve the desired goals, whether at the mental or motor level". [5]

That is, didactics is the scientific study of teaching methods and organizing educational situations to achieve the planned objectives. From the previous definitions of education, we notice the multiplicity of terms corresponding to the foreign term *Didactique*, which may be due to multiple translations. In Arabic, there are several words corresponding to the term *Didactique* which are: [6]



The Terminology and Concept of Educational Science

The use of these terms varies depending on the context. Some prefer using "Didactic" to avoid confusion about the term's meaning, while other researchers use the term "science of teaching and learning," and others still use "instructional sciences," in the same morphological pattern as "linguistics" or "mathematics."

Based on the discussion above, we can now define the concept of "Teaching Arabic Language," which is "a set of methods and techniques specific to teaching and learning the Arabic language during a particular educational stage, aiming to develop the student's knowledge and acquire linguistic skills, and use them functionally according to communicative contexts and situations". [7]

Thus, we understand that the teaching of the Arabic language does not aim merely to transfer linguistic information, but rather seeks to develop the student's ability to communicate and express functionally in the language, thereby enabling them to use it effectively in their daily life.

Educational Science and Individuals with Special Needs

People with special needs constitute an important segment of society, as they face various challenges in their daily lives due to physical, mental, or sensory impairments. They are "individuals who need special education services and supportive services" [8] to ensure them a dignified and active life. These impairments are divided into several main categories: physical, intellectual, auditory, visual, and psychological disabilities, each requiring a different type of support and care. Despite the diversity of impairments, we will focus in detail on hearing impairment, shedding light on its definition, types, and characteristics. But before that, it is essential to understand the hearing process and its stages, as this helps in understanding how hearing impairment can affect this process.

The Stages of the Hearing Process

The hearing process goes through three stages: [9]

a. **The Conversion Stage**: This is considered one of the most important stages of hearing. The ear begins by receiving sound waves from the surrounding environment, where

the auricle converts the sound into the auditory canal, which then transmits it to the eardrum. The eardrum amplifies the sound, which is then transferred to the cochlea in the inner ear. In the cochlea, hair cells convert the sound waves into electrical signals that are transmitted through the auditory nerve to the brain, where they are interpreted, and decisions are made based on the analyzed sound.

b. **The Analysis Stage**: In this stage, sound waves are analyzed in the brain.

c. **The Attitude and Decision Stage**: This stage is a mental process that ends with taking a stance or decision. No auditory process is arbitrary. A person makes decisions using their thinking. To make decisions based on the sounds they hear, the sender and receiver must align in the fundamentals of expression, and individual differences in thinking and analysis must be considered.

2-1 Definition of Hearing Impairment (Hearing Impairment)

The auditory system is one of the most affected systems, especially among children, due to several factors. Hearing impairment is defined as: "a general term that covers a wide range of degrees of hearing loss, ranging from deafness to severe loss that hinders the process of learning speech and language". [10]

This definition implies that hearing impairment includes various degrees of hearing loss, from mild partial loss that may not significantly affect language learning, to total deafness that completely hinders the acquisition of language.

2-2 Types of Hearing Impairment

Hearing impairment is divided into two main types that represent the primary classifications of hearing loss:

2-2-1 Deafness (Deafness): Deafness is defined as "the complete loss of the sense of hearing", [11] meaning that the hearing-impaired child cannot hear even with the use of hearing aids. Hence, the deaf person is referred to as "a person who suffers from a deficiency or malfunction that prevents the use of the hearing sense, as it is disabled". [12]

2-2-2 Hard of Hearing: These are "individuals who have hearing deficiencies or residual hearing, yet their hearing sense functions to some degree, and they can learn speech and language either with or without hearing aids". [13]

Several other subtypes of hearing impairment have been classified by experts based on three criteria: age at onset, location of impairment, and severity.

a. By Age of Onset:

- **Congenital Hearing Impairment:** Represents deafness.
- **Acquired Hearing Impairment:** Represents individuals with hearing loss. [14]

b. By Location of Impairment:

- **Conductive Hearing Loss:** A malfunction affecting only the outer and middle ear, which impedes sound transmission to the inner ear but does not prevent recognition and differentiation.
- **Sensorineural Hearing Loss:** A malfunction in the inner ear that hinders the transmission of sound waves to the brain and thus their interpretation.
- **Mixed Hearing Loss:** This type involves symptoms of both previous types, resulting in a combined hearing loss. [15]
- **Central Hearing Loss:** A malfunction in the brain's auditory center or in its auditory pathways, making it unable to recognize or interpret auditory stimuli. [16]

c. By Severity or Degree of Hearing Loss:

This classification depends on the degree of hearing loss in decibels (dB), which is the unit for measuring sound intensity or pressure. It is as follows:

- **Mild Hearing Loss:** Up to 20 dB; children with this loss can remain in regular schools.
- **Moderate Hearing Loss:** Up to 40 dB; children are given assistive devices (hearing aids) and may be placed in regular schools but in special classrooms suited to their hearing abilities.
- **Severe Hearing Loss:** Up to 60 dB; children are placed in specialized schools for the deaf. [17]

From these classifications, we understand that the degree of hearing loss ranges from mild, where the individual can hear loud sounds, to total deafness that completely prevents hearing. This necessitates specialized educational and healthcare approaches tailored to the needs of individuals according to their degree of hearing loss.

Characteristics of the Hearing-Impaired

Hearing-impaired individuals have unique characteristics that distinguish them from those with other disabilities. The most prominent of these are:

2-3-1 Linguistic Characteristics:

- Inability to control the time intervals between one word and the next, meaning they may take longer to pronounce one word and rush through the next. [18]
- Sound overlap due to the inability to separate different sounds.
- Insufficient stress on words, making them unclear or sometimes completely inaudible.[19]

2-3-2 Psychological Characteristics:

Jackson summarized a number of psychological characteristics of hearing-impaired individuals, including:

- Lower maturity levels.
- Withdrawal, especially from social situations.
- Passivity, particularly when hearing loss occurs early in life.
- A tendency toward impulsive behavior. Studies have shown that hearing-impaired children are more nervous than their hearing peers. [20]

2-3-3 Physical and Motor Characteristics:

Adel Abdullah summarized the physical and motor characteristics of hearing-impaired individuals as follows:

- Motor development is delayed compared to their hearing peers.
- Some develop incorrect postures.
- Communication difficulties hinder their ability to explore and interact with the surrounding environment. [21]

2-3-4 Social Characteristics:

- Lack of responsibility, low confidence, and inability to ask questions about their surroundings, leading to frustration, confusion, and anxiety due to not understanding what is happening around them. [22]
- The hearing-impaired individual lives in a silent world that may prevent them from imagining a world where sound plays an essential role. This may impose social isolation, visible in immature social levels and limited social interactions with peers and the external community. This can negatively affect their self-esteem and may lead to behavioral problems such as aggression, theft, lying, assaulting others, and causing harm. [23]

In conclusion, hearing impairment affects motor skills, speech, and communication, posing social and psychological challenges that require tailored support to facilitate the integration of these individuals into society.

3- The Impact of Hearing Impairment on Language Development

Language is considered one of the most intrinsically human functions. Humans are the only beings capable of translating their thoughts and emotions into understandable words and expressions. Speakers of a language first think about what they want to say, and their tongues complete the task automatically by putting those thoughts into words. A person cannot speak about something they cannot first conceptualize. However, for the deaf, the situation is different. They think about what they want to express, and their fingers do the rest, automatically converting their thoughts into signs. In other words, while ideas are translated into audible words for hearing individuals, they are translated into visual signs for the deaf. [24] Thus, the manifestations of language development are directly influenced by the degree of hearing impairment—the more severe the impairment, the greater the linguistic challenges. This can be clarified through the following classification:

3-3-1. Mild Hearing Impairment:

Individuals with mild hearing loss experience difficulty hearing various or distant sounds or understanding the topics of conversations. They also face linguistic problems that manifest in difficulty hearing and understanding approximately 50% of classroom discussions (for students), as well as challenges in vocabulary acquisition.

3-3-2. Moderate Hearing Impairment:

Individuals with this level of impairment struggle with understanding group conversations and discussions and suffer from reduced vocabulary, which in turn results in difficulties with verbal expression.

3-3-3. Severe Hearing Impairment:

This is the most intense degree of impairment and includes the deaf. Individuals face significant difficulty hearing and distinguishing loud sounds, resulting in major challenges in verbal expression. [25]

Hence, hearing impairment directly affects individuals' linguistic development across its varying degrees. The linguistic difficulties they face depend on the severity of the impairment. Those with mild hearing loss may experience relatively minor challenges, typically in sound discrimination, affecting pronunciation and comprehension. Those with moderate hearing loss often suffer from noticeable delays in vocabulary acquisition and difficulty constructing correct sentences. Individuals with severe hearing loss encounter broader delays in linguistic development, facing substantial difficulties in both expression and comprehension.

Deafness and Language Communication

Deafness is among the most impactful disabilities on the communication process, particularly the process of language acquisition in children, especially during its critical development phase. Deafness is defined as the "complete loss of the sense of hearing". [26] When classified by degree, mild and moderate deafness affect pronunciation and result in functional articulation disorders. However, profound deafness leads to the total loss of language, whether before or after language acquisition. A child learns through their senses and interaction with the environment, and language acquisition progresses from babbling to engaging in conversations as the child grows. If profound deafness is left untreated for a long time, language gradually deteriorates and, in most cases, disappears entirely.

Fortunately, scientific and technological advances have significantly contributed to addressing and managing this disability at all life stages—especially profound deafness. One of the most important modern techniques is the cochlear implant, which functions as an artificial ear that substitutes for the natural one. With it, the deaf child can hear a wide range

of sound frequencies—high, medium, and low—closely resembling normal hearing. This facilitates language acquisition and enables auditory-verbal communication with their environment.

But how does language acquisition occur? What are the key strategies for developing language in a deaf child? And at what stage should integration take place?

The field of speech-language pathology (orthophony) deals with all disorders related to language and communication. It is a broad discipline that requires patience and expertise. The speech-language pathologist (orthophonist) plays a vital role in teaching and training the deaf child to hear and gradually express themselves orally. This process relies on specific strategies and techniques, implemented progressively from simple to complex levels.

These stages are structured but can be adapted depending on the child's age and cognitive abilities. The therapist exposes the child to all relevant external sounds, beginning with low and high-pitched tones, then the voices of their parents, and eventually their own name. Initially, the child may not understand these sounds, but with repetition, they become responsive and begin to register them in the brain. Eventually, the child can distinguish between them. This recognition process relies heavily on repetition and leads to the ability to determine the source of emitted sounds and ultimately reach an ideal level of sound discrimination.

At this stage, imitation and participation in exercises are essential, aided by visual supports such as pictures or stickers. To learn a word or a sound, a tangible visual aid is necessary, since abstract concepts are difficult to grasp, especially in early stages. This step teaches the child to associate each sound with its corresponding image, initiating the learning or auditory training process.

The child begins distinguishing between family members' voices, internal and external sounds, animal sounds, etc. All this is achieved through persistence and repetition until the child reaches the most crucial stage of language acquisition—naming and identifying. Here, the child learns their first words, typically one or two syllables, and connects them to objects. The process is divided into two stages: first, recognizing the word and its articulation; second, learning it through hearing alone.

At this point, auditory education begins. The child hears the word, understands it, then identifies and names it. This enables the child to connect what they hear with what they see, fostering comprehension. The child then integrates spoken and heard language. Initially, the child is introduced to daily-use words for basic expression. Gradually, the therapist introduces simple sentences of two words using the same approach, aided by objects, toys, and visual supports (images and stickers). A role-playing technique is employed to encourage the child to express themselves using verbal language. Positive reinforcement is critical at this stage—every sound or word the child utters is considered a milestone and a foundation for language acquisition.

With encouragement through play, physical activity, and expression, the first stages of linguistic communication emerge. Anything tied to play and physical interaction is easier to acquire, leading to quicker learning and stronger memory retention, making it easier to rely on this knowledge later.

Using visual aids is an essential first step. Once the child accumulates a set of foundational words, they move on to simple sentence construction and can begin understanding without visual cues. This milestone is typically reached after two years of training.

The family environment and the family's cultural and social level play a major role in accelerating the child's progress. Achieving this requires great effort, consistency, and inclusion in kindergarten with typically developing peers. Early cochlear implant users often acquire language spontaneously and rapidly, resembling their hearing peers once they reach the stage of full sound comprehension. This stage marks the emergence of phonological awareness—the audio loop—which enables the child to understand spontaneously through hearing alone, without relying on lip-reading or visual aids. At this point, spontaneous dialogue begins, facilitating the child's social integration and allowing them to attend mainstream classes, enhancing verbal communication and eventually developing narrative skills.

All of this takes place under the supervision of the speech-language pathologist, whose role includes correcting phonetic disorders (commonly associated with voiceless consonants) and properly forming sentences and linguistic structures to ensure effective communication with the surrounding environment.

Conclusion:

Language development in deaf children with cochlear implants is built on three essential, interrelated stages: hearing, comprehension, and verbal expression. Each stage follows the other in a gradual sequence. Thus, we conclude that language begins with the simplest sound heard by a deaf child with a cochlear implant.

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