PSYCHOLOGY AND EDUCATION (2023) 60(2): 1592-1605
ISSN: 1553-6939

The role of selective attention in oral language acquisition in a sample of hearing-impaired children subject to cochlear implants

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Published: 09/2023

Abstract:

Oral language is one of the biggest challenges for hearing-impaired children undergoing cochlear implants, as the goal of cochlear implantation is to enable this group to acquire oral language, and mature linguistically and cognitively to catch up with the rest of their natural peers. Since language acquisition is the result of a set of factors, including different cognitive processes, including selective attention, this is what made us highlight in this paper the role of selective attention in oral language acquisition among a sample of hearing-impaired children undergoing cochlear implants, on a sample of 05 cases of hearing-impaired primary school students undergoing cochlear implants in two primary schools in the municipality of Hadjout, Tipaza Governorate, Algeria Using two data collection tools such as the oral language test ELO Abdul Hamid Khomsi and the Stroop Selective Attention Test. This study showed that Selective attention disorder leads to difficulties in oral language. The study concluded to expand the sample to a larger number, and to the necessity of conducting a comprehensive routine psychological and orthophonical examination from time to time for children with cochlear implants in schools, and even for the rest of the integrated children who suffer from disabilities and other disorders.

Keywords: selective attention, oral language, hearing impairment, cochlear implants.

1. Introduction

The cognitive processes of their differences were and are still the focus of attention of many researchers because of their importance and role in human life, both socially and in terms of cognitive learning, and among these processes addressed by studies we find selective attention, which is defined as voluntary attention, where the individual focuses on one stimulus among several stimuli in a selective manner has dealt with many studies selective attention of all kinds, including local studies, and foreign, and this because of its relationship And overlap, importance and role in the realization of many other cognitive processes, as its role lies in the processing of information or stimuli received from the outside world through sensory gates to be recorded in the working memory to be called when needed, and its importance lies in the entry of information processed through it for awareness and experience after processing and storing it in the working memory, Therefore, selective attention plays an important role in the process of learning and the acquisition of oral language, which is also the essence of social interaction and a means of learning, and also intervenes in the acquisition of the auditory system The first receiver of spoken auditory information, which receives the brain through it auditory information to translate it and become meaningful, and therefore any defect at its level cancels all these processes and this is what we find in hearing-impaired children, who are observed to be retarded at all levels, whether linguistic or cognitive, social and educational. They need special care and long-term care achieved by early intervention through the hearing devices available today, the most important of which is the cochlear implant device designed for the category of hearing-impaired children to a deep degree, as

this device allows children to catch up with the rest of their natural peers, by undergoing cochlear implant surgery, followed by long-term orthophonical and psychological care so that there is full actual success for this operation.

Since the goal of cochlear implantation is to acquire oral language and the ability to speak and learn in a natural way, which will result in improvement and maturity at other levels, we targeted in this paper the intervening cognitive processes that are related to the achievement of this goal and medicine, including selective attention.

In this context, this study comes to show the role of selective attention in the acquisition of oral language in a sample of hearing-impaired children undergoing cochlear implants.

2- Problematic:

Language is one of the most important cognitive abilities of the individual, through which communication and learning are achieved in humans, and this is what achieves the human social characteristic, and language has different definitions, including the definition of de Saussure, who defined it as: "a system of evidence and a set of rules that allow the collection and arrangement of these evidence, so we say that language is a system that has its rules and characteristics, and it depends on a sound system agreed upon by a group of people and this system is achieved thanks to the voting device. " Therefore, language in both receptive and expressive terms is the best means of communicating and expressing ideas and emotions in all the different languages of the world.

Since language is the optimal means of communication, it is certain that any defect that occurs at the level of cognitive processes and processes achieved and contribute to its acquisition may lead to its disorder or non-acquisition, causing some language disorders that vary according to the causes leading to it and its symptoms, and from these cognitive processes that have a role in the acquisition of language, we find attention, which is a vital process whose importance lies in being one of the main requirements for many other mental processes such as perception, remembering, thinking and learning, without these The process The individual's perception of what is going on around him may not be clear and clear (Al-Zaghloul & Al-Zaghloul, 2014, p.95). Thus, the individual does not get a good representation of the outside world except with the safety of these processes, especially attention, especially selective attention, it is a type of attention also called the term voluntary attention, because the individual tries to focus his attention on one particular stimulus among several stimuli, and this occurs in a selective manner due to limited mental energy at one time, and the limited storage capacity and speed of processing information in the individual (Al- Atoum , 2012,p.75). Bara has come to terms with the need to incorporate modern linguistic theories into the construction of means of sponsorship, lending an objective wording and adding theoretical sincerity (Bara, 2021, p. 85).

Accordingly, the individual strives to focus all his attention on one stimulus according to the importance of that stimulus and the need to pay attention to it, facing the distraction factors that hinder this process to overcome the wandering mind. Selective attention has a cognitive function that plays a major role in processing information or stimuli received from the external environment, through sensory gates, and then perceiving and recognizing them to be recorded in working memory, which in turn invokes previous relevant experiences from long-term memory (Benchakhckouhk & Djanane, 2020, p.458).

Hence, the importance of selective attention can be extracted in learning and the development of linguistic and cognitive gains for the individual, especially the child, through which he realizes and understands the information he receives through his communication with his outside world, and this is what made us address it without other cognitive processes to study its relationship to the acquisition of oral language as it plays a role in processing information received from the external environment and has a role and importance also in the acquisition of oral language, as it is among the cognitive foundations on which the acquisition of oral language is based Child, in addition to our theoretical reading of attention and the theories that explain it, including the multi-mode theory, Johnston and Heinz emphasized the role of consciousness and active memory as important elements

in directing selective attention. The theory confirmed that sensory input is processed and stored in active memory according to priorities imposed by the information processing system, which provides this information with an opportunity to enter awareness and experience compared to information that does not have any priorities in the case of non-selective attention (Al- Atoum, 2012, p.79).

This is in addition to the importance and role of selective attention in learning and gaining experience, as voluntary focus on one stimulus provides a greater opportunity for that information to enter consciousness and store it in working memory. This is in the average child, but a child who has a sensory disorder or disability needs prosthetic tools that can replace the affected organ, including hearing disability. In view of the continuous increase in cases of hearing disabilities, which are defined according to both Al-Khatib and Al-Hadidi as: "Varying levels of hearing impairment ranging from mild hearing loss to severe hearing loss (Al-Jawalda, 2012, p.31).

In this research paper, we mean the child who suffers from hearing loss with a degree between 91-120 decibels, and who was born with a hearing disability or acquired after birth, language loss and cognitive immaturity, this category of children needs long-term care achieved through early intervention and processing of the disabled with available hearing tools that help in retrieving and increasing hearing ability, the most important and effective of which is the cochlear implant, as it is an electroacoustic device installed through surgery. Through which a cochlear implant is implanted in the ear based on the induction of the auditory nerve through an electrode implanted inside the inner ear, in this case, the sound is received by an amplifier placed outside the ear and then the sound is converted to be processed technologically so that it is easy to perceive.

Subsequently, obtaining auditory information, including the child's awareness of what surrounds him, to be then working to restore the functions of other cognitive abilities through the orthophonic reeducation.

Through our theoretical readings and our participation in several local and foreign forums, as well as our supervision and discussion of many theses and theses, we found that this group suffers from the problem of communication and social integration as a result of a weakness in oral language skill, which made us highlight this problem in this research paper.

From what has been presented about this problem, we can ask the following question:

- Does selective attention play a role in oral language acquisition in a sample of hearing-impaired children undergoing cochlear implants?

3- From it we can formulate the following hypothesis:

-Selective attention has the role of selective attention in oral language acquisition in a sample of hearing-impaired children undergoing cochlear implants.

4- Objectives of the study:

- This study aims to clarify the role of selective attention in the acquisition of oral language in the group of hearing-impaired children subject to cochlear implants.
- The importance of cognitive processes in the acquisition of oral language in children with cochlear implants.
- Highlighting the role of early processing, and we mean here the cochlear implant in improving the child's linguistic and cognitive level, and this is of course after the orthophonic care.

5- The importance of the study:

- The importance of this study lies in providing scientific knowledge that helps specialists to understand and realize all the influencing cognitive factors and help in the acquisition of oral language and thus develop their services and change their therapeutic techniques in line with the new variables.
- This study opens the way for specialists in the field of hearing disability to focus more on the problems and difficulties that may hinder the progress of the treatment plan for this category of children, including avoiding them and finding solutions to them.

6- Definition of the concepts of the study terminally and procedurally:

Selective attention: Attention to a thrill that satisfies an individual's own needs and motivations. An individual focuses his attention to a thrill that is one of several easily and perfectly easy (Al-Atoum, 2012, 76).
Procedurally, it means: an individual's voluntary focus on one particular excitement without the other, which is measured by the Stroop test used in the current study.
Oral language: a set of spoken symbols used as means of expression, or communication with others (Al-Zarad, 90, 1999).
Procedurally, it is a direct means of communication used by an individual to express one's feelings and thoughts, the sum of the scores obtained by the examiner in the ELO test of khomsi.
Hearing impairment: It occurs as a result of factors that damage the auditory system to produce limitations at the level of its organs, whether external, middle or internal, resulting in the loss of a communicative, neurological or mixed hearing (Zeid, 2010, 23, 28).
Procedurally, it means severe or deep hearing loss greater than 91 decibels, as shown by the audiometrist's hearing measurement, through which the degree of hearing impairment is accounted for at the examiner.
Cochlear implant: A medical device dedicated to individuals with deep sensory-neurological hearing impairment, the cochlear implant system transcends the non-functional part of the cochlear and delivers it with direct electrical signals to the auditory nerve. (Med-el,2014,2).
Procedurally, it is a synthetic device implanted within the ear shell. Its role lies in the activation of the hearing nerve fiber. It improves the ability to verbally communicate, which has benefited the hospital examiner and has been followed up by the orthophonian specialist.

7- Previous studies:

The study DjenounWahiba , 2012 It aimed to verify the level of morphosynthetic and semantic level gain in children who underwent cochlear implants by comparing them with normal ones,
* the study sample consisted of 4 cases of children carrying cochlear implants and 12 normal children, and the researcher used data collection tools represented in testing oral comprehension strategies O52 for Abdul Hamid Khomsi, and semantic memory test for Abdul Aziz Saad. The results of her study resulted in statistically significant differences between children with cochlear implants and normal children in terms of acquiring the morphosynthetic level and the semantic level in favor of ordinary people, and her study showed that there were no statistically significant differences between the age of cochlear implantation and the acquisition of linguistic components.
Yalaalaoui Khalida & kouadri Zainab study, 2018: This study aimed to identify the relationship of selective attention to the acquisition of reading skill among deaf children with cochlear implants, and the researchers relied in achieving this goal on the data collection tools represented in the Stroop and Nepsy selective attention test, and the reading test by applying it to a sample of 5 children aged between (10-12) years. To reach the results that there is a positive correlation between selective attention and the acquisition of reading skill in the deaf child cochlear implanter.
Samir fenni Study, 2019 This study aimed to show the importance of cochlear implants in the development of oral language in the deaf child, through the use of auditory perception tests for sound and speech on a research sample consisting of 12 cases, and the results of the study concluded that thanks to the cochlear implant device, the child with a deep hearing disability can integrate into the vocal world, provided that he learns to link sensory information with its meaning and use it in social relations.
Study of Asma Ben shakhshoukh and Amine Djenane, 2020 The study aimed to reveal the effect of developing selective attention on oral comprehension among students with attention deficit disorder after cognitive rehabilitation of attention function, and the study was applied to 26 seven-year-old students studying in the second level of primary school, and the semi-experimental approach was used using one group with a pre- and post-measurement. The study defined two stages: the first measuring the effectiveness of the cognitive rehabilitation plan for attention function, and the second to identify the impact of selective attention development on oral

comprehension, and the study was used in: the behavior observation network within the department, the attention deficit disorder scale, and the selective attention and oral comprehension tests, with the application of the cognitive rehabilitation plan for the attention function. The results showed that there is an effect of selective attention development on oral comprehension in students with attention deficit disorder after cognitive rehabilitation of attention function, statistically significant differences were found in the performance of the selective attention test before and after cognitive rehabilitation of attention function in students with attention deficit disorder. In addition, statistically significant differences were found in the oral comprehension test before and after cognitive rehabilitation of attention function among the sample members.

Djanba Marwa Study, 2021 This study aimed to find out the nature of visual selective attention in a group of deaf children carrying cochlear implants, and to achieve this goal, the researcher relied on a research tool represented in the Stroop test, which measures visual selective attention, and it was applied to a sample of 6 deaf children carrying cochlear implants aged between (10_14), to obtain results showing that children carrying cochlear implants suffer from visual selective attention disorder, and that Gender differences in visual selective attention are found in cochlear implant children.

8- Commenting on previous studies:

We find that some studies intersected with our study in some variables and even tools, such as the study (Djanba Marwa 2021, and the study of Yaalawi Khalida and Kawadri Zainab, 2018) that dealt with the selective attention variable in cochlear implants and used the Stroop test in their studies. The study (Fanni Samir, 2019) also dealt with the cochlear implant variable and its importance in the development of oral language.

This research paper has adopted the descriptive approach in presenting and interpreting its results, which showed the role of selective attention in oral language acquisition, such as a study (Djanba Marwa) that children with cochlear implants suffer from visual selective attention disorder, in addition to a study (Samir Fenni, 2019) that showed the importance of cochlear implant technology in oral language development.

Consequently, these previous studies helped us a lot and gave us an overview of the variables of our study and the appropriate tools to apply them, and what was new in our study was the study of the relationship of selective attention to oral language acquisition in hearing-impaired children undergoing cochlear implants, using both the Stroop test and the Elo test based on the descriptive approach.

9- Theoretical background of the research paper:

Language is the essence of social interaction, through which communication between human beings is achieved and also contributes to learning and raising awareness and thought in humans, and any defect that occurs at the level of cognitive processes and processes achieved and contributed to its acquisition may lead to its disorder or non-acquisition, causing some language disorders that vary according to the causes leading to them and their symptoms, and from these cognitive processes that have a role in the acquisition of language, we find attention, which is a vital process whose importance lies in being one of the main requirements for many Other mental processes such as perception, remembering, thinking and learning, without this process, the individual's perception of what is going on around him may not be clear and clear. Hearing loss is a multifaceted dilemma, whether health, social, educational or economic, that falls on the shoulders of the injured, family and society, and this is what makes it of great importance in the field of scientific research through the multiplicity of methods of sponsorship. Cochlear implants are a well-established, effective and long-term solution for individuals with deafness. A cochlear implant is a multi-electrode device used to transmit audio information to the inner ear and helps improve a person's ability to hear the sounds around him, hear rhythms and patterns of pronunciation, and improve the reading process on the lips. This device is very different from the traditional hearing aid, as ordinary hearing aids. Hearing aids, are just amplifying instruments, they

are designed to magnify and clarify sounds, and they are useful for people with mild hearing impairment, moderate or severe, while people who did not benefit from hearing aids because the auditory sensory residue in the cochlea has been damaged or deformed, so the sound did not reach the auditory nerve, so this device bypasses these hairs to activate the auditory nerve directly.

10- Study Methodology:

The method is the way adopted by the researcher to reach his desired goal, and his function in the social sciences is to explore the principles that regulate social, educational, and human phenomena in general and lead to their occurrence so that they can be interpreted and their results controlled and controlled (Seusan, S. A., 2014, 89).

Since our study aims to answer the question and verify the hypothesis to derive the relationship between its variables, we have relied in achieving this on the descriptive approach, which is based mainly on interpretation, answering questions, verifying hypotheses, and contributing to deriving the important relationships between different phenomena and interpreting the meaning of data and providing researchers and scholars with various scientific facts. A descriptive approach is defined as: "accurately describing a problem or issue, using scientific research tools to obtain information, draw conclusions, and present them in digital or qualitative form. "

The study population was represented in the hearing-impaired children subject to cochlear implants who are present in a number of schools, Nafi Ali School, Ben Zoubir School, and the School for Hearing-Impaired Children in Hadjout, which includes 73 individuals, and after conducting the clinical interview, a sample of 05 children, aged between 9 and 10 years, was intentionally extracted., following up at the schools of Nafi Ali and Ben Zoubir School in Hadjout - Algeria - and the research was conducted during the months of February and March 2023, and the following table shows the characteristics of the sample.

Table 01: Characteristics of the study sample

Cases	Age	Degree of disability	Educational level	Age of disability detection	Language used before transplantation	Age at transplant	Duration of sponsorship after transplantation
T-W	9 years	Deep	third primary	two years	signals	3 years	Follow-up so far
M- A	10 years	deep	third primary	9months	signals	3 years	5 years
A - S	10 years	deep	fourth primary	3 years	signals	4 years	Follow-up so far
S - N	10 years	deep	fourth primary	8 months	signals	two years and 7 months	did not specify the duration
M - A	9 years	deep	fourth primary	16 months	signals	two and a half years	5 years

The table shows that all members of the sample have a degree of deep disability, studying in the third and fourth year of primary school, they used sign language before the transplant, we note that there is a difference in age when performing the transplant between 18 months and 04 years, and we also note a disparity in the period of sponsorship after transplantation, where the period is estimated at five years, and there are those who are still following the sponsorship until now.

11- Limits of the study:

11. 1. **Spatial framework of the study**:

This study was conducted in two primary schools with two integrated sections for cochlear implant children, namely Nafi Ali and Ben Zoubir School in Hadjout, Algeria, and the research was conducted during February and March 2023.

12**- Data collection tools**:

Data collection tools included both the Stroop Selective Attention Test and the Elo Oral Language Assessment Test.

12-1- **Stroop selective attention test:**

A test that measures selective attention and palm ability, established by Stroop in 1935, and the principle of the test lies in placing the case under study in front of stimuli with inappropriate characteristics that they must ignore and at the same time answer another characteristic, and this test contains three cards of size (21 * 30) A4 (Albaret & al., 1999, p p 15-17).
- First card: consists of 50 words written in black representing words of colors: red, green, yellow, blue.
- The second card: It contains the same words, but this time the words are written in different colors that do not represent the semantic meaning for them, for example, the word blue is written in red.
- The third card: represents rectangles bearing the same colors mentioned above.
The time required to give the answer is 45 seconds for each card, these cards consist of 10 rows each row carries 5 alarms.
This test aims to assess selective attention and palm ability of posture, which represents a competition between two answers, two options.
Instruction: should be as detailed and simplified as possible for individuals to understand.
- First position (card A): I will give you a paper with words written in it, you have to read aloud from right to left, as quickly as possible. When you get to the bottom of the paper reread from the beginning to say you stop, and if I point out that there is a mistake, you have to correct it. If you're ready, you have to start.
- The second position (card B): In this paper you repeat the same as you did last time, you will read the words and when you reach the bottom of the paper repeat from the first.
- The third position (card C): This paper has colored rectangles, you must name these colors and when you reach the end of the paper you have to return from the first until I tell you to stop.
- The fourth position (card B): I will give you a paper like the one I gave you before a while, but this time you must tell me what color the words were written in and not read the words, when you reach the end of the paper you have to repeat from the first until I tell you to stop.
Scoring method: The examiner must put in front of him four cards with possible answers that must be given to
The examiner gives it, and in each card he follows up and writes off errors and frequencies, then transfers the results on a sheet of paper
The punctuation that carries the personal information of the case, the errors it commits, the frequencies it falls in, and the number of
The correct answers for each of the cards submitted, and if it exceeds one or several lines, it must be reduced from the sum, and then we calculate the degree of error for each card, this is multiplied by the sum of the errors by two plus the frequencies, and then we calculate the degree of overlap, which is calculated by decreasing the degree of correct answers in the third card, which concerns the color label of the correct answers, which represents the interference (naming the color of the ink in which the word is written) in the second card.

Conditions for applying the test:

- Ensure that the individual has a good vision.
- The individual should not be allowed to perform any behavior that can hinder the readability of words, especially in the fourth part.

- If we assign him the error, he must reread from the word he made a mistake and not reread the entire line.
- The individual must be good at reading, and know the naming of colors.
- If the individual stops before the end of time or until the end of the paper, we should encourage him to continue

What prompted us to adopt this test in estimating the attention of our research sample is that it is suitable for young age groups, it deals with colors and some simple words familiar to students.

Psychometric Properties of Stroop Test:

Since the test did not perform, we used the psychometric characteristics of the researcher (Saad Abdelaziz, 2010), who adapted the test and verified its psycho metric properties by calculating both the sincerity and stability of the test in a number of ways, as illustrated in the following table:

Table 02: Psychometric Properties of Stroop Test

Test		Grade	Connectedness
	Honesty		
1- Constructive honesty 2- Self-honesty		0.924	signifiant
	Stability	0.85	Good
Test fastness coefficient by reprocessing method		0.73	signifiant
*		0.900	Good

It follows from the table that the study tool enjoys psychometric conditions for good testing, and that the tool can be relied upon in our current study (Saad, 2010, 93-92).

12. 2- Oral Language Assessment Test (ELO)

ELO is a test that assesses oral language in children, created by researcher Abdel Hamid Khomsi, adapted to the Algerian environment by Adda Dalila and allows to identify or detect children who may have learning difficulties (Adda, 2016).

_ Test Objective:

The ELO test aims to describe and assess oral language in children from 3 to 10 years old.

_ How to apply the test:

The test is applied in an individual way in a personal interview with the children, taking into account some points, namely:

1_ The test items must be presented impartially without any hint or focus on a point or the use of a specific rhythm.

2_ The procedure of each test can be divided into two sessions, especially in young children who follow quickly.

Test items:

This battery consists of 6 items divided into major areas:

1_ **Lexique Dictionary**:

A / - **lexical reception**: consists of 20 paintings that include 4 pictures in the test booklet and asks the child to refer to a specific image from the name of something proposed.

Instruction: I show the picture that I will tell you about.

Punctuation: Provides one point for each correct answer. The maximum point for correct answers is 20 points, regardless of the level or age of the child.

B/- **Lexical Production**: divided into two parts

- The first part consists of: 50 words representing the names of things and the child must answer the question "what is this"

By showing her pictures to him, this part is proposed to children from 5 years and 3 months to 10 years and three months, stopping at item 20 for children aged 5 years and 3 months, and for children aged 6 years and 3 months for 8 years and 3 months stop at item 32, while children aged 9 years and 3 months for 10 years and 3 months must on each Items represented by 50 items.

- The second part consists of 10 words representing actions (events) and the child must answer the question "what to do", and this part has not been applied to the study sample as it is proposed for children from 5 years and 3 months to 8 years and 3 months.

Rasterization: Provides one point for each correct answer to the question "what is this" and the question "what to do".

2. **Phonology**:

This item consists of 32 words arranged according to phonetic complexity.

The first group 16 is proposed to children from 3 years and 3 months to 4 years and 3 months.

Children between 5 years and 3 months to 10 years and 3 months repeat all the words 32.

Instruction: Repeat after me what I am going to say, you must listen to me carefully because I will only say it once.

Punctuation: Provides a point for each correct answer.

3. **Comprehension**:

Understanding is divided into two branches:

A/- **Comprehension** :(C1): Intended for children from 3 years and 3 months to 4 years and 3 months.

B/- **Understanding**: (C2): For children from 5 years and 3 months to 10 years and 3 months. This section that we applied in our study as it suits the age group of our study sample.

This item consists of 32 panels containing 4 pictures related to phrases and the task of the child is one of the four images that correspond to the content of the statement said by the examiner. And the stop is done for children aged 8 years and 3 months, for children older than that age they answer all 32 items.

Instruction: There are two types of instructions, the first instruction for the first presentation of the images is (We will work together, listen carefully to what I will say and indicate the image in which there is . . ..)

The second instruction is for the second presentation of the pictures, when the answer in the first presentation is wrong, as it provides the child with a second chance to answer, which is (listen carefully to what I will say and point to the picture in which there is what I told you)

Punctuation: Provides one point for each correct answer.

4. **Linguistic expression:**

A / - **production of phrases**: This level aims to study the grammatical competencies of children and consists of 3 training items and 25 items presented in a notebook of paintings consisting of two pictures, and required of the child to complete an incomplete sentence related to the content of the second image starting from the sentence uttered by the examiner and related to the content of the first image while avoiding the use of rhythm.

Two levels of stoppage were proposed, the first for item 16 for children aged 5 years and 3 months, and the second for children aged 10 years and 3 months, where all 25 items are used.

Instruction: I will show you a set of pictures and you will complete the sentence that you started.

Drip: Offers one point for each correct production.

B / - **Repetition of phrases**: This item was dispensed with and was not applied because it does not suit the age group of the study sample, this item applies to children from 5 years to 8 years.

Test score: The raw score of the test is calculated by adding up the points obtained in each dimension of the test, to be interpreted according to the following criteria:

- Under 99 poor levels,
- from 99 to 112 intermediate levels,
- From 112 and above high level.

Psychometric characteristics of the test: Researcher Dalila Adda, 2016 studied the psychometric properties of the ELO test and adapted to the Arabic language, calculated the stability and sincerity of the test. The results came as follows:

Table 03: Test Stability of ELO test

Method used to calculate test stability	Binding coefficient		Interpretation
Halfway Retail	Between the two halves of the test	0.76	High Stability Factor
	Using the Spearman-Brown method	0.86	

It is clear from the table that the correlation factor between the two halves of the test is 0.76, and after adjusting the length using the Spearman Brown equation the test stability rate is 0.86, this indicates that the test has a high stability.

- **Test sincerity**:

A - Arbitrators' sincerity: The findings on arbitrators' honesty relating to translation and content respectively estimated at 8.42 for translation and 9 for content were high, indicating the veracity of the test.

B - **Internal authenticity**: calculating the correlation factor between the dimensions of the test as a statistical function at the level

C - **Self-truthfulness method**: The degree of honesty was estimated at 0.9, through results obtained through the psychometric properties of the test, the ELO test adapted to the Algerian environment was found to meet the criteria for adapting and designing tests, from which it can be used in the current study.

13**. Presentation of results:**

Table 04: Results of cases on the ELO Oral Language Assessment Test

Items / Cases	Lexical reception	Lexical production	Repetition of words	Comprehension	Phrase production	Total	Percentage%
T-W	09	18	29	10	06	72	45
M- A	05	10	16	13	05	49	31. 12
A - S	13	24	27	25	20	109	71. 09
S - N	16	23	28	25	13	105	68. 78
M - A	11	14	27	20	16	88	71. 09

The table shows a discrepancy and disparity between the results of the cases, in the lexical reception item, we find the second case scored the lowest mark of 05/20, while the fourth case obtained 16/20, which is the highest mark. As for the lexical production item, the second case got the lowest mark, estimated at 10/50, and the fourth case got 24/50, which is the highest mark, and we find in the item repeated words that the second case got the lowest mark 16/32, while the first case had good results, as it got 29/32, while the understanding item, the first case got the lowest mark 10/32, and the second and third cases got 25/32 and are considered good results. In the phrase production item, the second case got the worst mark of 05/25 and the third case got a good score of 20/25.

Table 05: Case results in the Stroop Selective Attention Test

Cases	Degree of interference *	Degree of mistakes**
T-W	09	31
M- A	04	**38**
A - S	20	50
S - N	16	19
M - A	06	15

* Represents the degree of mistakes calculated in case after application of test.

* * Represents the degree of interference calculated in the case after application of the test.

The table showed that there are cases that had a large number of errors, especially in card B and written in different colors, do not represent the semantic meaning, for example, the word blue written in red, and this type of mistakes we noticed on the first and second case, or other cases, their results were good, but we noticed large frequencies in the third and fourth cases, we recorded 13 frequencies in the third case in card C, 10 frequencies in card B2, 7 frequencies in card B and 8 Frequencies in card A,

14- **Discussion of hypotheses in the light of the study's findings**:

The study hypothesis states that selective attention has a correlation with oral language acquisition in hearing-impaired children undergoing cochlear transplantation, and with reference to the results of cases in the kidneys of the two tests (Stroop & Elo), we find that the third case is the wrong degree at which it is very high and is the highest of all cases in Strop test, Due to frequencies and reference to their results in the test, we note that they recorded a number of frequencies in each test card, the largest of which was in the C-card for the name of colors. This confirms the existence of a disorder in selective attention in the case, the higher the degree of mistakes in the test indicates a disorder of selective attention.

In the oral language test, it was observed that it received the highest score of all cases, it received 109 points and by reference to the criteria for interpretation of the test results, its grade is limited to level 2 (99 - 112). Therefore, the level of the oral language test was good, it received good marks in all the test items above which was in the repeat word item. Making the degree of mistakes estimated at 50 and interference 20.

Through these results, the condition is found to have a disorder of selective attention and, conversely, to have a good oral language. What is noticed about the situation during the application of the two tests is that there are problems with the skill of the focus of attention during the application of the Stroop test, as they were tantamount to focusing in the answer to 3 or 4 words until they are again distracted and mingled with the answer, which explains their many frequencies in all test cards. In the oral language test, she was well understood and possessed a good linguistic asset. This discrepancy can be reflected in the results between the strop test and the oral language test because the girl child is sociable and beloved, and we believe that this factor has helped her to acquire oral language, in addition to the long cartoon period that she has been from 2 years old. With regard to its low results in the Strobe test, it can be explained by a lack of concentration and by the fact that it wears glasses.

In the fifth case, the table shows that the error score is low at 06 and is the lowest error score recorded in the Strop test of all cases, noting during the application of the test that the condition did not error any card with only two frequencies recorded in the first B card and the second in the B2 card (second application), this indicates that the condition does not suffer from any disorder of selective attention as it answered easily and smoothly.

In the oral language test, the case received 88 points at any level close to the average, most of its results being between the average and the weak, where it scored the highest point in the repeat and understanding items, which shows that it has a sound understanding.

Through the results of the two tests, it is clear that the condition received a very low error score in the Strobe test, and therefore it does not suffer from any disorder of selective attention, but in the language its level is poor. This can be explained by the fact that the situation is not well followed in the home, as its lexical balance is poor, as evidenced by the results in the reception and lexical production items where they received the lowest points, as well as the language expression in the phrase production item. Since the condition had undergone an early cochlear transplant and had undergone a long life guarantee and did not suffer from a selective attention disorder, there was no other explanation for its poor level of oral language other than that it did not follow well in the home, as evidenced by the fact that its level of oral language had not evolved.

The fourth case shows that the degree of error is high, as its results in the Stroop test show that it twice misstated the B card with varying frequencies recorded on each test card, the most of which was in the B2 card. (The second application) This shows that the condition has a problem of selective attention, as it was observed during the application that it speeds up the reading at first and then distracts it to slow down and hesitate, as it was pushing hard and then retreating and this is probably due to its attention concentration skill.

The verbal language test shows that it is at a good level, where it has a good score in the test. The highest score is in repeat words as well as in lexical understanding and production. Thus, the situation is well understood and its linguistic balance as well, except for the language expression in the phrase production item, where it scored the lowest point, and generally its results in the oral language test is satisfactory.

Based on our observations through the application of the two tests, these results can be explained by the fact that the situation suffers from a problem of concentration of attention and this has affected its results in selective attention as it has recorded only two errors, Since the case underwent an early cochlear implant as well as a prolonged orthophonic bail in addition to follow-up at home, we also found through the interview that the girl child is social, all of which greatly contributed to her improved level of oral language.

As for the first, second and third cases, the results showed that they received low scores in both tests, where the degree of error at the first case was high, occurred in many errors, all of which were in the B card, as well as the recording of some frequencies in the rest of the cards. The situation showed dispersion and lack of focus especially during the card reading.

In the oral language test, the results were also low and poor, as their points in all applicable test items were weak except for repeat words where they received an excellent point, while their understanding was weak.

Consequently, we note here that the level of oral language in the situation has been affected by its level of selective attention. This explains the decrease in its results in both tests. This is due to the fact that the girl child is not being followed at home as she is still following up with an Orthophonian specialist. The second case, where the degree of error is also high, recorded the highest number of errors in the second B card and recorded some frequencies in the rest of the cards, which demonstrates a disturbance of selective attention in the case.

In the oral language test, she received a very poor score, the lowest of all cases, where her results were poor in all test items. And what appeared on the case during the application of both tests was the slowness and lack of good focus and very low understanding, these results may be due to the failure to follow up on the situation at home by the parents, who have stopped supporting and following it and to stop the orthophonic reeducation, which has contributed to the decline in its level of linguistic and cognitive and that the situation was sociable, isolated and did not exchange much talk with other classmates.

Consequently, the first, second and third cases indicated that there was a correlation between selective attention and oral language acquisition in hearing-impaired children undergoing cochlear transplantation, in which case oral language was affected by selective attention.

Since these cases have established a correlation between selective attention and oral language acquisition, in contrast the fourth and fifth cases have proved the opposite, i.e. the absence of a correlation between selective attention and oral language acquisition, and because the language is a cognitive ability in which many other cognitive processes are intervened, led by attention and selective attention. (Belftney 2020) which showed a relationship between selective attention and oral language acquisition by cochlear farmers. Cognitive abilities of all kinds (perception, memory, attention, selective attention... etc.) have a role and relationship to oral language acquisition in all children and even cochlear farmers, so it works Orthophonic specializes in improving cognitive disorders in conjunction with language because they have a negative impact on language, as illustrated by the results of cases 1, 2 and 3 in our study.

In addition to a study (Yaalaoui & Kouidri., 2018) that showed that selective attention was related to the acquisition of reading skill in deaf child cochlear implant, it showed that although the study cases underwent cochlear implant, they remained with cognitive disorders, including selective attention, which in turn affected reading skill. This is what we noted on the results of cases 1, 2 and 3 in our study.

The study (Fenni, 2014) also showed that early cochlear transplant is of great importance in the development of oral language in the cochlear-planting child, as well as in the follow-up of an integrated training program and the guarantee of an Orthophonic after transplant, as this has positive effects on the success of cochlear transplant and the achievement of the desired goals, as the results of the fifth case in our study showed.

It was therefore decided to adopt the results of the majority of cases confirming a correlation between selective attention and oral language acquisition.

Hence we verify the validity of the study's hypothesis, which shows the role of selective attention in oral language acquisition in a sample of hearing-impaired children undergoing cochlear transplantation, so the study's hypothesis has been realized.

15- **Conclusion**:

In this paper, we examined the role of selective attention in the acquisition of oral language in a sample of hearing-impaired children undergoing cochlear transplantation. This topic was previously studied by Djanba Marwa, 2021. The study aimed to learn about the nature of visual-selective attention in a group of deaf children carrying coral transplants.

We have studied the relationship between the previous variables by applying the first two tests of the oral language Elo and the second one of the selective attention Stroop in order to verify the hypothesis and these tests have been applied to a sample of pupils from 05 cases, 4 of them are fourth-year primary students and the remaining three are third-year primary students undergoing cochlear transplantation. and the results of the study show the general hypothesis that there is a correlation between selective attention and oral language acquisition in hearing-impaired children undergoing cochlear transplantation.

In the light of the results of the present study, we recommend and propose the following:

- The need to install a psychologist and an Orthophonist in each school with compact sections.
- The need for early intervention by equipping hearing-impaired children through cochlear implants to mature knowledge and language like other peers before it is too late.

_ A long-term Orthophonic for cochlear growers must be guaranteed to maximize the benefits of this cultivation.

- Parents should follow their children at home and carry out activities with them even if the period of their Orthophonic therapy ends so that their children's level does not decline.
- The need to carry out a thorough psychological and occasional routine examination of cochlear farmers' children in schools and even other children with disabilities and other disorders.

16- **References**:

- Al Arabi, M., P., G., (2010). *Speech Disorders in Children with Hearing Impaired Diagnosis Treatment*, Modern Books House.
- Al-Atoum, Y., (2012). *Theoretical and Applied Cognitive Psychology*, 3rd Edition. Al-Masirah Publishing and Distribution House.
- Albaret, J-M., Migliore, L, *Stroop* , Centre for Applied Psychology, Paris, 1999.
- Adda, D., (2016). Adaptation of the Khomsi Oral Language Assessment Test (elo) to the Arabic language practised in the Algerian environment, *Journal of Humanist and Social Sciences Researcher*, vol. 8, No. 26, p. 367-373. https://www.asjp.cerist.dz/en/article/40226
- Bara S., A. (2021). proposing a test for the analysis and evaluation of the Algerian pupil's linguistic achievements, field study of children between 10 and 12 years of age through

narrative language production, *Journal of Psychological and Educational Sciences*, No. 4, vol. 7, p. 69-88. https://www.asjp.cerist.dz/en/article/163953

- Benchakhchoukh, A, & Djenane, A., (2020). Impact of selective attention development on oral understanding in pupils with attention deficit disorder after cognitive rehabilitation of attention function, *Journal of Human Sciences*, vol. 11, issue 02, p. 457-480 https://www.asjp.cerist.dz/en/article/126469.
- Djenba, M., (2021). Study of Optical Selective Attention in Children with Cochlear Implants through the Application of Stroop Test, *Journal of Humanist and Social Sciences Researcher*, vol. 13 No. 04, p p. 533-544 https://www.asjp.cerist.dz/en/article/168052.
- Fenni, S., (2019). The Effectiveness of Electronic Shell in Developing the Skill of Open Word Recognition Monogram, *Studies in Human Sciences and Society*, vol. 02, No. 01, pp. 141-160 https://www.asjp.cerist.dz/en/article/158825
- Al-Jawalda, F., (2012). *hearing disability*, first edition . Culture House for Publishing and Distribution
- Sausen, Ch. M., (2014) .*Foundations for Building Psychological and Educational Tests and Metrics*, 3rd Edition, Debono Center for Education and Thinking.
- Wahiba, dj, (2012). *Acquire morpho synthetic and semantic level in a child undergoing cochlear transplantation* Master's thesis, Faculty of Social Sciences, University of Algiers 2.
- Yaalaoui, K., & kouadri, Z., (2018), relationship of selective attention to the acquisition of reading skill in deaf child cochlear farms, *studies in orthophonia and neuropsychology*, vol. 03, No. 04, p p. 9-22 https://www.asjp.cerist.dz/en/article/95056.
- Al-Zaghloul, R., & Al-Zaghloul, I (2008). *Cognitive Psychology*, Al-Shorouk House of Publicity and Distribution.
- Al-Zarad, F. (1999). *Language and Speech Disorders*, Mars Publishing House.