

## **The Reality of Scientific research in the Field of Language Pathology and Communication Between Theory and Practice**

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### **Summary :**

The study aims to demonstrate the reality of scientific research in the specialty of language and communication pathology (orthophonie) between theory and practice, based on the importance of this specialty and what it offers to anthropology. It was conducted with a group of field specialists, researchers, professors, and doctoral students from the Department of Psychology and Orthophonie at the Faculty of Humanities and Social Sciences at Badji Mokhtar University - Algeria - all of whom are specialists in the field of language and communication pathology, and who were chosen intentionally, using the descriptive approach to fit it with the goal of the study. We have relied on collecting The information questionnaire tool included three major axes, which were: the fields of scientific studies in the specialization, the scientific returns or theoretical and field importance of these studies, the difficulties facing the researcher in the specialization, then the horizons and suggestions that would help him to carry out his scientific studies.

The results of the study concluded that scientific studies in this specialty are distinguished in that they: include several fields, including: oral and written language disorders, disabilities, learning difficulties, cognitive disorders, communicative problems, autism... They also have importance and contributions they make to anthropology, whether theoretical or field, and this is with regard to the various disorders that affect language, starting from explaining them, revealing their causes, and diagnosing them, all the way to building supportive programs that work to treat them and reduce their severity or the severity of the negative effects they leave behind. The affected individual creates communication problems that affect his quality of life, and the researcher in this specialty faces several difficulties that would hinder the process of his scientific research, which varied between theoretical and field difficulties .

### **Keywords :**

Scientific research, specialization in language and communication diseases, orthopedic researcher.

### **Introduction:**

Building and developing knowledge depends primarily on what is known as scientific research, which is the basic foundation for uncovering various phenomena and interpreting them in an organized scientific manner that creates solutions to answer the various aspects related to them, based on scientific results based on clear methodological foundations.

While the field of language and communication diseases is considered one of the modern scientific fields compared to other sciences, it is considered a fertile field, and has recently witnessed increasing interest for many researchers due to the wide spread of linguistic and cognitive disorders, and the effects that the latter have on various aspects related to humans, which requires identifying their causes, interpreting them, and finding appropriate solutions (treatments), and this is based on developing methods for diagnosing and taking care of them. Therefore, scientific research in the field of language and communication diseases is an essential element that helps guide practitioners and even academics who seek to develop scientific knowledge related to field practice in this field, to create diagnostic methods and treatment strategies that enable them to control as much as possible the various linguistic phenomena that they encounter.

Hence the need or motivation for the necessity of studying the reality of scientific research in the field of language and communication diseases, with the aim of revealing the various fields that have attracted the attention of researchers in the field, and identifying the importance that scientific research provides to those working in the field of language and communication diseases, in addition to revealing the difficulties that the scientific researcher faces in this field, and from here this article came to shed light on these aspects.

### **Study problem:**

Scientific research is a continuous human activity, in an attempt to understand everything in it, with the aim of increasing his knowledge of himself on the one hand, and of what is around him on the other hand, which helps him in his life, preserves his survival, and secures his future. It is an organized attempt to reach answers or solutions to the questions and problems facing individuals and groups in their locations and walks of life (Majed, 2016).

Scientific research, when related to the sciences, is defined as a means of organized inquiry and investigation carried out by the researcher, for the purpose of discovering the truth, or finding the relationship between a group of phenomena, developing it, correcting it, or verifying the previously existing information (Bani Yunus, 2018). Accordingly, scientific research has many purposes that allow us to reach knowledge, the most important of which are: exploring it, revealing it, proving it, developing it, examining it, verifying it, and predicting it...

Scientific research or scientific studies, whether theoretical or applied, are the backbone of all sciences in the various disciplines emerging from them, whether they are experimental, social, human, or humanitarian. The latter studies the human being in his various normal or pathological situations. It sheds light on all the aspects surrounding him, starting from his organic, functional, and even psychological self, all the way to those that constitute the environment in which he lives: the family aspect, the cultural aspect, the ideological aspect, the social aspect, and the professional aspect... All of this would provide the individual and society with a vision of the future. The direction in which the fields of knowledge are moving, and the extent of their development, in addition to enabling him to understand the vision of society clearly, it also provides him with a more accurate and more realistic way of thinking, and works to develop his idea to invent and create new means and techniques, while developing advanced methods, methodologies and mechanisms for conducting many studies.

The specialty of language pathology and communication is one of the sciences that deals with language from a therapeutic or supportive (pathological) perspective - primarily - in

addition to the communication problems caused by various diseases or disorders that an individual may suffer from, whether a child or an adult (Brin, et Courriez, 1997). Due to the wide spread of linguistic and cognitive disorders, there has become an urgent need for this specialization, and taking care of them has become necessary, especially since the latter becomes difficult, long, and exhausting if it is not diagnosed early and accurately. Add to that the negative effects it has on the individual's life, whether psychological, social, professional, relational, or educational, which hinders the communication process as a whole. This has increased the social demand for the orthopedic specialist to take care of it.

While the orthodontic practice, which is a process that includes several tasks (early detection, early intervention, diagnosis, re-education or rehabilitation, prevention, family guidance and guidance, and follow-up (Maisonny, Lunay 1975), this process is not an easy matter, but rather requires a base of knowledge related to understanding various linguistic and cognitive disorders through interpreting them and revealing the various aspects related to them (their causes, symptoms, diagnosis, classification, treatment...), all of this is provided by scientific studies. Scientific research based on theoretical foundations and field data in this specialty.

Scientific research in the field of language and communication diseases is one of the vital and specialized fields in psychology, linguistics, and neuroscience. It is based on the study of disorders that affect individuals' ability to use language and communicate normally and their quality of life.

Based on the previous proposal, we decided in this study to shed light on scientific studies and scientific research in the field of language and communication diseases, based on a set of the following questions :

**General question :**

What is the reality of scientific research in the field of language and communication diseases ?

**Sub-questions:**

1. What are the areas of scientific research in the field of language and communication diseases?
2. What is the importance of scientific research in the field of language and communication diseases?
3. What are the difficulties faced by scientific research in the field of language and communication diseases?

**Importance of the study :**

The importance of the study lies in that it sheds light on:

1. The importance of scientific research for various sciences, regardless of their direction or field.
2. A new study of the field of language and communication pathology as a fertile specialty that requires scientific research and theoretical or field studies that work to add, develop or develop the cognitive vision towards its various fields.
3. It creates new horizons and aspirations that serve scientific research in the field of language and communication diseases.
4. Creates some solutions and suggestions that will help the scientific researcher overcome or avoid falling into the difficulties that he may encounter while carrying out his research.

**Study objectives :**

The objectives of the study are :

**Overall goal :**

Explaining the reality of scientific research in the field of language pathology and communication between theory and practice.

**Procedural objectives:**

1. Identifying areas of scientific research in the field of language and communication diseases.
2. Recognizing the importance of scientific research in the field of language and communication diseases.
3. Identifying the difficulties faced by scientific research in the field of language and communication diseases.

**Limitations of the study:**

- **Spatial boundaries:** The study was conducted at Badji Mokhtar Annaba University, Faculty of Humanities and Social Sciences, Department of Psychology and Orthophonia.
- **Human limitations:** The study was conducted with a group of specialists: field specialists, researchers, professors, and doctoral students, all specialists in language and communication pathology, who were chosen intentionally in line with the aim of the study.
- **Time limits:** The study was conducted within two months.

**Adjusting the study terminology:**

**1- Scientific research:**

**Theoretically:**

An organized scientific activity carried out by a researcher or a group of researchers, with the aim of solving the problems they face, discovering new information or relationships, or developing, correcting, or achieving what already exists, using methods and tools that are appropriate to the nature of the research field (Zoqan, et al., 2016).

**Procedurally:**

It is organized and planned efforts aimed at solving specific problems, adding new things to a scientific field, or clarifying the best ways to apply new ideas and theories in the field of language and communication diseases.

Accordingly, we know that orthographic research is a precise investigation that aims to describe a problem that exists in the field of language and communication diseases with the aim of identifying it, collecting information and data related to it, analyzing it to arrive at results, discussing and interpreting them, and coming up with rules and laws that can be used to treat this problem or similar problems when they occur.

**2- Field of Language and Communication Diseases:**

It is the science emerging from the human sciences, concerned with diseases of language and communication, whether in children or adults, whether oral or written, including cognitive disorders, in addition to communication problems that may affect the individual and affect his quality of life .

**3- Orthophonic researcher:**

**Theoretically:**

He is a person who specializes in language and communication pathology, which studies various aspects related to language

Especially its sick side.

**Procedurally:**

In this study, the scientific researcher means every university professor, doctoral student, or field practitioner belonging to the specialty of language and communication pathology. All of them practice scientific research through theoretical or field studies.

**Study method:**

The study relied on the descriptive approach, which is consistent with the general objective and partial objectives of the study. It is one of the most prominent approaches used in scientific studies, especially those that focus on the study of humans and society (Sami Muhammad, 2010). It is a way to study phenomena or problems by describing in a scientific manner, and then arriving at logical explanations that have evidence and evidence that gives the researcher the ability to set specific frameworks for the problem, and this is used to determine the results of the research (Rajaa Mahmoud, 2011).

**Study sample:**

The study sample included a group of specialists: field specialists, researchers, professors, and doctoral students from the Department of Psychology and Orthopedics at the Faculty of Humanities and Social Sciences at Badji Mokhtar University - Algeria - all of them specialists in the field of language and communication diseases. They were chosen intentionally as required by the requirements of the study.

**Data collection tools:**

The study relied on a data collection tool, which was the questionnaire, as it was the most appropriate to obtain all information and data related to the problem of the study.

The questionnaire is one of the most famous tools used in the descriptive approach, which includes questions designed by the scientific researcher, for the purpose of obtaining information closely related to the study questions (Zoqan, et al., 2016).

The questionnaire used in this study included a set of questions. After the introductory section on the topic and personal data, the questionnaire was divided into three major axes:

**The first axis:** areas of research in the field of language and communication diseases.

**The second axis:** The importance that scientific research adds to the field of language and communication diseases.

**The third axis:** The difficulties faced by the researcher in the field of language and communication diseases.

Each axis included 10 phrases. The respondent must put a tick in front of the phrase he deems most appropriate, with an open and optional question at the end of the questionnaire, to put forward suggestions or prospects that would develop scientific research in the field of language and communication diseases.

**Presentation and interpretation of the study results:**

After distributing the questionnaire to the study sample and answering various questions, we arrived at a set of results that can be explained in the following points:

**First:**

There are many fields for which scientific research is a vital field. It is the funding field or the primary source upon which most of the fields emanating from the specialization of language

and communication pathology are based. It provides them with various information, whether theoretical or field, in order to uncover and interpret it. These fields include the following:

❖ **Language disorders in children:** including

- Oral language disorders: which include many disorders such as linguistic delay, dysphasia, speech and vocal disorders, stuttering, speech disorder... (Al-Zuraikat, 2005).
- Written language disorders: which include academic learning difficulties such as dyslexia, writing, calligraphy, and arithmetic (Abu Al-Diyar, 2012).
- Cognitive disorders: which include developmental learning difficulties such as attention, perception, and memory disorders (Al-Zaghoul, 2017).
- Executive functions disorder: which includes understanding, thinking, reasoning, and deduction...

**Language disorders in adults :**Where language disorders are acquired and concomitant (secondary disorders), most of which are related to diseases of aging: such as aphasia of various types, which often occur as a result of a cerebrovascular accident, Parkinson's, Alzheimer's, dementia...etc.

(Maisonny, Lunay1975)

In addition to several fields, the Orthon researcher devotes great efforts to research, including: autism, disabilities of various types, mental and hearing, psychosis, multiple sclerosis... etc.

All of these areas affect language in particular and communication in general, which affects the ability of individuals to interact, integrate, or adapt socially.

Based on this result, we can say that there are many fields in the field of language and communication diseases, which would allow the researcher the freedom to investigate and explore various knowledge related to this specialty, and this translates into the multiplicity of research methods in this field, which can include:

1. **Neurological research:** which studies how brain injuries or neurological problems affect language.
2. **Psychological research:** which focuses on understanding how psychological factors affect the ability to communicate.
3. **Linguistic research:** which focuses on analyzing language, sounds, and symbols.

**Second:**

Scientific research is of great importance in the field of language and communication diseases, and it has many contributions that vary depending on the field of research in it, and can be referred to in two axes:

**The first axis: theoretical contributions**

It includes the importance that this theoretical scientific research provides to the field of language and communication diseases, and includes all the data and data that explain the various linguistic and communication disorders, including identifying these disorders, explaining their causes, early detection and accurate diagnosis, revealing the extent of the overlap between these disorders and their differential diagnosis, the ability to classify them, and the ability to build treatment programs according to each disorder separately.

### **The second axis: field or applied contributions**

It includes the importance provided by various applied scientific research in the field of language and communication disorders, which would be the basic foundation upon which every practitioner in the field or academic researcher relies, to continue his research on the same phenomena or add new knowledge to the phenomena studied.

In this regard, we can point to the effective role that scientific research plays in diagnosis and treatment, as it contributes to:...

**Developing diagnostic standards:** aiming to improve the accuracy of diagnosing linguistic and communication disorders, which contributes to providing a customized treatment plan.

**Measuring the effectiveness of treatments:** It focuses on evaluating the effectiveness of different therapeutic techniques, such as cognitive-behavioral therapy, or customized language therapy (therapeutic programs).

It explores how to use technology, such as artificial intelligence, in diagnosing and treating language and communication disorders. In this regard, we talk about smart diagnosis, which relies on artificial intelligence techniques to analyze data and provide accurate diagnoses, in addition to remote treatment, which allows digital platforms to provide remote treatment sessions, which facilitates access to treatment in some cases, such as remote areas, for example.

### **Third:**

The scientific researcher in the field of language and communication disorders faces many difficulties and challenges that may hinder his work and negatively affect the validity of the results he reaches. These difficulties can be limited to the following points:

1. The field has many and wide areas of research, and this is reflected in the great diversity of linguistic and communication disorders, in addition to their complexity, which makes researching them difficult due to the difficulty of classifying them, or establishing unified criteria to understand each case individually, such as autism, aphasia, stuttering, dysphasia...
2. The difficulty of accurately diagnosing early in many children, especially rare, atypical disorders, which require in-depth understanding, and there is often overlap with other conditions, such as psychological and behavioral disorders.
3. The lack of available materials, whether theoretical, as it is a newly emerging field compared to some fields in psychology, or field, with regard to data collection tools, and here we specifically mention scales or diagnostic tests, or the lack of qualified specialists in this field.
4. The entry of modern technologies into the field of language and communication disorders has been a double-edged sword. Despite their positive addition and contribution, especially in treatment and diagnosis, they represent a difficulty for the scientific researcher with the lack of training in this field. In addition, not all individuals may accept the use of technology or be able to deal with it.
5. Limited financial funding from donors or academic institutions, which may affect researchers' ability to conduct long-term studies or experiment with new technologies.
6. Difficulty in generalizing the results obtained due to the influence of language and communication disorders on cultural and social factors. It is difficult to collect diverse research samples that represent all age groups.

7. The difficulty of dealing with and analyzing complex data due to the large diversity of data types (such as audio, linguistic, neurological data...), and this requires advanced techniques to analyze this data accurately.

All of these difficulties and challenges constitute a burden on the researcher in the field of language and communication diseases, while they push them to search for innovative solutions that contribute to improving diagnostic and treatment methods, and providing greater support to affected communities.

### **Conclusion :**

Through the presentation and discussion of the results obtained, it became clear that scientific research is the foundation or main entry point for addressing various phenomena that affect the linguistic and communicative aspect of humans, by giving an explanation for them based on a set of scientific evidence, based on an organized methodology. All of this would help the orthopedic specialist develop diagnostic methods and build more accurate and effective treatment strategies. However, reality shows many points that stand as a barrier and weaken the process of exploring knowledge in this field. Theory is one thing and application is another. This relationship is still a pivotal issue in the development of this field.

No matter how precise and deep the theoretical knowledge is, the possibility of applying it or transferring it to the field or application is extremely difficult, and the evidence is that many studies, especially those that deal with the construction of diagnostic tools or therapeutic programs, and despite the scientific and methodological foundations on which these studies were built, most of them, if not all of them, remain dead letters that are impossible to embody on the field. This is because professional or field practice is subject to the specificity associated with each individual disorder on the one hand, and the specificity of each case and its needs on the other hand, meaning More precisely, theory needs to be applied in the field through field practice, and the latter does not achieve sustainable development in isolation from scientific research.

Accordingly, scientific research in the field of language and communication diseases, especially in recent times, has become largely focused on field or applied studies instead of remaining limited to the descriptive aspect only, and this in cooperation with other specializations such as psychology, neuroscience, medicine... etc. makes the results obtained more comprehensive.

Therefore, there should be a solid bridge between theory and practice, which would contribute to improving the quality of diagnosis, care, and raising the level of services provided to people with language and communication disorders ..

### **Suggestions and prospects:**

At the end of this study and in conclusion of this topic, we decided to present a set of suggestions and prospects, which would take the hand of the scientific researcher in the field of language and communication diseases and help him to complete and develop his studies, and achieve a shift in the field, especially with regard to the diagnosis and treatment of linguistic disorders, the most important of which are:

1. Moving towards studies that work to develop more accurate and rapid diagnostic tools using artificial intelligence and machine learning techniques, as they help him analyze data more accurately and effectively.
2. Focus on early intervention through early intervention programs for children with language disorders.
3. Strengthening cooperation between disciplines such as psychology, neuroscience, linguistics, medicine... would provide comprehensive and integrated solutions.
4. Using artificial intelligence to identify linguistic patterns in some cases, which helps in early detection and faster understanding of the disorder.
5. Researching how to improve the outcomes of early interventions by integrating behavioral and educational therapies and new technologies such as interactive applications.
6. Participatory research that may contribute to improving understanding of how neurological damage affects language ability.
7. Continuous training for specialists in language and communication diseases, through organizing training courses in the field of treatment. These trainings help in updating the skills of doctors and specialists in line with the latest developments in scientific research and available technologies.
8. Increasing financial support from government agencies and academic institutions for research projects in language and communication diseases would increase opportunities to conduct long-term studies and experiment with new therapeutic techniques, leading to advances in diagnosis and treatment .

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