

# Professional Master's Degree

## Neurological Disorders of Language and Communication

TECH is a member of:



International  
Communication  
Association



**tech** global  
university



## Professional Master's Degree Neurological Disorders of Language and Communication

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtitute.com/us/medicine/professional-master-degree/master-neurological-disorders-language-communication](http://www.techtitute.com/us/medicine/professional-master-degree/master-neurological-disorders-language-communication)

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01

# Introduction to the Program

Neurological Disorders of Language and Communication represent a clinical and social challenge, as they affect cognitive development and interpersonal interaction. These disorders can result from conditions such as Aphasia, Dysarthria, or Language Development Disorders, and their impact is significant. In fact, according to a study by the American Speech-Language-Hearing Association, approximately 7.5% of children have language difficulties, highlighting the need for a specialized approach. In light of this reality, TECH has developed a program that allows for in-depth assessment and intervention of these disorders, using a methodology based on high-quality teaching materials and a 100% online format, adapted to the professional demands of the industry.





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*With this 100% online Professional Master's Degree, which combines theory and practice, you will gain an in-depth understanding of Neurological Disorders of Language and Communication, including their assessment and treatment”*

Challenges in language production and comprehension have a significant impact on everyday life, cognitive development, and social interactions. In fact, identifying and addressing Neurological Language and Communication Disorders improves the quality of life of those who suffer from them, optimizing their communication skills and promoting their integration into different environments. Currently, advances in neuroscience and linguistics have enabled the design of more effective strategies for assessment and intervention.

In this context, TECH Global University will delve into the analysis of the brain areas involved in speech production and comprehension through an innovative syllabus, providing detailed knowledge on the psychopathology of language. In addition, innovative strategies for assessment and intervention in Disorders such as Dysphasia, Aphasia, and various Neurodegenerative Diseases will be addressed. Through a theoretical and practical approach, the neurobiological processes underlying these conditions will be analyzed, allowing for a comprehensive understanding of their impact on Communication.

Subsequently, this university program provides professionals with the necessary tools to interpret, diagnose, and design effective intervention plans in different clinical and educational contexts. It will also allow them to develop specialized criteria for selecting therapeutic techniques and resources tailored to each case, thus optimizing results in language rehabilitation. Constant updating in this field is essential, so the academic content will be geared toward strengthening analytical and decision-making skills in complex scenarios.

Thanks to TECH Global University's methodology, access to content is adapted to any schedule and need, without geographical limitations. The Relearning method will allow for the progressive assimilation of knowledge through the repetition of key concepts, facilitating a more solid and lasting understanding. With a 100% online learning environment, available 24 hours a day, 7 days a week, a flexible and highly effective learning experience will be promoted.

This **Professional Master's Degree in Neurological Disorders of Language and Communication** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Development of practical cases presented by experts in Neurological Disorders of Language and Communication
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*You will have access to a Virtual Campus equipped with high-quality multimedia material to delve into the most relevant issues related to Neurological Disorders of Language and Communication"*

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*You will master the analysis of the areas of the brain involved in speech production and comprehension with the support of various practical resources offered by this university program”*

The teaching staff includes professionals in the field of neurological language and communication disorders, who bring their work experience to this program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*TECH Global University offers the most innovative teaching methodology for addressing language psychopathology in today's educational field.*

*You will address disorders such as Dysphasia and various Neurodegenerative Diseases anytime, anywhere in the world.*





02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.





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*Study at the world's largest online university  
and guarantee your professional success.  
The future starts at TECH”*

### The world's best online university, according to FORBES

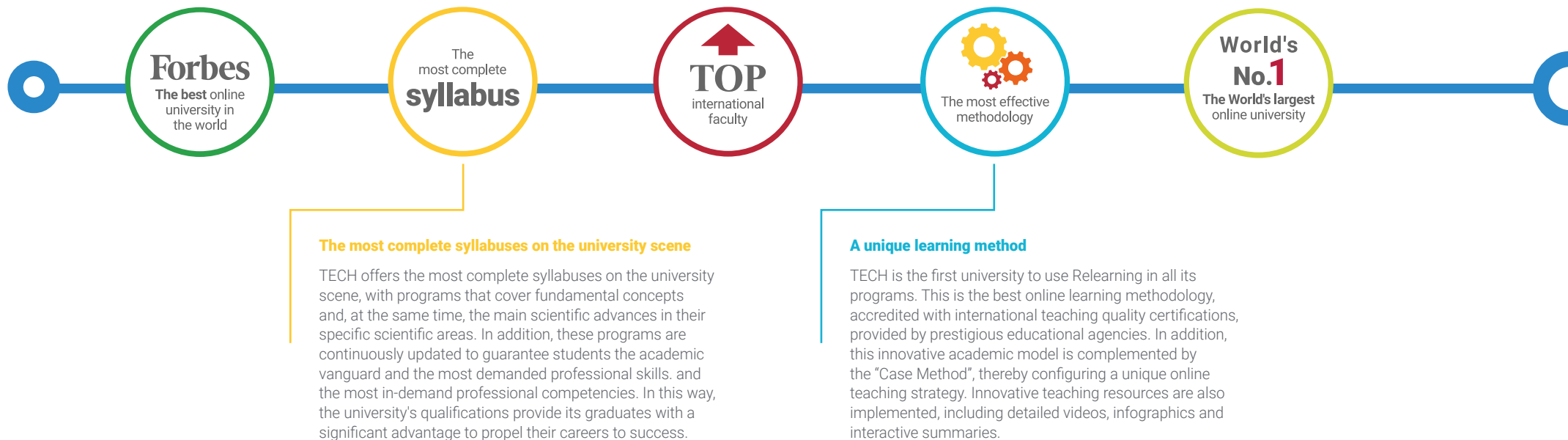
The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

### The best top international faculty

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

### The world's largest online university

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.



#### The official online university of the NBA

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

#### Leaders in employability

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



#### Google Premier Partner

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.



#### The top-rated university by its students

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.



# 03 Syllabus

This university program will provide a comprehensive approach to language disorders, enabling students to understand the underlying mechanisms of Speech Disorders and their impact on Communication. Through the analysis of the concept and classification of these disorders, skills will be developed for their identification and treatment in different clinical contexts. In fact, the program will delve into Neurodegenerative Diseases and Dementia, examining their relationship with language impairment and the most effective intervention strategies. Thanks to this knowledge, diagnostic and treatment capabilities are optimized, promoting professional practice based on scientific evidence.







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*The exclusive syllabus of this Professional Master's Degree has been designed to provide you with a comprehensive and specialized overview of the different areas of Neurodegenerative Diseases and Dementia”*

## Module 1. Anatomy and Physiology of the Nervous System

- 1.1. Introduction and Overview of the Nervous System
  - 1.1.1. Definition and Functions of the Nervous System
  - 1.1.2. Nervous System Classification
    - 1.1.2.1. Anatomical Classification
    - 1.1.2.2. Functional Classification
  - 1.1.3. Evolution and Development of the Nervous System
  - 1.1.4. Clinical Importance of Studying the Nervous System
- 1.2. Cellular Organization of the Nervous System
  - 1.2.1. Main Types of Cells
    - 1.2.1.1. Neurons
    - 1.2.1.2. Glial Cells
  - 1.2.2. Structure and Function of Neurons
    - 1.2.2.1. Soma
    - 1.2.2.2. Dendrites
    - 1.2.2.3. Axon
  - 1.2.3. Synapses and Neuronal Communication
  - 1.2.4. Neurotransmitters and Receptors
- 1.3. Anatomical Organization of the Nervous System: Central and Peripheral
  - 1.3.1. Central Nervous System (CNS)
    - 1.3.1.1. Brain
    - 1.3.1.2. Spinal Cord
  - 1.3.2. Peripheral Nervous System (PNS)
    - 1.3.2.1. Cranial Nerves
    - 1.3.2.2. Spinal Nerves
    - 1.3.2.3. Peripheral Ganglia
  - 1.3.3. Connections between the CNS and PNS

- 1.4. Spinal Cord, Brain Stem, and Cerebellum
  - 1.4.1. Spinal Cord
    - 1.4.1.1. Anatomical Organization
    - 1.4.1.2. Sensory and Motor Function
  - 1.4.2. Brain Stem
    - 1.4.2.1. Medulla Oblongata
    - 1.4.2.2. Protuberance
    - 1.4.2.3. Midbrain
  - 1.4.3. Cerebellum
    - 1.4.3.1. Anatomy of the Cerebellum
    - 1.4.3.2. Functions of the Cerebellum
    - 1.4.3.3. Cerebellar Connections
- 1.5. Diencephalon, Limbic System, and Basal Ganglia
  - 1.5.1. Diencephalon
    - 1.5.1.1. Thalamus
    - 1.5.1.2. Hypothalamus
    - 1.5.1.3. Epithalamus
  - 1.5.2. Limbic System
    - 1.5.2.1. Principal Components
    - 1.5.2.2. Function in Emotions and Memory
  - 1.5.3. Basal Ganglia
    - 1.5.3.1. Anatomical Structures
    - 1.5.3.2. Function in Motor Control
- 1.6. Cerebral Hemispheres
  - 1.6.1. Cerebral Lobes
    - 1.6.1.1. Frontal Lobe
    - 1.6.1.2. Parietal Lobe
    - 1.6.1.3. Temporal Lobe
    - 1.6.1.4. Occipital Lobe
  - 1.6.2. Hemispheric Functions
    - 1.6.2.1. The Left Hemisphere
    - 1.6.2.2. The Right Hemisphere
  - 1.6.3. Cerebral Cortex
    - 1.6.3.1. Sensory, Motor, and Association Areas

- 1.7. Vascularization of the Central Nervous System, Ventricular System, and Meninges
  - 1.7.1. Vascularization of the CNS
    - 1.7.1.1. Anterior Circulation: Carotid Arteries
    - 1.7.1.2. Posterior Circulation: Vertebrobasilar System
    - 1.7.1.3. Blood-Brain Barrier
  - 1.7.2. Ventricular System
    - 1.7.2.1. Cerebral Ventricles
    - 1.7.2.2. Circulation of Cerebrospinal Fluid
  - 1.7.3. Meninges
    - 1.7.3.1. Dura Mater
    - 1.7.3.2. Arachnoid Mater
    - 1.7.3.3. Pia Mater
- 1.8. Spinal Nerves and Cranial Nerves
  - 1.8.1. Spinal Nerves
    - 1.8.1.1. Organization and Plexuses
    - 1.8.1.2. Dermatomes and Myotomes
  - 1.8.2. Cranial Nerves
    - 1.8.2.1. Functions
    - 1.8.2.2. Main Pathways
- 1.9. Neuromotor Control of Speech
  - 1.9.1. Motor Pathways Involved
    - 1.9.1.1. Pyramidal Pathway
    - 1.9.1.2. Extrapyramidal Pathway
  - 1.9.2. Brain Areas Related to Speech
    - 1.9.2.1. Broca's Area and Supplementary Motor Area
    - 1.9.2.2. Primary Motor Cortex

- 1.10. Neurological Principles of Language
  - 1.10.1. Brain Structures Related to Language
    - 1.10.1.1. Characterization of Broca's and Wernicke's Areas: Location and Specific Functions
    - 1.10.1.2. Role of the Arcuate Fasciculus in the Connection Between Language Areas
    - 1.10.1.3. Contribution of the Right Hemisphere in Non-Verbal Aspects of Language
  - 1.10.2. Neural Processes in Language Acquisition and Production
    - 1.10.2.1. Brain Plasticity and Its Influence on Language Acquisition
    - 1.10.2.2. Neuronal Activation During Language Comprehension and Production
    - 1.10.2.3. Participation of the Basal Ganglia and Cerebellum in Linguistic Processes
  - 1.10.3. Neurological Disorders and Their Impact on Language
    - 1.10.3.1. Types of Aphasia: Clinical Characteristics and Affected Areas
    - 1.10.3.2. Language Disorders in Neurodegenerative Diseases (e.g., Alzheimer's, Parkinson's)
    - 1.10.3.3. Impact of Traumatic Brain Injury on Language Function

## Module 2. Neuropsychology of Language

- 2.1. Neuropsychology and Speech Therapy
  - 2.1.1. Basic Concepts
    - 2.1.1.1. Definition of Neuropsychology
    - 2.1.1.2. Relationship between Neuropsychology and Speech Therapy
    - 2.1.1.3. Cognitive Functions and their Relationship with Language
  - 2.1.2. Assessment Methodologies
    - 2.1.2.1. Neuroimaging Techniques
    - 2.1.2.2. Neuropsychological Assessment of Language
  - 2.1.3. Technique and Approach Route
    - 2.1.3.1. Interdisciplinary Approach to Speech Therapy
    - 2.1.3.2. Techniques for Neuropsychological Rehabilitation of Language
    - 2.1.3.3. Speech Therapy Strategies for the Treatment of Cognitive and Communicative Disorders

- 2.2. Neuroanatomical Bases of Language
  - 2.2.1. Brain Structures Involved
    - 2.2.1.1. Broca's and Wernicke's Areas
    - 2.2.1.2. Angular Gyrus and its Role in Reading
    - 2.2.1.3. Temporal Lobe and Its Relationship with Comprehension
  - 2.2.2. Brain Connections
    - 2.2.2.1. Arcuate Fasciculus
    - 2.2.2.2. Interhemispheric Connections
  - 2.2.3. Left vs. Right Brain in Language
    - 2.2.3.1. Hemispheric Dominance
    - 2.2.3.2. Function of the Right Hemisphere in Non-verbal Language
- 2.3. Neurocognitive Processes of Language
  - 2.3.1. Language Comprehension
    - 2.3.1.1. Phonological and Lexical Decoding
    - 2.3.1.2. Semantic and Pragmatic Comprehension
  - 2.3.2. Language Production
    - 2.3.2.1. Phonological Processing
    - 2.3.2.2. Lexical, Syntactic and Semantic Processing
  - 2.3.3. Memory and Language
    - 2.3.3.1. Verbal Working Memory
    - 2.3.3.2. Long-Term Memory and Language
- 2.4. Neuronal Plasticity and Language
  - 2.4.1. Concept of Brain Plasticity
    - 2.4.1.1. Definition and Types of Brain Plasticity
    - 2.4.1.2. Factors Influencing Brain Plasticity
  - 2.4.2. Mechanisms of Neuronal Plasticity
    - 2.4.2.1. Synaptic Plasticity and its Role in Learning
    - 2.4.2.2. Neurogenesis and its Implication in Brain Repair
  - 2.4.3. Impact of Plasticity on Language Recovery
    - 2.4.3.1. Adaptation Mechanisms in Language Disorders
    - 2.4.3.2. Cortical Plasticity in Language Restructuring
  - 2.4.4. Age and Plasticity
    - 2.4.4.1. Effects of Early Age on Neuronal Plasticity
    - 2.4.4.2. Plasticity in Adulthood and its Relationship with Language Learning
  - 2.4.5. Brain Rehabilitation and Stimulation
    - 2.4.5.1. Brain Stimulation Techniques for Language Rehabilitation
    - 2.4.5.2. Speech Therapies and their Impact on Neuronal Plasticity
- 2.5. Neurobiological Language Disorders in Children
  - 2.5.1. Speech Disorders
    - 2.5.1.1. Speech Disorders
    - 2.5.1.2. Childhood Apraxia
    - 2.5.1.3. Childhood Dysarthria
  - 2.5.2. Language Disorders
    - 2.5.2.1. Specific Language Impairment (SLI)
    - 2.5.2.2. Developmental Language Disorder
    - 2.5.2.3. Simple Language Delay
  - 2.5.3. Related Disorders and Neurodevelopmental Disorders
    - 2.5.3.1. Acquired Childhood Aphasia
    - 2.5.3.2. Autism Spectrum Disorder
    - 2.5.3.3. Down Syndrome
    - 2.5.3.4. Cerebral Palsy
- 2.6. Neuropsychological Assessment of Language in Children
  - 2.6.1. Assessment Techniques
    - 2.6.1.1. Standardized Tests
    - 2.6.1.2. Clinical and Observational Assessment
  - 2.6.2. Specific Neuropsychological Instruments
    - 2.6.2.1. Verbal Fluency Assessment
    - 2.6.2.2. Language Development Scales
  - 2.6.3. Interpretation of Results
    - 2.6.3.1. Analysis of Language Skills
    - 2.6.3.2. Identification of Disorders and Comorbidities
- 2.7. Neuropsychological Rehabilitation in Children
  - 2.7.1. Early Interventions
    - 2.7.1.1. Language Therapy
    - 2.7.1.2. Early Stimulation Approaches
  - 2.7.2. Specific Therapeutic Approaches
    - 2.7.2.1. Therapies Based on Games
    - 2.7.2.2. Cognitive-Behavioral Therapy for Language
  - 2.7.3. Rehabilitation Techniques
    - 2.7.3.1. Brain Plasticity Therapies
    - 2.7.3.2. Language Rehabilitation Using Technology



- 2.8. Neurobiological Language Disorders in Adults
  - 2.8.1. Aphasia
    - 2.8.1.1. Broca's Aphasia
    - 2.8.1.2. Wernicke's Aphasia
    - 2.8.1.3. Global Aphasia
  - 2.8.2. Disorders Related to Acquired Brain Injury
    - 2.8.2.1. Dysarthria
    - 2.8.2.2. Speech Apraxias
  - 2.8.3. Neurodegenerative Disorders
    - 2.8.3.1. Alzheimer's Disease and Language
    - 2.8.3.2. Language Disorders in Amyotrophic Lateral Sclerosis (ALS)
    - 2.8.3.3. Language Disorders in Parkinson's Disease
- 2.9. Neuropsychological Assessment of Language in Adults
  - 2.9.1. Neuropsychological Tests in Adults
    - 2.9.1.1. Assessment of Aphasias
    - 2.9.1.2. Assessment of Cognitive and Linguistic Disorders
  - 2.9.2. Diagnostic Methods
    - 2.9.2.1. Clinical Interviews and Medical History
    - 2.9.2.2. Functional Assessment Scales
  - 2.9.3. Interpretation of Results in Adults
    - 2.9.3.1. Assessment of Verbal Disfluency
    - 2.9.3.2. Differentiation between Aphasia and Dementia
- 2.10. Neuropsychological Rehabilitation in Adults
  - 2.10.1. Rehabilitation after a Cerebrovascular Accident (CVA)
    - 2.10.1.1. Post-CVA Speech Therapy
    - 2.10.1.2. Approaches Based on Neuroplasticity
  - 2.10.2. Rehabilitation in Neurodegenerative Diseases
    - 2.10.2.1. Intervention Approaches in Alzheimer's Disease
    - 2.10.2.2. Language Rehabilitation in Amyotrophic Lateral Sclerosis (ALS)
  - 2.10.3. Emerging Therapies
    - 2.10.3.1. Cognitive-Behavioral Therapy in Aphasia
    - 2.10.3.2. Use of Technologie for Language Rehabilitation

### Module 3. Psychopathology of Language

- 3.1. Introduction and Objectives
  - 3.1.1. Concept and Fundamentals of Psychopathology of Language
    - 3.1.1.1. Differentiation between Normal and Pathological Disorders
    - 3.1.1.2. Historical Evolution of the Concept
    - 3.1.1.3. Relationship between Language and Psychopathology
  - 3.1.2. Concept and Classification of Language Disorders
    - 3.1.2.1. Concept of Disorder, Impairment, Disturbance, and Delay
    - 3.1.2.2. Classification of Language Disorders
  - 3.1.3. Models in Psychopathology of Language
    - 3.1.3.1. Biomedical and Rehabilitation Model
    - 3.1.3.2. Biopsychosocial Model
  - 3.1.4. Differentiating between Linguistic and Psycholinguistic Disorders
    - 3.1.4.1. Primary vs. Secondary Language Disorders
    - 3.1.4.2. Relationship with Other Psychological Disorders
- 3.2. Neurodevelopmental and Communication Disorders
  - 3.2.1. Types of Communication Disorders
    - 3.2.1.1. Expressive and Receptive Language Disorders
    - 3.2.1.2. Verbal Fluency Disorders: Stuttering
    - 3.2.1.3. Social Communication Disorder (Pragmatic)
    - 3.2.1.4. Disorders of Voice and Articulation of Speech
  - 3.2.2. Disorders of Speech Sounds in Children
    - 3.2.2.1. Dyslalia
    - 3.2.2.2. Childhood Dysarthria
    - 3.2.2.3. Phonological Disorder
    - 3.2.2.4. Changes in Articulation and Normal Speech Development
  - 3.2.3. Simple Speech and Language Delay
    - 3.2.3.1. Definition and Characteristics of Simple Language Delay
    - 3.2.3.2. Assessment of Speech and Language Delay
    - 3.2.3.3. Progression and Prognosis of Simple Language Delay
    - 3.2.3.4. Risk and Protective Factors in Simple Delay
  - 3.2.4. Explanatory Models
    - 3.2.4.1. Cognitive Model and Its Application to Communication Disorders
    - 3.2.4.2. Neurobiological Model of Speech and Language Disorders
    - 3.2.4.3. Psychosocial Model
    - 3.2.4.4. Interactive and Integrative Model

- 3.3. Neurodevelopment Disorders. Attention Deficit Hyperactivity Disorder
  - 3.3.1. Conceptual Approach and Brief Historical Overview
    - 3.3.1.1. Concept and Diagnostic Criteria for Attention Deficit Hyperactivity Disorder (ADHD)
    - 3.3.1.2. Distinction Between ADHD, Impulsivity, and Behavioral Disorders
    - 3.3.1.3. Etiology of ADHD: Genetic, Neurobiological, and Environmental Factors
    - 3.3.1.4. Evolution of the Concept Throughout History
    - 3.3.1.5. Early Diagnoses and the Transition to the Current Model
  - 3.3.2. Classification and Clinical Manifestations
    - 3.3.2.1. Classification of ADHD According to the DSM-5
    - 3.3.2.2. Clinical Manifestations of ADHD in Children and Adolescents
    - 3.3.2.3. Differential Diagnosis
  - 3.3.3. Hyperactivity and Other Disorders
    - 3.3.3.1. Hyperactivity Features in ADHD
    - 3.3.3.2. Disorders Linked to Hyperactivity
    - 3.3.3.3. Interventions and Treatments for Hyperactivity: Pharmacological and Behavioral
    - 3.3.3.4. Educational Intervention
  - 3.3.4. Impact of ADHD on Language Development
    - 3.3.4.1. Difficulties in Language Comprehension and Expression
    - 3.3.4.2. Disorders linked to Language Production
    - 3.3.4.3. Intervention in Language Development in Kids with ADHD
  - 3.3.5. Changes in Pragmatics and Verbal Fluency
    - 3.3.5.1. Pragmatic Difficulties in ADHD
    - 3.3.5.2. Verbal Fluency in ADHD
    - 3.3.5.3. Treatment of Pragmatic and Verbal Fluency Disorders
- 3.4. Autism Spectrum Disorders (ASD)
  - 3.4.1. General Conceptualization of ASD
  - 3.4.2. Importance of Studying ASD in Speech-Language Pathology
  - 3.4.3. Definition and Characteristics
    - 3.4.3.1. General Characteristics of ASD
    - 3.4.3.2. Early Signs and Progression
  - 3.4.4. Classification
    - 3.4.4.1. Diagnostic Criteria (DSM-5 and ICD-10)
    - 3.4.4.2. Types of ASD: Mild, Moderate, and Severe
  - 3.4.5. Psychopathology of Language in ASD
    - 3.4.5.1. Communication and Language Difficulties
    - 3.4.5.2. Pragmatic Language Disorders
    - 3.4.5.3. Prosody and Syntax Disorders
- 3.5. Specific Learning Disorders
  - 3.5.1. Concept and Classification of Neurodevelopmental Disorders
    - 3.5.1.1. Relationship between Specific Learning Disorders and Other Neurodevelopmental Disorders
  - 3.5.2. Definition and Characteristics
    - 3.5.2.1. Definition of Specific Learning Disorders
    - 3.5.2.2. Common Characteristics and Differences from Other Conditions
  - 3.5.3. Types of Specific Learning Disorders
    - 3.5.3.1. Dyslexia
    - 3.5.3.2. Dyscalculia
    - 3.5.3.3. Reading and Writing Learning Disorder
  - 3.5.4. Explanatory Models
    - 3.5.4.1. Neuropsychological Models
    - 3.5.4.2. Cognitive Models
    - 3.5.4.3. Environmental and Genetic Factors
- 3.6. Intellectual Disability, Sensory Impairments, Neurological Injuries, and Environmental Deprivation
  - 3.6.1. Concept and Characteristics of the Intellectual Disability
    - 3.6.1.1. Impact of Sensory Impairments and Neurological Injuries
    - 3.6.1.2. Definition and Characteristics of Intellectual Disability
  - 3.6.2. Diagnostic Criteria and Levels of Disability
    - 3.6.2.1. DSM-5 and ICD-10 Criteria for the Diagnosis of Intellectual Disability
    - 3.6.2.2. Levels of Disability and Their Implications for Treatment
  - 3.6.3. Explanatory Models of Intellectual Disability
    - 3.6.3.1. Genetic and Neurological Models
    - 3.6.3.2. Environmental and Cultural Approaches



- 3.6.4. Assessment of Intellectual Disability
  - 3.6.4.1. Diagnostic Tools and Their Application
  - 3.6.4.2. Early Intervention Strategies
- 3.6.5. Cerebral Palsy, Blindness, Deafness, and Social Isolation
  - 3.6.5.1. Repercussions of Cerebral Palsy on Motor and Cognitive Development
  - 3.6.5.2. Impact of Blindness and Deafness on Language Acquisition
- 3.6.6. Effects of Sensory Impairments on Language Development
  - 3.6.6.1. Cerebral Palsy and its Relationship to Language
  - 3.6.6.2. Interventions to Improve Communication in Sensory Impairments
- 3.6.7. Social Isolation and its Impact on Communicative Development
  - 3.6.7.1. Effects of Social Isolation on the Acquisition of Communication Skills
  - 3.6.7.2. Strategies to Promote Social and Communication Integration
- 3.7. Psychopathology in Personality Disorders and Psychotic Disorders
  - 3.7.1. Definition of Personality Disorders and Psychotic Disorders
    - 3.7.1.1. Relationship with Language and Communication
    - 3.7.1.2. Personality, Characteristics, and Classification of Personality Disorders
  - 3.7.2. Personality Disorders
    - 3.7.2.1. Borderline Personality Disorder
    - 3.7.2.2. Narcissistic and Antisocial Disorder
    - 3.7.2.3. Avoidant and Dependent Disorder
    - 3.7.2.4. Language Disorders in Personality Disorders
  - 3.7.3. Schizophrenia and Other Psychotic Disorders
    - 3.7.3.1. Characteristics of Schizophrenia
    - 3.7.3.2. Other Psychotic Disorders (Schizoaffective Disorder, Delusional Disorder)
    - 3.7.3.3. Language Disorders in Psychotic Disorders
    - 3.7.3.4. Hallucinations and Their Impact on Language
- 3.8. Psychopathology of Language in Other Clinical Conditions and Consequences for the Environment
  - 3.8.1. Relationship between Psychopathology and Language Disorders in Different Clinical Conditions
  - 3.8.2. Consequences for the Social and Family Environment
  - 3.8.3. Depression and Mania
  - 3.8.4. Characteristics of Affective Disorders
  - 3.8.5. Effects of Depression and Mania on Language

- 3.8.6. Language Disorders in Affective Disorders
- 3.8.7. Anxiety Disorders
  - 3.8.7.1. Types of Anxiety Disorders (Generalized, Phobic, Social)
  - 3.8.7.2. Impact of Anxiety on Language
  - 3.8.7.3. Language Disorders in Anxiety Disorders
- 3.8.8. Dementia and Language Disorders
  - 3.8.8.1. Effects of Dementia on Language (Aphasia, Apraxia)
  - 3.8.8.2. Treatment and Management of Language Disorders Associated with Dementia
  - 3.8.8.3. Family, School, and Social Environment in Psychopathology of Language
- 3.9. Impact of Language Disorders on Child and Adolescent Mental Health
  - 3.9.1. Relationship between Language Disorders and Mental Health in Childhood and Adolescence
    - 3.9.1.1. Importance of Early Diagnosis and Intervention
    - 3.9.1.2. Language Disorders and Emotional Development
    - 3.9.1.3. Effects of Language Disorders on Self-Esteem and Self-Confidence
    - 3.9.1.4. Impact on Social Skills and School Integration
  - 3.9.2. Language Disorders and Anxiety Disorders
    - 3.9.2.1. Relationship between Communication Difficulties and Anxiety Disorders in Children and Adolescents
    - 3.9.2.2. Linguistic Manifestations Associated with Anxiety (Evasion, Incoherence, Among Others)
  - 3.9.3. Language Disorders and Depressive Disorders
    - 3.9.3.1. Effects of Language Disorders on the Development of Depression in Children and Adolescents
    - 3.9.3.2. Linguistic Characteristics of Depressive Disorders (Monotonous Speech, Reduced Vocabulary, etc.)
  - 3.9.4. Language Disorders and Behavioral Disorders
    - 3.9.4.1. Relationship between Language Difficulties and Behavioral Disorders in Children and Adolescents
    - 3.9.4.2. Influence of Communicative Frustration on Disruptive Behaviors
- 3.10. The Role of Speech Therapists in the Rehabilitation of Patients with Schizophrenia and Language Disorders
  - 3.10.1. The Impact of Schizophrenia on Language and Communication
    - 3.10.1.1. The Importance of Language Rehabilitation in Schizophrenic Patients
    - 3.10.1.2. Linguistic Characteristics in Schizophrenia
    - 3.10.1.3. Impairments in Language Fluency, Coherence, and Structure
  - 3.10.2. The Role of the Speech Therapist in Diagnosis and Assessment
    - 3.10.2.1. Language Assessment Tools for Patients with Schizophrenia
    - 3.10.2.2. Identification of Associated Language Disorders (Aphasia, Dysarthria, etc.)
  - 3.10.3. Speech Therapy Intervention in Schizophrenia
    - 3.10.3.1. Therapies Aimed at Improving Verbal and Non-Verbal Communication
    - 3.10.3.2. Techniques for Restructuring Speech and Improving Fluency
    - 3.10.3.3. Interventions in Prosody, Syntax, and Semantic Disorders
    - 3.10.3.4. Treatment of Speech Disorders in Schizophrenia
    - 3.10.3.5. Strategies for Treating Dysarthria and Mutism
  - 3.10.4. Interdisciplinary Work in Schizophrenia Rehabilitation
    - 3.10.4.1. Collaboration between Speech Therapists, Psychiatrists, and Psychologists for a Comprehensive Approach
    - 3.10.4.2. Assessment of the Social and Family Environment and Its Impact on Language Rehabilitation
    - 3.10.4.3. Prognosis and Monitoring

## Module 4. Linguistics Applied to Language Disorders

- 4.1. The Importance of Linguistics in the Clinical Field
  - 4.1.1. Introduction to Applied Linguistics
  - 4.1.2. The Relevance of Applied Linguistics in Language Disorders: Justification and Approach
  - 4.1.3. Clinical Linguistics: Definition and Scope of Application
    - 4.1.3.1. Clinical Linguistics and Its Relationship with Psychology and Neurology
    - 4.1.3.2. Linguistic Tools in the Assessment of Language Disorders
    - 4.1.3.3. The Role of the Clinical Linguist in Language Treatment



- 4.2. Language as an Innate Ability
  - 4.2.1. Language as an Innate Human Ability
  - 4.2.2. Language Acquisition: Differences between Learning and Development
    - 4.2.2.1. Chomsky's Nativist Theory: Implications for Language Acquisition
    - 4.2.2.2. Cognitive and Environmental Factors in Language Learning
  - 4.2.3. Early Language Stimulation: A Key Element in Language Development
    - 4.2.3.1. Early Communicative Interaction and Language
    - 4.2.3.2. Nature vs. Nurture
  - 4.2.4. Innate Ability and the Critical Period
    - 4.2.4.1. The Critical Period Hypothesis: Empirical Evidence and Controversies
    - 4.2.4.2. Impact of Early Interventions on Language Development
- 4.3. Linguistic Description of Language Processing
  - 4.3.1. Introduction to Language Processing
  - 4.3.2. Linguistic Processing: Definition and Cognitive Mechanisms
    - 4.3.2.1. Cognitive Models of Language Processing
    - 4.3.2.2. Differences between Auditory and Visual Language Processing
  - 4.3.3. Linguistic Comprehension and Production
    - 4.3.3.1. Oral Comprehension
    - 4.3.3.2. Oral Production
    - 4.3.3.3. Role of Working Memory in Language Comprehension
    - 4.3.3.4. Linguistic Production: A Study of the Cognitive Processes Involved
- 4.4. Phonology
  - 4.4.1. Concept of Phonology
    - 4.4.1.1. Phoneme
    - 4.4.1.2. Phonological System
    - 4.4.1.3. Phonological Inventory
  - 4.4.2. The Sound Component of Language: Processing and Production
    - 4.4.2.1. Sound Articulation: Fundamentals and Cognitive Mechanisms
    - 4.4.2.2. Perception of the Sound Component: Factors Involved
  - 4.4.3. Phonetic and Phonological Skills: Production
    - 4.4.3.1. Phonological Production: Clinical Implications
    - 4.4.3.2. Disorders in Phonetic Production: Causes and Diagnosis
  - 4.4.4. Phonetic and Phonological Skills: Perception
    - 4.4.4.1. Assessment of Perception Phonology
- 4.5. Morphosyntax
  - 4.5.1. Concept of Morphosyntax
    - 4.5.1.1. Morphology of Words
    - 4.5.1.2. Syntax
    - 4.5.1.3. Relationship between Morphology and Syntax
  - 4.5.2. Definition and Processing of the Morphosyntactic Component of Language
    - 4.5.2.1. Theories of Syntactic Structure
    - 4.5.2.2. Morphology Processing
  - 4.5.3. Morphological Skills and Their Impairment
    - 4.5.3.1. Morphological Disorders
    - 4.5.3.2. Diagnosis of Morphological Impairments
  - 4.5.4. Syntactic Skills and Their Impairment
    - 4.5.4.1. Syntactic Disorders: Assessment and Treatment
    - 4.5.4.2. Clinical Implications of Syntax Impairment
- 4.6. The Lexical-Semantic Level
  - 4.6.1. The Lexical-Semantic Component of Language: Definition and Processing
    - 4.6.1.1. Semantics: Structures and Principles
    - 4.6.1.2. Lexicon: Representation and Access
  - 4.6.2. The Importance of Vocabulary: Its Relevance in Language Development
    - 4.6.2.1. Vocabulary in Children and Adults: Differences in Processing
    - 4.6.2.2. Factors that Affect Vocabulary
  - 4.6.3. The Use of Lexicon
    - 4.6.3.1. Synonymy
    - 4.6.3.2. Antonymy
    - 4.6.3.3. Hypernymy
  - 4.6.4. Organization of the Semantic System
    - 4.6.4.1. Implications for Linguistic Comprehension and Production
    - 4.6.4.2. Semantic Hierarchies and Relationships

- 4.7. The Pragmatic Level and Its Impairments
  - 4.7.1. The Pragmatics of Language and Social Context
    - 4.7.1.1. The Role of Context in the Interpretation of Meaning
    - 4.7.1.2. Communicative Functions
  - 4.7.2. Narrative Skills and Their Impairment
    - 4.7.2.1. The Production of Narrative Discourse: Assessment and Impairments
    - 4.7.2.2. Disorders in the Narrative: Causes and Clinical Consequences
  - 4.7.3. Conversational Skills and Their Impairment
    - 4.7.3.1. The Role of Pragmatics in Conversation
    - 4.7.3.2. Disorders in Conversational Interaction: Assessment and Treatment
  - 4.7.4. Impairments in Pragmatic Skills: Clinical Implications
    - 4.7.4.1. Pragmatic Disorders: Causes and Diagnosis
    - 4.7.4.2. Treatment of Disorders in the Social Use of Language
- 4.8. Phonetic-Phonological Component Disorders
  - 4.8.1. Causes of Phonological Disorders
    - 4.8.1.1. Acquired
    - 4.8.1.2. Congenital
  - 4.8.2. Phonological Production Disorders
    - 4.8.2.1. Articulation Disorders: Diagnosis and Treatment
    - 4.8.2.2. Phonological Disorders: Articulation Disorders:
  - 4.8.3. Impairments in Phonological Perception
    - 4.8.3.1. Difficulties in Phonological Perception: Cognitive Consequences
    - 4.8.3.2. Methods for Assessing Sound Perception
  - 4.8.4. Clinical Examples of Phonetic and Phonological Impairments
    - 4.8.4.1. Cases of Sound Production Disorders
    - 4.8.4.2. Cases of Sound Perception Disorders
- 4.9. Impairments of the Morphosyntactic Component
  - 4.9.1. Implications of Impairments of the Morphosyntactic Component of Language
    - 4.9.1.1. Characteristics of Language Development Disorders
    - 4.9.1.2. Characteristics of Acquired Language Disorders
  - 4.9.2. Morphosyntactic Production and Comprehension Disorders in Children
    - 4.9.2.1. Language Acquisition Impairments: Morphosyntactic Implications
    - 4.9.2.2. Developmental Disorders in Children with Language Delay
  - 4.9.3. Acquired Disorders Due to Neurological Injury: Impairments in Morphosyntactic Production and Comprehension
    - 4.9.3.1. Aphasia and Morphosyntactic Disorders: Assessment and Treatment
    - 4.9.3.2. Consequences of Neurological Lesions on Syntactic Structure
  - 4.9.4. Examples of Morphosyntactic Impairments
    - 4.9.4.1. Cases of Syntactic Aphasia
    - 4.9.4.2. Cases of Language Disorders in Children
- 4.10. Impairments in the Pragmatic Component
  - 4.10.1. Pragmatic Impairments and Their Implications for Human Communication
    - 4.10.1.1. Definition and Characteristics of Pragmatic Impairments
    - 4.10.1.2. The Importance of Pragmatics in Social Interaction
  - 4.10.2. Main Impairments in Language Pragmatics
    - 4.10.2.1. Pragmatic Impairments in Children: Early Detection
    - 4.10.2.2. Pragmatic Impairments in Developmental Disorders
    - 4.10.2.3. Pragmatic Impairments in Neurological Disorders
  - 4.10.3. Assessment of Pragmatic Skills in Different Contexts
    - 4.10.3.1. Pragmatic Assessment Tools and Techniques
    - 4.10.3.2. Contextualized Assessment: Natural and Simulated Settings
  - 4.10.4. Intervention Strategies for Pragmatic Impairments
    - 4.10.4.1. Therapeutic Approaches Based on Real-Life Contexts
    - 4.10.4.2. Group Therapy for the Development of Pragmatic Skills
    - 4.10.4.3. Use of Technological Resources in Pragmatic Intervention

## Module 5. Dysphagia

- 5.1. Dysphagia Impaired Nonverbal Oral Function
  - 5.1.1. Altered Nonverbal Dysphagia
  - 5.1.2. Non-Verbal Oral Function: Swallowing
  - 5.1.3. Physiological Phases of Swallowing
  - 5.1.4. Oropharyngeal Dysphagia and Its Impact on Nonverbal Oral Function
- 5.2. Differential Diagnosis of Dysphagia
  - 5.2.1. Normal Swallowing
  - 5.2.2. Pathological Swallowing
  - 5.2.3. Painful Swallowing: Odynophagia
  - 5.2.4. Pharyngeal Globe

- 5.3. Classification of Dysphagia
  - 5.3.1. Types of Dysphagia
  - 5.3.2. Oropharyngeal Dysphagia
  - 5.3.3. Esophageal Dysphagia
  - 5.3.4. Functional Dysphagia
- 5.4. Causes of Dysphagia
  - 5.4.1. Causes of Oropharyngeal Dysphagia
  - 5.4.2. Causes of Esophageal Dysphagia
  - 5.4.3. Causes of Psychogenic Dysphagia
  - 5.4.4. Causes Latrogenic
- 5.5. Dysphagia Associated with Other Diseases
  - 5.5.1. Neurological Disorders
  - 5.5.2. Muscular Diseases
  - 5.5.3. Organic Diseases
  - 5.5.4. Imported Infectious
  - 5.5.5. Functional Diseases
- 5.6. Complications Associated with Dysphagia
  - 5.6.1. Decreased Swallowing Efficiency
    - 5.6.1.1. Undernourishment
    - 5.6.1.2. Dehydration
  - 5.6.2. Decreased Swallowing Safety
  - 5.6.3. Dependency and Increased Care
  - 5.6.4. Complications Arising from the Use of Artificial Nutrition
- 5.7. Interdisciplinarity in the Treatment of Dysphagia
  - 5.7.1. O.R.L
  - 5.7.2. Digestive System
  - 5.7.3. Physiotherapy
  - 5.7.4. Speech Therapy
- 5.8. Dysphagia and Other Verbal and Nonverbal Oral Functions
  - 5.8.1. Breathing
  - 5.8.2. Salivation
  - 5.8.3. Chewing
  - 5.8.4. Breathing
  - 5.8.5. Voice
  - 5.8.6. Speech

- 5.9. Dysphagia and Family Environment
  - 5.9.1. Changes in Eating Habits
  - 5.9.2. Guidelines for the Management of Dysphagia in the Family
  - 5.9.3. Social Impact and Dysphagia
  - 5.9.4. Conclusions
- 5.10. Dysphagia and Neuropsychological Status of the Patient and Environment
  - 5.10.1. Psychological Status of the Patient with Dysphagia
  - 5.10.2. Psychological State of the Family
  - 5.10.3. Neuropsychological Status of the Patient
  - 5.10.4. Executive Functions in the Patient with Dysphagia

## Module 6. Augmentative and Alternative Communication Systems

- 6.1. Overview of Augmentative and Alternative Communication
  - 6.1.1. Augmentative and Alternative Communication (AAC): Evolution and Development
    - 6.1.1.1. History of AAC in the Field of Speech Therapy
    - 6.1.1.2. Technological Advances in AAC
    - 6.1.1.3. Influence of Scientific Research on the Evolution of AAC
  - 6.1.2. Fundamental Concepts of Augmentative and Alternative Communication
    - 6.1.2.1. Definition of AAC
    - 6.1.2.2. Differences between Augmentative and Alternative Communication
    - 6.1.2.3. Main Objectives of AAC
  - 6.1.3. Classification of Augmentative and Alternative Communication
    - 6.1.3.1. Unassisted AAC vs. Service
    - 6.1.3.2. Low-, Medium-, and High-Tech AAC
    - 6.1.3.3. Classification According to Type of Disability
- 6.1.4. Evidence and Myths
  - 6.1.4.1. Main Scientific Evidence on the Effectiveness of AAC
  - 6.1.4.2. Debunking Misconceptions About AAC
  - 6.1.4.3. Impact of AAC on Language Development

- 6.2. Users of Augmentative and Alternative Communication
  - 6.2.1. Implications of Language Neurodevelopment in AAC
    - 6.2.1.1. The Impact of Neurological Disorders on the Use of AAC
    - 6.2.1.2. How AAC Promotes Language Development in Children with Delays
    - 6.2.1.3. Neuroplasticity and AAC
  - 6.2.2. Communicative Diversity and AAC Throughout Life
    - 6.2.2.1. Use of AAC in Childhood, Adolescence, Adulthood, and Old Age
    - 6.2.2.2. The Evolution of Communicative Needs as a Person Ages
    - 6.2.2.3. AAC and Its Implications for People with Progressive Disabilities
  - 6.2.3. Users of AAC Systems
    - 6.2.3.1. Characteristics and Profiles of Users
    - 6.2.3.2. Types of People with Disabilities Who Use AAC
    - 6.2.3.3. Stigmatization and Social Barriers Faced by AAC Users
  - 6.2.4. Evolutionary Perspective and Adaptation of AAC to Each User
    - 6.2.4.1. Factors Influencing the Selection of an Appropriate AAC System
    - 6.2.4.2. Methods for Assessing and Adjusting the AAC System
- 6.3. Unassisted Augmentative and Alternative Communication
  - 6.3.1. Conceptualization
    - 6.3.1.1. Relationship between Unassisted AAC and Motor and Cognitive Development
    - 6.3.1.2. Relationship between Cognitive and Linguistic Impairment and the Ability to Use Hand Signs and Gestures in Adults
  - 6.3.2. Unassisted AAC: Hand Gestures
    - 6.3.2.1. History and Use of Hand Gestures in AAC
    - 6.3.2.2. Types of Hand Gestures: Conventional vs. Unconventional
    - 6.3.2.3. Implementation of Hand Gestures in Everyday Life
  - 6.3.3. Unassisted AAC: Bimodal Systems
    - 6.3.3.1. Definition and Examples of Bimodal Systems
    - 6.3.3.2. Advantages of Bimodal Systems in the Development of Communication Skills
  - 6.3.4. Unassisted AAC: Commonly used Gestures
    - 6.3.4.1. Identifying Common Gestures and Their Use in Communication
    - 6.3.4.2. Cultural Adaptation of Gestures
    - 6.3.4.3. The Role of Gestures in Social Interaction
- 6.4. Augmentative and Alternative Communication with Assistance
  - 6.4.1. Conceptualization and Classification
    - 6.4.1.1. Key Differences between Unassisted and Assisted AAC
    - 6.4.1.2. Classification According to Level of Technological Dependence
  - 6.4.2. Assisted AAC: Low Technology
    - 6.4.2.1. Examples of Low-Tech Devices (Communication Boards, Pictograms)
    - 6.4.2.2. Advantages and Limitations of Low-Tech
    - 6.4.2.3. Implementation of Low-Tech Solutions in Educational and Clinical Settings
  - 6.4.3. Assisted AAC: Mid-Tech
    - 6.4.3.1. Devices Combining Analog and Digital Technology (Tablets with Apps)
    - 6.4.3.2. Flexibility and Adaptability of Mid-Tech Solutions
    - 6.4.3.3. Success Stories in the Use of Mid-Tech in Educational Settings
  - 6.4.4. Assisted AAC: High-Tech
    - 6.4.4.1. High-Tech Devices and Their Use (Voice-Generated Communication Systems, Brain-Computer Interfaces)
    - 6.4.4.2. Benefits and Challenges of High-Tech Solutions
    - 6.4.4.3. Accessibility and Costs of High-Tech Solutions
- 6.5. Selecting and Adapting the AAC System with User Support
  - 6.5.1. Selecting the Code
    - 6.5.1.1. Types of Codes Used in AAC Systems (Graphic, Pictographic, Verbal Codes)
    - 6.5.1.2. How to Select the Appropriate Code Based on the User Profile
    - 6.5.1.3. The Impact of the Code on Communicative Effectiveness
  - 6.5.2. Selecting the Vocabulary
    - 6.5.2.1. Selecting the Vocabulary Relevant to Each User
    - 6.5.2.2. Considerations Regarding Language Development When Selecting Vocabulary
    - 6.5.2.3. Vocabulary for Different Communicative Situations (Social, Academic, Personal)
  - 6.5.3. Support
    - 6.5.3.1. Importance of Training for Users and Communication Partners
    - 6.5.3.2. The Role of Emotional Support in the Success of AAC
    - 6.5.3.3. Support Networks and Resources for AAC Users



- 6.5.4. Access
  - 6.5.4.1. Modalities of Access to AAC Systems (Keyboard, Touch Screen, Eye Control, etc.)
  - 6.5.4.2. Adaptation of Systems to the Motor and Cognitive Abilities of the User
  - 6.5.4.3. Factors Affecting the Choice of an Appropriate Access Modality (Age, Disability, Environment)
- 6.6. Assessment of Users of Augmentative and Alternative Communication
  - 6.6.1. Participatory Model
    - 6.6.1.1. Importance of the Participation Model in Assessment
    - 6.6.1.2. User-Centered Assessment Methods
    - 6.6.1.3. Assessment in Context: Involvement of Family Members, Educators, and Therapists
  - 6.6.2. Communicative Competence
    - 6.6.2.1. Definition of Communicative Competence and Its Relationship to the Use of AAC
    - 6.6.2.2. Assessment of Communicative Competence in AAC Users
    - 6.6.2.3. Factors Affecting Communicative Competence
  - 6.6.3. Communicative Profiles
    - 6.6.3.1. Identifying Different Communicative Profiles in People with Disabilities
    - 6.6.3.2. Tools for Developing Comprehensive Communicative Profiles
    - 6.6.3.3. Using Profiles in Intervention Planning
  - 6.6.4. Assessment Tools
    - 6.6.4.1. Standardized Tools for Assessment of AAC
    - 6.6.4.2. Qualitative and Quantitative Methods in Assessment
    - 6.6.4.3. The Importance of Continuous Assessment
- 6.7. Principles of Intervention
  - 6.7.1. Assisted Natural Language
    - 6.7.1.1. Definition of Assisted Natural Language in AAC
    - 6.7.1.2. Success Stories in the Use of Assisted Natural Language
    - 6.7.1.3. Integration of Assisted Natural Language in the Educational Context
  - 6.7.2. Hierarchy of Supports
    - 6.7.2.1. Definition and Type of Supports in AAC (Physical, Cognitive, Social)
    - 6.7.2.2. Implementation of the Hierarchy of Supports in Intervention
    - 6.7.2.3. Adaptation of the Hierarchy of Supports According to the User's Level of Dependency
- 6.7.3. Communication Partners
  - 6.7.3.1. The Role of Communication Partners in the AAC Communication Process
  - 6.7.3.2. Training and Support for Communication Partners
  - 6.7.3.3. The Importance of Communication Partners in User Motivation
- 6.7.4. The Functions of Communication
  - 6.7.4.1. The Different Communicative Functions (Informative, Expressive, Social)
  - 6.7.4.2. How to Promote Communicative Functions through AAC
  - 6.7.4.3. The Role of AAC in Improving Communicative Functions
- 6.8. Design of the Intervention Plan
  - 6.8.1. The Right to Communication
    - 6.8.1.1. Legal Rights of People with Disabilities in Relation to AAC
    - 6.8.1.2. AAC as a Fundamental Right in Social Inclusion
  - 6.8.2. Intervention Objectives
    - 6.8.2.1. Establishing of Short, Medium and Long-Term Objectives
    - 6.8.2.2. Establishing Short-, Medium-, and Long-Term Objectives
  - 6.8.3. How to Define Functional Objectives in AAC Intervention
    - 6.8.3.1. Methods for Measuring the Impact of Intervention
    - 6.8.3.2. Communicative Competence Assessment Scales
    - 6.8.3.3. Quantifying Improvement in Communication
  - 6.8.4. Importance of Monitoring Intervention
    - 6.8.4.1. Relevance of the Intervention Implemented
    - 6.8.4.2. Adaptation to User Needs
- 6.9. Intervention from a Functional Approach
  - 6.9.1. AAC in the Family Environment
    - 6.9.1.1. Strategies for Involving the Family in AAC Intervention
    - 6.9.1.2. The Impact of AAC on Family Relationships
  - 6.9.2. AAC in the School Environment
    - 6.9.2.1. How to Integrate AAC in the Classroom
    - 6.9.2.2. Training and Awareness for Educational Staff
    - 6.9.2.3. Examples of Best Practices in the Use of AAC in the School Setting

- 6.9.3. AAC in the Clinical Setting
  - 6.9.3.1. AAC Intervention in Therapy
  - 6.9.3.2. Collaboration between Therapists and Family Members in the Use of AAC
  - 6.9.3.3. Challenges and Solutions in the Clinical Setting
- 6.10. Literacy and AAC Systems
  - 6.10.1. The Right to Literacy
    - 6.10.1.1. The Right to Literacy for People with Disabilities
    - 6.10.1.2. The Importance of Literacy as a Tool for Inclusion
  - 6.10.2. Emerging Literacy
    - 6.10.2.1. Concept and Stages of Emerging Literacy
    - 6.10.2.2. Strategies to Support Emerging Literacy in People with AAC
  - 6.10.3. Conventional Literacy
    - 6.10.3.1. Processes and Methods for Achieving Conventional Literacy
    - 6.10.3.2. Support Technologies for Conventional Literacy

## Module 7. Speech Disorders: Assessment and Intervention

- 7.1. Concept and Classification of Speech Disorders
  - 7.1.1. Articulation and Fluency
    - 7.1.1.1. Definition of Articulation
    - 7.1.1.2. Factors Affecting Fluency
  - 7.1.2. Conceptualization of Speech Disorders
    - 7.1.2.1. Speech Disorders and their Classification
    - 7.1.2.2. Differences between Speech Disorders and Language Disorders
  - 7.1.3. Classification of Speech Disorders
    - 7.1.3.1. Articulatory Disorders
    - 7.1.3.2. Fluency Disorders
  - 7.1.4. Incidence of Speech Disorders
    - 7.1.4.1. Risk Factors
    - 7.1.4.2. Prevalence in the Child Population



- 7.2. Speech Sound Disorders (Dyslalias)
  - 7.2.1. Development of Phonetics and Phonology
    - 7.2.1.1. The Role of Phonetics in Speech Production
    - 7.2.1.2. Relationship Between Phonology and Speech Sound Disorders
  - 7.2.2. Definition of SSD
    - 7.2.2.1. Functionals
    - 7.2.2.2. Organic
  - 7.2.3. Classification of SSD
    - 7.2.3.1. Simple
    - 7.2.3.2. Complex
    - 7.2.3.3. Phonetic
    - 7.2.3.4. Phonological
    - 7.2.3.5. Phonetic-Phonological
  - 7.2.4. SSD Etiology
    - 7.2.4.1. Biological Causes
    - 7.2.4.2. Social and Environmental Causes
- 7.3. Assessment of Speech Sound Disorders
  - 7.3.1. Diagnostic Criteria for SSD
    - 7.3.1.1. Assessment of Articulatory Accuracy
    - 7.3.1.2. Assessment of Phonological Coherence
  - 7.3.2. Phonetic Examination
    - 7.3.2.1. Identification of Articulation Errors
    - 7.3.2.2. Analysis of Sound Intensity and Duration
  - 7.3.3. Phonological Examination
    - 7.3.3.1. Assessment of Phoneme Production
    - 7.3.3.2. Identification of Phonological Patterns
    - 7.3.3.3. Assessment of Phonological Discrimination
  - 7.3.4. Standardized Assessment Tools for Dyslalia
    - 7.3.4.1. Articulation Tests
    - 7.3.4.2. Phonological Assessment Scales
- 7.4. Intervention in Speech Sound Disorders
  - 7.4.1. Establishment of Therapeutic Goals
    - 7.4.1.1. Planning of Individual and Group Sessions
  - 7.4.2. Activities for Intervention in Dyslalia
    - 7.4.2.1. Auditory Discrimination Exercises
    - 7.4.2.2. Practice in the Production of Specific Sounds
  - 7.4.3. Resources and Materials for Intervention in Dyslalia
    - 7.4.3.1. Use of Visual and Auditory Aids
    - 7.4.3.2. Teaching Materials for the Correction of Dyslalia
- 7.5. Dysarthria
  - 7.5.1. Neurological Bases of Speech
    - 7.5.1.1. The Central Nervous System and its Relation to Speech
    - 7.5.1.2. Neurological Disorders and their Impact on Verbal Production
  - 7.5.2. Definition of Dysarthria
    - 7.5.2.1. Spastic Dysarthria
    - 7.5.2.2. Ataxic Dysarthria
  - 7.5.3. Classification of Dysarthria
    - 7.5.3.1. Flaccid Dysarthria
    - 7.5.3.2. Rigid Dysarthria
  - 7.5.4. Etiology of Dysarthria
    - 7.5.4.1. Acquired Brain Lesions
    - 7.5.4.2. Genetic Disorders
- 7.6. Assessment of Dysarthrias
  - 7.6.1. Diagnostic Criteria for Dysarthria
    - 7.6.1.1. Identification of Motor Impairments
    - 7.6.1.2. Assessment of Speech Coordination and Accuracy
  - 7.6.2. Neurophysiological Examination
    - 7.6.2.1. Basic Neurological Examinations
    - 7.6.2.2. Assessment of Oral Motor Function
  - 7.6.3. Speech Examination
    - 7.6.3.1. Verbal Clarity Analysis
    - 7.6.3.2. Assessment of Speech Rate and Rhythm
  - 7.6.4. Acoustic Examination
    - 7.6.4.1. Spectrographic Analysis
    - 7.6.4.2. Measurement of Voice Resonance

- 7.7. Intervention in Dysarthria
  - 7.7.1. Design of the Intervention Plan
    - 7.7.1.1. Short- and Long-Term Therapeutic Objectives
    - 7.7.1.2. Planning Rehabilitation Sessions
  - 7.7.2. Intervention in Speech Aspects
    - 7.7.2.1. Exercises to Improve Articulation
    - 7.7.2.2. Techniques to Improve Prosody
  - 7.7.3. Technical Aids for Intervention
    - 7.7.3.1. Voice Amplification Devices
    - 7.7.3.2. Use of Assistive Technology in Communication
  - 7.7.4. Augmentative and Alternative Communication
    - 7.7.4.1. Non-verbal Communication Systems
    - 7.7.4.2. Implementation of Communication Devices
- 7.8. Dysphemia
  - 7.8.1. Definition of Dysphemia
    - 7.8.1.1. Dysphemia as a Rhythm Disorder
    - 7.8.1.2. Relationship between Dysphemia and Anxiety
  - 7.8.2. Classification of Dysphemia
    - 7.8.2.1. Early-Onset Dysphemia
    - 7.8.2.2. Acquired Dysphemias
  - 7.8.3. Etiology of Dysphemias
    - 7.8.3.1. Psychological Factors
    - 7.8.3.2. Biological Factors
  - 7.8.4. Others Rhythm and Fluency Disorders
    - 7.8.4.1. Tachylalia and Bradylalia
    - 7.8.4.2. Non-pathological Disfluencies
- 7.9. Assessment of Dysphemia
  - 7.9.1. Diagnostic Criteria for Dysphemia
    - 7.9.1.1. Identification of Speech Blockages
    - 7.9.1.2. Assessment of Associated Emotional Symptoms
  - 7.9.2. Patient Assessment
    - 7.9.2.1. Clinical Interviews
    - 7.9.2.2. Specific Tests of Verbal Fluency
  - 7.9.3. Assessment of Family Members
    - 7.9.3.1. Surveys on Family History
    - 7.9.3.2. Social and Family Impact Assessment
  - 7.9.4. Assessment of Other Variables
    - 7.9.4.1. Emotional and Cognitive Assessment
    - 7.9.4.2. Analysis of Social Interaction
- 7.10. Intervention in Dysphemia
  - 7.10.1. Design of the Intervention Plan
    - 7.10.1.1. Establishment of Communicative Goals
    - 7.10.1.2. Relaxation and Stress Control Techniques
  - 7.10.2. Dysphemia Intervention Techniques
    - 7.10.2.1. Fluency Therapy
    - 7.10.2.2. Behavior Modification Techniques
  - 7.10.3. Intervention with Families
    - 7.10.3.1. Advice for Parents and Caregivers
    - 7.10.3.2. Workshops and Family Emotional Support
  - 7.10.4. Intervention Programs
    - 7.10.4.1. Group Therapy
    - 7.10.4.2. Educational and Awareness Programs

## Module 8. Neurodegenerative Diseases and Dementia

- 8.1. Normal Aging
  - 8.1.1. Introduction to Speech and Language Disorders in Neurological Diseases
    - 8.1.1.1. Definition of Speech and Language Disorders
    - 8.1.1.2. Relationship between Aging and Speech Disorders
  - 8.1.2. General Mechanisms of Aging
    - 8.1.2.1. Cellular and Tissue Changes
    - 8.1.2.2. Impact of Aging on the Nervous System
  - 8.1.3. Brain Aging
    - 8.1.3.1. Structural Changes in the Brain
    - 8.1.3.2. Impairments in Brain Function
  - 8.1.4. Age-Related Cognitive Changes
    - 8.1.4.1. Normal vs. Pathological Cognitive Impairment
    - 8.1.4.2. Effects of Aging on Memory and Learning



- 8.2. Alzheimer's Disease and Other Dementias
  - 8.2.1. Dementia and Mild Cognitive Impairment
    - 8.2.1.1. Difference between Dementia and Mild Cognitive Impairment
    - 8.2.1.2. Diagnostic Criteria
  - 8.2.2. Risk Factors
    - 8.2.2.1. Prevalence of Dementia
    - 8.2.2.2. Modifiable and Non-Modifiable Risk Factors
  - 8.2.3. Alzheimer's Disease
    - 8.2.3.1. Clinical Characteristics and Diagnosis
    - 8.2.3.2. Current Treatments for Alzheimer's Disease
  - 8.2.4. Other Neurodegenerative Dementias
    - 8.2.4.1. Frontotemporal Dementia
    - 8.2.4.2. Lewy Body Dementia
  - 8.2.5. Secondary Dementias
    - 8.2.5.1. Metabolic and Vascular Causes of Dementia
    - 8.2.5.2. Treatment of Secondary Dementias
  - 8.2.6. Treatment of Dementias
    - 8.2.6.1. Pharmacological Treatment
    - 8.2.6.2. Non-Pharmacological Interventions
- 8.3. Speech Therapy Assessment and Intervention in Dementia
  - 8.3.1. General Objectives of Speech Therapy Intervention
    - 8.3.1.1. Main Goals of Speech Therapy Assessment
  - 8.3.2. Objectives and Functions of the Speech Therapist
    - 8.3.2.1. Assessment of Cognitive and Linguistic Functions
    - 8.3.2.2. Support for Communication and Swallowing
  - 8.3.3. Difficulties in Language and Comprehension
    - 8.3.3.1. Language Disorders in Dementia
    - 8.3.3.2. Interventions to Improve Comprehension
  - 8.3.4. Swallowing Difficulties
    - 8.3.4.1. Identifying Swallowing Problems in Dementia
    - 8.3.4.2. Speech Therapy Strategies to Improve Swallowing
  - 8.3.5. Speech Therapy Intervention
    - 8.3.5.1. Therapeutic Approaches to Language
    - 8.3.5.2. Cognitive Stimulation and Communication Techniques

- 8.4. Parkinson's Disease
  - 8.4.1. Anatomical Considerations of Movement Disorders and Classification
    - 8.4.1.1. Anatomy of the Motor System
    - 8.4.1.2. Classification of Movement Disorders
  - 8.4.2. Epidemiology and Pathogenesis of Parkinson's Disease
    - 8.4.2.1. Risk Factors for Parkinson's Disease
    - 8.4.2.2. Pathological Processes Involved in Parkinson's Disease
  - 8.4.3. Clinical Features of Parkinson's Disease
    - 8.4.3.1. Motor and Non-Motor Symptoms
    - 8.4.3.2. Clinical Course of the Disease
  - 8.4.4. Diagnosis and Treatment of Parkinson's Disease
    - 8.4.4.1. Diagnostic Methods in Parkinson's Disease
    - 8.4.4.2. Pharmacological and Surgical Treatments
- 8.5. Atypical and Secondary Parkinsonism
  - 8.5.1. Introduction to the Neuropathology of Atypical Parkinsonism
    - 8.5.1.1. Definition and Classification of Atypical Parkinsonism
    - 8.5.1.2. Neurodegenerative and Non-Neurodegenerative Causes
  - 8.5.2. Clinical Features and Diagnosis of Atypical Parkinsonism
    - 8.5.2.1. Characteristic Symptoms of Atypical Parkinsonism
    - 8.5.2.2. Diagnostic Tests for Atypical Parkinsonism
  - 8.5.3. Secondary Parkinsonism
    - 8.5.3.1. Causes of Secondary Parkinsonism
    - 8.5.3.2. Management and Speech Therapy Treatment of Secondary Parkinsonism
- 8.6. Speech Therapy Assessment and Intervention in Parkinson's Disease
  - 8.6.1. Objectives of Speech Therapy Assessment in Parkinson's Disease
    - 8.6.1.1. Purposes of Speech Therapy Intervention
  - 8.6.2. Speech Therapy Objectives and Assessment
    - 8.6.2.1. Tools and Methods for Speech Therapy Assessment
    - 8.6.2.2. Assessment of Swallowing and Oral Motor Skills

- 8.6.3. Associated Disorders
  - 8.6.3.1. Motor and Non-Motor Disorders in Parkinson's Disease
  - 8.6.3.2. Diseases Concurrent with Parkinson's Disease
- 8.6.4. Speech Therapy Intervention
  - 8.6.4.1. Intervention Techniques for Language Disorders
  - 8.6.4.2. Therapeutic Approaches for Swallowing
- 8.6.5. Guidelines and Advice for Families
  - 8.6.5.1. Support for Caregivers and Family Members
  - 8.6.5.2. Recommendations for Improving Quality of Life
- 8.7. Neuromuscular Diseases
  - 8.7.1. Introduction, Classification, and Pathophysiology of Neuromuscular Diseases
    - 8.7.1.1. Classification of Neuromuscular Diseases
    - 8.7.1.2. Pathophysiology of Neuromuscular Diseases
  - 8.7.2. Muscular Dystrophies and Myopathies
    - 8.7.2.1. Types of Muscular Dystrophies
    - 8.7.2.2. Diagnosis and Treatment of Myopathies
  - 8.7.3. Neuropathologies
    - 8.7.3.1. Classification of Neuropathologies
    - 8.7.3.2. Symptoms and Treatment of Neuropathies
  - 8.7.4. Neuromuscular Junction Diseases
    - 8.7.4.1. Characteristics of Neuromuscular Junction Diseases
    - 8.7.4.2. Therapeutic Management of These Diseases
  - 8.7.5. Degenerative Motor Diseases or Motor Neuron Diseases
    - 8.7.5.1. Amyotrophic Lateral Sclerosis
    - 8.7.5.2. Other Motor Neuron Diseases
- 8.8. Speech Therapy Assessment and Intervention in Neuromuscular Diseases
  - 8.8.1. Main Objectives of Speech Therapy Assessment
    - 8.8.1.1. Functions of the Speech Therapist in Neuromuscular Diseases
  - 8.8.2. Objectives and Types of Treatment
    - 8.8.2.1. Therapeutic Approaches in Neuromuscular Diseases
    - 8.8.2.2. Speech Therapy Treatments for Oral Motor Skills and Language
  - 8.8.3. Speech Therapy Assessment
    - 8.8.3.1. Language and Swallowing Assessment Methods
    - 8.8.3.2. Diagnostic Tools Used
  - 8.8.4. Associated Disorders
    - 8.8.4.1. Motor Disorders in Neuromuscular Diseases
    - 8.8.4.2. Communication Impairments
  - 8.8.5. Augmentative and Alternative Communication Methods
    - 8.8.5.1. Indications for the Use of Technology
    - 8.8.5.2. Benefits of Alternative Communication Systems
- 8.9. Multiple Sclerosis
  - 8.9.1. Pathophysiology and Clinical Features of Multiple Sclerosis
    - 8.9.1.1. Myelin Abnormalities and Their Impact
    - 8.9.1.2. Clinical Symptoms of Multiple Sclerosis
  - 8.9.2. Diagnosis of Multiple Sclerosis
    - 8.9.2.1. Common Diagnostic Methods
    - 8.9.2.2. Specific Tests for Multiple Sclerosis
  - 8.9.3. Treatment and Management of Multiple Sclerosis
    - 8.9.3.1. Pharmacological Treatment
    - 8.9.3.2. Non-Pharmacological Therapeutic Approaches
  - 8.9.4. Other Demyelinating Diseases
    - 8.9.4.1. Characteristics of Demyelinating Diseases
    - 8.9.4.2. Differences from Multiple Sclerosis
- 8.10. Speech-Language Assessment and Intervention in Multiple Sclerosis
  - 8.10.1. Specific Objectives of Speech-Language Assessment
    - 8.10.1.1. Functions and Roles of the Speech-Language Pathologist
  - 8.10.2. Specific Objectives of Speech-Language Assessment
    - 8.10.2.1. Assessment of Cognitive and Motor Functions
    - 8.10.2.2. Language and Communication Support
  - 8.10.3. Speech Therapy Assessment
    - 8.10.3.1. Language and Swallowing Assessment Methods
    - 8.10.3.2. Tools for Motor Skills Assessment

- 8.10.4. Associated Disorders
  - 8.10.4.1. Associated Cognitive and Motor Disorders
  - 8.10.4.2. Comorbid Diseases
- 8.10.5. Speech Therapy Intervention
  - 8.10.5.1. Techniques for Addressing Communication, Speech, Language, and Voice
  - 8.10.5.2. Intervention Strategies for Swallowing

## Module 9. Aphasia and Speech Therapy Intervention

- 9.1. Neuroanatomical Bases of Language
  - 9.1.1. Neuroanatomical Bases of Language
    - 9.1.1.1. Brain and its Relation to Language
    - 9.1.1.2. Key Brain Areas Involved in Language Production and Comprehension
  - 9.1.2. Neuropsychological Perspective on Language Processing
    - 9.1.2.1. Linguistic Processing and Its Stages
    - 9.1.2.2. Models of Linguistic Processing
  - 9.1.3. Neurolinguistic Models
    - 9.1.3.1. Language Localization Model
    - 9.1.3.2. Functional and Dynamic Models in Neurolinguistics
- 9.2. Neuropathological Processes
  - 9.2.1. Hemorrhagic and Ischemic Processes
    - 9.2.1.1. Cerebral Hemorrhage and Their Impact on Language
    - 9.2.1.2. Strokes and Aphasias
  - 9.2.2. Cranioencephalic Traumas
    - 9.2.2.1. Types of Cranial Trauma
    - 9.2.2.2. Effects of Trauma on Communication
  - 9.2.3. Tumors
    - 9.2.3.1. Brain Tumors and Their Linguistic Effects
    - 9.2.3.2. Diagnosis and Treatment
  - 9.2.4. Infectious processes
    - 9.2.4.1. Central Nervous System Infections
    - 9.2.4.2. Effects of Infection on Language
- 9.2.5. Metabolic Processes
  - 9.2.5.1. Metabolic Disorders and Their Relationship to Aphasia
  - 9.2.5.2. Treatment and Rehabilitation
- 9.2.6. Genetic Alterations
  - 9.2.6.1. Genetic Disorders Affecting Language
- 9.3. Cognitive Functions. Attention, Memory, and Executive Functions
  - 9.3.1. The Frontal Lobes: Anatomy and Functions
    - 9.3.1.1. Executive Functions and their Relationship with Language
    - 9.3.1.2. The Frontal Lobe in Communication Control
  - 9.3.2. Attentional Processes and Language
    - 9.3.2.1. Types of Attention and Their Impact on Language
    - 9.3.2.2. Assessment of Attention in Patients with Aphasia
  - 9.3.3. Memory and Language
    - 9.3.3.1. Short- and Long-Term Memory in Communication
    - 9.3.3.2. Memory Assessment in People with Aphasia
  - 9.3.4. Executive Functions
    - 9.3.4.1. Planning, Inhibition, and Their Relationship with Language
    - 9.3.4.2. Assessment of Executive Functions in Aphasia
- 9.4. Aphasia and Associate Disorders in Dementia and Degenerative Diseases
  - 9.4.1. Dementias: Etiology and Classification
    - 9.4.1.1. Types of Dementia and Their Linguistic Effects
    - 9.4.1.2. Diagnostic Assessment of Dementia
  - 9.4.2. Dementia: Linguistic Impairment. Assessment and Intervention
    - 9.4.2.1. Linguistic Impairment in Alzheimer's Disease
    - 9.4.2.2. Speech Therapy Intervention in Dementia
  - 9.4.3. Aphasia in Dementia
    - 9.4.3.1. Characteristics of Aphasia in Degenerative Dementia
    - 9.4.3.2. Assessment of Aphasia in the Context of Dementia
  - 9.4.4. Apraxia and Agnosia Associated with Degenerative Diseases
    - 9.4.4.1. Apraxia in Degenerative Diseases
    - 9.4.4.2. Agnosia and Its Relationship with Aphasia

- 9.5. Semiology of Aphasia
  - 9.5.1. Definition of Aphasia Disorders
    - 9.5.1.1. Classification of Aphasia
    - 9.5.1.2. Causes of Aphasia Disorders
  - 9.5.2. Linguistic Classification: Fluent and Non-Fluent Aphasia
    - 9.5.2.1. Characteristics of Fluent Aphasia
    - 9.5.2.2. Characteristics of Non-Fluent Aphasia
  - 9.5.3. Classification of Profiles According to the Ability to Repeat
    - 9.5.3.1. Aphasia with Impaired Repetition
    - 9.5.3.2. Aphasia without Impaired Repetition
  - 9.5.4. Classic Aphasia Syndromes
    - 9.5.4.1. Broca's Aphasia
    - 9.5.4.2. Wernicke's Aphasia
    - 9.5.4.3. Sensory Transcortical Aphasia
    - 9.5.4.4. Motor Transcortical Aphasia
    - 9.5.4.5. Mixed Transcortical Aphasia
    - 9.5.4.6. Mixed Aphasia
  - 9.5.5. Clinical Utility of Classifying Aphasia Phenotypes
    - 9.5.5.1. Implications for Intervention
    - 9.5.5.2. Prediction of Prognosis
  - 9.5.6. Cognitive Processes Affected in People with Aphasia
    - 9.5.6.1. Working Memory and Language
    - 9.5.6.2. Attention and Communication Processes
- 9.6. Linguistic Alterations in Aphasia
  - 9.6.1. Affection of Language Levels: Phonology, Morphology, Syntax, Semantics, and Pragmatics
    - 9.6.1.1. Phonological Alterations in Aphasia
    - 9.6.1.2. Morphological and Syntactic Alterations
    - 9.6.1.3. Semantic and Pragmatic Impairments
  - 9.6.2. Impairment in Naming and Repetition
    - 9.6.2.1. Problems in Naming Objects
    - 9.6.2.2. Difficulties in Verbal Repetition
  - 9.6.3. Paraphasia and Jargon Aphasia
    - 9.6.3.1. Semantic and Phonological Paraphasia
    - 9.6.3.2. Jargon Aphasia and Its Impact on Communication
- 9.7. Speech-Language Pathological Assessment of Aphasia
  - 9.7.1. Aspects of the Patient's Context
    - 9.7.1.1. Assessment of the Patient's Life Context
    - 9.7.1.2. Analysis of Cognitive and Communicative Abilities
  - 9.7.2. Clinical Tasks Useful for Analyzing Oral Production
    - 9.7.2.1. Verbal Fluency Assessment
    - 9.7.2.2. Analysis of Speech Quality
    - 9.7.2.3. Naming, Labeling, and Repetition Tasks
  - 9.7.3. Useful Clinical Tasks for Assessing Oral Comprehension
    - 9.7.3.1. Understanding Verbal Instructions
    - 9.7.3.2. Assessing Semantic Comprehension
  - 9.7.4. Useful Tasks for Assessing Communicative Participation
    - 9.7.4.1. Assessing the Use of Non-Verbal Communication Strategies
    - 9.7.4.2. Analysis of Participation in Conversations
  - 9.7.5. Analysis of Caregiver Skills
    - 9.7.5.1. Assessment of Communication with the Caregiver
    - 9.7.5.2. Caregiver Training in Aphasia Management
  - 9.7.6. Screening Tests
    - 9.7.6.1. Rapid Diagnostic Tools
    - 9.7.6.2. Assessment of the Severity of Aphasia
  - 9.7.7. Specific Batteries
    - 9.7.7.1. Standardized Assessment Batteries
- 9.8. Speech Therapy Intervention in Aphasia
  - 9.8.1. Fundamentals of the Speech Therapy Intervention
    - 9.8.1.1. Principles of Neuroplasticity in Rehabilitation
    - 9.8.1.2. Establishing Therapeutic Objectives
  - 9.8.2. Selection of Rehabilitation Strategy
    - 9.8.2.1. Linguistic Stimulation Strategies
    - 9.8.2.2. Personalized Therapies According to the Type of Aphasia
  - 9.8.3. Therapies Aimed at Training Deficits
    - 9.8.3.1. Speech and Language Therapy
    - 9.8.3.2. Cognitive and Linguistic Rehabilitation



- 9.8.4. Multimodal Therapies
  - 9.8.4.1. Combined Therapies: Speech, Writing, and Non-Verbal Language
  - 9.8.4.2. Integration of Assistive Technologies
- 9.8.5. Augmentative and Alternative Communication Systems
  - 9.8.5.1. Communication Technologies for People with Aphasia
  - 9.8.5.2. Non-verbal Communication Systems
- 9.9. Therapeutic Programs and Intervention in Specific Aphasia Disorders
  - 9.9.1. Perseverations and Echolalia
    - 9.9.1.1. Techniques for Managing Verbal Perseverations
    - 9.9.1.2. Intervention in Echolalia
  - 9.9.2. Intervention in Paraphasia
    - 9.9.2.1. Strategies for Correcting Phonological Paraphasia
    - 9.9.2.2. Management of Semantic Paraphasia
  - 9.9.3. Intervention in Jargon Apraxia
    - 9.9.3.1. Techniques for Improving Language Comprehension and Production
    - 9.9.3.2. Therapeutic Approaches to Jargon Apraxia
  - 9.9.4. Intervention in Agrammatism
    - 9.9.4.1. Rehabilitation of Grammatical Production
    - 9.9.4.2. Strategies to Improve Syntax
- 9.10. Speech Therapy Intervention for Aphasia Focused on the Family and Social Integration
  - 9.10.1. The Importance of the Family Environment in Aphasia Rehabilitation
    - 9.10.1.1. The Impact of Aphasia on Family Dynamics
    - 9.10.1.2. Collaboration between the Family and Speech Therapist in Rehabilitation
  - 9.10.2. Training the Family in Communication with People with Aphasia
    - 9.10.2.1. Teaching Effective and Adapted Communication
    - 9.10.2.2. The Use of Visual and Tactile Elements
  - 9.10.3. Family Support and Education Programs
    - 9.10.3.1. Educational Workshops for Family Members
    - 9.10.3.2. Support Networks and Guidance Groups
  - 9.10.4. Social Integration of People with Aphasia
    - 9.10.4.1. Social Inclusion Strategies
    - 9.10.4.2. Community Integration Activities and Programs

## Module 10. Physiotherapy Techniques Applied to Speech Therapy

- 10.1. Introduction to Orofacial and Myofunctional Therapy
  - 10.1.1. Definition and Objectives of Orofacial and Myofunctional Therapy
    - 10.1.1.1. Concept of Orofacial and Myofunctional Therapy
    - 10.1.1.2. General Objectives of Therapy
    - 10.1.1.3. Relationship with Other Areas of Speech Therapy
  - 10.1.2. Speech Therapy Competencies in Orofacial Functions
    - 10.1.2.1. Role of the Speech-Language Therapist in the Orofacial Approach
    - 10.1.2.2. Importance of a Multidisciplinary Approach
  - 10.1.3. Historical Evolution of Orofacial and Myofunctional Therapy
    - 10.1.3.1. History and Development of the Discipline
    - 10.1.3.2. Technological and Methodological Advances
  - 10.1.4. Disorders Requiring Treatment
    - 10.1.4.1. Functional Orofacial Dysfunctions
    - 10.1.4.2. Structural Alterations
- 10.2. Muscular Anatomy and Physiology of Stomatognathic Functions
  - 10.2.1. Orofacial Musculature
    - 10.2.1.1. Classification of Orofacial Muscles
    - 10.2.1.2. Main Functions of the Muscles
    - 10.2.1.3. Relationship with Stomatognathic Functions
  - 10.2.2. Respiratory Muscles
    - 10.2.2.1. Anatomy of the Respiratory Muscles
    - 10.2.2.2. Function in the Respiratory Process
  - 10.2.3. Cervical Musculature
    - 10.2.3.1. Relationship between Cervical Musculature and Orofacial Functions
  - 10.2.4. Muscle Physiology
    - 10.2.4.1. Muscle Contraction
    - 10.2.4.2. Muscle Adaptations in Dysfunctions

- 10.3. Neuroanatomophysiology of the Maxillofacial Complex
  - 10.3.1. Brain Structures Involved in Orofacial Functions
    - 10.3.1.1. Brain Areas Related to Motor Control
    - 10.3.1.2. Neurological Connections in Stomatognathic Functions
  - 10.3.2. Bone Structures: Skull and Jaw
    - 10.3.2.1. Anatomy of the Skull
    - 10.3.2.2. Biomechanical Relationship Between the Skull and Jaw
  - 10.3.3. Maxillofacial Growth
    - 10.3.3.1. Factors Influencing Maxillofacial Development
    - 10.3.3.2. Common Growth Abnormalities
  - 10.3.4. Poor Habits
    - 10.3.4.1. Identification of Harmful Habits
    - 10.3.4.2. Consequences for the Orofacial System
- 10.4. Orofacial and Myofunctional Assessment I
  - 10.4.1. Medical History
    - 10.4.1.1. Collection of Medical History
    - 10.4.1.2. Identification of Orofacial Habits
  - 10.4.2. Structural Assessment
    - 10.4.2.1. Visual Inspection of Structures
    - 10.4.2.2. Palpation and Functional Measurements
  - 10.4.3. Assessment of Mobility
    - 10.4.3.1. Joint Mobility Tests
    - 10.4.3.2. Range of Motion Recording
  - 10.4.4. Assessment of Strength and Tone
    - 10.4.4.1. Muscle Strength Measurement Techniques
    - 10.4.4.2. Muscle Tone Assessment
- 10.5. Orofacial and Myofunctional Assessment II
  - 10.5.1. Assessment of Sensitivity
    - 10.5.1.1. Methods for Assessing Tactile Sensitivity
    - 10.5.1.2. Assessment of Deep Sensitivity
  - 10.5.2. Posture Assessment
    - 10.5.2.1. Identification of Abnormal Postural Patterns
    - 10.5.2.2. Relationship Between Posture and Orofacial Functions
  - 10.5.3. Assessment of Stomatognathic Functions
    - 10.5.3.1. Sucking, Chewing, and Swallowing
    - 10.5.3.2. Breathing and Phonation
- 10.6. Basic Intervention Techniques
  - 10.6.1. Cryotherapy, Soft Tissue Manipulation, and Active Exercises
    - 10.6.1.1. Principles of Cryotherapy
    - 10.6.1.2. Soft Tissue Manipulation Techniques
    - 10.6.1.3. Design and Application of Active Exercises
  - 10.6.2. Electrotherapy and Laser
    - 10.6.2.1. Fundamentals of Electrotherapy
    - 10.6.2.2. Application of Laser in Orofacial Dysfunctions
  - 10.6.3. Kinesiotape
    - 10.6.3.1. Principles of Kinesiotape Use
    - 10.6.3.2. Application Techniques and Therapeutic Effects
- 10.7. Intervention in the Temporomandibular Joint and Associated Disorders
  - 10.7.1. Assessment of the TMJ
    - 10.7.1.1. Inspection and Palpation of the TMJ
    - 10.7.1.2. Functional and Mobility Tests
  - 10.7.2. TMJ Intervention
    - 10.7.2.1. Functional Rehabilitation Techniques
    - 10.7.2.2. Specific Exercises for Temporomandibular Dysfunctions
  - 10.7.3. Associated Disorders
    - 10.7.3.1. Myofascial Pain
    - 10.7.3.2. Impairments in Occlusion

- 10.8. Intervention in Facial Paralysis
  - 10.8.1. Facial Paralysis: Types and Characteristics
    - 10.8.1.1. Classification of Facial Paralysis
    - 10.8.1.2. Etiology and Clinical Manifestations
  - 10.8.2. Assessment
    - 10.8.2.1. Clinical Assessment Methods
    - 10.8.2.2. Facial Function Measurement Scales
  - 10.8.3. Treatment
    - 10.8.3.1. Neuromuscular Stimulation Techniques
    - 10.8.3.2. Facial Rehabilitation Exercises
- 10.9. Intervention in Respiratory Function
  - 10.9.1. Obstructive Sleep Apnea (OSA)
    - 10.9.1.1. Definition and Diagnosis of OSA
    - 10.9.1.2. Speech Therapy Intervention in OSA
  - 10.9.2. Mechanical Ventilation
    - 10.9.2.1. Principles of Mechanical Ventilation
    - 10.9.2.2. Therapeutic Approach
  - 10.9.3. Mouth Breathing
    - 10.9.3.1. Assessment of Mouth Breathing
    - 10.9.3.2. Techniques for Respiratory Re-education
  - 10.9.4. Tracheostomy
    - 10.9.4.1. Orofacial Adaptations in Tracheostomized Patients
    - 10.9.4.2. Rehabilitation of Stomatognathic Functions
- 10.10. Intervention in Swallowing Disorders and Associated Alterations
  - 10.10.1. Lingual Frenulum
    - 10.10.1.1. Impact of the Lingual Frenulum on Orofacial Functions
    - 10.10.1.2. Speech Therapy Intervention Techniques
  - 10.10.2. Dysphagia
    - 10.10.2.1. Assessment of Dysphagia
    - 10.10.2.2. Intervention in Swallowing Disorders
  - 10.10.3. Dysfunctional Swallowing
    - 10.10.3.1. Differential Diagnosis of Dysfunctional Swallowing
    - 10.10.3.2. Swallowing Re-education Techniques
  - 10.10.4. Food Aversions
    - 10.10.4.1. Identification of Food Aversions
    - 10.10.4.2. Intervention in Behavioral Disorders Associated with Eating



*Bet on TECH! You will use Augmentative and Alternative Communication (AAC) systems, promoting your patients' autonomy by developing literacy and reading and writing skills"*

# 04

## Teaching Objectives

This university program aims to provide graduates with an in-depth understanding of the anatomical, neurophysiological, and psycholinguistic foundations of language, enabling them to more accurately comprehend the mechanisms involved in language processing. In addition, it will foster the development of practical skills for designing and applying personalized therapeutic strategies, always based on scientific evidence. Furthermore, it will promote an interdisciplinary approach that will facilitate collaboration with other health professionals, ensuring comprehensive, patient-centered care. It will also incorporate advanced technologies and innovative techniques to improve the quality of life of those with these disorders.





“

*You will delve into intervention techniques for conditions such as Dysphagia and Orofacial Disorders, which have a significant impact on communication and motor functions. Enroll now!”*



## General Objectives

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- ♦ Understand the organization of the nervous system and its relationship to speech and language functions
- ♦ Identify developmental milestones and language disorders in children and adults
- ♦ Integrate the essential psychological and linguistic foundations of speech therapy, including language development, neuropsychology, and basic speech processes
- ♦ Integrate knowledge of linguistics into the analysis of language and its disorders
- ♦ Describe the normal physiology of swallowing
- ♦ Understand the history and evolution of Augmentative and Alternative Communication (AAC), identifying the most important milestones in its development and impact
- ♦ Recognize the characteristics, classification, and etiology of dyslalia, dysarthria, and dysphasia, and their impact on linguistic, social, occupational, and academic development
- ♦ Describe the pathophysiological processes, symptoms, and clinical progression of diseases such as Parkinson's disease, Alzheimer's disease, multiple sclerosis, and neuromuscular diseases
- ♦ Describe the anatomical bases involved in language production and comprehension, understanding their relationship with aphasia and associated disorders
- ♦ Identify the main assessment and treatment techniques in the field of orofacial motor function and their application in stomatognathic disorders





## Specific Objectives

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### Module 1. Anatomy and Physiology of the Nervous System

- Identify the main anatomical structures of the central and peripheral nervous systems and their role in communication processes
- Analyze the neurobiological bases of language and speech
- Recognize the areas of the brain involved in speech production, comprehension, and motor control
- Describe the interactions between the motor and sensory structures involved in speech production

### Module 2. Neuropsychology of Language

- Examine the fundamentals of language psychopathology and its relationship with neurodevelopmental disorders
- Differentiate between linguistic and psycholinguistic disorders based on their origin and manifestations
- Analyze the main communication disorders and their impact on language development
- Study the influence of ADHD and autism spectrum disorders on communication skills
- Describe specific learning disorders and their impact on language acquisition
- Assess the impact of intellectual disability, sensory impairments, and social isolation on language development

### Module 3. Psychopathology of Language

- Get to know and identify communication, language, speech, voice and non-verbal oral function disorders
- Apply assessment techniques to diagnose language disorders and write speech therapy reports
- Intervene appropriately in different contexts (family, school, clinical) to treat language disorders
- Design, program and evaluate speech therapy interventions using appropriate techniques and resources

### Module 4. Linguistics Applied to Language Disorders

- Explore the relevance of applied linguistics in the diagnosis and treatment of language disorders
- Examine the impact of innateness and early stimulation on language development
- Identify the cognitive mechanisms involved in language processing and production
- Analyze phonological disorders and their influence on oral communication
- Assess morphosyntactic alterations and their impact on discourse structuring
- Identify pragmatic disorders and their effect on social interaction

### **Module 5. Dysphagia**

- ♦ Differentiate the physiological phases of swallowing and their involvement in oropharyngeal dysphagia
- ♦ Classify the different types of dysphagia and their clinical consequences
- ♦ Determine the main causes of dysphagia and its link to other disorders
- ♦ Assess the nutritional and functional complications associated with dysphagia

### **Module 6. Augmentative and Alternative Communication Systems**

- ♦ Learn about the different forms of AAC that exist today, with special emphasis on technological advances that have improved and democratized its use
- ♦ Develop skills to conduct AAC assessments using evidence-based models that respect the rights of people with communication needs
- ♦ Acquire skills to effectively intervene with AAC users, promoting their involvement in natural environments and fostering their autonomy
- ♦ Promote the development of emerging and conventional literacy skills by analyzing and stimulating reading and writing as a key tool

### **Module 7. Speech Disorders: Assessment and Intervention**

- ♦ Identify the main speech disorders and their clinical characteristics
- ♦ Select the most appropriate methods for assessing speech disorders
- ♦ Implement intervention strategies tailored to each patient
- ♦ Review and optimize speech therapy treatments based on available evidence

### **Module 8. Neurodegenerative Diseases and Dementia**

- ♦ Understand how neurodegenerative diseases affect both higher cognitive functions (such as language) and motor functions related to articulation
- ♦ Interpret prevalence statistics and risk factors associated with these disorders, with a focus on the most affected age groups
- ♦ Explain medical treatments and general management of neurodegenerative diseases, including strategies used to mitigate their effects on motor and cognitive functions
- ♦ Acquire practical knowledge of speech therapy interventions and specific therapeutic approaches to treat language and orofacial motor disorders in patients with these diseases

### **Module 9. Aphasia and Speech Therapy Intervention**

- ♦ Analyze classic models of cognitive functioning and their application in understanding different types of aphasia
- ♦ Apply appropriate semiology and functional diagnosis to assess aphasia, recognizing the individuality of each case based on symptoms and the location of the injury
- ♦ Identify types of aphasia and their characteristics according to symptoms and the location of the lesion, using appropriate assessment and differential diagnosis methods
- ♦ Develop and apply evidence-based speech therapy interventions to treat aphasia, including training and assessment of the communication partners of people with aphasia





#### **Module 10. Physiotherapy Techniques Applied to Speech Therapy**

- ♦ Understand the relationship between physiotherapy and speech therapy in the treatment of orofacial disorders
- ♦ Use assessment tools to detect myofunctional dysfunctions
- ♦ Perform specific physiotherapy techniques applied to speech therapy
- ♦ Integrate therapeutic approaches to optimize intervention in orofacial disorders

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*This program will provide you with in-depth, up-to-date knowledge to address neurodegenerative diseases, considering their impact on higher cognitive functions, such as motor functions”*



# 05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*



## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes  
(which you might not be able to attend)”*





### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“

*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”*

## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

### The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.





## The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

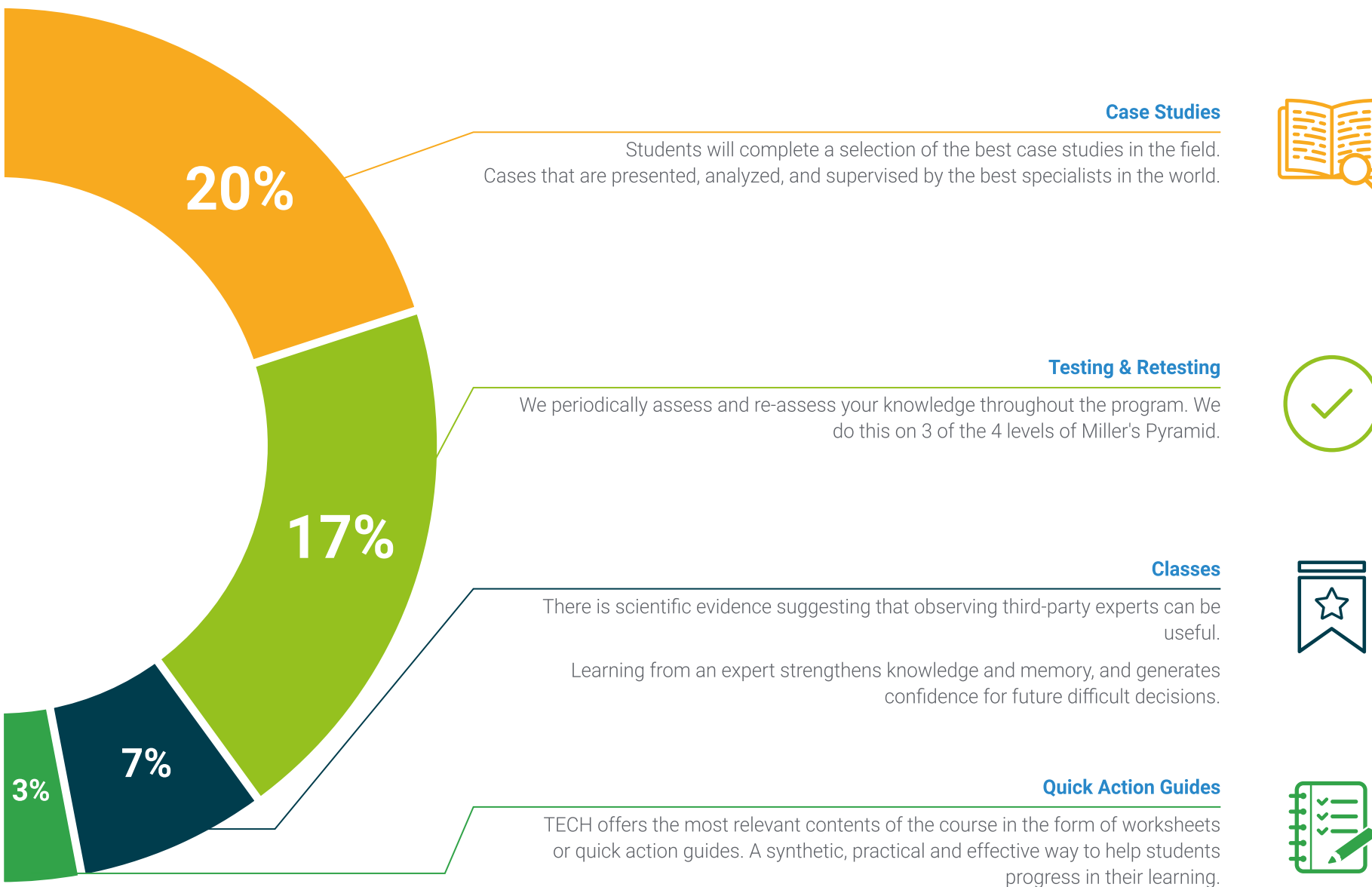
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.





# 06 Certificate

This Professional Master's Degree in Neurological Disorders of Language and Communication guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the Professional Master's Degree issued by TECH Global University.



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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*



This private qualification will allow you to obtain a **Professional Master's Degree in Neurological Disorders of Language and Communication** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

TECH is a member of the International Communication Association (ICA), which focuses on improving academic research processes in communication sciences. Thanks to the professionals who make up the ICA and the benefits it offers its members, students have access to a wide variety of educational materials and teaching resources focused on professional development, accompanied by a network of professionals and companies dedicated to excellence in the industry.

**TECH is a member of:**

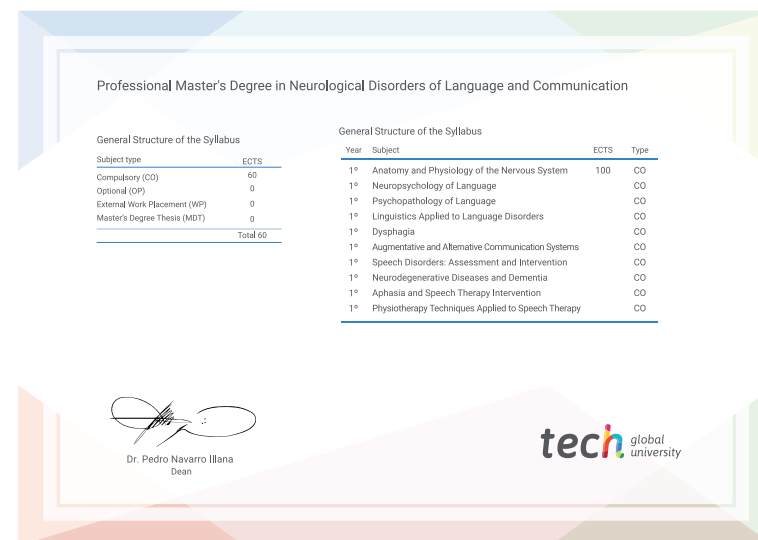


Title: **Professional Master's Degree in Neurological Disorders of Language and Communication**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**







## Professional Master's Degree

Neurological Disorders  
of Language and  
Communication

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree

## Neurological Disorders of Language and Communication

TECH is a member of:



International  
Communication  
Association

**tech** global  
university