



Master's Degree

Speech Therapy Intervention

» 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/master-degree/master-speech-therapy-intervention

Index

> 06 Certificate

> > p. 48





tech 06 | Introduction to the Program

Speech therapy is an essential discipline in the field of health, as it enables the assessment, diagnosis and treatment of language, communication and swallowing disorders. With the increase in cases of phonological difficulties, aphasias or dysarthrias, specialists in this field face the challenge of perfecting their knowledge in order to provide effective care. Furthermore, advances in therapeutic techniques and in technology applied to speech therapy interventions require highly trained professionals, capable of incorporating new methodologies into their clinical practice.

In response to this need, TECH has designed the Speech Therapy Intervention program: a comprehensive program that will delve into the most innovative strategies for the treatment of speech, voice and communication disorders at different stages of development. Through a comprehensive and specialized syllabus, emphasis will be placed on differential diagnosis, intervention in neurological disorders and the use of technological tools in speech therapy rehabilitation. All this, with a practical approach that will allow the application of the acquired knowledge in clinical and educational environments.

By acquiring this knowledge, graduates will significantly expand their job opportunities, accessing health, education and research sectors with a highly specialized profile. In this way, they will be able to design effective therapeutic plans, improve patients' quality of life and stand out in a constantly evolving professional market. Likewise, knowledge of new technologies applied to speech therapy will strengthen their ability to implement personalized treatments adapted to each case.

To guarantee a flexible and accessible learning experience, this degree will be taught 100% online, allowing students to manage their time without affecting their work or personal responsibilities. In turn, TECH will incorporate the Relearning methodology, based on the reiteration of key concepts, which will facilitate the assimilation of knowledge efficiently and without the need to invest long hours in traditional learning.

This **Master's Degree in Speech Therapy Intervention** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of practical cases presented by experts in Speech Therapy
- 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
- Special emphasis on innovative methodologies in Speech Therapy Intervention
- 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



Make communication your specialty!
At TECH you will master the most
advanced techniques in speech
therapy assessment and treatment
with a program designed to boost
your professional development"

Introduction to the Program | 07 tech



At TECH you will learn from the best experts in speech therapy and have access to an up-to-date syllabus designed by prestigious specialists. You will raise your professional profile and stand out in the sector!"

Its teaching staff includes professionals from the field of Speech Therapy, 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

A 100% online program that will not only transform your career, but will also enable you to master the most advanced techniques in Speech Therapy Intervention. Make up your mind and be part of TECH!

Flexibility and excellence in a single program.

With TECH's Relearning methodology, you will assimilate key knowledge in Speech Therapy in a dynamic and effective way.







tech 10 | Why Study 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 most complete syllabus





World's
No.1
The World's largest
online university

The most complete syllabuses on the university scene

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

A unique learning method

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

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.



tech 14 | Syllabus

Module 1. Voice Anatomy, Physiology and Biomechanics

- 1.1. Laryngeal Phylogeny and Embryology
 - 1.1.1. Laryngeal Phylogeny
 - 1.1.2. Laryngeal Embryology
- 1.2. Basic Concepts of Physiology
 - 1.2.1. Muscle Tissue
 - 1.2.2. Types of Muscle Fibers
- 1.3. Respiratory System Structures
 - 1.3.1. Chest
 - 1.3.2. Airways
- 1.4. Respiratory System Musculature
 - 1.4.1. Inspiratory Muscles
 - 1.4.2. Expiratory Muscles
- 1.5. Physiology of the Respiratory System
 - 1.5.1. Respiratory System Function
 - 1.5.2. Lung Capacities and Volumes
 - 1.5.3. Lung Nervous System
 - 1.5.4. Breathing at Rest vs in Phonation
- 1.6. Laryngeal Anatomy and Physiology
 - 1.6.1. Laryngeal Skeleton
 - 1.6.2. Laryngeal Cartilages
 - 1.6.3. Ligaments and Membranes
 - 1.6.4. Joints
 - 1.6.5. Musculature
 - 1.6.6. Vascularization
 - 1.6.7. Laryngeal Innervation
 - 1.6.8. Lymphatic System
- 1.7. Structure and Function of the Vocal Cords
 - 1.7.1. Histology of the Vocal Cords
 - 1.7.2. Biomechanical Properties of the Vocal Cords
 - 1.7.3. Phases of the Vibration Cycle
 - 1.7.4. Fundamental Frequency

- 1.8. Anatomy and Physiology of the Vocal Tract
 - 1.8.1. Nasal Cavity
 - 1.8.2. Oral Cavity
 - 1.8.3. Laryngeal Cavity
 - 1.8.4. Linear and Non-Linear Source and Filter Theory
- 1.9. Voice Production Theory
 - 1.9.1. Historical Recap
 - 1.9.2. Ewald's Primitive Myoelastic Theory
 - 1.9.3. Husson's Neurochronoxic Theory
 - 1.9.4. Completed Mucoondulatory Theory and Aerodynamic Theory
 - 1.9.5. Neurooscillatory Theory
 - 1.9.6. Oscillo-Impedial Theory
 - 1.9.7. Mass-Spring Models
- 1.10. The Physiology of Phonation
 - 1.10.1. Neurological Control of Phonation
 - 1.10.2. Pressure
 - 1.10.3. Thresholds
 - 1.10.4. Beginnings and Endings of the Vibration Cycle
 - 1.10.5. Laryngeal Adjustments for Phonation

Module 2. Acoustic Physics and Audiology

- 2.1. Sound Wave: Properties and Characteristics
 - 2.1.1. Physical Characteristics of the Sound Wave
 - 2.1.1.1. Amplitude
 - 2.1.1.2. Frequency (F)
 - 2.1.1.3. Wave Length
 - 2.1.1.4. Speed
 - 2.1.2. Acoustic Characteristics of the Sound Wave
 - 2.1.2.1. Timbre
 - 2.1.2.2. Intensity
 - 2.1.2.3. Tone
 - 2.1.3. Behavior of the Sound Wave
 - 2.1.3.1. Propagation in Homogeneous Medium
 - 2.1.3.2. Effects of Interference and Superposition

2.2.	Measu	rement of the Components of Sound Waves		
	2.2.1.	Measurement of Amplitude		
		2.2.1.1. Decibels (dB)		
		2.2.1.2. Logarithmic Scales		
	2.2.2.			
		2.2.2.1. Hertz (Hz)		
		2.2.2.2. Audible Range for the Human Ear		
	2.2.3.			
		2.2.3.1. Relationship between Frequency, Speed of Sound and Wavelength		
		2.2.3.2. Units of Measurement and their Application in Acoustics		
2.3.	Reflect	ion, Refraction, Diffraction of Sound		
	2.3.1.	Reflection of Sound		
		2.3.1.1. Law of Reflection		
		2.3.1.2. Echoes and Reverberation		
	2.3.2.	Refraction of Sound		
		2.3.2.1. Speed Changes in Different Medium		
		2.3.2.2. Angle of Incidence and Refraction		
	2.3.3.	Diffraction of Sound		
		2.3.3.1. Effects of Diffraction on Sound Barriers		
		2.3.3.2. Diffraction in Open Spaces		
2.4.	Acoustic Physiology: The Human Ear and Hearing			
	2.4.1.	Ear Structure		
		2.4.1.1. External Ear		
		2.4.1.2. Middle Ear		
		2.4.1.3. Inner Ear		
	2.4.2.	Hearing Process		
		2.4.2.1. Sound Transduction		
		2.4.2.2. Neural Coding of the Acoustic Signal		
	2.4.3.	Sound Perception		
		2.4.3.1. Audible Frequencies		
		2.4.3.2 Percention of Pitch and Volume		

2.5.	Subjective Tests: Acumetry and Pure Tone Audiometry			
	2.5.1.	Acumetry		
		2.5.1.1. Basic Concepts		
		2.5.1.2. Verbal and Noise Acumetry		
		2.5.1.3. Tuning Fork Assessment Methods		
	2.5.2.	Pure Tone Audiometry		
		2.5.2.1. Procedure		
		2.5.2.2. Hearing Threshold		
		2.5.2.3. Pure Tone Assessment		
		2.5.3.4. Masking and Masking Dilemma		
	2.5.3.	Interpretation of Results		
		2.5.3.1. Identification of Hearing Loss Patterns		
		2.5.3.2. Differentiation between Conductive and Sensorineural Hearing Loss		
		2.5.3.3. Clinical Application of Results in Diagnosis and Treatment		
2.6.	Subjective Tests: Supraliminal Audiometry and Verbal Audiometry			
	2.6.1.	Supraliminal Audiometry		
		2.6.1.1. Fowler and SISI Tests		
		2.6.1.2. Other Supraliminal Tests		
	2.6.2.	Verbal Audiometry or Speech Audiometry		
		2.6.2.1. Other Suprathreshold Tests		
		2.6.2.2. Procedure		
		2.6.2.3. Masking in Verbal Audiometry		
	2.6.3.	Interpretation of Results		
		2.6.3.1. Speech Intelligibility Analysis		
		2.6.3.2. Relationship between Verbal Results and Types of Hearing Loss		
		2.6.3.3. Application of the Results in Auditory Rehabilitation		

tech 16 | Syllabus

2.7.	Suhiec	tive Tests: Free-field Audiometry and Pediatric Audiometry	2 10	Δοοροο	ment Booths
2.7.	2.7.1.	Free-field Audiometry	2.10.		Preliminary Consider
	2.7.1.	2.7.1.1. Free-field Assessment Procedures		2.10.1.	2.10.1.1. International
		2.7.1.2. Clinical Trials Masking			2.10.1.2. Environmen
	2.7.2.	Pediatric Audiometry		2 10 2	Anechoic Chambers
		2.7.2.1. General Considerations		2	2.10.2.1. Design and
		2.7.2.2. Unconditioned Pediatric Audiometry			2.10.2.2. Application
		2.7.2.3. Conditioned Pediatric Audiometry		2.10.3.	Semi-Anechoic Char
	2.7.3.	Interpretation of Results			2.10.3.1. Compariso
		2.7.3.1. Analysis of Response Patterns in Free Field			2.10.3.2. Use in Simu
		2.7.3.2. Relationship between Results and Environmental Conditions		2.10.4.	Audiometric or Soun
		2.7.3.3. Application of Results in Hearing Interventions			2.10.4.1. Technology
2.8.	Objecti	ve Tests: Impedance Spectroscopy			2.10.4.2. External No
	2.8.1.	Fundamentals of Impedance Spectroscopy		2.10.5.	Reverberation Cham
		2.8.1.1. Resistance and Reactance of the Middle Ear			2.10.5.1. Characteris
		2.8.1.2. Tympanometric Curve			2.10.5.2. Application
	2.8.2.	Acoustic Reflex Test		1 0 1	D: . I
		2.8.2.1. Stapedius Muscle Contraction	Mod	ule 3. \	oice Disorders
		2.8.2.2. Measurement of Stapedius Muscle Contraction	3.1.	Normal	Voices and Pathologi
	2.8.3.	Clinical Interpretation of Impedance Spectroscopy		3.1.1.	Euphonia vs. Dyspho
		2.8.3.1. Diagnosis of Middle Ear Dysfunction		3.1.2.	Types of Voices
		2.8.3.2. Relationship between Tympanometric Curves and Types of Hearing Loss	3.2.	Vocal F	atigue
		2.8.3.3. Use of Impedance Spectroscopy Measurement in Monitoring Hearing		3.2.1.	Introduction
2.9.	Objecti	ve Tests: Otoacoustic Emissions and Auditory Evoked Potentials			3.2.1.1. Advice to Pre
	2.9.1.	Otoacoustic Emissions		3.2.2.	Synthesis
		2.9.1.1. Principles of Otoacoustic Emissions	3.3.	Acoust	c Signs of Dysphonia
		2.9.1.2. Clinical Indications		3.3.1.	First Manifestations
	2.9.2.	Auditory Evoked Potentials		3.3.2.	Acoustic Features
		2.9.2.1. Brainstem Auditory Evoked Potentials (BAEP)		3.3.3.	Severity Grades
		2.9.2.2. Applications in the Assessment of the Central Auditory System	3.4.	Functio	nal Dysphonias
	2.9.3.	Interpretation of Objective Tests		3.4.1.	Type I: Isometric Lar
		2.9.3.1. Relationship between Otoacoustic Emissions and the State		3.4.2.	Type II: Glottic and S
		of Cochlear Function		3.4.3.	Type III: Anteroposte
		2.9.3.2. Identification of Auditory Disorder Using Evoked Potentials		3.4.4.	Type IV: Conversion
		2.9.3.3. Use of Objective Tests in Differential Diagnoses		3 4 5	Transitional Adolesc

٥.	Assessi	Assessment Booths		
	2.10.1.	Preliminary Considerations		
		2.10.1.1. International Regulations and Standards		
		2.10.1.2. Environmental Factors and Noise Control		
	2.10.2.	Anechoic Chambers		
		2.10.2.1. Design and Acoustic Characteristics		
		2.10.2.2. Applications in Hearing Tests and Experiments		
	2.10.3.	Semi-Anechoic Chamber		
		2.10.3.1. Comparison with Anechoic Chambers		
		2.10.3.2. Use in Simulation of Real Acoustic Environments		
	2.10.4.	Audiometric or Sound-Attenuated Chambers		
		2.10.4.1. Technology and Equipment Used in Audiometry		
		2.10.4.2. External Noise Control and Patient Comfort		
	2.10.5.	Reverberation Chambers		
		2.10.5.1. Characteristics of Sound in Reverberant Environments		
		2.10.5.2. Applications in Sound Absorption and Acoustic Quality Tests		
od	ule 3. V	oice Disorders		
	Normal	Voices and Pathological Voices		
	3.1.1.	Euphonia vs. Dysphonia		
	3.1.2.	Types of Voices		
	Vocal F	atigue		
	3.2.1.	Introduction		
		3.2.1.1. Advice to Prevent Vocal Fatigue		

Type I: Isometric Laryngeal Disorder

Type IV: Conversion Aphonia/Dysphonia Transitional Adolescent Dysphonia

Type II: Glottic and Supraglottic Lateral Contraction Type III: Anteroposterior Supraglottic Contraction

3.5.	Structure and Content			
	3.5.1.	Psychogenic Dysphonia		
		3.5.1.1. Definition		
		3.5.1.2. Patient Characteristics		
		3.5.1.3. Signs of Psychogenic Dysphonia and Voice Characteristics		
		3.5.1.4. Clinical Forms		
		3.5.1.5. Diagnosis and Treatment of Psychogenic Dysphonia		
		3.5.1.6. Synthesis		
3.6.	Transit	ional Adolescent Dysphonia		
		Vocal Changes		
		Concept of Adolescent Transitional Dysphonia		
	3.6.3.	Treatment		
	3.6.4.	Synthesis		
3.7.	Dysphonia due to Congenital Organic Lesions			
	3.7.1.	Introduction		
	3.7.2.	Intrachordal Epidermal Cyst		
	3.7.3.	Sulcus Vocalis		
	3.7.4.	Mucosal Bridge		
	3.7.5.	Vergeture		
	3.7.6.	Microsinequias		
	3.7.7.	Laryngomalacia		
	3.7.8.	Synthesis		
3.8.	Acquire	ed Organic Dysphonias		
	3.8.1.	Introduction		
	3.8.2.	Dysphonias of Neurological Origin		
		3.8.2.1. Peripheral Laryngeal Paralysis		
		3.8.2.2. Upper Motor Neuron Disorders		
		3.8.2.3. Extrapyramidal Alterations		
		3.8.2.4. Cerebellar Alterations		
		3.8.2.5. Lower Motor Neuron Disorders		

3.8.2.6. Other Alterations

3.8.3.	Organic Dysphonias of Acquired Origin
	3.8.3.1. Of Traumatic Origin
	3.8.3.2. Inflammatory
	3.8.3.3. Dysphonias of Neoplastic Origin
3.8.4.	Synthesis
Mixed D	ysphonias
3.9.1.	Introduction
3.9.2.	Vocal Nodes
3.9.3.	Laryngeal Polyps
3.9.4.	Reinke's Edema
3.9.5.	Vocal Cord Hemorrhage
3.9.6.	Contact Ulcer or Granuloma
3.9.7.	Mucous Retention Cyst
3.9.8.	Synthesis

Module 4. Statistics

3.9.

4.1.	Introdu	ction to Statistics
	4.1.1.	Basic Concepts
	4.1.2.	Types of Variables
	4.1.3.	Statistical Information
4.2.	Data Re	ecord Sorting and Classifying
	4.2.1.	Description of Variables
	4.2.2.	Frequency Distribution Table

- 4.2.3. Quantitative and Qualitative Frequency Distribution Tables
- 4.3. Applications of Information and Communication Technologies (ICT) and Practical Systems
 - 4.3.1. Basic Concepts
 - 4.3.2. Tools
 - 4.3.3. Data Representation
- 4.4. Data Summary Measures I
 - 4.4.1. Descriptive Statistics
 - 4.4.2. Centralization Measurements
 - 4.4.3. Measures of Dispersion
 - 4.4.4. Measures of Shape and Position

tech 18 | Syllabus

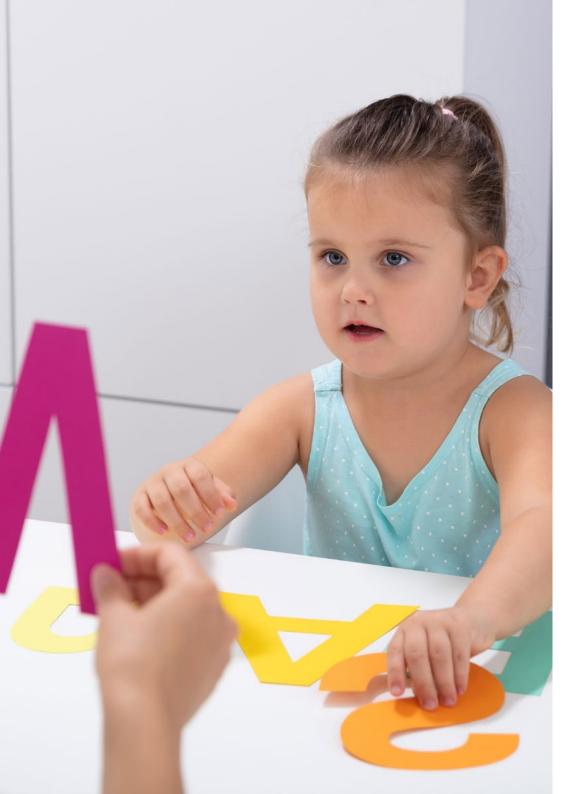
- 4.5. Data Summary Measures II
 - 4.5.1. Box Plots
 - 4.5.2. Identifying Outliers
 - 4.5.3. Transformation
- 4.6. Statistical Analysis of the Relationship between the Two Variables
 - 4.6.1. Tabulation
 - 4.6.2. Contingency Tables and Graphical Representations
 - 4.6.3. Linear Relationship between Quantitative Variables
- 4.7. Time Series and Index Numbers
 - 4.7.1. Time Series
 - 4.7.2. Rates of Change
 - 4.7.3. Index Numbers
 - 4.7.4. The Consumer Price Index (CPI) and Deflated Time Series
- 4.8. Introduction to Probability: Calculation and Basic Concepts
 - 4.8.1. Basic Concepts
 - 4.8.2. Set Theory
 - 4.8.3. Probability Calculation
- 4.9. Random Variables and Probability Distributions
 - 4.9.1. Random Variables
 - 4.9.2. Variable Measurements
 - 4.9.3. Function of Probability
- 4.10. Probability Models for Random Variables
 - 4.10.1. Probability Calculation
 - 4.10.2. Discrete Random Variables
 - 4.10.3. Continuous Random Variables
 - 4.10.4. Models Derived from Normal Distribution

Module 5. Speech Therapy Research Methods

- 5.1. Basic Notions of Investigation: Science and the Scientific Method
 - 5.1.1. Definition of the Scientific Method
 - 5.1.2. Analytical Method
 - 5.1.3. Synthetic Method
 - 5.1.4. Inductive Method
 - 5.1.5. Cartesian Thought

- 5.1.6. Rules of the Cartesian Method
- 5.1.7. Methodical Doubt
- 5.1.8. The First Cartesian Principle
- 5.1.9. Induction Procedures According to J. Mill Stuart
- 5.2. Research Paradigms and Methods Derived from These
 - 5.2.1. How Do Research Ideas Arise?
 - 5.2.2. What to Research in Education?
 - 5.2.3. Research Problem Statement
 - 5.2.4. Background, Justification and Research Objectives
 - 5.2.5. Theoretical Foundation
 - 5.2.6. Hypotheses, Variables and Definition of Operational Concepts
 - 5.2.7. Choosing a Research Design
 - 5.2.8. Sampling in Quantitative and Qualitative Studies
- 5.3. The General Process of Research: Quantitative and Qualitative Focus
 - 5.3.1. Epistemological Assumptions
 - 5.3.2. Approach to Reality and the Object of Study
 - 5.3.3. Subject-Object Relationship
 - 5.3.4. Objectivity
 - 5.3.5. Methodological Processes
 - 5.3.6. Integration of Methods
- 5.4. Phases and Stages of Qualitative Research
 - 5.4.1. Phase 1: Conceptual Phase
 - 5.4.2. Phase 2: Planning and Design Phase
 - 5.4.3. Phase 3: Empirical Phase
 - 5.4.4. Phase 4: Analytical Phase
 - 5.4.5. Phase 5: Diffusion Phase
- 5.5. Types of Quantitative Research
 - 5.5.1. Historical Research
 - 5.5.2. Correlation Research
 - 5.5.3. Case Studies
 - 5.5.4. "Ex Post Facto" Research of Completed Events
 - 5.5.5. Quasi-Experimental Research
 - 5.5.6. Experimental Research





- 5.6. Phases and Stages of Qualitative Research
 - 5.6.1. Phase 1: Preparation Phase
 - 5.6.2. Phase 2: Field Phase
 - 5.6.3. Phase 3: Analytical Phase
 - 5.6.4. Phase 4: Informative Phase
- 5.7. Types of Qualitative Research
 - 5.7.1. Ethnography
 - 5.7.2. Grounded Theory
 - 5.7.3. Phenomenology
 - 5.7.4. The Biographical Method and Life History
 - 5.7.5. The Case Study
 - 5.7.6. Content Analysis
 - 5.7.7. Examination of Speech
 - 5.7.8. Participatory Action Research
- 5.8. Techniques and Instruments for Collecting Quantitative Data
 - 5.8.1. The Structured Interview
 - 5.8.2. The Structured Questionnaire
 - 5.8.3. Systematic Observation
 - 5.8.4. Attitude Scales
 - 5.8.5. Statistics
 - 5.8.6. Secondary Sources of Information
- 5.9. Techniques and Instruments for Collecting Qualitative Data
 - 5.9.1. Unstructured Interview
 - 5.9.2. In Depth Interview
 - 5.9.3. Focus Groups
 - 5.9.4. Simple, Unregulated and Participant Observation
 - 5.9.5. Life Stories
 - 5.9.6. Diaries
 - 5.9.7. Content Analysis
 - 5.9.8. The Ethnographic Method
- 5.10. Data Quality Control
 - 5.10.1. Requirements for a Measuring Instrument
 - 5.10.2. Processing and Analysis of Quantitative Data
 - 5.10.3. Processing and Analysis of Qualitative Data

tech 20 | Syllabus

6.3.2.2. Clinical Applications

6.3.2.3. Clinical Usefulness for the Speech Therapist

Mod	ule 6. F	Pathophysiology of Hearing and Phonation	
6.1.	6.1. Voice Disorders		
	6.1.1.	Normal Voice and Dysphonia	
		6.1.1.1. Characteristics of the Normal Voice	
		6.1.1.2. Risk Factors	
	6.1.2.	Classification of Dysphonia	
		6.1.2.1. Functional Dysphonias	
		6.1.2.2. Organic Dysphonias	
		6.1.2.3. Psychogenic Dysphonia	
		6.1.2.4. Idiopathic Dysphonia	
	6.1.3.	Interdisciplinary Approach	
		6.1.3.1. Otolaryngologist	
		6.1.3.2. Speech Therapist	
		6.1.3.3. Psychologist	
6.2.	Voice A	Assessment	
	6.2.1.	Concepts of Voice Pathophysiology	
		6.2.1.1. The Physiology of Phonation	
		6.2.1.2. Pathological Alterations in the Voice	
	6.2.2.	Medical History and Quality of Life	
		6.2.2.1. Assessment of Medical History	
		6.2.2.2. Impact on Quality of Life	
	6.2.3.	Perceptual Assessment of the Voice	
		6.2.3.1. Methods of Perceptual Assessment	
		6.2.3.2. Voice Assessment Tools	
	6.2.4.		
		6.2.4.1. Functional Assessment	
		6.2.4.2. Instrumental Assessment	
6.3.	Laryng	eal Imaging	
	6.3.1.	Laryngoscopy	
		6.3.1.1. Direct	
		6.3.1.2. Indirect	
	6.3.2.	Videolaryngoscopy	
		6.3.2.1. Medical Procedure	

	6.3.3.	Laryngostroboscopy
		6.3.3.1. Medical Procedure
		6.3.3.2. Clinical Applications
		6.3.3.3. Clinical Usefulness for the Speech Therapis
6.4.	Voice L	aboratory I
	6.4.1.	Aerodynamics of the Voice
		6.4.1.1. Air Flow During Phonation
		6.4.1.2. Measurement of Subglottic Pressure
	6.4.2.	Acoustic Analysis
		6.4.2.1. Fundamental Frequency
		6.4.2.2. Timbre and Voice Quality
	6.4.3.	Spectrogram
		6.4.3.1. Definition and Characteristics
		6.4.3.2. Clinical Interpretation
	6.4.4.	Electroglottography
		6.4.4.1. Principle of Operation
		6.4.4.2. Applications in Voice Disorders
	6.4.5.	Laryngeal Electromyography
		6.4.5.1. Principles of Electromyography
		6.4.5.2. Clinical Applications
6.5.	Voice L	aboratory II
	6.5.1.	Spectrogram
		6.5.1.1. Spectral Analysis of the Voice
		6.5.1.2. Relationship with Voice Disorders
	6.5.2.	Smoothed Cepstral Peak Analysis
		6.5.2.1. Smoothing Techniques
		6.5.2.2. Clinical Use
	6.5.3.	Electroglottography
		6.5.3.1. Recording Glottal Vibration
		6.5.3.2. Vocal Function Assessment
	6.5.4.	Inverse Filtering
		6.5.4.1. Filtering Techniques
		6.5.4.2. Application in Voice Assessment

0.0.	Concep	of and Classification of Hearing Loss
	6.6.1.	General Concepts
		6.6.1.1. Anatomy of the Auditory System
		6.6.1.2. Mechanisms of Hearing
	6.6.2.	Classification of Hearing Loss
		6.6.2.1. Conductive Hearing Loss
		6.6.2.2. Sensorineural Hearing Loss
		6.6.2.3. Mixed Hearing Loss
	6.6.3.	Degree of Severity of Hearing Loss
		6.6.3.1. Severity Level
		6.6.3.2. Sedation Scales
5.7.	Conduc	ctive Hearing Loss
	6.7.1.	Pathogenic Mechanisms
		6.7.1.1. Alterations in The External Ear
		6.7.1.2. Alterations in The Middle Ear
	6.7.2.	Most Relevant Disorders
		6.7.2.1. Middle Ear Infection
		6.7.2.2. Perforated Eardrum
	6.7.3.	Diagnosis and Assessment
		6.7.3.1. Clinical History and Physical Examination
		6.7.3.2. Audiological Tests
		6.7.3.3. Imaging Tests
5.8.	Sensor	ineural Hearing Loss
	6.8.1.	Pathogenic Mechanisms
		6.8.1.1. Alterations in The Internal Ear
		6.8.1.2. Damage to the Auditory Nerve
	6.8.2.	Most Relevant Congenital Disorders
		6.8.2.1. Hereditary Deafness
		6.8.2.2. Congenital Malformations
	6.8.3.	Presbycusis
		6.8.3.1. Pathophysiology
		6.8.3.2. Audiological Tests
	6.8.4.	Noise-Induced Hearing Loss
		6.8.4.1. Pathophysiology
		6.8.4.2. Audiological Tests

6.9	9. Mixed	Mixed Hearing Loss			
	6.9.1.	Most Relevant Acquired Disorders			
		6.9.1.1. Acoustic Trauma			
		6.9.1.2. Infectious Diseases			
		6.9.1.3. Menière's Disease			
	6.9.2.	Audiological Diagnosis			
		6.9.2.1. Acuametry Tests			
		6.9.2.2. Auditory Threshold Tests			
	6.9.3.	Interdisciplinary Treatment			
		6.9.3.1. Otolaryngologist			
		6.9.3.2. Adaptation of Hearing Aids			
6.	10. Impac	t of Hearing Loss and Dysphonia on Communication and Quality of Life			
	6.10.1	. Effects of Hearing Loss on Language Development, Speech and Social Interaction			
		6.10.1.1. Language Delay			
		6.10.1.2. Difficulties in Social Communication			
	6.10.2	. Effects of Hearing Loss on Adult Communication			
		6.10.2.1. Implications for Professional Life			
		6.10.2.2. Implications for Family Life			
		6.10.2.3. Implications for Social Life			
	6.10.3	. Consequences of Dysphonia on Professional, Social and Emotional Communication			
		6.10.3.1. Impact on the Professional Voice			
		6.10.3.2. Emotional and Psychological Effects			
	6.10.4	. Changes in Quality of Life Derived from Hearing Loss and Dysphonia			
		6.10.4.1. Social Isolation			
		6.10.4.2. Decreased Self-Esteem			
	6.10.5	. Speech Therapy Intervention Strategies to Mitigate the Impact of these Conditions			
		6.10.5.1. Voice Therapy			
		6.10.5.2. Auditory Adaptation			
	6.10.6	. Importance of Prevention, Early Diagnosis and Comprehensive Treatment			
		6.10.6.1. Prevention in the Family, Social and Work Environment			

6.10.6.2. Early Diagnosis and Monitoring

tech 22 | Syllabus

Module 7. Speech Therapy Intervention for Voice Disorders 7.1. Dysphonia 7.1.1. Definition of Dysphonia and Aphonia, Normal and Pathological Voice 7.1.1.1. Difference between Dysphonia and Aphonia 7.1.1.2. Characteristics of a Normal Voice

- 7.1.1.3. Characteristics of a Pathological Voice 7.1.2. The Voice as an Element of Identity
 - 7.1.2.1. Psychological Importance of the Voice7.1.2.2. The Voice in The Construction of Personal Identity
- 7.1.3. Classification of Dysphonia7.1.3.1. Functional Dysphonias7.1.3.2. Organic Dysphonias7.1.3.3. Mixed Dysphonias
- 7.1.4. Voice Evolution with Age7.1.4.1. Voice Changes in Childhood7.1.4.2. Voice Changes in Adulthood7.1.4.3. Voice Changes in Old Age
- Speech Therapy Assessment of the Voice
 7.2.1. Functional Assessment of the Voice
 7.2.1.1. Vocal Quality Assessment
 7.2.1.2. Resonance Assessment
 - 7.2.2. Medical History
 7.2.2.1. Patient's Medical History
 7.2.2.2. Risk Factors in Dysphonia
 - 7.2.3. Non-Speech Parameters7.2.3.1. Breathing7.2.3.2. Posture7.2.4. Speech Parameters
 - 7.2.4. Speech Parameters
 7.2.4.1. Tone and Pitch
 7.2.4.2. Intensity and Projection
 - 7.2.5. Self-assessment Scales7.2.5.1. Dysphonia Severity Scale7.2.5.2. Vocal Quality Self-Assessment Scale

Fundamentals of Voice Rehabilitation 7.3.1. Intervention in Voice Disorders 7.3.1.1. Medical Treatment 7.3.1.2. Surgical Treatment 7.3.2. Overview of Voice Rehabilitation 7.3.2.1. Intervention Approaches 7.3.2.2. Treatment Objectives Biomechanical Objective of Voice Rehabilitation 7.3.3.1. Restoration of Laryngeal Function 7.3.3.2. Optimization of Vocal Function 7.3.4. Disorders Suitable for Rehabilitation and Prognosis 7.3.4.1. Functional Dysphonias 7.3.4.2. Organic Dysphonias 7.3.5. The Importance of Patient Adherence to Therapy 7.3.5.1. Factors Affecting Adherence 7.3.5.2. Strategies to Improve Adherence 7.3.6. Principles of Sensorimotor Learning (PSL) 7.3.6.1. Motor Learning in Voice Rehabilitation 7.3.6.2. Application of Sensory Techniques in Therapy Philosophical Trends in Speech Therapy Intervention for the Voice 7.4.1. Symptomatological Trend 7.4.1.1. Treatment of Symptoms Without Modifying the Cause 7.4.1.2. Techniques and Approaches of the Symptomatological Trend 7.4.2. Psychological Trend 7.4.2.1. The Voice as an Emotional Reflex 7.4.2.2. Psychological Techniques in Voice Rehabilitation Hygienic Approach 7.4.3. 7.4.3.1. Basic Vocal Hygiene 7.4.3.2. Voice Care and Prevention

7.4.4.1. Biomechanical Approach to Voice Treatment

7.4.4.2. Relaxation and Breathing Techniques

7.4.4.

Physiological Trend

		7.4.5.1. Combination of Approaches in Rehabilitation
		7.4.5.2. Benefits of an Eclectic Approach
	7.4.6.	Scientific Evidence
		7.4.6.1. Recent Studies in Voice Rehabilitation
		7.4.6.2. Results in the Application of Philosophical Trends
7.5.	Genera	I Therapeutic Approach: Voice and Body
	7.5.1.	Muscles, Relaxation and Muscle Contraction: Concepts
		7.5.1.1. Muscles Involved in Phonation
		7.5.1.2. Muscle Relaxation in Voice Treatment
	7.5.2.	Muscles that Intervene in Phonation
		7.5.2.1. Respiratory Muscles
		7.5.2.2. Laryngeal Muscles
	7.5.3.	Upright Posture and Voice: Poor Posture
		7.5.3.1. The Effect of Posture on the Voice
		7.5.3.2. Correcting Bad Posture Habits
	7.5.4.	Exercises in Posture, Relaxation and Muscle Work
		7.5.4.1. Relaxation Exercises
		7.5.4.2. Muscle Strengthening Exercises
7.6.	Genera	l Therapeutic Approach: Breathing
	7.6.1.	Respiratory Type and Mode
		7.6.1.1. Diaphragmatic Breathing
		7.6.1.2. Clavicular and Thoracic Breathing
	7.6.2.	Dosage and Phonorespiratory Coordination
		7.6.2.1. Respiratory Coordination with Phonation
		7.6.2.2. Techniques for Dosing Breathing
	7.6.3.	Respiratory Teaching and its Importance in the Rehabilitation of Dysphonia
		7.6.3.1. Benefits of Controlled Breathing
		7.6.3.2. Breathing Techniques for Dysphonia

7.4.5. Eclectic Trend

7.	General	Therapeutic Approach: Resonance and Vocal Imposition		
	7.7.1.	Concept of Resonance. Resonators		
		7.7.1.1. Supraglottic Resonators		
		7.7.1.2. Subglottic Resonators		
	7.7.2.	Non-linear Phonation Theory		
		7.7.2.1. Basic Principles of Non-linear Phonation		
		7.7.2.2. Application in Voice Therapy		
	7.7.3.	SOSV (Semi-Occluded Speech Vocal) Exercises		
		7.7.3.1. Benefits of SOSV Exercises		
		7.7.3.2. Techniques for Applying SOSV Exercises		
	7.7.4.	Importance of Resonance Work in Voice Problems		
		7.7.4.1. Improving Voice Quality through Resonance		
		7.7.4.2. Strategies for Optimizing Resonance		
	7.7.5.	The Concept of Vocal Imposition		
		7.7.5.1. The Definition of Vocal Imposition		
		7.7.5.2. Vocal Imposition Techniques in Rehabilitation		
8.	General Therapeutic Approach: Articulation and Modulation			
	7.8.1.	Definition of Articulation		
		7.8.1.1. Components of Articulation		
		7.8.1.2. Types of Articulatory Errors		
	7.8.2.	Phonoarticulatory Organs		
		7.8.2.1. Lips, Tongue and Palate		
		7.8.2.2. Jaw and Teeth		
	7.8.3.	Resonance-Articulation Relationship		
		7.8.3.1. Influence of Resonance on Articulation		
		7.8.3.2. Techniques to Improve the Coordination between Resonance and Articulation		
	7.8.4.	Modulation, the Basis of Expressiveness		

7.8.4.1. Control of Modulation in the Voice 7.8.4.2. Techniques to Improve Modulation

tech 24 | Syllabus

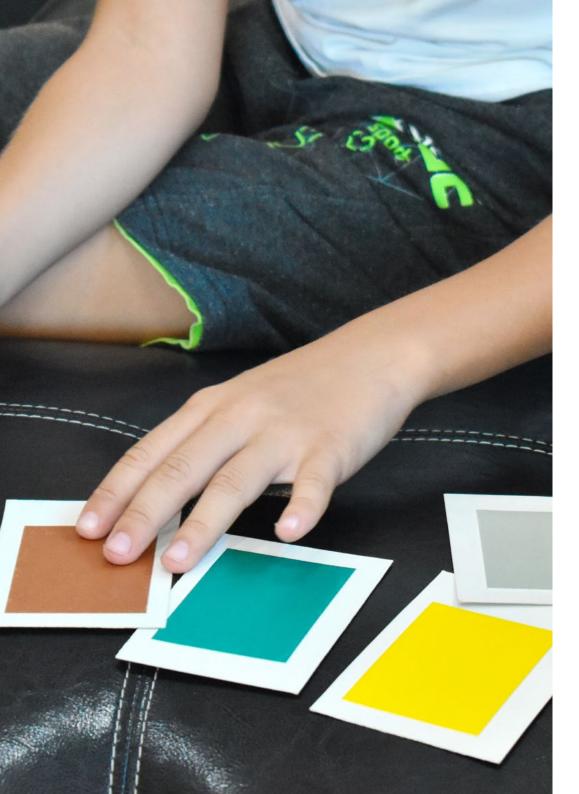
Importance of Modulation Practice Early Detection of Hearing Loss 7.8.5.1. Improving Emotional Expression through Modulation 8.1.2.1. Methods of Newborn Screening 7.8.5.2. Impact of Modulation on Vocal Effectiveness 8.1.2.2. Screening Tests in Childhood 786 Exercises Etiology of Hearing Loss 8.1.3.1. Genetic Causes 7.8.6.1. Exercises to Improve Modulation 7.8.6.2. Exercises to Correct Articulatory Errors 8.1.3.2. Acquired Causes 8.1.3.3. Prenatal and Perinatal Hearing Loss Indirect Therapy: Vocal Hygiene 7.9.1. Concept of Vocal Hygiene 8.2. Risk Factors and Prevention of Hearing Loss 7.9.1.2. Habits and Routines of Vocal Care 8.2.1. Risk Indicators for Hearing Loss 7.9.2. Guidelines for Vocal Hygiene 8.2.1.1. Genetic Factors 7.9.2.1. Avoiding Voice Abuse 8.2.1.2. Exposure to Loud Noises 8.2.1.3. Diseases and Medical Conditions 7.9.2.2. Proper Use of the Voice in Everyday Activities 7.9.3. Education in Voice Care 8.2.2. Classification of Hearing Loss 7.9.3.1. Identification of Harmful Habits 8.2.2.1. Conductive Hearing Loss 7.9.3.2. Progressive Adaptation of Care Behaviors 8.2.2.2. Sensorineural Hearing Loss 7.10. Voice Rehabilitation in Different Disorders 8.2.2.3. Mixed Hearing Loss 8.2.3. Consequences of Child Hearing Loss 7.10.1. Functional and Organic-Functional Dysphonia 7.10.1.1. Treatment of Functional Dysphonia 8.2.3.1. Impact on Language Development 7.10.1.2. Treatment of Organic-Functional Dysphonia 8.2.3.2. Impact on Emotional and Social Development 7.10.2. Organic Dysphonias 8.2.3.3. Impact on Performance School 7.10.2.1. Treatment of Mild Organic Dysphonia Conventional Hearing Aids 7.10.2.2. Treatment of Severe Organic Dysphonia 8.3.1. History of the Hearing Aid 7.10.3. Child Dysphonia 8.3.1.1. First Hearing Aids 7.10.3.1. Treatment of Functional Child Dysphonia 8.3.1.2. Technological Evolution of Hearing Aids 7.10.3.2. Treatment of Organic Child Dysphonia 8.3.1. Components and Operation 8.3.1.1. Microphone Module 8. Speech Therapy Intervention for Hearing Impairments 8.3.1.2. Amplifier 8.1. Diagnosis and Etiology of Hearing Loss 8.3.1.3. Receiver and Internal Hearing Aid 8.1.1. Epidemiology of Hearing Loss 8.3.2. Types of Hearing Aids 8.1.1.1. Hearing Loss in Newborns 8.3.2.1. Behind-the-Ear Hearing Aids 8.1.1.2. Hearing Loss in Children 8.3.2.2. In-the-Canal Hearing Aids 8.1.1.3. Hearing Loss in Adults 8.3.2.3. Full-Ear Hearing Aids

8.4.		Conduction Implants and Middle Ear Implants			
	8.4.1.	Basic Concepts			
		8.4.1.1. Bone Conduction Principle			
	0.40	8.4.1.2. Indications for Bone Conduction Implants			
	8.4.2.				
		8.4.2.1. Bone Conduction Implants			
	0.40	8.4.2.2. Middle Ear Implants			
	8.4.3.	Surgery Osseointegrated Implant			
		8.4.3.1. Surgical Procedure			
		8.4.3.2. Risks and Benefits			
8.5.		ar implants			
	8.5.1.	Cochlear Implant Components and Functioning			
		8.5.1.1. External Parts of the Cochlear Implant			
		8.5.1.2. Internal Parts of the Cochlear Implant			
	8.5.2.				
		8.5.2.1. Indications for Adults			
		8.5.2.2. Indications for Children			
	8.5.3.	Structure of a CI Program			
		8.5.3.1. Pre-implant Assessment			
		8.5.3.2. Post-operative and Follow-up			
	8.5.4.	CI Surgery			
		8.5.4.1. Surgical Procedure			
		8.5.4.2. Possible Complications and Their Management			
		8.5.4.3. Telemetry			
8.6.	Assessment of Prosthetic Performance				
	8.6.1.	Technical Requirements			
		8.6.1.1. Technical Parameters for Assessment			
		8.6.1.2. Tools for Measuring Prosthetic Effectiveness			
	8.6.2.	Battery of Tonal Tests			
		8.6.2.1. Auditory Threshold Test			
		8.6.2.2. Tone Discrimination Test			
	8.6.3.	Battery of Verbal Tests			
		8.6.3.1. Words Recognition Test			
		8.6.3.2. Verbal Comprehension Test			

8.7.	Communication Methods and Systems				
	8.7.1.	Oral Methods			
		8.7.1.1. Speech Method			
		8.7.1.2. Auditory Stimulation Methods			
	8.7.2.	Gestural Methods			
		8.7.2.1. Sign Language			
		8.7.2.2. Gestures and Mime			
	8.7.3.	Mixed Methods			
		8.7.3.1. Integration of Sign Language and Oral Communication			
		8.7.3.2. Benefits of Mixed Methods			
8.8.	Advice for the Family of the Hearing-Impaired Child				
	8.8.1.	Impact on the Family			
		8.8.1.1. Psychological Adaptation of Parents			
		8.8.1.2. Family Dynamics in Response to Hearing Loss			
	8.8.2.	Guidance for Relatives of Children Aged 0-6			
		8.8.2.1. Early Stimulation Strategies			
		8.8.2.2. Support on Language Development			
	8.8.3.	Guidance for Relatives of Children Aged 6-12			
		8.8.3.1. Support in School Integration			
		8.8.3.2. Strategies for Socialization			
	8.8.4.	Development of School, Social and Emotional Competence			
		8.8.4.1. Setting Educational Goals			
		8.8.4.2. Support in Emotional Development			
8.9.	Technical Aids and Schooling for the Hearing Impaired Child				
	8.9.1.	Frequency Modulation Systems			
		8.9.1.1. Use in the Classroom			
		8.9.1.2. Adaptation and Benefits			
	8.9.2.	Magnetic Loops and Connectivity			
		8.9.2.1. Principle of Operation			
		8.9.2.2. Integration with Other Devices			

tech 26 | Syllabus

	8.9.3.	School Acoustics	9.2.	Techno	ological Tools for Assessment and Diagnosis in Speech Therapy
		8.9.3.1. Optimization of the Acoustic Environment in the Classroom		9.2.1.	Voice and Pronunciation Analysis Software
		8.9.3.2. Measures to Reduce Environmental Noise			9.2.1.1. Acoustic Analysis Tools
	8.9.4.	Visual Resources		9.2.2.	Tools for the Assessment of Verbal Comprehension and Expression
		8.9.4.1. Use of Subtitles and Visual Screens			9.2.2.1. Software for the Assessment of Verbal Fluency
		8.9.4.2. Integration of Visual Technologies in the Classroom		9.2.3.	Digital Techniques for the Diagnosis of Speech Disorders
8.10.	Auditor	y Rehabilitation of the Post-Lingual Deaf with a Cochlear Implant			9.2.3.1. Digital Assessment of Dysarthria
		Detection		9.2.4.	Technological Equipment for the Assessment of Hearing and Language Perception
		8.10.1.1. Initial Hearing Assessment			9.2.4.1. Digital Tests for Hearing Assessment
		8.10.1.2. Early Identification of Difficulties	9.3.	Mobile	Apps for Learning Alternative and Augmentative Communication Systems
	8.10.2.	Discrimination		9.3.1.	Apps for Training in the Use of Pictograms
		8.10.2.1. Tone Discrimination Training			9.3.1.1. Programs for Learning Visual Pictograms
		8.10.2.2. Speech Discrimination Training		9.3.2.	Tools for Monitoring Patients in the Use of Alternative Systems
	8.10.3.	Identification			9.3.2.1. Daily Use Monitoring Apps
		8.10.3.1. Recognition of Environmental Sounds		9.3.3.	Apps for Improving Communication in Children and Adults with Disorders
		8.10.3.2. Identification of Speech Sounds			9.3.3.1. Personalized Applications for Children with Autism
	8.10.4.	Detection		9.3.4.	Personalized Programs for Learning Signs and Symbols
		8.10.4.1. Detection of Isolated Words			9.3.4.1. Apps for Teaching Sign Language
		8.10.4.2. Detection of Complete Sentences	9.4.	Virtual	Platforms for Speech Therapy Rehabilitation
	8.10.5.	Comprehension		9.4.1.	Interactive Platforms for Remote Language Therapy
		8.10.5.1. Comprehension of Discourse in Context			9.4.1.1. Platforms with Interactive Exercises in Real Time
		8.10.5.2. Strategies to Improve Auditory Comprehension		9.4.2.	Use of Videoconferencing in Speech Therapy Rehabilitation
					9.4.2.1. Benefits of Teletherapy for Remote Patients
Mod	ule 9.	Technological Resources in Speech Therapy		9.4.3.	Online Programs for Monitoring Patient Progress
9.1.	Use of	Digital Technologies in Speech Therapy Intervention			9.4.3.1. Progress Monitoring Software
	9.1.1.	Digital Tools in Speech and Language Assessment		9.4.4.	Real-Time Feedback Tools for Therapists and Patients
		9.1.1.1. Voice Analysis Applications for Diagnosis			9.4.4.1. Real-Time Vocal Feedback Applications
	9.1.2.	Applications for Speech Rehabilitation	9.5.	Assisti	ve Technologies for Improving Communication in Patients with Disabilities
		9.1.2.1. Interactive Games for Speech Improvement		9.5.1.	Computer-generated Voice Devices
	9.1.3.	Use of Simulators and Interactive Games in Speech Therapy			9.5.1.1. Voice Technologies for People with Aphasia
		9.1.3.1. Voice Simulators for Therapy		9.5.2.	Reading and Writing Technologies for Visually Impaired People
	9.1.4.	Telemedicine Platforms for Speech Therapy			9.5.2.1. Reading Software for Blind People
		9.1.4.1. Videoconferencing Platforms for Therapy Sessions			•



Syllabus | 27 tech

9.5.3.	Hearing Aids and Sound Amplification Systems
	9.5.3.1. Amplification Devices for Patients with Hearing Loss

- 9.5.4. Assistive Technologies for People with Cerebral Palsy9.5.4.1. Communication Devices for People with Limited Mobility
- 9.6. Design and Use of Electronic Devices for Communication Prostheses
 - 9.6.1. Electronic Devices for Patients with Aphasia9.6.1.1. Augmentative Communication Devices for Aphasia
 - 9.6.2. Vocal Prostheses and their Integration into Daily Communication9.6.2.1. Prosthetic Devices for the Improvement of Speech and Voice
 - 9.6.3. Portable Technologies to Improve Communication in People with Paralysis9.6.3.1. Portable Prostheses for Patients with Paralysis
 - 9.6.4. Devices for the Improvement of Speech in Patients with Dysarthria9.6.4.1. Support Devices for Vocal Articulation
- 9.7. Devices for Improving Speech in Patients with Dysarthria
 - 9.7.1. Impact of Technology on the Efficiency of Speech Therapy9.7.1.1. Improvements in the Quality of Treatments with Technology
 - 9.7.2. Tools for Data Collection and Analysis of Patient Progress9.7.2.1. Clinical Data Analysis Software
 - 9.7.3. Recording Technologies for Monitoring Speech Therapy Intervention9.7.3.1. Platforms for Recording Therapy Sessions
 - 9.7.4. Use of Social Networks and Virtual Communities for Collaborative Learning9.7.4.1. Social Network Support Groups for Patients9.7.4.2. Professional Development Groups
- 9.8. Specialized Software for Speech Therapy Assessment
 - 9.8.1. Computer Programs for the Early Detection of Language Disorders 9.8.1.1. Screening Software
 - 9.8.2. Digital Tools for Assessing Pronunciation and Verbal Fluency9.8.2.1. Speech Analysis Tools
 - 9.8.3. Software for Assessment of Reading Comprehension and Written Expression9.8.3.1. Programs for the Assessment of Reading Comprehension9.8.3.2. Text Assessment Programs
 - 9.8.4. Voice Analysis Platforms for Speech Therapy Diagnoses9.8.4.1. Applications for the Analysis of Vocal Parameters

tech 28 | Syllabus

9.9.	Integration of Technological Resources in Personalized Speech Therapy Treatments			10.1.5.	Risk Factors in Professional Voice Use		
	9.9.1.	Adaptation of Applications and Devices to Individual Needs			10.1.5.1. Internal Factors		
		9.9.1.1. Customization of Applications According to Specific Disorders			10.1.5.2. External Factors		
	9.9.2.	Use of Artificial Intelligence in the Customization of Treatments		10.1.6.	Dysphonia as an Occupational Disease		
		9.9.2.1. Intelligent Systems for Adapting Speech Therapy			10.1.6.1. Causes of Dysphonia in Vocal Professions		
	9.9.3.	Design of Specific Digital Programs According to Speech Therapy Disorder			10.1.6.2. Prevention and Treatment		
	9.9.4.	Personalization of Intervention Through the Analysis of Patient Data	10.2.	Profess	ional Voice I. Spoken Voice		
		9.9.4.1. Use of Clinical Data to Personalize Therapy		10.2.1.	Physiological Basis of the Spoken Voice		
9.10.		ies to Integrate Accessible Technologies into the Daily Lives of Patients			10.2.1.1. Vocal Apparatus Anatomy		
		ommunication Needs			10.2.1.2. Physiology of Vocal Emission		
	9.10.1. Use of Technologies to Improve Communication at Home			10.2.2.	Physiology of Voice Production		
		9.10.1.1. Devices for Family Communication			10.2.2.1. Voice-Body Diagram		
	9.10.2.	Integration of Devices at School or Work for Patients with			10.2.2.2. Relationship between Body and Voice		
		Communication Difficulties	1	10.2.3.	Classification of Voices		
	0.10.2	9.10.2.1. Assistive Technologies in Educational Settings Adaptation of Technologies to Facilitate Social Inclusion			10.2.3.1. Classification According to Tone		
	9.10.3.	9.10.3.1. Tools for the Social Integration of People with Disabilities			10.2.3.2. Classification according to Voice Quality		
	9.10.4.	Training Programs for Family Members and Caregivers in the Use of		10.2.4.	Processes that Integrate the Body-Voice Emission for Speech		
		Accessible Technologies 9.10.4.1. Training Workshops for the Use of Assistive Devices			10.2.4.1. Breathing and Airflow Control		
					10.2.4.2. Articulation and Resonance		
				10.2.5.	Spoken Voice Assessment		
Mod	ule 10.	Professional Voice Training			10.2.5.1. Clinical Methods for Voice Assessment		
10.1.	The Pro	ofessional Voice: Overview			10.2.5.2. Specific Tests for Spoken Voice Assessment		
	10.1.1. Concept of Voice Health, Effectiveness and Efficiency			10.3. Professional Voice II. Singing Voice			
		10.1.1.1. Definition of Voice Health		10.3.1.	Physiological Basis of the Singing Voice		
		10.1.1.2. Importance of Voice Effectiveness and Efficiency			10.3.1.1. Anatomy of Singing		
	10.1.2.	Definition of Professional Voice and Occupational Voice			10.3.1.2. Physiology of Singing and Differences with the Spoken Voice		
		10.1.2.1. Key Differences between Professional Voice and Occupational Voice		10.3.2.	Classification of Voices, Vocal Range, Pitch Range		
		10.1.2.2. Impact of Intensive Voice Use on Each Type			10.3.2.1. Classification according to Voice Type (Soprano, Tenor, etc.)		
	10.1.3.	Classification of Professions According to Voice Use and Demand			10.3.2.2. Classification according to Pitch Range and Vocal Range		
		10.1.3.1. Professions with High Vocal Risk		10.3.3.	Comparison between the Spoken and Singing Voice		
		10.1.3.2. Professions with Low Vocal Risk	th Low Vocal Risk		10.3.3.1. Differences in Vocal Technique		
	10.1.4.	Vocoergonomics and Vocal Load			10.3.3.2. Differences in the Physiology of Voice Production		
		10.1.4.1. Principles of Voice Ergonomics					
		10.1.4.2. Strategies for Reducing Vocal Strain					

10.3.4.	Processes that Integrate the Body-Voice Production for Singing
	10.3.4.1. Breathing and Air Control in Singing
	10.3.4.2. Resonance and Articulation Techniques in Singing
10.3.5.	Singing Voice Assessment
	10.3.5.1. Voice Assessment Methods for Singers
	10.3.5.2. Clinical Indicators of Voice Dysfunction in Singing
Speech	Therapy Approach to Occupational and Professional Voice
10.4.1.	Vocal Techniques Adapted to the Work-Related Voice
	10.4.1.1. Adaptation of Vocal Technique for Different Professions
	10.4.1.2. Specific Vocal Strengthening Exercises
10.4.2.	Voice Hygiene and Adjustments to the Occupational/Professional Voice
	10.4.2.1. Practical Tips for Daily Voice Care
	10.4.2.2. Ergonomic Adjustments for the Occupational Voice
10.4.3.	Direct Training of the Voice
	10.4.3.1. Muscle and Respiratory Training Exercises
	10.4.3.2. Techniques for Improving Vocal Quality
10.4.4.	Techniques, Execution and Variants of Exercises for Voice Training and Retraining
	10.4.4.1. Exercises for Voice Training
	10.4.4.2. Exercises for Voice Retraining
The Tea	acher's Voice
10.5.1.	Expressive Characteristics and Vocal Quality in the Teacher
	10.5.1.1. Tone and Volume Suitable for Teaching
	10.5.1.2. Vocal Expression and Effective Communication
10.5.2.	Risk Factors for Voice Use in Teaching
	10.5.2.1. Excessive Use of the Voice in Noisy Environments
	10.5.2.2. Vocal Stress due to Excessive Speaking
10.5.3.	Different Demands According to Teaching Activity
	10.5.3.1. Voice Demands at Different Educational Levels
	10.5.3.2. Voice Adaptation According to the Teaching Context
10.5.4.	Specific Training for the Teaching Voice
	10.5.4.1. Exercises to Maintain Voice Resistance
	10.5.4.2. Voice Relaxation Techniques

10.4.

10.5.

10.6.	The Broadcaster's Voice				
		Expressive Characteristics and Voice Quality in the Broadcaster			
		10.6.1.1. Use of Tone, Rhythm and Articulation			
		10.6.1.2. The Voice as a Communication Tool			
	10.6.2.	Speech Therapy Approach to the Broadcaster			
		10.6.2.1. Techniques for Improving Vocal Clarity			
		10.6.2.2. Managing the Voice in Stressful Situations			
	10.6.3.	The Broadcaster Who Consults for Speech and Voice Problems			
		10.6.3.1. Speech Therapy Assessment of Broadcasters			
		10.6.3.2. Diagnosis and Treatment of Voice Dysfunctions			
	10.6.4.	The Voice in Dubbing			
		10.6.4.1. Specific Techniques for Voice Dubbing			
		10.6.4.2. Voice Adaptation for Different Characters			
	10.6.5.	The Football Commentator			
		10.6.5.1. Characteristics of the Voice in Sports Commentating			
		10.6.5.2. Techniques for Maintaining Voice Quality in Long Commentaries			
10.7.	The Actor's Voice				
	10.7.1.	Expressive Characteristics and Voice Quality in Actors			
		10.7.1.1. Vocal Expression According to Character			
		10.7.1.2. Voice Control for Expressing Emotions			
	10.7.2.	Different Requirements: Acting in Film, Television, Theater and Voice Adaptation According to Characters			
		10.7.2.1. Voice Demands in Film and Television			
		10.7.2.2. Voice Demands in Theater and Adaptation			
	10.7.3.	Risk Factors for the Voice in Acting			
		10.7.3.1. Vocal Overexertion in Rehearsals and Performances			
		10.7.3.2. Voice Stress in Intense Productions			
	10.7.4.	Speech Therapy Approach to the Actors			
		10.7.4.1. Exercises for Voice Recovery			

10.7.4.2. Techniques to Prevent Voice Injuries in Actors

tech 30 | Syllabus

10.8. The Singer's Voice

- 10.8.1. Expressive Characteristics and Voice Quality in Singers10.8.1.1. Expressive Characteristics and Voice Quality in the Singer10.8.1.2. Mastery of Tone and Pitch
- 10.8.2. The Singing Voice in Different Musical Genres10.8.2.1. Voice Adaptation to Different Musical Styles10.8.2.2. Voice Differences between Genres
- 10.8.3. Risk Factors for Singers10.8.3.1. Voice Injuries due to Voice Abuse10.8.3.2. Environmental Conditions that Affect the Singing Voice
- 10.8.4. Speech Therapy Approach for Singers10.8.4.1. Treatments for Singing Dysphonia10.8.4.2. Techniques to Optimize the Voice Health of the Singer

10.9. The Voice of the Telemarketer and Others

- 10.9.1. Expressive Characteristics and Voice Quality in the Telemarketers10.9.1.1. Tone and Vocal Clarity for Telephone Communication10.9.1.2. Proper Use of Volume and Rhythm
- 10.9.2. Risk Factors for the Telemarketer10.9.2.1. Vocal Stress due to Long Conversations10.9.2.2. Working Conditions that Affect the Voice
- 10.9.3. Speech Therapy Approach for the Telemarketer10.9.3.1. Techniques to Relieve Voice Tension10.9.3.2. Prevention of Voice Disorders in the Telemarketer
- 10.9.4. Other Occupations with Voice Overload
 10.9.4.1. Professions with High Vocal Risk (e.g., Salespeople, Receptionists)
 10.9.4.2. Prevention and Voice Care in Other Occupations

10.10. Exercises to Restore Vocal Function

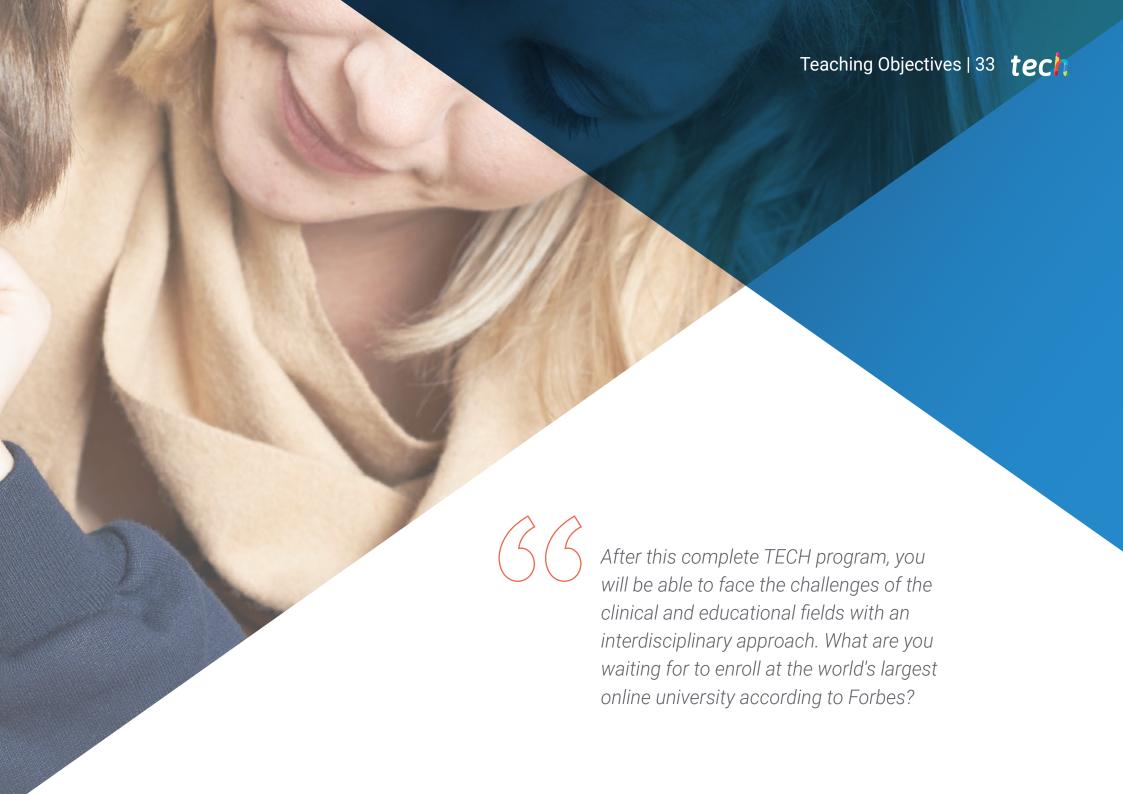
- 10.10.1. Muscle and Respiratory Conditioning10.10.1.1. Breathing Exercises to Strengthen the Voice10.10.1.2. Laryngeal Muscle Conditioning Techniques
- 10.10.2. Structured Voice Therapy Methods
 10.10.2.1. Voice Therapies based on Vocal Structure
 10.10.2.2. Rehabilitation Exercises for Dysphonia
- 10.10.3. Voice Facilitation Techniques
 10.10.3.1. Relaxation Techniques for the Voice
 10.10.3.2. Methods to Improve Voice Projection
- 10.10.4. Voice Warm-up and Cool-down
 10.10.4.1. Voice Warm-up Routines
 10.10.4.2. Voice Cool-down Strategies



A high-level program that will encourage you to make a difference in Speech Therapy. What are you waiting for to enroll?" Do it now and make the most of all the benefits that TECH has to offer"





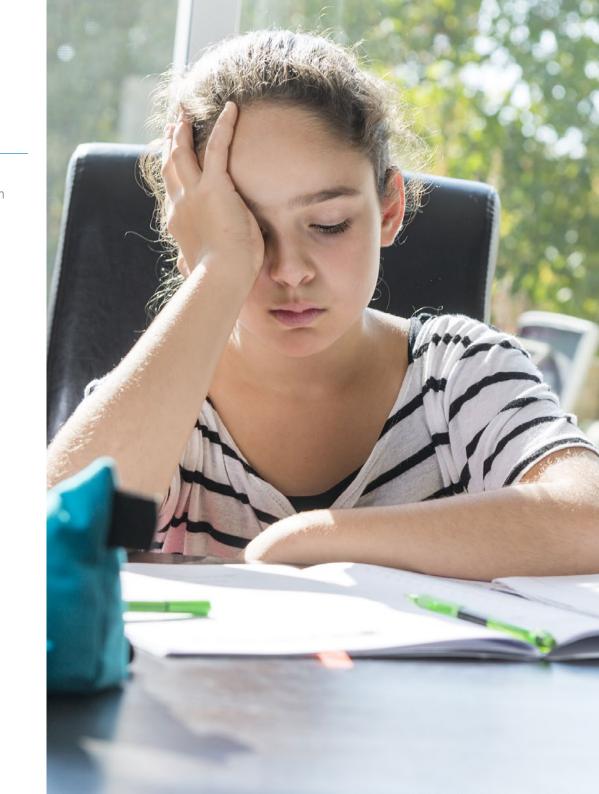


tech 34 | Teaching Objectives



General Objectives

- Analyze the theoretical and methodological foundations of speech therapy intervention
- Apply advanced techniques for the assessment and diagnosis of language and communication disorders
- Design speech therapy intervention plans tailored to the individual needs of patients
- Implement innovative strategies in the rehabilitation of speech and voice disorders
- Integrate digital technologies and tools into speech therapy assessment and intervention processes
- Collaborate with multidisciplinary teams for a comprehensive approach to language disorders
- Assess the effectiveness of speech therapy intervention programs using evidence-based methodologies
- Develop communication and teaching skills for the education and guidance of patients and families
- Adapt speech therapy intervention to different age groups and clinical and educational contexts
- Apply ethical and deontological principles in the professional practice of speech therapy
- Research new trends and approaches in speech therapy intervention to improve professional practice
- Manage speech therapy resources and services in different fields of action
- Enhance the autonomy and quality of life of patients with communication disorders
- Foster the development of professional skills for innovation and leadership in speech therapy





Module 1. Voice Anatomy, Physiology and Biomechanics

- Learn about the phylogenetic origin of the phonatory system
- Learn about the evolutionary development of the human larynx
- Apply the main muscles and the functioning of the respiratory system
- Understand the main anatomical structures that make up the larynx and how it works
- Master the histology of the vocal cords
- Analyze the vibratory cycle of the vocal chords

Module 2. Acoustic Physics and Audiology

- Understand the fundamental properties and characteristics of sound waves
- Apply methods for measuring sound waves and their components
- Analyze the acoustic processes of reflection, refraction and diffraction in the propagation of sound
- Identify methods for assessing auditory function using subjective and objective tests

Module 3. Voice Disorders

- Differentiate normal voice from pathological voice
- Differentiate between the concepts of euphonia and dysphonia
- Learn to detect early symptoms/traits of dysphonia through listening
- Know the different types of voices and their characteristics
- Analyze the different types of functional dysphonia
- Detail the different types of congenital organic dysphonia

Module 4. Statistics

- · Recognize the basic concepts of statistics and probability
- Apply the different methods of data selection, pooling and presentation
- Design and select samples by identifying the means, techniques and tools to record information
- Handle everything related to statistics and its concepts

Module 5. Speech Therapy Research Methods

- Master solid and varied conceptual and methodological bases
- Guide and resolve doubts that may arise in this field
- Develop an advanced understanding of the key concepts and methodologies in this area
- Solve specific problems and address challenges with a critical and informed approach

Module 6. Pathophysiology of Hearing and Phonation

- Identify the main types of hearing loss, as well as the associated disorders that affect hearing, describing their causes, pathogenic processes and consequences
- Analyze the altered physiological mechanisms in voice disorders and the auditory system, relating them to their impact on communication disorders
- Manage the anatomy and physiology of the organs of speech and hearing in order to understand the pathological alterations that cause voice and hearing disorders
- Understand the importance of the prevention, treatment and prognosis of disorders that affect communication from a comprehensive speech therapy perspective

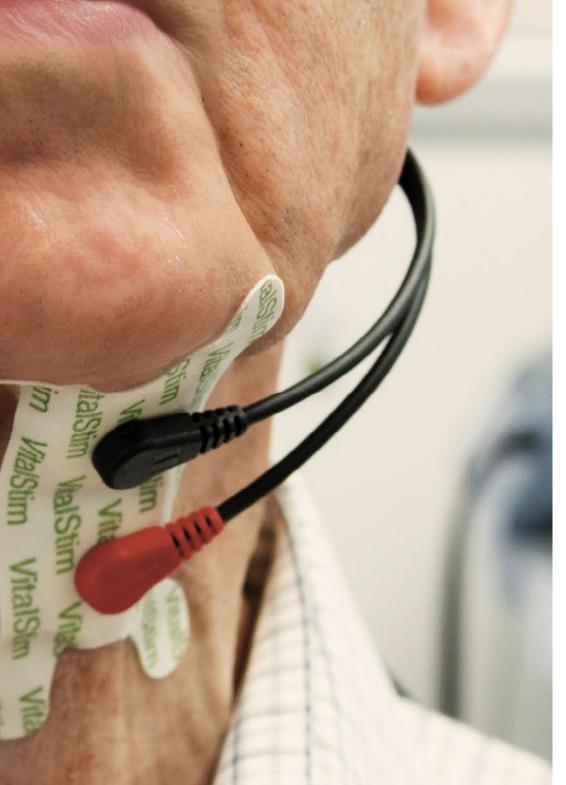
Module 7. Speech Therapy Intervention for Voice Disorders

- Apply the bases of speech therapy in the treatment of the voice, taking into account collaboration with other professionals in voice disorders
- Identify and select the appropriate treatment (medical, surgical, speech therapy or a combination) for different vocal lesions
- Carry out an assessment of the voice at the beginning of the intervention, determining the pathophysiology and establishing a treatment plan
- Use speech therapy intervention approaches (hygienic, psychological, symptomatic, physiological and eclectic) according to voice disorders

Module 8. Speech Therapy Intervention for Hearing Impairments

- Identify alterations in auditory perception and their impact on communication and social, school and family integration
- Assess the therapeutic options available for auditory rehabilitation, differentiating the approaches according to the type of hearing loss
- Know and apply audio-prosthetic devices appropriate for each degree of hearing loss
- Understand the fundamentals of cochlear implants and select the appropriate candidates for this device





Module 9. Technological Resources in Speech Therapy

- Apply speech therapy treatments appropriate to the individual needs of patients
- Select and adapt alternative and augmentative communication systems according to the context of each patient
- Facilitate the learning of alternative systems and increase the use of prostheses and technical aids
- Know and apply assessment and diagnostic techniques and instruments in Speech Therapy

Module 10. Professional Voice Training

- Understand the processes of health promotion in speech therapy in the area of the spoken and singing voice, both artistic and occupational
- Identify the risk factors and predisposition to dysphonia in groups that require intensive use of the voice, differentiating between artistic and occupational voice
- Distinguish the specific characteristics of the artistic and occupational voice, analyzing the particular needs of each professional group and their relationship with dysphonia
- Apply strategies promote vocal health and prevent dysphonia, in order to reduce the risk in professionals who make intensive use of their voice





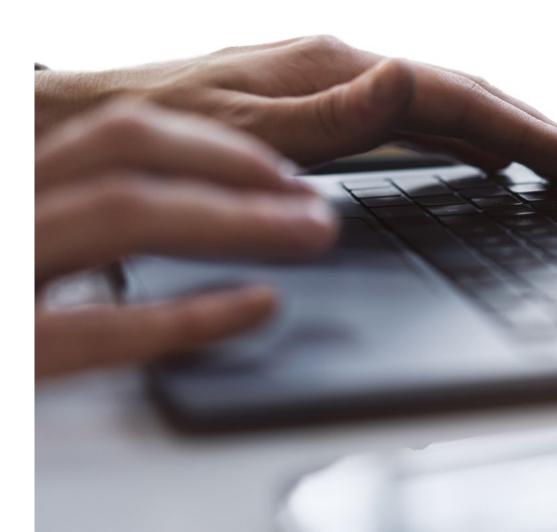
The student: the priority of all TECH programs

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.







Study Methodology | 41 tech

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"

tech 42 | Study Methodology

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).

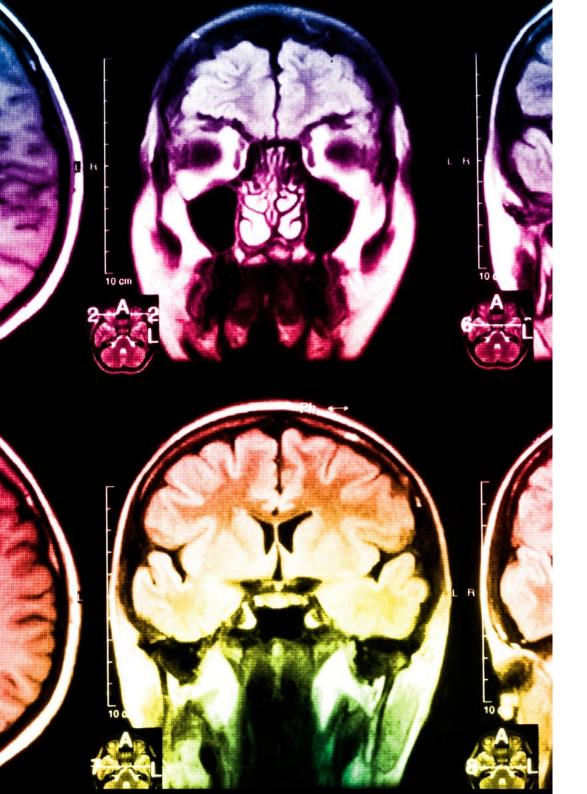
Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



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.

tech 46 | Study Methodology

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

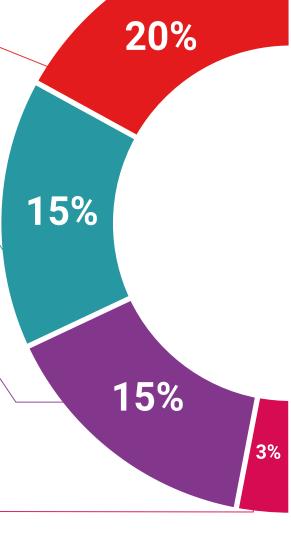
You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



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.

Study Methodology | 47 tech



Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



Testing & Retesting

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



Classes

There is scientific evidence suggesting that observing third-party experts can be useful.





Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.





17%





tech 50 | Certificate

This private qualification will allow you to obtain a diploma for the **Master's Degree in Speech Therapy Intervention** 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.

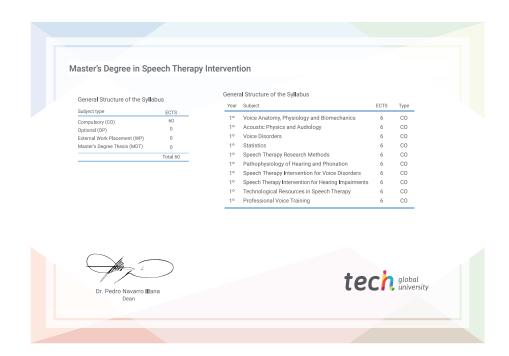
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: Master's Degree in Speech Therapy Intervention

Modality: online

Duration: 12 months

Accreditation: 60 ECTS



^{*}Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

health confidence people information tutors guarantee accreditation teaching institutions technology learning



Master's Degree Speech Therapy Intervention

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

