Advanced Master's Degree

University Teaching and Research in Education

tech global university

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Advanced Master's Degree
University Teaching and Research in Education

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Global University**
- Credits: **120 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/education/advanced-master-degree/advanced-master-degree-university-teaching-research-education

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01

Introduction

University students seek higher education, quality training and research motivation. People with a high learning capacity who are immersed in the search for their future. Therefore, teaching at the university level is essential to prepare these young people for the future and to create knowledge-based societies.

A comprehensive program created to take you to the next level in the field of university teaching and research and to help you instill your passion for learning in your students"

This Advanced Master's Degree in University Teaching and Research in Education has among its objectives the promotion and strengthening of the competencies of teachers in the university environment, taking into account the most current tools in higher education. In addition, one of the most important aspects of university professors is the promotion of scientific research among young people, so this specialization has an important focus on this discipline.

Active teaching methodologies and techniques, quality and evaluation models in education, the phases of programming and implementation of educational projects that are followed in different centers or the tools and resources that exist to carry out the practice of university teaching, are just some of the topics on which this specialization focuses. In addition to this, he has extensive knowledge of the basics of educational research, as well as advanced methods and techniques for the development of scientific research at the university level.

Throughout this specialization, the student will learn all of the current approaches to the different challenges posed by their profession. A high-level step that will become a process of not only professional but also personal improvement. In addition, TECH makes a social commitment: to help the specialization of highly qualified professionals and develop their personal, social and occupational skills during their development.

Students are not only instructed in theoretical knowledge, but are shown another way of studying and learning that is more organic, convenient and efficient. At TECH we work to keep students motivated, create in them a passion for learning and encourage them to develop critical thinking to think for themselves.

This Advanced Master's Degree is designed to provide access to the specific knowledge of this discipline in an intensive and practical way. A great value for any professional.

What is more, as it is a 100% online specialization, students decide where and when to take on the course load. No fixed schedules and no obligation to move to the classroom, which facilitates the reconciliation with family and work life.

This **Advanced Master's Degree in Teaching and University Research in Education** contains the most complete and up-to-date academic program on the university scene. The most important features include:

- The latest technology in e-learning software
- Intensely visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- The development of practical case studies presented by practising experts
- State-of-the-art interactive video systems
- Teaching supported by telepractice
- Continuous updating and recycling systems
- Self-regulated learning: full compatibility with other occupations
- Practical exercises for self-assessment and learning verification
- Support groups and educational synergies: questions to the expert, debate and knowledge forums
- Communication with the teacher and individual reflection work
- Content that is accessible from any fixed or portable device with an Internet connection
- Supplementary documentation databases are permanently available, even after completing the program

Professors must update their teaching skills to advance their career. In this Advanced Master's Degree we give you the keys to university teaching and research in an intensive and complete training program"

A program created for professionals who aspire to excellence that will allow you to acquire new skills and strategies in a smooth and effective way"

Our teaching staff is made up of working professionals. In this way, TECH ensures it offers the educational update it intends to provide. A multidisciplinary team of doctors training and experience in different environments, who will develop the theoretical knowledge in an efficient way, but above all, they will bring their practical knowledge from their own experience to the course.

This command of the subject is complemented by the effectiveness of the methodological design of this program. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of easy-to-use and versatile multimedia tools that will give you the necessary skills you need for your specialization.

The design of this program is based on Problem-Based Learning: an approach that views learning as a highly practical process. To achieve this remotely, TECH uses telepractice. With the help of an innovative, interactive video system and learning from an expert, students will acquire the knowledge as if they were dealing with the case in real life. A concept that will make it possible to integrate and fix learning in a more realistic and permanent way.

A high-level scientific specialization, supported by advanced technological development and the teaching experience of the best professionals.

A deep and comprehensive dive into strategies and approaches in university teaching and research.

02

Objectives

The objective of this Advanced Master's Degree is to specialize highly qualified professionals for workplace. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping professionals reach a much higher level of expertise and control. A goal that you can take for granted with a high-intensity and high-precision specialization.

If your goal is to improve in your profession and to acquire a qualification that will enable you to compete among the best, then look no further: welcome to TECH"

General Objectives

- Encourage skills and competences in university teachers
- Understand the most up to date tools for working as a teacher in the university field
- Learn how to motivate your students to take an interest in continuing their studies and entering into the field of research
- Get up to date on the changes taking place in the field of education
- Training professionals for the practice of research in education
- Learn how to carry out specific programs to improve school performance
- Research forms and processes in education in the school environment.
- Analyze and integrate the knowledge necessary to foster students' school and social development

Our goal is to help you achieve yours, through a very unique program of specialization that will become an unparalleled professional growth experience"

Specific Objectives

Module 1. Active Methodologies and Didactic Techniques

- Achieve student self-motivation
- Understand the methodology adapted to professors and their needs
- Know how to choose the methodology best suited to the context in which the teaching process takes place
- Learn about the most innovative strategies and tools that use a variety of resources

Module 2. Higher Education

- Understand the principles and objectives that led to the emergence of higher education institutions worldwide
- Learn to reflect on the new pedagogical, technological and social needs that universities need to respond to

Module 3. Quality Models and Quality Assessment in Education

- Learn to improve your knowledge on the workings of the institution itself, and teaching and learning processes
- Learn to collect information on whether they are achieving their learning objectives or not
- Know how to introduce measures for timely improvement to prevent student underachievement and school failure

Module 4. Programming and Implementing Educational Projects

- Acquire the skills needed in a specific field of knowledge
- Conduct a detailed study of the educational project followed in the center
- Know the different types of the most important educational projects that are being developed both nationally and internationally
- Learn the most important aspects to take into account in the programming and implementing of educational projects

Module 5. Teacher Tools and Resources for Teaching and Learning

- Learn to select those strategies, resources and tools that have been applied in education
- Know how to present and incorporate new methodologies, resources and techniques which allow the teacher to anticipate new challenges
- Work on the teaching of tomorrow so that it can integrate educational change will inevitably go hand in hand with new social and technological developments
- Prepare students for a changing and more uncertain environment
- Learn to incorporate activities such as the use and enjoyment of new technologies and social networks, gamification in teaching, as well as online educational platforms

Module 6. Introduction to Teaching Skills

- Learn how to make a broad, objective and experience-based description of the skills that every teacher must develop and strengthen before and during their work in the classroom
- Know how to analyze all the educational stages in which the teacher is involved, as well as the skills that all current teachers should possess
- Review the educational laws up to the present day
- Recognize different tools and strategies for analysis and assessment of the teaching profession a means to improve and perfect it

Module 7. Skill Based Learning in the University Field

- Know how to direct students' efforts towards new approaches to education
- Pursue competency-based learning, where knowledge is combined with its application in practical, diverse, changing and realistic situations
- Incorporate skill-based work

Module 8. Educational Research Methodology

- Know how to develop attitudes and skills for scientific research as an essential requirement to contribute to the progress and welfare of society

Module 9. Fundamentals, Processes and Methods in Research

- Determine the elements and sequence that should be followed in the methodological design of educational research, in order to frame it within the scientific procedure
- Knowledge and work with basic concepts of descriptive statistics
- Become familiar with univariate and bivariate descriptive statistics
- Acquire skills and interpret a frequency table, a bar chart and some descriptive indexes
- Analyze and interpret qualitative data
- Acquire skills and interpret contingency tables as a tool for descriptive analysis of the relationship between variables
- Know and handle specific computer programs used in the area that help to analyze and interpret the results obtained

Module 10. Experimental Research: Design as a Model

- Know and be able to apply experimental scientific methodologies in research
- Know how to carry out an experimental investigation, following the phases and the approach of the same one
- Differentiate the different experimental designs and be able to apply them correctly
- Experimental rigor
- Apply the correct statistical analysis for each type of design
- Analyze and contrast the data obtained in the empirical setting correctly

Module 11. Techniques and Instruments for Data Collection in Qualitative Research

- Know the techniques for categorizing, analyzing and summarizing qualitative information
- Knowing the quality of the instruments
- Identify and properly use the instruments used to collect information
- Adequately record the information obtained through the observation technique
- Know the ethics of qualitative information

Module 12. Computer Resources for Educational Research

- Ethical and legal use of information
- Know the process of scientific publication
- Communicate and disseminate information
- Manage computer resources for quantitative data
- Manage computer resources for qualitative data

Module 13. Data Collection Techniques and Instruments and Measurement

- Learn basic psychometric concepts
- Knowing the research process
- Acquire skills for the collection of information using quantitative techniques
- Acquire knowledge for the process of elaboration of instruments
- Learning to analyze the reliability and validity of an instrument
- Handling and interpreting psychometric test scores

Module 14. Item Response Theory (IRT)

- Familiarity with IRT for the development and study of the data collection instrument
- Introduce the student to the basic concepts of IRT
- Understanding of the different models for item analysis
- Know how to apply the different models for item analysis
- Analyze the quality of measurement instruments through the IRT premises
- Apply this theory to other measurement processes in education

Module 15. Multivariate Analysis

- Become familiar with multivariance analysis
- Know the models of techniques and procedures that study the interrelationships between variables
- Being able to describe the pattern of behavior of the observed variables
- Study the differences between groups
- Know how to apply the techniques that comprise multivariate interdependence models
- Interpret contingency tables

Module 16. Direction of Thesis and Scientific Research, Guidance to University Students

- Know how to direct and orientate your students interested in scientific research
- Acquire the resources to carry out not only effective, but also enjoyable and motivating work
- Discover the importance of motivation and orientation of students interested in investigation
- Acquire the knowledge and practical tools to carry out research guidance with complete confidence

Module 17. Innovation, Diversity and Equity in Education

- Focus your knowledge on innovation, diversity and equity in education
- Provide the student with all the necessary material to study through a series of activities for reflection, research and inquiry
- Learn to implement innovative educational plans in your respective centers and classrooms

Module 18. Talent, vocation, and creativity

- Identify the nature of talent
- List the characteristics of talent

03

Skills

Once all the contents have been studied and the objectives of this Advanced Master's Degree in University Teaching and Research in Education have been achieved, professionals will have obtained superior competence and performance in this area. A very complete approach in a high-level master's degree which makes the difference.

Achieving excellence in any profession requires effort and perseverance but, above all, the support of professionals who provide you with the impetus you need, with the necessary means and support. At TECH, we offer you everything you need"

General Skills

- Apply the most appropriate educational practices to university teaching
- Encourage students to develop their research skills
- Implement educational changes in daily practice with their university students
- Employ research in educational settings
- Apply modes of educational research

Our objective is very simple: to offer you quality training, with the best teaching system available today, so you can achieve excellence in your profession"

Specific Skills

- Apply the methodologies that best suit their lessons and the context in which they are teaching
- Develop strategies and apply the most precise tools for their daily practice
- Know the principles and objectives that led to the creation of higher education in order to take them into account during the teaching process
- Reflect on the new pedagogical, technological and social needs that are necessary in universities to offer a better education to students
- Improve the teaching processes in universities
- Obtain the necessary information to determine whether the objectives proposed for the learning process are being met
- Introduce measures for improvement in enough time to prevent student underachievement and school failure
- Identify the different educational projects that exist in universities and carry out the one followed in the university center itself
- Program and implement educative processes
- Develop the best strategies for developing educational practice in universities
- Incorporate the main methodologies to anticipate new educational challenges
- Prepare students to develop in a changing environment
- Introduce activities that implement the use of new technologies within teaching
- Develop the necessary skills to approach university teaching
- Apply educational regulations to classroom teaching
- Put into practice strategies of teaching analysis and evaluation in order to improve the profession as a whole
- Combine theoretical teaching with practical activities to achieve competency-based learning for students
- Guide the student towards research
- Guide students in any doubts they may have during their university education
- Develop the necessary skills for scientific research, which will contribute towards the progress and wellbeing of society
- Provide students with all the necessary material to allow them to carry out their educational projects through reflection and research
- Put into practice innovative educational plans
- Apply criteria to evaluate information

04

Course Management

Students will benefit from the high-level teaching team at TECH Global University, chosen for its proven experience in education and its embodiment of the concept of total quality this program is based on. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.

Our professors bring their vast experience and their teaching skills to offer you a stimulating and creative specialized training program"

Management

Ms. Jiménez Romero, Yolanda

- Elementary School Teacher Degree with a Major in English
- Educational Psychologist Specialist in Higher Ability Students, Inclusive Education, Attention to Diversity
- Master's Degree in Educational Psychology, International University of Valencia
- Master's Degree in Neuropsychology of Higher Ability Students, University of Rioja
- Master's Degree in Emotional Intelligence, University of Extremadura
- Director and Coordinator of master's programs: CEU University Online Education Campus, Tech Technological University TECH University Mexico

Professors

Ms. Álvarez Medina, Nazaret

- Degree in Psychopedagogy Open University of Catalonia
- Graduate in Primary Education with Mention in English Language Camilo José Cela University
- Official Professional Master's Degree on Educational Treatment of Diversity
- Diploma in Teaching English as a Foreign Language University of La Laguna, Spain
- Degree in Educational and Executive Coaching from the Complutense University of Madrid
- Educational counselor, official in the body of secondary education teachers in the community of Madrid
- Preparer of public education competitive examinations

Pattier Bocos, Daniel

- PhD in Education Madrid Complutense University 2017-present.
- Degree in Primary Education - Madrid Complutense University 2010-2014
- Master's Degree in Research and Innovation in Education UNED 2014-2016
- University Professor in Didactics and Curricular Innovation (bilingual in English) Madrid Complutense University
- Creator of university materials and contents UNIR, CEU University, Cardenal Herrera
- FPU Research Fellow in Education - Madrid Complutense University
- Finalist for the Best Teacher Prize in Spain, 2018

Dr. Valero Moreno, Juan José

- Agricultural Engineer Higher Technical School of Agricultural Engineering University of Castilla-La Mancha Albacete, 2000
- Master's Degree in Management of Occupational Risk Prevention, Excellence, Environment and Corporate Responsibility ESEA - UCJC, 2014 Seville
- Master's Degree in Innovation and Research in Education Specialty: Quality and Equity in Education (100 ETCS) UNED Madrid, 2014
- Master's Degree in Occupational Risk Prevention UNIR, 2011

Manzano García, Laureano

- Bachelor's Degree in Psychology from the U A M Year 1996
- Special Education Degree by ESCUNI Year 2002
- Competitive examinations tutor in face-to-face and online classes, as well as distance tutoring for the specialist subjects of Special Education (teachers) and Educational Guidance (high school)
- Teacher at IES Victoria Kent Since 2012

Gutiérrez Barroso, César

- PhD Candidate in History at National Distance Education University (UNED) November 2018
- Degree in History (Castilla La Mancha University) 2001-2006
- Master's Degree in Multiple Intelligences for Secondary School (Alcalá de Henares University)
- Master's Degree in Museology - Center for Study Techniques (Madrid) 2007
- High School teacher at Liceo San Pablo School in Leganés Teacher of 1st and 3rd ESO, and 2nd Baccalaureate of Geography and History (9/11/2018-11/09/2019)

Fernández Cebrián, José María

- PhD in Education Madrid Complutense University 2017-present.
- Degree in Primary Education - Madrid Complutense University 2010-2014
- Master's Degree in Research and Innovation in Education UNED 2014-2016
- University Professor in Didactics and Curricular Innovation (bilingual in English) Madrid Complutense University
- Creator of university materials and contents UNIR, CEU University, Cardenal Herrera
- FPU Research Fellow in Education - Madrid Complutense University
- Finalist for the Best Teacher Prize in Spain, 2018

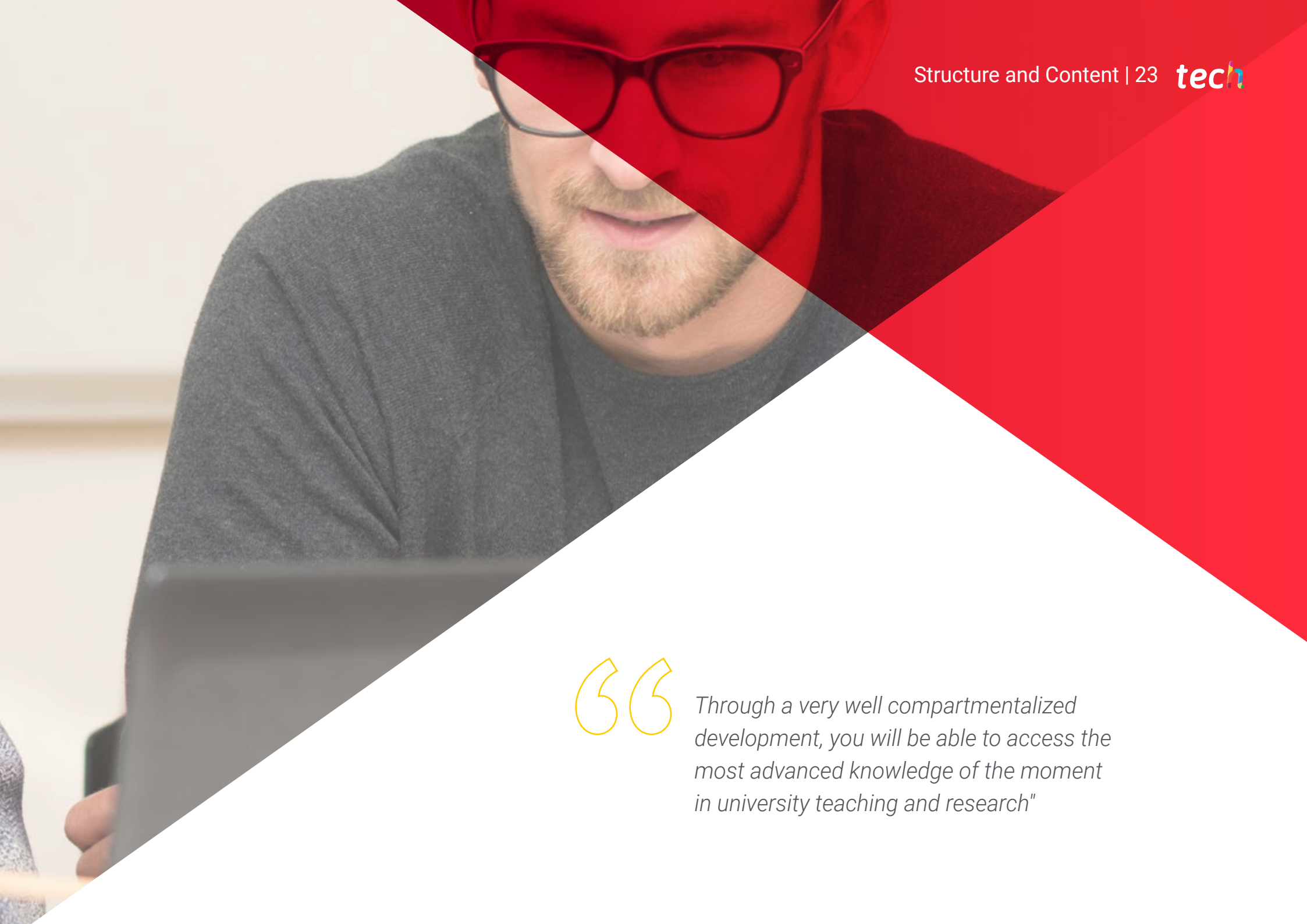
Visconti Ibarra, Martin Edgardo

- D. in Education and Behavioral Sciences - Vigo University Since 2015
- Degree in Primary Education Pontevedra School of Education and Sports Sciences (2009-2014)
- Master's Degree in Learning Difficulties and Cognitive Processes Faculty of CCSS of Education and History of Ourense (2014-2015)
- Master's Degree in Management of Educational Centers CEU Cardenal Herrera (From May 2019)
- Director Colegio Bilingüe Academia Europea Bilingual School (El Salvador) Since 2018

05

Structure and Content

The contents of this Advanced Master's Degree have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. The content of this program enables you to learn all aspects of the different disciplines involved in this field. A complete and well-structured program that will take you to the highest standards of quality and success.



Through a very well compartmentalized development, you will be able to access the most advanced knowledge of the moment in university teaching and research"

Module 1. Active Methodologies and Didactic Techniques

1.1. Active Methodologies
- 1.1.1. What are Active Methodologies?
- 1.1.2. Keys for Methodological Development from the Students Activity
- 1.1.3. Relationship Between Learning and Active Methodologies
- 1.1.4. History of Active Methodologies
  - 1.1.4.1. From Socrates to Pestalozzi
  - 1.1.4.2. Dewey
  - 1.1.4.3. Institutions Promoting Active Methodologies
    - 1.1.4.3.1. The Free Institution of Education
    - 1.1.4.3.2. The New School
    - 1.1.4.3.3. The Unique Republican School

1.2. Project Based Learning, Problems and Challenges
- 1.2.1. Travel Companions Cooperation Between Teachers
- 1.2.2. Phases of PBL Design
  - 1.2.2.1. Tasks, Activities and Exercises
  - 1.2.2.2. Rich Socialization
  - 1.2.2.3. Research Tasks
- 1.2.3. Phases of PBL Development
  - 1.2.3.1. Benjamin Bloom's Theories
  - 1.2.3.2. Bloom's Taxonomy
  - 1.2.3.3. Bloom's Taxonomy Revised
  - 1.2.3.4. Bloom's Pyramid
  - 1.2.3.5. David A. Kolb's Theory: Experience-Based Learning
  - 1.2.3.6. Kolb's Cycle
- 1.2.4. The Final Product
  - 1.2.4.1. Types of Final Product
- 1.2.5. Evaluation in PBL
  - 1.2.5.1. Evaluation Techniques and Instruments
    - 1.2.5.1.1. Observation
    - 1.2.5.1.2. Performance
    - 1.2.5.1.3. Questions
- 1.2.6. Practical Examples PBL Projects

1.3. Thought Based Learning
- 1.3.1. Basic Principles
  - 1.3.1.1. Why, How and Where to Improve Thought?
  - 1.3.1.2. Thought Organizers
  - 1.3.1.3. The Infusion with the Academic Curriculum
  - 1.3.1.4. Attention to Skills, Processes and Disposition
  - 1.3.1.5. The Importance of Being Explicit
  - 1.3.1.6. Attention to Metacognition
  - 1.3.1.7. Learning Transfer
  - 1.3.1.8. Construct an Infused Program
  - 1.3.1.9. The Need for Continuous Personal Development
- 1.3.2. Teach to Think TBL
  - 1.3.2.1. Collaborative Creation of Thought Maps
  - 1.3.2.2. Thinking Skills
  - 1.3.2.3. Metacognition
  - 1.3.2.4. Thought Design

1.4. Event-Based Learning
- 1.4.1. Approach to the Concept
- 1.4.2. Basis and Foundations
- 1.4.3. The Pedagogy of Sustainability
- 1.4.4. Benefits of Learning

1.5. Play Based Learning
- 1.5.1. Games as Learning Resources
- 1.5.2. Gamification
  - 1.5.2.1. What is Gamification?
    - 1.5.2.1.1. Fundamentals
    - 1.5.2.1.2. Narration
    - 1.5.2.1.3. Dynamics
    - 1.5.2.1.4. Mechanisms
    - 1.5.2.1.5. Components
    - 1.5.2.1.6. Insignias
    - 1.5.2.1.7. Gamification Apps
    - 1.5.2.1.8. Examples
    - 1.5.2.1.9. Criticisms of Gamification, Limitations and Common Errors

1.5.3. Why use Videogames in Education?
1.5.4. Types of Players According to the Richard Bartle Theory
1.5.5. Escape Room/Breakout Edu, an organizational form of understanding education
1.6. The Flipped Classroom,the reverse class
1.6.1. Organization of Working Time
1.6.2. Advantages of the Flipped Classroom
1.6.2.1. How can I Effectively Teach using Flipped Classrooms?
1.6.3. Disadvantages of the Flipped Classroom Focus
1.6.4. The Four Pillars of the Flipped Classroom
1.6.5. Resources and Tools
1.6.6. Practical Examples
1.7. Other Trends in Education
1.7.1. Robotics and Programming in Education
1.7.2. e-learning, Micro-learning and Other Online Trends
1.7.3. Neuro-education Based Learning
1.8. Free, Natural Methodologies based on Individual Development
1.8.1. Waldorf Methodology
1.8.1.1. Methodological Basis
1.8.1.2. Strengths, Opportunities and Weaknesses
1.8.2. Maria Montessori, the Pedagogy of Responsibility
1.8.2.1. Methodological Basis
1.8.2.2. Strengths, Opportunities and Weaknesses
1.8.3. Summerhill, a Radical Point of View on How to Teach
1.8.3.1. Methodological Basis
1.8.3.2. Strengths, Opportunities and Weaknesses
1.9. Educational Inclusion
1.9.1. Is there Innovation without Inclusion?
1.9.2. Cooperative Learning
1.9.2.1. Principles
1.9.2.2. Group Cohesion
1.9.2.3. Simple and Complex Dynamics
1.9.3. Shared Teaching
1.9.3.1. Ratio and Attention to Students
1.9.3.2. Teaching coordination as a strategy for student improvement
1.9.4. Multilevel Teaching
1.9.4.1. Definition
1.9.4.2. Models
1.9.5. Universal Learning Design
1.9.5.1. Principles
1.9.5.2. Guidelines
1.9.6. Inclusive Experiences
1.9.6.1. Rome Project
1.9.6.2. Interactive Groups
1.9.6.3. Dialogue Talks
1.9.6.4. Learning Communities
1.9.6.5. INCLUD-ED Project

Module 2. Higher Education

2.1. Historical Summary of the Development of Universities
2.1.1. The First Universities
2.1.2. University of Salamanca
2.1.3. Universities in Mexico and Latin America
2.1.4. European Universities
2.1.5. North American Universities
2.1.6. Cardenal Newman
2.1.7. The Cultural and Educational Contribution of the Middle Ages
2.1.8. Knowledge of the Cloisters: Cathedral and Monastic Schools
2.1.9. The University of the 20th Century
2.1.10. Adoption of the Notion of Networking in the Academic Field
2.2. The Concept of University
2.2.1. What do you do at University?
2.2.2. Knowledge
2.2.3. What is Taught and How is it Taught?
2.2.4. Research and Support Services
2.2.5. The Critical Role of University

2.2.6. The Intellectual Role of University
2.2.7. Autonomous Universities
2.2.8. Academic Freedom
2.2.9. The University Community
2.2.10. Evaluation Processes

2.3. Higher Education Spaces Worldwide
2.3.1. Globalization: Towards a Change in Higher Education
2.3.2. Social changes and Higher Education Spaces
2.3.3. GUNI Networks
2.3.4. European Space for Higher Education
2.3.5. Higher Education in Latin America
2.3.6. Higher Education in Africa
2.3.7. Higher Education in Asia and the Pacific
2.3.8. Tempus Project

2.4. The Bologna Process: European Space for Higher Education (ESHE)
2.4.1. Origin of ESHE
2.4.2. The Soborna Declaration
2.4.3. The Salamanca Convention and the Bologna Process
2.4.4. Materialization of the Tuning Project Proposal in Europe
2.4.5. Redefining the Syllabus
2.4.6. New Credit Transfer and Accumulation System
2.4.7. The Concept of Competence
2.4.8. Student Exchange and Mobility
2.4.9. ESHE within the Process of Globalization of Higher Education
2.4.10. Experiences and Research in ESHE

2.5. Ibero-American Knowledge
2.5.1. Ibero-American University Cooperation in Higher Education
2.5.2. Launching the Ibero-American Higher Education
2.5.3. Opportunities, Initiatives and Detected Obstacles
2.5.4. Institutions and Entities Involved
2.5.5. Materialization of the Tuning Project Proposal in Ibero-America
2.5.6. Ibero-American Initiative for Social Communication and Scientific Culture
2.5.7. Science and Technology for Development (CYTED) Program
2.5.8. Pablo Neruda Mobility Program
2.5.9. Ibero-American Program for Industrial Property and Promotion of Development (IBEPI)
2.5.10. Euro-American Cooperation in Higher Education

2.6. Education Models in Higher Education
2.6.1. The Concept of the Education Model
2.6.2. Influence of the Education Model on the University Academic Model
2.6.3. Coherence of the Education Model with the Vision and Mission of the University
2.6.4. The Pedagogical Foundation of Education Models
2.6.5. Educational Psychologist Theories Which Support the Education Model
2.6.6. Ken Robinson Education Model
2.6.7. John Taylor Gatto Education Model
2.6.8. Towards a New Integral Model
2.6.9. The Education Model Based on Skills
2.6.10. The Internet in the Pedagogical Paradigm of Higher Education

2.7. The University Organization
2.7.1. The Structure of a University as an Organization
2.7.2. Coordination of Work in an Organization
2.7.3. Constituent Parts of an Organization
2.7.4. Core Members of a University
2.7.5. Fields of Action in the University Organization
2.7.6. Role of a University Professor
2.7.7. Skills Training: Object of University Teaching
2.7.8. The Transmission of Knowledge
2.7.9. University Organization, Governance and Leadership
2.7.10. University Management

2.8. The Virtual Campus in Higher Education
- 2.8.1. e-Learning Scenarios and Elements
- 2.8.2. e-Learning Platforms
- 2.8.3. b-Learning
- 2.8.4. Mentoring
- 2.8.5. Blended Learning
- 2.8.6. Flipped Classroom
- 2.8.7. Grand Mastery Learning
- 2.8.8. TPACK Model
- 2.8.9. MOOCs
- 2.8.10. Mobile learning

2.9. Scientific Dissemination and Popularization on the Internet
- 2.9.1. How to Diffuse Scientific Information on the Internet?
- 2.9.2. Scientific Dissemination in the Academic Environment
- 2.9.3. Diffusion vs. Disclosure
- 2.9.4. Visibility and Accessibility in Scientific Work
- 2.9.5. Tools for Increasing Visibility
- 2.9.6. Open Access
- 2.9.7. Public Profile of Research Personnel
- 2.9.8. General Social Networks and their Application in Scientific Dissemination
- 2.9.9. Scientific Social Networks
- 2.9.10. Dissemination Through Blogs

2.10. Self-management of Academic Writing
- 2.10.1. Epistemic and Pedagogical Function of Writing
- 2.10.2. Academic and Communicative Function of Writing
- 2.10.3. Cognitive Focus of Learning
- 2.10.4. The Technique of Writing a Text
- 2.10.5. Organization of an Argument
- 2.10.6. Coherence and Cohesion Mechanisms of a Text
- 2.10.7. Academic Work
- 2.10.8. Research Articles

Module 3. Quality Models and Quality Assessment in Education

3.1. Nature and Evolution of the Concept of Quality
- 3.1.1. Conceptual Introduction
- 3.1.2. Dimensions of the Concept of Quality
- 3.1.3. Evolution of the Concept of Quality
  - 3.1.3.1. Craft Stage
  - 3.1.3.2. Industrial Revolution
  - 3.1.3.3. Movement for Quality
- 3.1.4. Basic Principles of Quality
- 3.1.5. Total Quality and Excellence
- 3.1.6. Concept of Quality Management
- 3.1.7. Focus of Quality Management: Classification and Basic Characteristics

3.2. Quality in Education: Dimensions and Components
- 3.2.1. Analysis of the Term Quality in Education
- 3.2.2. Evaluation of Quality
- 3.2.3. Dimensions and Components of a Quality Plan in Education
  - 3.2.3.1. Context
  - 3.2.3.2. Educational Concept
  - 3.2.3.3. Methods
  - 3.2.3.4. Results
- 3.2.4. Quality Models Applied to the Evaluation of Organizations
  - 3.2.4.1. The Malcolm Baldridge Model
  - 3.2.4.2. The Excellence Model of the European Foundation for Quality Management
  - 3.2.4.3. The Ibero-American Model of Excellence Management
  - 3.2.4.4. Comparison Between the Excellence Models and the ISO 9000 Criteria
- 3.2.5. Systemic Nature of the Principles and Practices of Total Quality Management (TQM)
- 3.2.6. TQM Process: Adoption Grade

3.3. Design and Development of the Educational Process
- 3.3.1. Educational Nature of the Objectives
- 3.3.2. Validation and Process Changes
- 3.3.3. Processes Related to Stakeholders
- 3.3.4. Management Responsibility
- 3.3.5. Promotion of Participation
- 3.3.6. Systemic Evaluation as a Base for Continuing Improvement

3.4. Measurement, Analysis and Improvement
- 3.4.1. General Guidelines
- 3.4.2. Monitoring and Measurement
- 3.4.3. Data Analysis
- 3.4.4. Continuing Improvement
- 3.4.5. Classic Management and Quality Control Tools
  - 3.4.5.1. Data Collection Sheet
  - 3.4.5.2. Histogram
  - 3.4.5.3. Pareto Chart
  - 3.4.5.4. Fishbone / Ishikawa Diagram
  - 3.4.5.6. Correlation Diagram
  - 3.4.5.7. Control Charts
- 3.4.6. New Management and Quality Control Tools
  - 3.4.6.1. Affinity Diagram
  - 3.4.6.2. Entity Relationship Diagram
  - 3.4.6.3. Tree Diagram
- 3.4.7. Other Tools
  - 3.4.7.1. Modal and Failure Analysis
  - 3.4.7.2. Experiment Design
  - 3.4.7.3. Flow Chart

3.5. Quality Management Systems: ISO 9000 Standards
- 3.5.1. Normative Models of Quality Management
- 3.5.2. The Familiar ISO 9000 Standards
- 3.5.3. Structure of Quality Management Systems according to ISO 9001 Standards

3.5.4. The Process of Implementation and Certification of Quality Management Systems
3.5.4.1. Management's Decision and Commitment
3.5.4.2. Planning and Organization of the Project
3.5.4.3. Preliminary Self-Diagnosis
3.5.4.4. Information, Awareness and Training
3.5.4.5. Preparation of Documentation
3.5.4.6. Implementation
3.5.4.7. Monitoring and Improvement of the System
3.5.4.8. Key Factors in the Process
3.5.5. Organization of Work to Achieve Certification
3.5.6. Certificate Retention and Periodic Audits
3.6. EFQM Excellence Model - European Model of Excellence and Quality
3.6.1. The Model and the European Quality Award
3.6.2. Fundamental Concepts
3.6.3. Structure and Criteria
3.6.4. Evaluation Processes: Results Based Logic
3.6.5. Framework and Benefits of its Application
3.7. Ibero-American Foundation for Quality Management (FUNDIBEQ) Model of Excellence
3.7.1. The Model and the Ibero-American Award for Quality
3.7.2. Fundamental Concepts
3.7.3. Structure and Criteria
3.7.4. Evaluation Processes
3.7.5. Framework and Benefits of its Application
3.8. Application of Quality Management Models to University Tutoring
3.8.1. Contextualization of Quality Management Models in University Tutoring
3.8.2. Added Value for Recipients
3.8.3. Sustainable Guidance
3.8.4. Organizational Skills
3.8.5. Management Agility
3.8.6. Creativity and Innovation
3.8.7. Leadership with Vision and Integrity
3.8.8. Achieve Success Through Human Talent
3.8.9. Maintain Outstanding Results
3.8.10. Process Based Focus
3.9. Evaluation of Teaching Staff in the Plans for Quality Improvement in Universities
3.9.1. Contextualization of the Evaluation of University Teaching Staff
3.9.2. Student evaluation of Teaching Staff
3.9.3. Integration of Teaching Staff Evaluations in Improvement Plans
3.9.4. Questionnaires for the Evaluation of University Teaching Staff
3.9.5. Enquiries and Dissemination of Results
3.10. Self-Evaluation Plans and Improvement
3.10.1. Contextualization and Previous Considerations
3.10.2. Designing and Development of an Improvement Plan
3.10.2.1. Constitution of an Improvement team
3.10.2.2. Choosing Areas for Improvement
3.10.2.3. Creating Objectives
3.10.2.4. Analysis of Areas for Improvement
3.10.2.5. Execution and Monitoring of the Plan
3.10.2.6. Conclusions and Suggestions
3.10.2.7. Monitoring and Accountability
3.10.3. Development and Analysis of the Areas
3.10.4. Elaboration of Improvement Plan
3.10.5. Creating a Report

Module 4. Programming and Implementing Educational Projects

4.1. Introduction to the Types of Educational Projects
- 4.1.1. What is an Educational Project?
- 4.1.2. What is the Purpose of an Educational Project?
- 4.1.3. Origin of an Educational Project
- 4.1.4. Parties Involved in the Educational Project
- 4.1.5. Target Audience of the Educational Project
- 4.1.6. Factors Involved in an Educational Project
- 4.1.7. Content of an Educational Project
- 4.1.8. Objectives of the Educational Project
- 4.1.9. Results of an Educational Project
- 4.1.10. Conclusion of Educational Projects

4.2. Technological Projects
- 4.2.1. Virtual Reality
- 4.2.2. Augmented Reality
- 4.2.3. Mixed Reality
- 4.2.4. Digital Whiteboards
- 4.2.5. iPad or tablet project
- 4.2.6. Cell phones in the Classroom
- 4.2.7. Educational Robotics
- 4.2.8. Artificial Intelligence
- 4.2.9. E-learning and Online Education
- 4.2.10. 3D Printing

4.3. Methodological Projects
- 4.3.1. Gamification
- 4.3.2. Game Based Education
- 4.3.3. Flipped Classroom
- 4.3.4. Project Based Learning
- 4.3.5. Problem-Based Learning
- 4.3.6. Thought Based Learning
- 4.3.7. Skill Based Learning
- 4.3.8. Cooperative Learning
- 4.3.9. Design Thinking
- 4.3.10. Montessori Methodology
- 4.3.11. Musical Pedagogy
- 4.3.12. Educational Coaching

4.4. Value Projects
- 4.4.1. Emotional Education
- 4.4.2. Anti-Bullying Projects
- 4.4.3. Projects to Support Associations
- 4.4.4. Projects in Favor of Peace
- 4.4.5. Projects in Favor of Stopping Discrimination
- 4.4.6. Solidarity Projects
- 4.4.7. Projects Against Gender Violence
- 4.4.8. Inclusion Projects
- 4.4.9. Intercultural Projects
- 4.4.10. Coexistence Projects

4.5. Evidence-Based Projects
- 4.5.1. Introduction to Evidence-Based Projects
- 4.5.2. Previous Analysis
- 4.5.3. Determining the Objective
- 4.5.4. Scientific Research
- 4.5.5. Choosing a Project
- 4.5.6. Local or National Contextualization
- 4.5.7. Viability Study
- 4.5.8. Implementation of Evidence-Based Projects
- 4.5.9. Monitoring Evidence-Based Projects
- 4.5.10. Evaluation of Evidence-Based Projects
- 4.5.11. Publication of Results

4.6. Artistic Projects
- 4.6.1. LOVA (The Opera as a Learning Vehicle)

4.6.2. Theater
4.6.3. Musical Projects
4.6.4. Choirs and Orchestras
4.6.5. Projects on the Infrastructure of the Center
4.6.6. Visual Art Projects
4.6.7. Design Technology Art Projects
4.6.8. Decorative Art Projects
4.6.9. Street Projects
4.6.10. Projects Centered on Creativity

4.7. Language Projects
4.7.1. On-site Language Immersion Projects
4.7.2. Local Language Immersion Projects
4.7.3. International Language Immersion Projects
4.7.4. Phonetic Projects
4.7.5. Conversation Assistants
4.7.6. Native Teachers
4.7.7. Preparation for Official Language Exams
4.7.8. Projects to Encourage Language Learning
4.7.9. Exchange Projects

4.8. Excellence Projects
4.8.1. Improving Personal Excellence
4.8.2. Improving Institutional Excellence
4.8.3. Improving Graduate Excellence
4.8.4. Collaboration with Prestigious Entities
4.8.5. Competitions and Prizes
4.8.6. Projects for External Evaluation
4.8.7. Connection with Businesses
4.8.8. Excellence Projects in Culture and Sport
4.8.9. Advertising

4.9. Other Innovation Projects
- 4.9.1. Outdoor Education
- 4.9.2. Youtubers and Influencers
- 4.9.3. Mindfulness
- 4.9.4. Peer Tutoring
- 4.9.5. RULER Method
- 4.9.6. School Gardens
- 4.9.7. Learning Community
- 4.9.8. Democratic School
- 4.9.9. Early Stimulation
- 4.9.10. Learning Corners

4.10. Programming and Implementing Educational Projects
- 4.10.1. Situational Analysis
- 4.10.2. Objective
- 4.10.3. SWOT Analysis
- 4.10.4. Resources and Materials
- 4.10.5. Programming an Educational Project
- 4.10.6. Implementation of an Educational Project
- 4.10.7. Evaluation of an Educational Project
- 4.10.8. Restructuring of an Educational Project
- 4.10.9. Institutionalization of an Educational Project
- 4.10.10. Dissemination of an Educational Project

Module 5. Teacher Tools and Resources for Teaching and Learning

5.1. The Teaching Process
- 5.1.1. Definition of the Concept of Teaching
- 5.1.2. Different Theories on the Concept of Teaching
- 5.1.3. Modalities of Teaching
- 5.1.4. Educational Levels Throughout Development

5.2. The Learning Process
- 5.2.1. Definition of the Concept of Learning
- 5.2.2. Evolution of the Concept of Learning
- 5.2.3. Different Theories on the Concept of Learning
- 5.2.4. Learning in Different Educational Stages

5.3. Teaching- Learning Process
- 5.3.1. The Relationship Between Learning and Teaching
- 5.3.2. The Teacher's Role in the Teaching- Learning Process
- 5.3.3. The student in the teaching- learning process
- 5.3.4. Elements of the teaching- learning process
- 5.3.5. Reflection on the Teaching- Learning Process

5.4. Current Strategies for Teaching and Learning
- 5.4.1. Types of Teaching Strategies
- 5.4.2. Types of Learning Strategies
- 5.4.3. Inverted Teaching: Flipped Classroom

5.5. Inclusive Learning: Learning for Everyone
- 5.5.1. Inclusive Education UNESCO
- 5.5.2. From Integration to Inclusion
- 5.5.3. Design of an Inclusive Learning Program
- 5.5.4. People with Functional Diversity and Learning

5.6. Guidance vs. Self-Study
- 5.6.1. Academic Guidance
- 5.6.2. Tutorial Action Plan
- 5.6.3. Elements Involved in the Process
- 5.6.4. Self-Learning and Decision Making

5.7. Emotional Learning in the Digital Era
- 5.7.1. Emotional Learning
- 5.7.2. Stage , Types and Methods in Emotional Learning
- 5.7.3. The Digital Divide between Teachers and Students
- 5.7.4. Teaching in the Era of Digital Connectivity

5.8. Methodologies for future teaching
- 5.8.1. Evolution of Teaching Methods
- 5.8.2. Importance of Context
- 5.8.3. Role of the Teacher in the Teaching of the Future
- 5.8.4. Teaching with Tutorials Learning Communities
- 5.8.5. Classroom Organization: Flexible Timings and New Spaces

5.9. Teaching Resources and Tools
- 5.9.1. Differences Between Didactic Resources and Tools
- 5.9.2. Didactic Resources Types
- 5.9.3. Choosing Resources and their Tools
- 5.9.4. Design and Use of Conventional Resources
- 5.9.5. Families as an Educational Resource

5.10. Training the Trainers
- 5.10.1. Access to Teaching
- 5.10.2. Continuing Training and Teacher Refresher Courses
- 5.10.3. Teacher Action Research
- 5.10.4. Project, Method and Didactic Material Exchange
- 5.10.5. Didactic Resource Banks

Module 6. Introduction to Teaching Skills

6.1. Legal Regulations for the Improvement of Quality Education
- 6.1.1. Teacher Training Plans
- 6.1.2. Quality Education Legislation
- 6.1.3. Educational Environment Analysis
- 6.1.4. Pedagogical Evaluation
- 6.1.5. Indicators to Improve the Quality of a Center

6.2. Educational Laws in the Spanish Educational System
- 6.2.1. Law for the Improvement of Educational Quality (LOMCE)
- 6.2.2. Organic Education Law (LOE)
- 6.2.3. LOCE
- 6.2.4. Comparison between LOPEG and LOGSE
- 6.2.5. Comparison between LODE and LOECE
- 6.2.6. The Spanish Education System

6.3. Key Skills in the Curriculum
- 6.3.1. Analysis of the Concept of Professional Skills
- 6.3.2. Analysis of the Concept of Teaching Skills
- 6.3.3. Differences Between General and Transversal Skills
- 6.3.4. Evolution of the Concept of Teaching Skills
- 6.3.5. Elementary School Skills
- 6.3.6. Middle / High School Skills

6.4. Evaluation of Teaching Skills
- 6.4.1. Evaluation Techniques and Tools
- 6.4.2. Data Collection Techniques and Tools
- 6.4.3. Teacher Evaluation Performance Templates
- 6.4.4. Purpose and Consequences of Teacher Evaluation
- 6.4.5. Parties Involved in Teacher Evaluation

6.5. Teacher Self-Evaluation
- 6.5.1. Elements of Self-Evaluation
- 6.5.2. Evaluation of Educational Practice
- 6.5.3. Comparison Between Different Teaching Styles
- 6.5.4. The Teacher as an Active Agent in Evaluation
- 6.5.5. Self-Evaluation and Reflection in the Improvement of Teachers' Skills

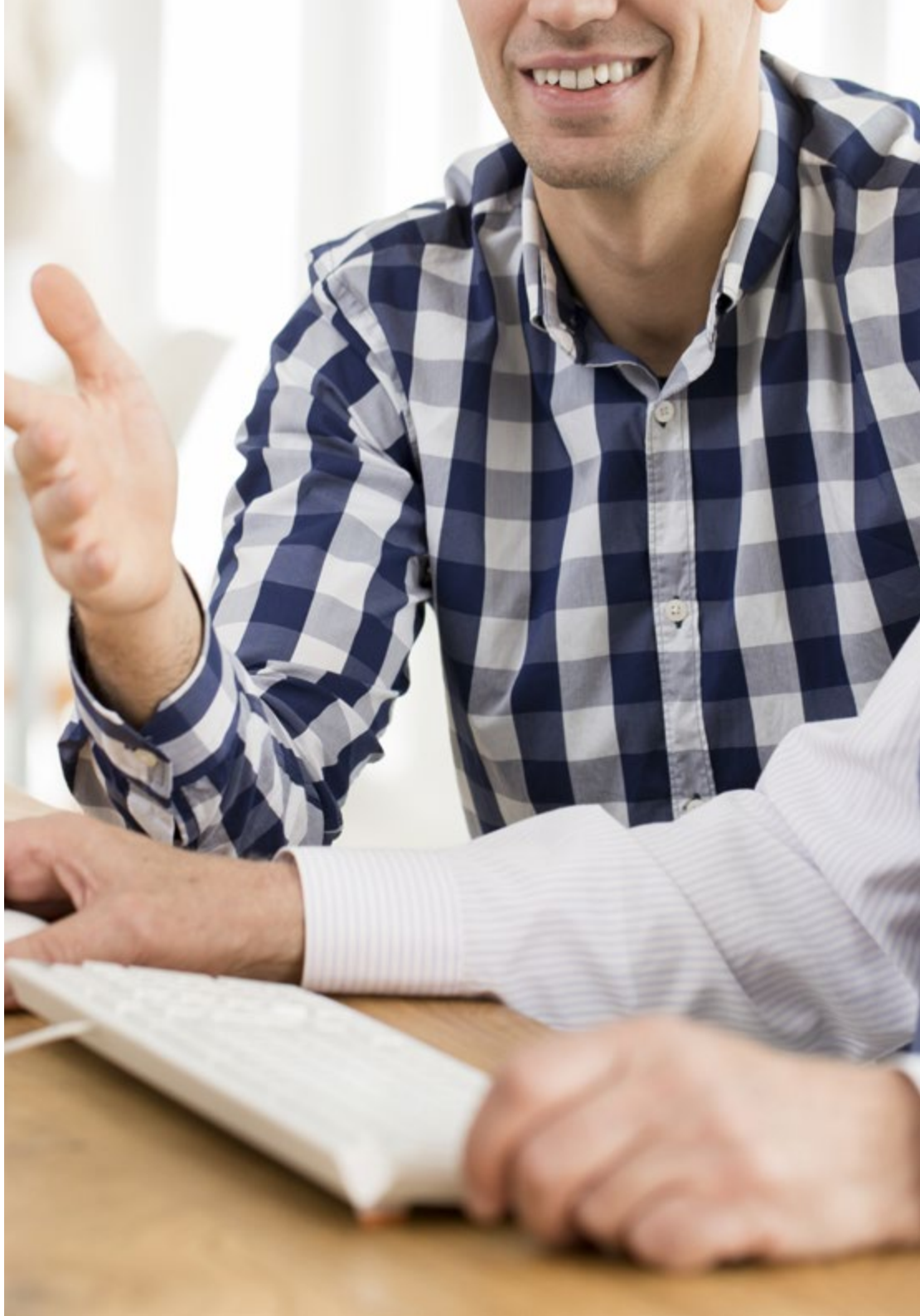
6.6. The Development of General Teaching Skills
- 6.6.1. Analysis of General Teaching Skills
- 6.6.2. Elements of General Teaching Skills
- 6.6.3. Relevance of General Competencies
- 6.6.4. Evolution of General Teaching Skills

6.7. The Development of Transversal Teaching Skills
- 6.7.1. Analysis of Transversal Teaching Skills
- 6.7.2. Elements of Transversal Teaching Skills
- 6.7.3. Relevance of Transversal Skills
- 6.7.4. Evolution of Transversal Teaching Skills

6.8. The role of Management in the Development of Skills
- 6.8.1. Management as an Agent in Development
- 6.8.2. Professional Skills in Academic Management
- 6.8.3. Differentiation of Basic Management Styles

6.9. Future Perspectives of Teaching Skills
- 6.9.1. Evolution of Teaching Skills in Higher Education
- 6.9.2. New Teaching Skills of the Teaching Staff
- 6.9.3. New Pedagogical Skills of the Teacher

6.10. Digital Skills in Teaching
- 6.10.1. Key competences and digital competence
  - 6.10.1.1. The Digital Competence Framework for Educators
  - 6.10.1.2. Definition of Digital Competence
  - 6.10.1.3. Areas and Competences
  - 6.10.1.4. Digital Competence Teacher Portfolio
- 6.10.2. Digital Resources and Learning Processes
  - 6.10.2.1. Digital Resources for Use in the Classroom
  - 6.10.2.2. Digital Resources in Elementary School Education
  - 6.10.2.3. Digital Resources in Middle/High School Education
  - 6.10.2.4. Digital Resources in Higher Education
  - 6.10.2.5. Open Digital Resources
- 6.10.3. Technological Tools in the Educational Field
  - 6.10.3.1. ICT in Education
  - 6.10.3.2. Contribution of ICT to Education
  - 6.10.3.3. Characteristics of ICT Tools
  - 6.10.3.4. Types of ICT Tools in Education
  - 6.10.3.5. Gamification in the Classroom
- 6.10.4. Transversal and Curricular Resources
  - 6.10.4.1. Digital Competency in Elementary School Education
  - 6.10.4.2. Digital Competency in Middle/High School Education
  - 6.10.4.3. Curricular Integration of ICT
  - 6.10.4.4. Classroom Planning
  - 6.10.4.5. Evaluation of the Use of ICT in the Classroom



Module 7. Competency-Based Learning in the University Setting

7.1. Learning Theories
- 7.1.1. Concepts related to Teaching: Educate, Instruct, Train
- 7.1.2. Relationship Between Learning and Teaching
- 7.1.3. Evolution of Learning from Childhood to the World of University
- 7.1.4. Different Educational Institutions

7.2. The Sum of Learning: Learning by Competencies
- 7.2.1. Learning Paths
- 7.2.2. 10 Types of Learning
  - 7.2.2.1. Implicit and Explicit Learning
  - 7.2.2.2. Explicit Learning
  - 7.2.2.3. Associative Learning
  - 7.2.2.4. Rote Learning
  - 7.2.2.5. Experience-based / Situated Learning
  - 7.2.2.6. Learning by Observation
  - 7.2.2.7. Cooperative Learning
  - 7.2.2.8. Cooperative Learning
  - 7.2.2.9. Significant Learning
  - 7.2.2.10. Skill Based Learning

7.3. Competences Related to Self-Learning
- 7.3.1. Basic Skills
- 7.3.2. Concept of Self-Learning
- 7.3.3. Contextualization of Learning
- 7.3.4. Self-regulated Learning
- 7.3.5. Autonomous Learning

7.4. Skill Based Learning in Different Educational Levels
- 7.4.1. Kindergarten Skills
- 7.4.2. Elementary School Skills
- 7.4.3. Middle/High School Skills
- 7.4.4. Skills for within the University Environment

7.5. Skill Based Learning in Higher Education
- 7.5.1. Characteristics of the University Student Body
- 7.5.2. Characteristics of the University Teaching Staff
- 7.5.3. Skills from the Syllabus
- 7.5.4. Prerequisites for Skill Based Learning at University
- 7.5.5. Skills and the Different University Specialties

7.6. Transversality of Skills
- 7.6.1. Resources Management
- 7.6.2. Interpersonal Relations Management
- 7.6.3. Information Management
- 7.6.4. Evolution and Refreshing Knowledge in the Face of Change
- 7.6.5. Technological Domain

7.7. Implementation of Skills from the Curriculum
- 7.7.1. Levels of Curriculum Specification
- 7.7.2. Competencies in Educational Administration
- 7.7.3. Adequacy of Teaching and Curriculum Design
- 7.7.4. Skills in Students with Functional Diversity

7.8. Skills evaluation
- 7.8.1. What and How to Evaluate Now?
- 7.8.2. Qualification Criteria
- 7.8.3. Assessing “Know How", "Know How to Be” and "Know How to Do”
- 7.8.4. Objective and Subjective Evaluation
- 7.8.5. Interaction Between Skills

7.9. Skills of a University Professor
- 7.9.1. Profiles of the University Teaching Staff
- 7.9.2. Planning the Teaching- Learning Process
- 7.9.3. Presenting Content to the Students
- 7.9.4. Ability to Integrate Resources Outside University
- 7.9.5. Suitability of the Teaching Practice to Meet the Demands of the Environment

7.10. Didactic Strategies for Skills Development at University
- 7.10.1. The Field of Communication and Expression
- 7.10.2. Relationship Between Skill and Subject
- 7.10.3. Time Management
- 7.10.4. Group Work and Projects
- 7.10.5. Information Processing and Digital Technology in the University Environment

Module 8. Educational Research Methodology

8.1. Basic Notions of Investigation: Science and the Scientific Method
- 8.1.1. Definition of the Scientific Method
- 8.1.2. Analytical Method
- 8.1.3. Synthetic Method
- 8.1.4. Inductive Method
- 8.1.5. Cartesian Thought
- 8.1.6. Rules of the Cartesian Method
- 8.1.7. Methodical Doubt
- 8.1.8. The First Cartesian Principle
- 8.1.9. The procedures of induction according to J. Stuart Mill

8.2. The General Process of Research: Quantitative and Qualitative Focus
- 8.2.1. Epistemological Assumptions
- 8.2.2. Approach to Reality and the Object of Study
- 8.2.3. Subject-Object Relationship
- 8.2.4. Objectivity
- 8.2.5. Methodological Processes
- 8.2.6. Integration of Methods

8.3. Research Paradigms and Methods Derived from These
- 8.3.1. How do Research Ideas Arise?
- 8.3.2. What is there to Research in Education?
- 8.3.3. Research Problem Statement
- 8.3.4. Background, Justification and Research Objectives
- 8.3.5. Theoretical Foundation
- 8.3.6. Hypotheses, Variables and Definition of Operational Concepts
- 8.3.7. Choosing a Research Design
- 8.3.8. Sampling in Quantitative and Qualitative Studies

8.4. Phases and Stages of Qualitative Research
- 8.4.1. Phase 1 Conceptual Phase
- 8.4.2. Phase 2 Planning and Design Phase
- 8.4.3. Phase 3 Empirical Phase
- 8.4.4. Phase 4 Analytical Phase
- 8.4.5. Phase 5 Diffusion Phase

8.5. Types of Quantitative Research
- 8.5.1. Historical Research
- 8.5.2. Correlation Research
- 8.5.3. Case Studies
- 8.5.4. "Ex Post Facto" Research on Completed Events
- 8.5.5. Quasi-experimental research
- 8.5.6. Experimental Research

8.6. Phases and Stages of Qualitative Research
- 8.6.1. Phase 1: Preliminary Phase
- 8.6.2. Phase 2: Field Phase
- 8.6.3. Phase 3: Analytical Phase
- 8.6.4. Phase 4: Information Phase

8.7. Types of Qualitative Research
- 8.7.1. Ethnography
- 8.7.2. Grounded Theory
- 8.7.3. Phenomenology
- 8.7.4. The Biographical Method and Life History
- 8.7.5. The Case Study
- 8.7.6. Content Analysis
- 8.7.7. Examination of Speech
- 8.7.8. Participatory Action Research

8.8. Techniques and Instruments for Collecting Quantitative Data
- 8.8.1. The Structured Interview
- 8.8.2. The Structured Questionnaire
- 8.8.3. Systematic Observation
- 8.8.4. Attitude Scales
- 8.8.5. Stadistics
- 8.8.6. Secondary Sources of Information

8.9. Techniques and Instruments for Collecting Qualitative Data
- 8.9.1. Unstructured Interview
- 8.9.2. In-Depth Interview
- 8.9.3. Focus Groups
- 8.9.4. Simple, Unregulated and Participant Observation
- 8.9.5. Life Stories
- 8.9.6. Diaries
- 8.9.7. Content Analysis
- 8.9.8. The Ethnographic Method

8.10. Data Quality Control
- 8.10.1. Requirements for a Measuring Instrument
- 8.10.2. Processing and Analysis of Quantitative Data
  - 8.10.2.1. Validation of Quantitative Data
  - 8.10.2.2. Statistics for Data Analysis
  - 8.10.2.3. Descriptive Statistics
  - 8.10.2.4. Inferential Statistics
- 8.10.3. Processing and Analysis of Qualitative Data
  - 8.10.3.1. Reduction and Characterization
  - 8.10.3.2. Clarify, Refine and Compare
  - 8.10.3.3. Programs for Qualitative Analysis of Textual Data

Module 9. Fundamentals, Processes and Methods in Research

9.1. Methodological Design of Educational Research
- 9.1.1. Introduction
- 9.1.2. Approaches or Paradigms in Educational Research
- 9.1.3. Types of Research
  - 9.1.3.1. Basic or Fundamental Research
  - 9.1.3.2. Applied Research
  - 9.1.3.3. Descriptive or Interpretative Research
  - 9.1.3.4. Prospective Research
  - 9.1.3.5. Exploratory Research
- 9.1.4. The Research Process: The Scientific Method

9.2. Statistical Analysis of Data
- 9.2.1. Introduction
- 9.2.2. What is data Analysis?
- 9.2.3. Types of Variables
- 9.2.4. Measuring Scales

9.3. Univariate Descriptive Statistics (I): Distribution and Polygon of Frequencies
- 9.3.1. Introduction
- 9.3.2. Frequency Distribution
- 9.3.3. Frequency Polygons or Histograms
- 9.3.4. SPSS: Frequencies

9.4. Univariate descriptive statistics (II): Position Indices and Dispersion Indices
- 9.4.1. Introduction
- 9.4.2. Variables and Types
- 9.4.3. Indices of Position or Central Tendency and Their Properties
  - 9.4.3.1. Arithmetic Mean
  - 9.4.3.2. Median
  - 9.4.3.3. Fashion
- 9.4.4. Dispersion or Variability Indexes
  - 9.4.4.1. Variance
  - 9.4.4.2. Standard Deviation
  - 9.4.4.3. Coefficient of Variation
  - 9.4.4.4. Semiquartile Amplitude
  - 9.4.4.5. Total Amplitude

9.5. Univariate Descriptive Statistics (III): Scores and Index of the Shape of the Distribution
- 9.5.1. Introduction
- 9.5.2. Types of Scores
  - 9.5.2.1. Differential Score
  - 9.5.2.2. Typical Score
  - 9.5.2.3. Centile Score
- 9.5.3. Distribution Shape Index
  - 9.5.3.1. Asymmetry Index (AS)
  - 9.5.3.2. Kurtosis or Kurtosis Index (Cv)

9.6. Exploratory Data Analysis (EDA)
- 9.6.1. Introduction
- 9.6.2. Definition of Exploratory Data Analysis
- 9.6.3. Stages of Exploratory Data Analysis
- 9.6.4. SPSS: Exploratory Data Analysis

9.7. Linear Correlation Between Two Variables (X and Y)
- 9.7.1. Introduction
- 9.7.2. Concept of Correlation
- 9.7.3. Types and Correlation Coefficients
- 9.7.4. Pearson's Correlation Coefficient (rxy)
- 9.7.5. Properties of Pearson's Correlation
- 9.7.6. SPSS: Correlation Analysis

9.8. Introduction to Regression Analysis
- 9.8.1. Introduction
- 9.8.2. General Concepts: The Regression Equation of Y on X
- 9.8.3. Model Goodness-of-fitIndex
- 9.8.4. SPSS: Linear Regression Analysis

9.9. Introduction to Inferential Statistics (I)
- 9.9.1. Introduction
- 9.9.2. Probability: General Concept
- 9.9.3. Contingency Tables for Independent Events
- 9.9.4. Theoretical Probability Models with Continuous Variables
  - 9.9.4.1. Normal Distribution
  - 9.9.4.2. Student “t” Distribution

9.10. Introduction to Inferential Statistics (II)
- 9.10.1. Introduction
- 9.10.2. Theoretical Probability Models With Continuous Variables
- 9.10.3. Sample Distribution
- 9.10.4. The Logic of Hypothesis Testing
- 9.10.5. Type I and II Errors

Module 10. Experimental Research: Design as a Model

10.1. Experimental Method
- 10.1.1. Introduction
- 10.1.2. Approaches or Paradigms from Educational Research
- 10.1.3. Concept of Experimental Research
- 10.1.4. Types of Research
- 10.1.5. Research Approach
- 10.1.6. Quality of an Investigation: Kerlinger Principle (Max-Min-Con)
- 10.1.7. Experimental Validity of an Investigation

10.2. Experimental Design in Research
- 10.2.1. Introduction
- 10.2.2. Types of Experimental Designs: Pre-experimental, Experimental and Quasi-experimental
- 10.2.3. Experimental Control
  - 10.2.3.1. Controlling Variables
  - 10.2.3.2. Control Techniques
  - 10.2.3.3. Experimental Design: Between-group and within-Subject Design
  - 10.2.3.4. Data Analysis: Statistical Techniques

10.3. Experimental Design with Different Groups of Subjects
- 10.3.1. Introduction
- 10.3.2. Approaches or Paradigms from Educational Research
- 10.3.3. Concept of Experimental Research
- 10.3.4. Types of Research
- 10.3.5. Research Approach
- 10.3.6. Quality of an Investigation: Kerlinger Principle (Max-Min-Con)
- 10.3.7. The Validity of an Investigation

10.4. Experimental Design with the Same Subjects
- 10.4.1. Introduction
- 10.4.2. Student's T-Test with the Same Subjects
- 10.4.3. Non-parametric Contrasts for Two Related Samples: Wilcoxon Test
- 10.4.4. Non-parametric Contrasts for More than Two Related Samples: Friedman's Test

10.5. One-factor, Completely Randomized Experimental Design
- 10.5.1. Introduction
- 10.5.2. The general Linear Model
- 10.5.3. ANOVA Models
- 10.5.4. One-factor, Fixed Effects, Completely Randomized ANOVA (A-EF-CA)
- 10.5.5. The Model
- 10.5.6. The Assumptions
- 10.5.7. The Contrast Statistic
- 10.5.8. Measures of Effect Size
- 10.5.9. Multiple Comparisons Between Measurements
  - 10.5.9.1. What are Multiple Comparisons?
  - 10.5.9.2. A Priori Planned Comparisons
  - 10.5.9.3. Ex-post Planned Comparisons

10.6. One-factor Experimental Design with Repeated Measures
- 10.6.1. Introduction
- 10.6.2. One-factor, Fixed from Effects, with Repeated Measures ANOVA (A-EF-CA)
- 10.6.3. Measures of Effect Size
- 10.6.4. Multiple Comparisons
  - 10.6.4.1. Orthogonal Planned Comparisons: Planned F Tests

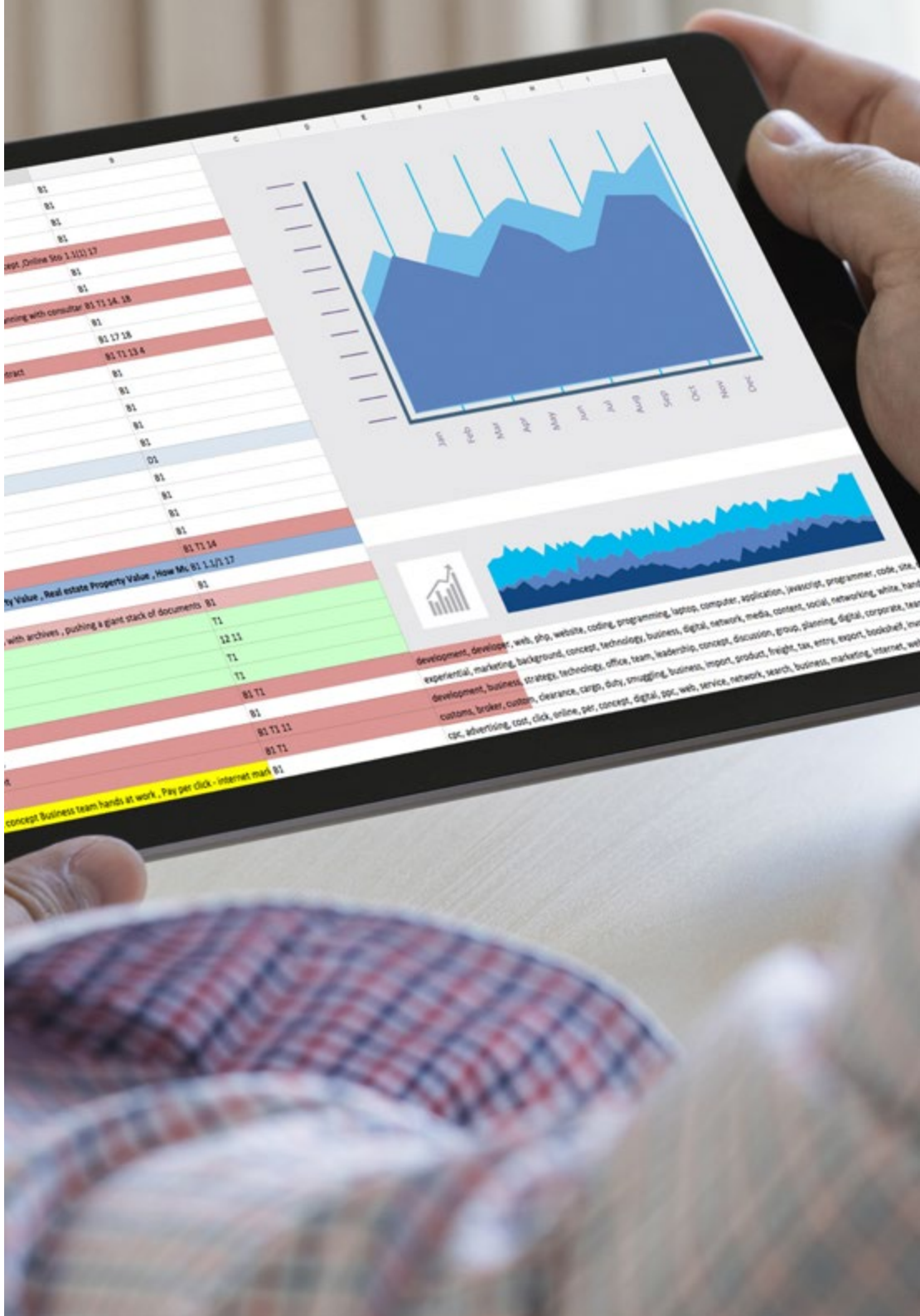
10.7. Completely Randomized Two-Factor Experimental Design
- 10.7.1. Introduction
- 10.7.2. Two-factor, Fixed-effect, Completely Randomized ANOVA (AB-EF-CA)
- 10.7.3. Measures of Effect Size
- 10.7.4. Multiple Comparisons

10.8. One-factor Experimental Design with Repeated Measures
- 10.8.1. Introduction
- 10.8.2. One-factor, Fixed from Effects, with Repeated Measures ANOVA (two-EF-CA)
- 10.8.3. Multiple Comparisons
- 10.8.4. One-factor, Fixed from Effects, with Repeated Measures ANOVA (two-EF-CA)
- 10.8.5. Multiple Comparisons

10.9. Block Experimental Design
- 10.9.1. Introduction
- 10.9.2. Characteristics of Block Designs
- 10.9.3. Additional Variables to the Factor: Blocking Factor
- 10.9.4. One-factor Blocking Design: Completely Randomized Blocking
- 10.9.5. Two-factor Blocking Design: Latin Square Blocking

10.10. Experimental Design with Covariate Variables
- 10.10.1. Introduction
- 10.10.2. ANCOVA design
  - 10.10.2.1. Covariate Variables to Reduce the Error Term
  - 10.10.2.2. Covariate Variables to Control Extraneous Variables
- 10.10.3. Why Include a Covariate Variable in the Design?
- 10.10.4. Blocking and ANCOVA

10.11. Single Case Experimental Design (N=1)
- 10.11.1. Introduction
- 10.11.2. Basic Structure of Single-case Designs
  - 10.11.2.1. Elaboration of Multiple Items
  - 10.11.2.2. Difficulty Index; Discrimination Index: Validity Index
  - 10.11.2.3. Analysis of Distractor Items
- 10.11.3. Treatment Study in Single Case Design
  - 10.11.3.1. Visual Data Analysis
- 10.11.4. Basic Model: A-B
- 10.11.5. A-B-A Design
- 10.11.6. Criteria Change Design
- 10.11.7. Multiple Baseline Design



Module 11. Techniques and Instruments for Data Collection in Qualitative Research

11.1. Introduction
- 11.1.1. Introduction
- 11.1.2. Research Methodology qualitative
- 11.1.3. Qualitative Research Techniques
- 11.1.4. Phases of Qualitative Research

11.2. Observation
- 11.2.1. Introduction
- 11.2.2. Observation Categories
- 11.2.3. Types of Observation: Ethnographic, Participant, and Non-Participant
- 11.2.4. What, How and When to Observe
- 11.2.5. Ethical Considerations of Observation
- 11.2.6. Content Analysis

11.3. Interview Techniques
- 11.3.1. Introduction
- 11.3.2. Interview Concept
- 11.3.3. Interview Characteristics
- 11.3.4. The Purpose of the Interview
- 11.3.5. Types of Interviews
- 11.3.6. Advantages and Disadvantages of the Interview

11.4. Discussion Group and Focus Group Techniques
- 11.4.1. Introduction
- 11.4.2. Discussion Groups
- 11.4.3. Objectives that Can Be Considered: Advantages and Disadvantages
- 11.4.4. Issues for Discussion

11.5. SWOT and DELPHI Technique
- 11.5.1. Introduction
- 11.5.2. Characteristics of Both Techniques
- 11.5.3. SWOT Technique
- 11.5.4. The Delphi Technique.
  - 11.5.4.1. Preliminary Tasks Before Starting a DELPHI

11.6. Life History Method
- 11.6.1. Introduction
- 11.6.2. Life History
- 11.6.3. Method Characteristics
- 11.6.4. Types
- 11.6.5. Phases

11.7. The Field Diary Method
- 11.7.1. Introduction
- 11.7.2. Concept of Field Diary
- 11.7.3. Field Diary Characteristics
- 11.7.4. Structure of the Field Diary

11.8. Discourse and Image Analysis Technique
- 11.8.1. Introduction
- 11.8.2. Features
- 11.8.3. Discourse Analysis Concept
- 11.8.4. Discourse Analysis Types
- 11.8.5. Levels of Discourse
- 11.8.6. Image Analysis

11.9. The Case Study Method
- 11.9.1. Introduction
- 11.9.2. Concept of Case Studies
- 11.9.3. Types of Cases Study
- 11.9.4. Cases Study Design

11.10. Classification and Analysis of Qualitative Data
- 11.10.1. Introduction
- 11.10.2. Categorization of Data
- 11.10.3. Data Coding
- 11.10.4. Theorizing Data
- 11.10.5. Data Triangulation
- 11.10.6. Exposure of Data
- 11.10.7. Writing Analytical Reflections. Memoing

Module 12. Computer Resources for Educational Research

12.1. Documentary Resources in Educational Research
- 12.1.1. Introduction
- 12.1.2. Introduction of Documentary Resources in Educational Research
- 12.1.3. Dissemination and Communication of Scientific-Academic Information
- 12.1.4. Scientific-academic Language
- 12.1.5. Access to Information: Bibliographic Databases

12.2. Information Search and Retrieval
- 12.2.1. Introduction
- 12.2.2. Search for Information
- 12.2.3. Information Search Strategies: Interfaces
- 12.2.4. Search for Electronic Journals
- 12.2.5. Bibliographic Databases

12.3. Access to Information Sources
- 12.3.1. Introduction
- 12.3.2. Databases
- 12.3.3. Electronic Magazines
- 12.3.4. Institutional Repositories
- 12.3.5. Scientific Social Networks
- 12.3.6. Information Managers

12.4. Thesauri
- 12.4.1. Introduction
- 12.4.2. Concept of Thesauri
- 12.4.3. Characteristics of Thesauri
- 12.4.4. Thesaurus Terminology

12.5. Thesauri: Database Usage
- 12.5.1. Introduction
- 12.5.2. Thesaurus Nomenclature
- 12.5.3. Thesaurus Hierarchy
- 12.5.4. Database

12.6. Information Evaluation Criteria
- 12.6.1. Introduction
- 12.6.2. Criteria for Evaluating Bibliographic Sources
- 12.6.3. Bibliometric Indicators
- 12.6.4. Book Evaluation and Publisher Ranking

12.7. Communication of Information
- 12.7.1. Introduction
- 12.7.2. Scientific-academic Language
- 12.7.3. Legal use of Information
- 12.7.4. Communication of Information
- 12.7.5. The Scientific Publication Process

12.8. SPSS (I)- Statistical Computing Tool for Quantitative data
- 12.8.1. Introduction
- 12.8.2. Introduction to SPSS
- 12.8.3. Structure of SPSS
- 12.8.4. How to Handle Data Files?

12.9. SPSS (II)- Descriptive Analysis of variables
- 12.9.1. Introduction
- 12.9.2. Menu Bar and SPSS tools
- 12.9.3. Create New Files
- 12.9.4. How to Define a Variable?

12.10. Computer Resources Qualitative Data
- 12.10.1. Introduction
- 12.10.2. Programs and Resources for Qualitative Data Collection
- 12.10.3. Computer Resources for Analyzing Qualitative Data
- 12.10.4. Other Programs for Information Analysis

Module 13. Data Collection Techniques and Instruments and Measurement

13.1. Measurement in Research
- 13.1.1. Introduction
- 13.1.2. What do we Want to Measure?
- 13.1.3. Subject Measurement Process
- 13.1.4. Psychometry

13.2. Collection of Information using Quantitative Techniques: Observation and Surveys
- 13.2.1. Introduction
- 13.2.2. Observation
  - 13.2.2.1. Theoretical Framework and Categories of Observation
- 13.2.3. The Survey
  - 13.2.3.1. Material for Conducting a Survey
  - 13.2.3.2. Survey Research Design

13.3. Collection of Information with Quantitative Techniques: the tests
- 13.3.1. Introduction
- 13.3.2. Test Concept
- 13.3.3. Item Generation Process
- 13.3.4. Testing by Area: Performance; Intelligence and Aptitude; Personality, Attitudes and Interests

13.4. Collection of Information with Quantitative Techniques: Scaling Methods
- 13.4.1. Introduction
- 13.4.2. Concept of Attitude Scales
- 13.4.3. Thurstone Method
  - 13.4.3.1. Method of Paired Comparisons
- 13.4.4. Likert Scale
- 13.4.5. Guttman Scale

13.5. Test Construction Process
- 13.5.1. Introduction
- 13.5.2. Item Scaling Process
  - 13.5.2.1. Item Generation Process
  - 13.5.2.2. Information Gathering Process
  - 13.5.2.3. Scaling Process in the Strict Sense
- 13.5.3. Scale Evaluation Process
  - 13.5.3.1. Item Analysis
  - 13.5.3.2. Scale Dimension
  - 13.5.3.3. Scale Reliability
  - 13.5.3.4. Scale Validity
- 13.5.4. Subjects' Scores on the Scale

13.6. Analysis of Test Items
- 13.6.1. Introduction
- 13.6.2. Classical Test Theory (Spearman, 1904)
- 13.6.3. Test Reliability
- 13.6.4. The Concept of Validity
- 13.6.5. Evidence of Validity

13.7. Reliability of the Instrument
- 13.7.1. Introduction
- 13.7.2. Definition of Reliability
- 13.7.3. Reliability by Test-Retest or Repeatability Method
- 13.7.4. Reliability by the Alternate or Parallel Shape Method
- 13.7.5. Reliability Through Internal Consistency Coefficients
  - 13.7.5.1. Coeficiente de Kuder-Richardson
  - 13.7.5.2. Cronbach's Alpha Coefficient

13.8. Validity of the Instrument
- 13.8.1. Introduction
- 13.8.2. Definition of Validity
- 13.8.3. Validity of the Instruments
  - 13.8.3.1. Immediate Validity
  - 13.8.3.2. Content Validity
  - 13.8.3.3. Construct Validity
  - 13.8.3.4. Contrast Validity
- 13.8.4. Validity Strategies

13.9. Item Analysis
- 13.9.1. Introduction
- 13.9.2. Item Analysis
- 13.9.3. Difficulty and Validity Indexes
- 13.9.4. Correction of Random Effects

13.10. Interpretation of Test Scores
- 13.10.1. Introduction
- 13.10.2. Interpretation of Scores
- 13.10.3. Normative Test Scales
- 13.10.4. Typical Derived Baremos
- 13.10.5. Interpretations Referring to the Criterion

Module 14. Item Response Theory (IRT)

14.1. Item Response Theory (IRT)
- 14.1.1. Introduction
- 14.1.2. Measurement Models
- 14.1.3. Fundamental Concepts of IRT
- 14.1.4. Basic Postulates of IRT

14.2. Generalizability Theory (GT)
- 14.2.1. Introduction
- 14.2.2. Generalizability Theory (GT)
- 14.2.3. Facets of Generalizability Theory
- 14.2.4. Interpretation of Results in a Study

14.3. Characteristics of IRT (I)
- 14.3.1. Introduction
- 14.3.2. Historical Introduction of TRI
- 14.3.3. IRT Assumptions
- 14.3.4. IRT models

14.4. Characteristics of IRT (II)
- 14.4.1. Introduction
- 14.4.2. TRI Results
  - 14.4.2.1. Parameters
  - 14.4.2.2. Item Characteristic Curve
  - 14.4.2.3. True Score
  - 14.4.2.4. Test Characteristic Curve
  - 14.4.2.5. Level of Information
- 14.4.3. Response Models: The Item Characteristic Curve
- 14.4.4. Question Selection Methods

14.5. Response Models for Dichotomous Items: the Rasch Contribution
- 14.5.1. Introduction
- 14.5.2. The Rasch Model
- 14.5.3. Characteristics of the Rasch Model
- 14.5.4. Example (Rasch Model)

14.6. Response Models for Dichotomous Items: the Rasch Contribution
- 14.6.1. Introduction
- 14.6.2. Birnbaum's Logistic Model (1968)
- 14.6.3. Model Parameters
  - 14.6.3.1. 2-parameter Logistic Model
  - 14.6.3.2. 3-parameter Logistic Model
  - 14.6.3.3. 4-parameter Logistic Model

14.7. Response Models for Polytomous Items: Nominal Item Models (Block, 1972)
- 14.7.1. Introduction
- 14.7.2. Polytomous Items
- 14.7.3. Nominal Response Models (Block, 1972)
- 14.7.4. Political Item Parameters

14.8. Response Models for Polytomous Items: Ordinal Item Models
- 14.8.1. Introduction
- 14.8.2. Ordinal Item Models
- 14.8.3. Ordinal Cumulative Model
  - 14.8.3.1. Samejima's Graded Response Model (GRM) (1969)
  - 14.8.3.2. Modified Graded Response Model (M-GRM) of Muraki (1990)
- 14.8.4. Continuous Ordinal Models
  - 14.8.4.1. Sequential Model (Tutz, 1990)
- 14.8.5. Adjacent Ordinal Models
  - 14.8.5.1. Partial Credit Model (Masters, 1982)

14.9. Response Model for Polytomous Items: Samejima's (1969) Graduated Response model
- 14.9.1. Introduction
- 14.9.2. Normal Graded Response Model
- 14.9.3. Graded Response Logistic Model
- 14.9.4. Example (Graduated Response Model)

14.10. Differential Item Functioning (DIF)
- 14.10.1. Introduction
- 14.10.2. Item Differential Concept (DIF)
- 14.10.3. Types of DIF
- 14.10.4. DIF screening methods
- 14.10.5. Purification methods

Module 15. Multivariate Analysis

15.1. Multivariate Analysis
- 15.1.1. Introduction
- 15.1.2. What is Multivariate Analysis?
- 15.1.3. The Objectives of Multivariate Analysis
- 15.1.4. Classification of Multivariate Techniques

15.2. Multiple Linear Regression
- 15.2.1. Introduction
- 15.2.2. Concept of Multiple Linear Regression
- 15.2.3. Conditions for Multiple Linear Regression
- 15.2.4. Predictors to Generate the Best Model

15.3. Binary Logistic Regression
- 15.3.1. Introduction
- 15.3.2. Binary Logistic Regression Concept
- 15.3.3. Model adjustment
  - 15.3.3.1. Model fitting in R
- 15.3.4. Stages of the R
- 15.3.5. Example (Binary Logistic Regression)

15.4. Nominal and Ordinal Logistic Regression
- 15.4.1. Introduction
- 15.4.2. General Review of Nominal Logistic Regression
- 15.4.3. Example (Nominal Logistic Regression)
- 15.4.4. General Review of Ordinal Logistic Regression
- 15.4.5. Example (Ordinal Logistic Regression)

15.5. Poisson Regression
- 15.5.1. Introduction
- 15.5.2. Poisson Concept
- 15.5.3. Distribution Functions
- 15.5.4. Poisson Regression with Counts

15.6. Log-Linear Models
- 15.6.1. Introduction
- 15.6.2. Log-Linear Models for Contingency Tables
- 15.6.3. Log-Linear Models for Contingency Tables
- 15.6.4. Example (Log-Linear Models for Contingency Tables)

15.7. Discriminant Analysis
- 15.7.1. Introduction
- 15.7.2. Concept of Discriminant Analysis
- 15.7.3. Classification with Two Groups
  - 15.7.3.1. Fisher Discriminant Function
- 15.7.4. Example (Discriminant Analysis)

15.8. Cluster Analysis
- 15.8.1. Introduction
- 15.8.2. Concept of K-means Clusters
- 15.8.3. Concept of Hierarchical Cluster Analysis
- 15.8.4. Example (Hierarchical Cluster Analysis)

15.9. Multidimensional scaling
- 15.9.1. Introduction
- 15.9.2. Multidimensional scaling: basic concepts
- 15.9.3. The Similarity Matrix
- 15.9.4. Classification of Scaling Techniques

15.10. Factor Analysis
- 15.10.1. Introduction
- 15.10.2. When is Factor Analysis Used?
- 15.10.3. Factor Analysis Methodology
- 15.10.4. Applications of Factor Analysis

Module 16. Direction of Thesis and Scientific Research, Guidance to University Students

16.1. Motivating University Students to Get Involved in Research
- 16.1.1. Introduction to Investigative Practice
- 16.1.2. Gnoseology or Theory of Knowledge
- 16.1.3. Scientific Research and Foundations
- 16.1.4. Research-Oriented Motivation

16.2. Basic Student Training for Research Activity
- 16.2.1. Initiation in Research Methods and Techniques
- 16.2.2. Elaboration of Quotes and Bibliographic References
- 16.2.3. The Use of New Technologies in Information Searching and Management
- 16.2.4. The research report: structure, characteristics and preparation standards

16.3. Requirements for the Management of Research Projects
- 16.3.1. Initial Guidance for Research Practice
- 16.3.2. Responsibilities in the Supervision of Theses and Research Projects
- 16.3.3. Introduction to Scientific Literature

16.4. The Approach to the Topic and the Study of the Theoretical Framework
- 16.4.1. The Research Topic
- 16.4.2. Objectives of the Research
- 16.4.3. Document Sources and Research Techniques
- 16.4.4. Structure and Boundaries of a Theoretical Framework

16.5. Research Designs and Hypothesis System
- 16.5.1. Types of Studies in Research
- 16.5.2. Research Designs
- 16.5.3. Hypothesis: Types and Characteristics
- 16.5.4. Variables in Research

16.6. Research Methods, Techniques and Instruments
- 16.6.1. Population and Sample
- 16.6.2. Sampling
- 16.6.3. Methods, Techniques and Instruments

16.7. Planning and Supervision of Student Activity
- 16.7.1. Research Plan Development
- 16.7.2. Research Activity Document
- 16.7.3. Schedule of Activities
- 16.7.4. Supervision and Monitoring of the Students

16.8. Supervising Scientific Research Projects
- 16.8.1. Promoting Research Activity
- 16.8.2. Encouragement and Creation of Opportunities for Enrichment
- 16.8.3. Resources and Presentation Techniques

16.9. End-of-Degree Papers and Dissertations
- 16.9.1. Management of Theses and Master's Degree Theses as Pedagogical Practice
- 16.9.2. Support and Career Planning
- 16.9.3. Characteristics and Structures of Master's Degree Theses
- 16.9.4. Characteristics and Structures of Doctoral Theses

16.10. Commitment to the Dissemination of Results: The True Impact of Scientific Research
- 16.10.1. The Use of Research as a Tool to Achieve Specific Goals
- 16.10.2. The Significant Impact of Research Activity
- 16.10.3. The By-products of Research Projects
- 16.10.4. Dissemination and Diffusion of Knowledge

Module 17. Innovation, Diversity and Equity in Education

17.1. What do we Understand by Educational Innovation?
- 17.1.1. Definition
- 17.1.2. Why is Educational Innovation essential?
- 17.1.3. How Can We Be Innovative?
- 17.1.4. Should We Be Innovative?

17.2. Diversity, Equity and Equal Opportunity
- 17.2.1. Definition of Concepts
- 17.2.2. Three Indispensable Elements in Education

17.3. Innovation and Educational Improvement
- 17.3.1. Innovation Process
- 17.3.2. Efficiency and Educational Improvement

17.4. Innovation for Achieving Equality in Education
- 17.4.1. How to Explain Equality
- 17.4.2. Equality in Education: A Persistent Problem
- 17.4.3. Factors for Achieving Equality in the Classroom: Examples in the Classroom

17.5. Non-Sexist Teaching and Language
- 17.5.1. What is Non-Sexist Language?
- 17.5.2. What is Sexism in Language?
- 17.5.3. What is Inclusive Language?
- 17.5.4. Examples of Sexist and Non-Sexist Language in Education

17.6. Factors that Favor and Hinder Innovation
- 17.6.1. Factors that Favor Innovation
- 17.6.2. Factors that Hinder Innovation

17.7. Characteristics of Innovative Schools
- 17.7.1. What is an Innovative School?
- 17.7.2. Innovative Schools, a Different Education
- 17.7.3. Elements of an Innovative School
- 17.7.4. The Keys to an Innovative Classroom

17.8. Process of Educational Innovation
- 17.8.1. The 21st Century School

17.9. Resources and Innovation Teaching Programs
- 17.9.1. Distinct Innovation Programs Which Can Be Used in the Classroom
- 17.9.2. Teaching Resources for an Innovative Classroom

17.10. Emerging Fields in the Teaching
- 17.10.1. Emerging Pedagogies
- 17.10.2. Emerging Needs of Students
- 17.10.3. ICT as an Emerging Resource in Teaching
- 17.10.4. Different ICT Tools to Use in the Classroom

Module 18. Talent, vocation, and creativity

18.1. Talent and its Educational Importance
- 18.1.1. Talent
- 18.1.2. Components
- 18.1.3. Talent is Diverse
- 18.1.4. Measuring and Discovering Talent
- 18.1.5. Gallup Test
- 18.1.6. Test of Garp
- 18.1.7. CareerScope
- 18.1.8. MBTI
- 18.1.9. Success DNA

18.2. Talent and Key Competencies
- 18.2.1. Key Competencies Paradigm
- 18.2.2. Key Competencies
- 18.2.3. The role of the Intelligences
- 18.2.4. Knowledge: Uses and Abuses in Education
- 18.2.5. The Importance of Skills
- 18.2.6. The Differentiating Factor of Attitude

18.2.7. Relationship between Talent and Key Competencies
18.3. Talent Development
18.3.1. Learning modalities. Richard fields
18.3.2. The Element
18.3.3. Talent Development Procedures
18.3.4. Mentor Dynamics
18.3.5. Talent and Educational Approach
18.4. Motivation Mechanisms
18.4.1. Needs, Desires and Motivations
18.4.2. Decision-Making
18.4.3. Executive Capabilities
18.4.4. Procrastination
18.4.5. Duty, Love and Pleasure in Education
18.4.6. Emotional Habits for Motivation
18.4.7. Motivational Beliefs
18.4.8. Values for Motivation
18.5. Vocation: Meaning and Purpose
18.5.1. The Importance of Vocation
18.5.2. Meaning and Purpose
18.5.3. Vision, Mission, Commitment
18.5.4. Exploring Vocation
18.5.5. Teaching Vocation
18.5.6. Educating for Vocation
18.6. Towards a Definition of Creativity
18.6.1. Creativity
18.6.2. Brain Functioning and Creativity
18.6.3. Intelligences, Talents and Creativity
18.6.4. Emotions and Creativity
18.6.5. Beliefs and Creativity
18.6.6. Divergent Thinking
18.6.7. Convergent Thinking
18.6.8. The Creative Process and its Phases
18.6.9. Disney Dynamics
18.7. Why Creativity?
18.7.1. Arguments for Creativity Today
18.7.2. Personal creativity for Life
18.7.3. Creativity in Art
18.7.4. Creativity for Problem Solving
18.7.5. Creativity for Professional Development
18.7.6. Creativity in the Coaching Process
18.8. Creativity Development
18.8.1. Conditions for Creativity
18.8.2. Artistic Disciplines as Precursors of Creativity
18.8.3. The Art Therapy Approach
18.8.4. Creativity Applied to Challenges and Problem Solving
18.8.5. Relational Thinking
18.8.6. Edward de Bono's Hats
18.9. Creativity as a Value in Education
18.9.1. The Need to Encourage Creativity in Education
18.9.2. Active Methodologies and Novelty
18.9.3. Educational Models that Value Creativity
18.9.4. Means, Times and Spaces to Apply Creativity in the Classroom
18.9.5. Disruptive Education
18.9.6. Pensamiento Visual
18.9.7. Design Thinking
18.10. Creative Techniques
18.10.1. Relational Thinking Techniques
18.10.2. Techniques for Generating Ideas
18.10.3. Techniques for Evaluating Ideas
18.10.4. Exercises of Ingenuity
18.10.5. Artistic Disciplines for Creative Development
18.10.6. RCS Method
18.10.7. Other Techniques and Methods

A complete specialization that will take you through the knowledge you need to compete among the best"

06

Methodology

This training program offers a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

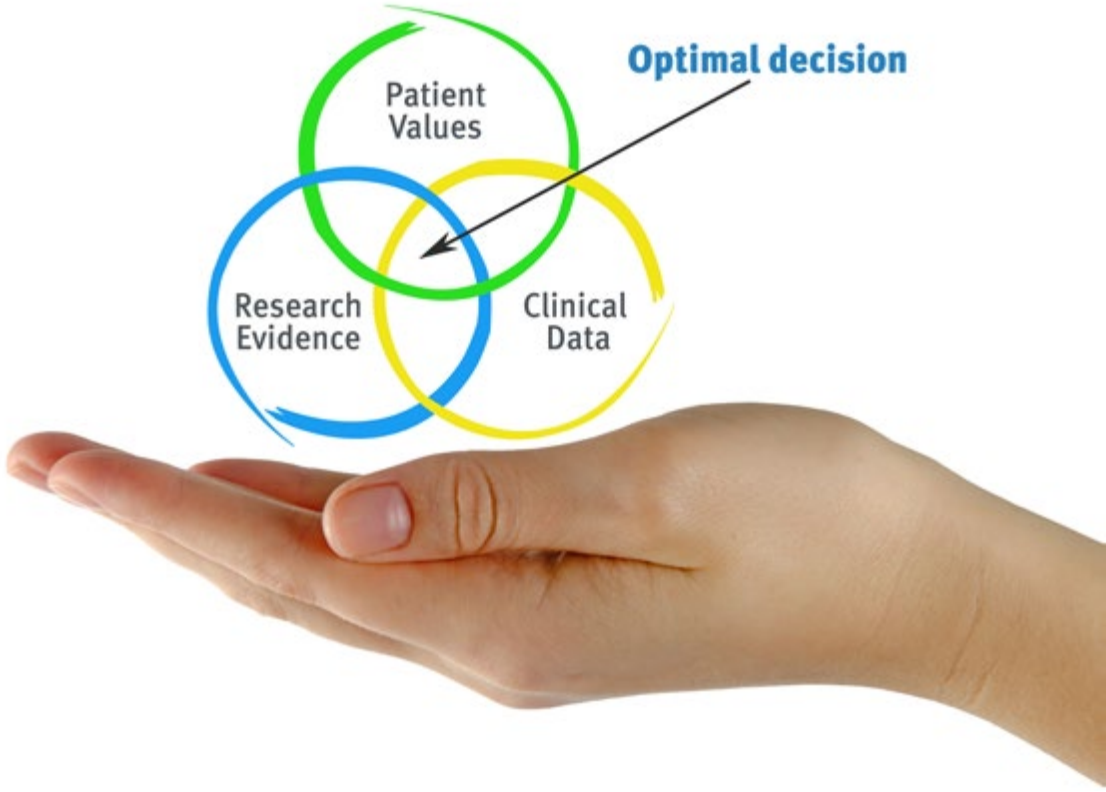
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH Education School we use the Case Method

In a given situation, what should a professional do? Throughout the program students will be presented with multiple simulated cases based on real situations, where they will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method.

With TECH, educators can experience a learning methodology that is shaking the foundations of traditional universities around the world.



It is a technique that develops critical skills and prepares educators to make decisions, defend their arguments, and contrast opinions.

Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

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

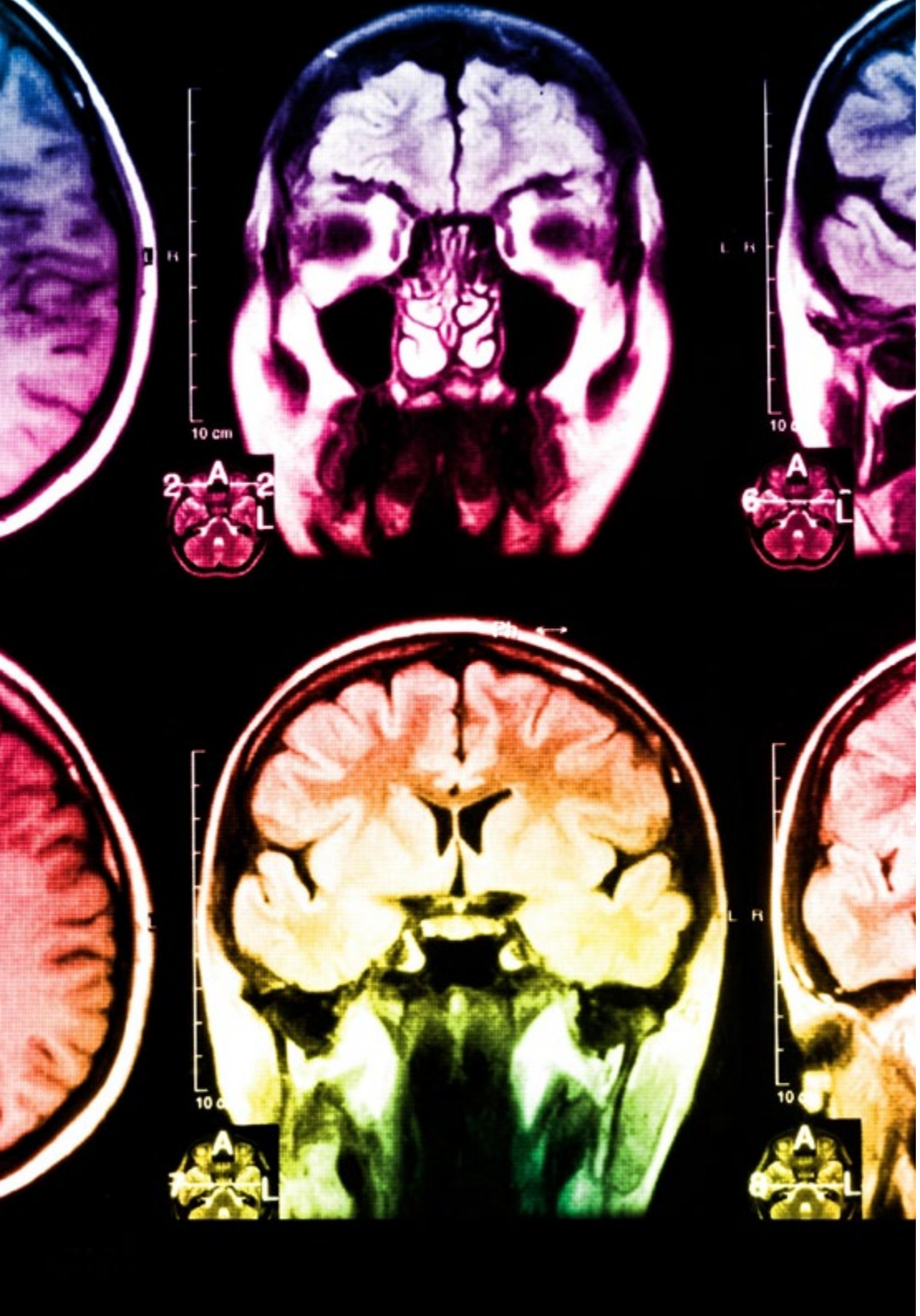
1. Educators who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life teaching.
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.

Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine case studies with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

Educators will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 85,000 educators with unprecedented success in all specialties. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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.

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.

This program offers the best educational material, prepared with professionals in mind:

Study Material

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Educational Techniques and Procedures on Video

TECH introduces students to the latest techniques, with the latest educational advances, and to the forefront of Education. All this, first-hand, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.

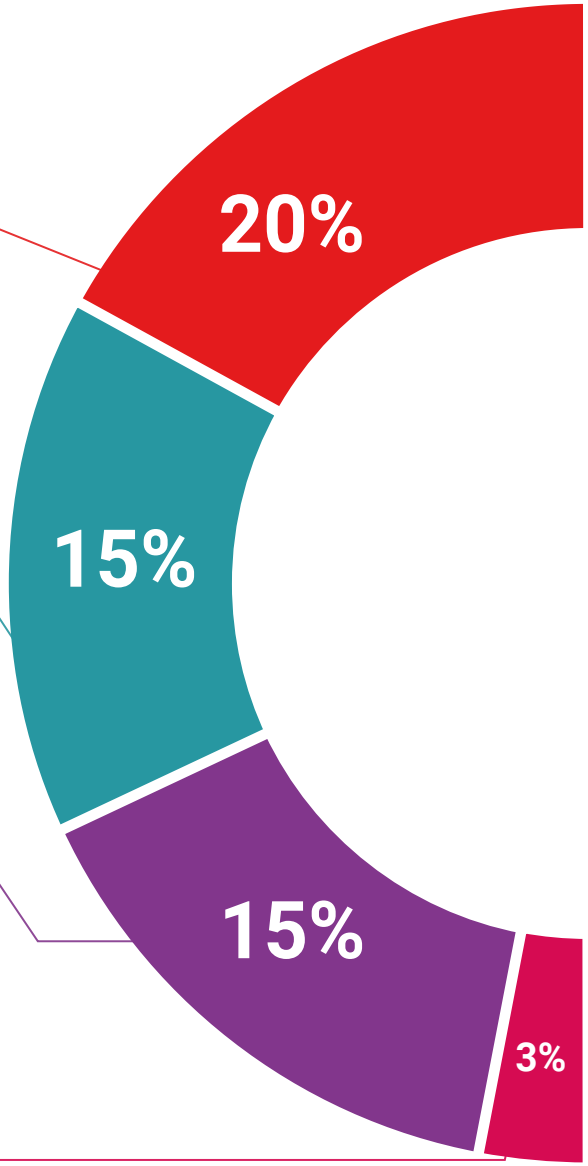
Interactive Summaries

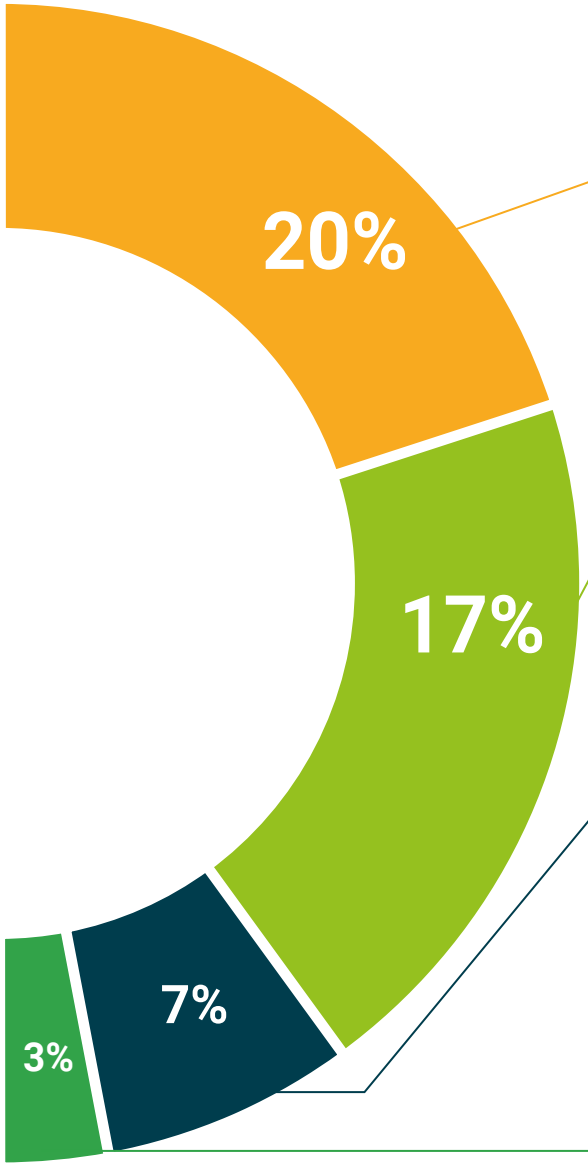
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises: so that they can see how they are achieving your goals.

Classes

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

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

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.

07

Certificate

The Advanced Master's Degree in University Teaching and Research in Education guarantees students, in addition to the most rigorous and up-to-date education, access to a Advanced Master's Degree issued by TECH Global University.

Successfully complete this training and receive your university degree without travel or laborious paperwork"

This program will allow you to obtain your **Advanced Master's Degree diploma in University Teaching and Research in Education** 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** title 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: **Advanced Master's Degree in University Teaching and Research in Education**

Modality: **online**

Duration: **2 years**

Accreditation: **120 ECTS**

tech global university

Mr./Ms. _____ with identification document _____
has successfully passed and obtained the title of:

Advanced Master's Degree in University Teaching and Research in Education

This is a program of 3.000 hours of duration equivalent to 120 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024

Dr. Pedro Navarro Illana
Chancellor

Unique TECH Code: AFWORD23S techtitute.com/certificates

Advanced Master's Degree in University Teaching and Research in Education

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Active Methodologies and Didactic Techniques	7	CO
1º	Higher Education	7	CO
1º	Quality Models and Quality Assessment in Education	7	CO
1º	Programming and Implementing Educational Projects	7	CO
1º	Teacher Tools and Resources for Teaching and Learning	7	CO
1º	Introduction to Teaching Skills	7	CO
1º	Skill Based Learning in the University Field	7	CO
1º	Educational Research Methodology	7	CO
1º	Fundamentals, Processes and Methods in Research	7	CO
2º	Experimental Research: Design as a Model	7	CO
2º	Techniques and Instruments for Data Collection in Qualitative Research	7	CO
2º	Computer Resources for Educational Research	7	CO
2º	Data Collection Techniques and Instruments and Measurement	7	CO
2º	Item Response Theory (IRT)	7	CO
2º	Multivariate Analysis	7	CO
2º	Direction of Thesis and Scientific Research, Guidance to University Students	7	CO
2º	Innovation, Diversity and Equity in Education	4	CO
2º	Talent, vocation, and creativity	4	CO

Dr. Pedro Navarro Illana
Rector

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*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.

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Advanced Master's Degree

University Teaching and Research in Education

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Global University**
- Credits: **120 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree

University Teaching and Research in Education

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