Professional Master's Degree

Biology and Geology Teacher Training in High School Education

tech global university

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Professional Master's Degree
Biology and Geology Teacher Training in High School Education

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

Website: **www.techtitute.com/us/education/professional-master-degree/master-biology-geology-teacher-training-high-school-education**

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01

Introduction

Teaching in high school is crucial to prepare young people for the future and contribute to the creation of a knowledge-based society. This program gathers specific information to refresh graduates in the teaching of Biology and Geology. And if the professional in this field needs a program to get up to date, he can count on this one offered by TECH. This is an academic experience of the highest level with which you will be able to update your knowledge in teaching innovation and initiation to educational research in only 12 months and 100% online.

A process of professional growth that will allow you to include everything you have learned in your work with the security of an expert in the field"

Biology and Geology Teacher Training Program in High School Education is designed to improve the student's competencies as a future teacher through the most innovative educational technology and on a hybrid learning basis.

This degree is distinguished by the fact that its contents can be taken 100% online, adapting to the needs and obligations of the student, in an asynchronous and completely self-manageable manner. The student will be able to choose which days, at what time and for how long to dedicate to the course of the contents of the program. Always in tune with the skills and capabilities dedicated to it.

The order and distribution of the subjects and their units is specially designed to allow each student to choose their own schedule and self-manage their time. For this purpose, you will have at your disposal theoretical materials presented through enriched texts, multimedia presentations, exercises and guided practical activities, motivational videos, master classes and case studies, where you will be able to evoke knowledge in an orderly manner and work on decision making that demonstrates your high level education within this field of teaching.

This **Professional Master's Degree in Biology and Geology Teacher Training in High School Education** contains the Educational most complete and up-to-date program on the market. Its most notable features are:

- The development of practical cases presented in simulated scenarios by experts in the field of study, where the student will evoke in an orderly manner the knowledge learned and demonstrate the acquisition of the competencies
- 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
- The latest developments on the educational task of the high school teacher
- Practical exercises where to perform the self-assessment process to improve learning, as well as activities at different levels of competence, according to Miller's model
- Special emphasis on innovative methodologies and teaching research
- 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

TECH presents the Professional PROGRAM in Biology and Geology Teacher Training in High School Education with the highest quality in the university market"

This Professional Master's Degree may be the best investment you can make when selecting a refresher program, for two reasons: in addition to expanding your knowledge in teaching, you will obtain a qualification endorsed by TECH Global University"

Choose your specialty and take the program that will lead you to professional excellence.

This 100% online Professional Master's Degree will allow you to balance your studies with your professional work while increasing your knowledge in this field.

Its teaching staff includes professionals belonging to the field of Teacher Training, who bring to this program their work experience, as well as recognized specialists from prestigious reference societies and 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 immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the teacher must try to solve the different situations of professional practice that arise throughout the Professional Master's Degree. For this purpose, the teacher will be assisted by an innovative interactive video system developed by renowned experts in the field of Geography and History teaching with extensive teaching experience.

02

Objectives

The program in Biology and Geology Teacher Training in High School is oriented to facilitate the performance of the professional dedicated to teaching with the latest advances and most innovative treatments in the sector.

This program is designed to help you update your knowledge in education, with the use of the latest educational technology to contribute with quality and security to the decision making and monitoring of students in High School Education"

General Objective

- Provide the future teacher with the acquisition of specialized skills and competencies that will increase their performance level and update their knowledge in High School teaching

Thanks to this program you will be able to achieve the necessary competences to be a successful professional"

Specific Objectives

Module 1. Learning and Development of Personalities

- Get to know the relationship between learning and development, education and culture
- Understand the importance of schooling in development
- Study the concept of brain plasticity and plasticity windows
- Gain knowledge about the essential social factors in learning: imitation, shared attention and empathic understanding
- Identify the stages of development
- Understand the concept of personality

Module 2. Society, Family and Education

- Know the term integral education
- Conceptualize educational guidance
- Explain the origin of educational guidance and the main figures of educational guidance
- Explain the areas of intervention of educational guidance
- Identify the models of intervention of educational guidance
- Enumerate the functions of guidance in the educational center
- Enunciate the principles of the guidance action

Module 3. Complements for the Disciplinary Formation in Biological and Geology

- Know the different distorted visions of science and its characteristics, in order to understand the different misconceptions about it.
- Expose the main characteristics of science didactics, as well as the problems it deals with
- Mention the relationship between research activity and the scientific method, and its teaching in biology and geology
- Know what inquiry learning is and its characteristics
- Know the scientific method and its Characteristics
- Know proposals for teaching biology and geology based on the scientific method and inquiry learning

Module 4. Biology and Geology Curriculum Design

- Define the concept of curriculum
- Detail the elements that make up the curriculum
- Explain the concept of curriculum design
- Describe the levels of concreteness of the curriculum
- Explain the different models of the curriculum
- Determine the aspects that should be taken into account in the elaboration of a teaching program

Module 5. Biological and geology Didactics

- Understand the origin and evolution of didactics
- Different definitions of the concept of didactics
- Propose a classification of didactics
- Explain the contribution of the CSIC to the scientific formation of teachers
- Expose the objects of study of science didactics

Module 6. Teaching Innovation and Initiation to Educational Research

- Get to know the fields of innovation in the educational context
- Discover learning communities
- Expose the obstacles and challenges of innovation in the educational context
- Explain how teachers learn and their role change
- Demonstrate the factors that favor professional learning and development
- Delve into the professional learning of teachers
- Introduce professional learning and meeting spaces, such as: conferences, congresses, innovation days, professional networks, communities of practice and MOOCS (Massive Open Online Courses)

Module 7. Educational Processes and Contexts

- Learn about the White Paper as the basis for the General Education Law
- Explain the concept of White Paper
- Identify the different educational laws in chronological order
- Expose the determinants of the educational reform
- Present the general and fundamental principles of the educational reform
- Mention the main characteristics of the Moyano Law
- Show the particularities of the General Education Law: preamble, purposes, educational levels, educational centers and teachers

Module 8. Inclusive Education and Attention to Diversity

- Develop an overview of the conceptions and formation of the teacher profile throughout history
- Learn about the institutions and training plans of each moment
- Conceptualize the current profile of teachers and their training needs

Module 9. Creativity and Emotional Education in the Classroom

- Know the difference between emotion and intelligence
- Understand emotional intelligence and its importance in the individual
- Get to know the importance of a teacher with very good self-regulation and emotional intelligence, from the point of view of Mayer and Salovey

Module 10. Neuroeducation

- Understand experience at the neural level
- Discover learning at the neuronal level

Module 11. Communication in the Classroom

- Communicate effectively with all members of the classroom
- Use images and videos as support material in the classroom
- Know how to solve communication problems

03

Skills

After passing the evaluations of the Professionals Master's Degree in Biology and Geology Teacher Training in High School Education, the professional will have acquired the necessary competences for a quality and up-to-date praxis based on the most innovative didactic methodology.

This program will allow you to learn the new tools used in Teacher to offer better service to your students”

General Skills

- Gain knowledge about the curricular contents of the subjects related to the corresponding teaching specialization, as well as the body of didactic knowledge regarding the respective teaching and learning processes For professional training, knowledge of the respective professions will be included
- Plan, develop and evaluate the teaching and learning process, promoting educational processes that facilitate the acquisition of the competences of the respective teachings, taking into account the level and previous training of the students, as well as their orientation, both individually and in collaboration with other teachers and professionals
- Search, obtain, process and communicate information (oral, printed, audiovisual, digital or multimedia), transform it into knowledge and apply it in teaching and learning processes in the subjects of their specialization
- Determine the syllabus to be implemented in an educational center by participating in its collective planning; develop and apply teaching methodologies, both group and personalized, adapted to the diversity of the students
- Design and develop learning spaces with special attention to equity, emotional and values education, equal rights and opportunities between men and women, citizenship training and respect for human rights that facilitate life in society, decision-making and the construction of a sustainable future
- Acquire strategies to stimulate student effort and promote their ability to learn by themselves and with others, and develop thinking and decision-making skills that facilitate autonomy, confidence and personal initiative
- Gain knowledge about the processes of interaction and communication in the classroom, master the social skills and abilities necessary to promote learning and coexistence in the classroom, and deal with problems that may arise in the classroom
- Design and carry out formal and non-formal activities that contribute to making the center a place of participation and culture in the environment where it is located; develop the functions of tutoring and guidance of students in a collaborative and coordinated manner; to participate in the evaluation, research and innovation of teaching and learning processes
- Get to know the regulations and institutional organization of the educational system and quality improvement models applicable to educational centers
- Know and analyze the historical characteristics of the teaching profession, its current situation, perspectives and interrelation with the social reality of each era
- Inform and advise families about the teaching and learning process and about the personal, educational and professional orientation of their children

A unique, key, and decisive educational experience to boost your professional development"

Specific Skills

- Get to know the characteristics of the students, their social contexts and motivations
- Understand the personality development of these students and the possible dysfunctions that affect learning
- Elaborate proposals based on the acquisition of knowledge, skills and intellectual and emotional skills
- Identify and plan for the resolution of educational situations that affect students with different abilities and learning rhythms
- Know the processes of interaction and communication in the classroom and in the center, address and solve possible problems
- Know the historical evolution of the educational system in our country
- Know and apply resources and strategies for information, tutoring and academic and professional orientation
- Promote actions of emotional education in value and citizenship training
- Participate in the definition of the educational project and in the general activities of the center according to criteria of quality improvement, attention to diversity, prevention of learning and coexistence problems
- Relate education to the environment and understand the educational role of the family and the community, both in the acquisition of skills and learning and in education in respect for rights and freedoms, equal rights and opportunities between men and women and in the equal treatment and non-discrimination of people with disabilities
- Get to know the historical evolution of the family, its different types and the incidence of the family context in education
- Acquire social skills in family relations and orientation

- Know the formative and cultural value of the subjects corresponding to the specialization and the contents that are studied in the respective teachings
- Gain knowledge about the history and recent developments of the subjects and their perspectives in order to be able to transmit a dynamic vision of them
- Know the contexts and situations in which the different curricular contents are used or applied
- In the case of psycho-pedagogical and professional orientation, to know the processes and resources for the prevention of learning and coexistence problems, evaluation processes and academic and professional orientation
- Get to know the theoretical-practical developments of teaching and learning of the subjects corresponding to the specialization
- Transform the syllabus into activity and work programs
- Acquire criteria for the selection and elaboration of educational materials
- Foster a climate that facilitates learning and values the contributions of the students
- Integrate audiovisual communication and multimedia education in the teaching and learning process
- Get to know evaluation strategies and techniques and to understand evaluation as an instrument of regulation and stimulus to effort
- Get to know and apply innovative teaching proposals in the area of specialization
- Critically analyze the performance of teaching, good practices and guidance using quality indicators
- Identify the problems related to the teaching and learning of the subjects of the specialization and propose alternatives and solutions
- Know and apply basic methodologies and techniques of educational research and evaluation and be able to design and develop research, innovation and evaluation projects

- Acquire experience in the planning, teaching and evaluation of the subjects corresponding to the specialization
- Master the social skills and abilities necessary to foster a climate that facilitates learning and coexistence
- Participate in the proposals for improvement in the different areas of performance
- Summarize the training acquired throughout all the courses described above and demonstrate the acquisition of the competences of the other subjects
- Demonstrate a command of the English language corresponding to level B1 according to the Common European Framework of Reference for Languages
- Get to know the psycho-pedagogical characteristics of the students in order to be able to evaluate them and issue the required reports
- Know the measures of attention to diversity that can be adopted in order to be able to give the necessary advice in each case
- Analyze the organization and functioning of a center to coordinate the personal, academic and professional orientation of students in collaboration with the members of the school community
- Develop the necessary skills and techniques to be able to adequately advise families about the development and learning process of their children
- Identify public services and community entities with which the center can collaborate and promote and plan, in collaboration with the management team, the necessary actions for a better attention of the students

04

Course Management

The program includes in its teaching staff experts of reference in Teacher Preparation, who bring to this program their work experience. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.

Learn about the latest advances in Teacher Training from leading experts in the field"

Management

Dr. Barboyón Combey, Laura

- Teacher of Primary Education and postgraduate studies
- Teacher in postgraduate university studies of High School Teacher Formation
- Teacher of Primary Education in several schools
- Doctor in Education from the University of Valencia
- Master's Degree in Psychopedagogy from the University of Valencia
- Degree in Primary Education with a major in English Teaching from the Catholic University of Valencia San Vicente Mártir

05

Structure and Content

The structure of the contents has been designed by the best professionals in the Teacher Training sector, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed and studied, and with extensive knowledge of new technologies applied to teaching.

We offer you the most complete and up-to-date educational program on the market. We strive for excellence and for you to achieve it too"

Module 1. Learning and Development of Personalities

1.1. Introduction: Relationship between Learning and Development, Education and Culture
- 1.1.1. Introduction
- 1.1.2. The Common Concept of Psychological Development
- 1.1.3. An Alternative to the Common Concept of Psychological Development: the Social and Cultural Nature of Development
- 1.1.4. The Role of Education in Psychological Development
- 1.1.5. Schooling as an Essential Context for Psychological Development
- 1.1.6. Essential Social Factors in Learning
- 1.1.7. Stages of Development
- 1.1.8. Key Developmental Processes

1.2. Conceptions of Learning and Learner Development
- 1.2.1. Concept of Learning
- 1.2.2. Main Theories of Learning and Development
  - 1.2.2.1. Theories of Psychoanalysis
    - 1.2.2.1.1. Freud's Theory
    - 1.2.2.1.2. Erikson's Psychosocial Theory
  - 1.2.2.2.Behavioral theories
    - 1.2.2.2.1. Pavlov's Classical Conditioning Theory
    - 1.2.2.2.2. Skinner's Operating Conditioning Theory
  - 1.2.2.3. Cognitive Theories
    - 1.2.2.3.1. Information Processing Theory
      - 1.2.2.3.1.1. Robert Gagné's Instructional Theory
    - 1.2.2.3.2. Constructivism
      - 1.2.2.3.2.1. Verbal-Meaningful Learning Theory of Dr. Ausubel
      - 1.2.2.3.2.2. Jean Piagetl's Genetic Epistemology
      - 1.2.2.3.2.3. Lev Vygotsky's Sociocultural Cognitive Theory
      - 1.2.2.3.2.4. Jerome Bruner's Discovery Learning
  - 1.2.2.4. Socio-Cognitive Theories
    - 1.2.2.4.1. Bandura's social-Cognitive Theory

1.3. Characterization of the Adolescence Stage: Physical and Sexual Development
- 1.3.1. Puberty and Adolescence
  - 1.3.1.1. Puberty
  - 1.3.1.2. Cardiac Catheterization
- 1.3.2. Psychological Effects of Puberty
- 1.3.3. Early Developing Adolescents and Late Developing Adolescents
  - 1.3.3.1. Precocious Puberty
  - 1.3.3.2. Delay of Puberty
- 1.3.4. Changing Patterns of Sexual Behavior
- 1.3.5. The Context and Timing of Adolescent Sexual Behavior
- 1.3.6. Love Affair and Intimacy

1.4. Psychological Dimensions related to School Learning: Social and Moral Development
- 1.4.1. Main Socializing Agents
  - 1.4.1.1. The Family
    - 1.4.1.1.1. The Concept of Family
    - 1.4.1.1.2. The Adolescent and their Family
  - 1.4.1.2. The Peer Group
  - 1.4.1.3. Educational Centers
  - 1.4.1.4. The media
- 1.4.2. Risks of Social Media
- 1.4.3. Development of Moral Concepts. Various Theoretical Models
  - 1.4.3.1. Piaget
  - 1.4.3.2. Kohlberg
- 1.4.4. Factors Influencing Adolescent Moral Development
  - 1.4.4.1. Differences Between Genders
  - 1.4.4.2. Intelligence
  - 1.4.4.3. At Home
  - 1.4.4.4. Friends

1.5. Psychological Dimensions Related to School Learning: Intelligence
- 1.5.1. The Advent of Formal Thinking
  - 1.5.1.1. Characteristics of Formal Thinking
  - 1.5.1.2. Hypothetic-Deductive Thinking and Propositional Reasoning
- 1.5.2. Criticisms to Piaget's View
- 1.5.3. Cognitive Changes
  - 1.5.3.1. The Development of Memory
    - 1.5.3.1.1. Sensory Memory
    - 1.5.3.1.2. Short-Term Memory (STM)
    - 1.5.3.1.3. Long-Term Memory (LTM)

1.5.3.2. The Development of Memory Strategies
1.5.3.3. The Development of Metacognition
1.5.3.3.1. The Development of Metacognition
1.5.3.3.2. Knowledge and Metacognitive Control
1.5.4. Intelligence
1.5.4.1. Cattell's Fluid and Crystallized Intelligence
1.5.4.2. Sternberg Triarchic Theory
1.5.4.3. Gardner's Multiple Intelligences
1.5.4.4. Goleman's Emotional Intelligence
1.5.4.5. Wechsler Scale
1.6. Psychological Dimensions related to School Learning: Identity, Self-Concept, and Motivation
1.6.1. Self-Concept
1.6.1.1. Definition of Self-Concept
1.6.1.2. Factors Associated with the Development of Self-Concept
1.6.2. Self-esteem
1.6.3. Theoretical Approaches to Identity Development
1.6.3.1. Different Ways of Elaborating Identity
1.6.4. Motivation and Learning
1.7. The Teaching-Learning Process in Adolescence: General Principles
1.7.1. Ausubel's Theory of Meaningful Verbal Learning
1.7.1.1. Types of Learning in the School Context
1.7.1.2. What is Already Known and the Desire to Learn: Conditions for Constructing Meaning
1.7.1.3. The Processes of Assimilation of New Contents
1.7.1.4. A Review of the Theory Thirty Years Later
1.7.2. Processes of Knowledge Construction: The Constructivist Theory of Teaching and Learning
1.7.2.1. School Education: A Social and Socializing Practice
1.7.2.2. The Construction of Knowledge in the School Context: The Interactive Triangle
1.7.2.3. The Processes of Knowledge Construction and the Mechanisms of Educational Influence
1.7.3. Why Do Only Humans Have Teaching?

1.8. The Teaching-Learning Process in Adolescence: Construction of Knowledge in the Classroom and Teacher/Student Interaction
- 1.8.1. Teacher Effectiveness
- 1.8.2. Teaching Styles
- 1.8.3. Teaching Models
- 1.8.4. The Role of the Teacher
- 1.8.5. Expectations of the Teacher and the Student

1.9. The Teaching-Learning Process in Adolescence. Processes of Knowledge Construction and Peer-to-Peer Interaction
- 1.9.1. Peer Interaction and Cognitive Development
- 1.9.2. Cooperative Learning
  - 1.9.2.1. The Use of Cooperative Learning as a Didactic Method

1.10. Attention to Diversity and Educational Needs in the Adolescence Stage
- 1.10.1. Historical Background
- 1.10.2. The Warnock Report
- 1.10.3. The Concept of Special Educational Needs
- 1.10.4. The Causes of SEN
- 1.10.5. Classification of SEN
- 1.10.6. Learning Difficulties derived from Motor, Visual and Hearing Impairment. Educational Intervention
- 1.10.7. Learning Difficulties Derived from Autism (ASD), Attention Deficit Hyperactivity Disorder (ADHD), Intellectual Disabilities (IDD) and High Abilities. Educational Intervention
- 1.10.8. Behavioral Disorders in Childhood and Adolescence
  - 1.10.8.1. Epidemiology and Risk Factors for Behavioral Disorders
  - 1.10.8.2. Clinical Features and Forms of Presentation
- 1.10.9. Main Manifestations of Behavioral Disorders
  - 1.10.9.1. Attention Deficit Hyperactivity Disorder (ADHD)
  - 1.10.9.2. Dissocial Disorder (DD)
  - 1.10.9.3. Oppositional Defiant Disorder (ODD)
- 1.10.10. An Example of an Instrument to Detect Behavioral Disorders in the Classroom
- 1.10.11. Proposals for Therapeutic Intervention in the Classroom
  - 1.10.11.1. Attention Deficit Hyperactivity Disorder (ADHD)
  - 1.10.11.2. Oppositional Defiant Disorder (ODD) and Dissocial Disorder (DD)

1.11. Relationships in Adolescence and Conflict Management in the Classroom
- 1.11.1. What is Mediation
  - 1.11.1.1. Types of Mediation
    - 1.11.1.1.1. School Mediation
    - 1.11.1.1.2. Family Mediation
  - 1.11.1.2. Insight Theory
  - 1.11.1.3. The Enneagram
- 1.11.2. Strengths and Weaknesses of Implementing a Mediation Program

1.12. Principle of Personalized Education and Forms of Action
- 1.12.1. Historical Evolution of Special Education
  - 1.12.1.1. The United Nations (UN)
  - 1.12.1.2. The Universal Declaration of Human Rights (UDHR)
- 1.12.2. The Localization Dilemma
- 1.12.3. Educational Inclusion
- 1.12.4. The Dilemma of Differences
- 1.12.5. Personalized Education
- 1.12.6. Personal Learning Design
- 1.12.7. Conclusions
  - 1.12.7.1. *Learning by Doing*

Module 2. Society, Family and Education

2.1. The Guidance Function of the Educational Center
- 2.1.1. Educational Counselling
  - 2.1.1.1. Introduction
  - 2.1.1.2. Concept of Educational Guidance
  - 2.1.1.3. Guidance Functions in the Educational Center
  - 2.1.1.4. Origin of Educational Guidance
  - 2.1.1.5. Areas of Intervention
    - 2.1.1.5.1. Professional Guidance
    - 2.1.1.5.2. Development Guidance
    - 2.1.1.5.3. School Guidance
    - 2.1.1.5.4. Guidance in the Attention to Diversity

2.1.1.6. Intervention Models
2.1.1.6.1. Counseling Model
2.1.1.6.2. Services Model
2.1.1.6.3. Program Model
2.1.1.6.4. Consultation Model
2.1.1.6.5. Technological Model
2.1.2. Principles of Guiding Action
2.2. The Tutor-Teacher and the Tutorial Action
2.2.1. The Tutor's Profile and Competences
2.2.2. Tutorial Action
2.2.3. The Guidance Department
2.2.3.1. Organization of the Guidance Department
2.2.3.2. Composition of the Guidance Department
2.2.3.3. Functions of the Guidance Department
2.2.3.4. Functions of the Members of the Guidance Department
2.2.3.4.1. Functions of the Head of the Guidance Department
2.2.3.4.2. Functions of the Support Teacher
2.2.3.4.3. Functions of the Therapeutic Pedagogy and Hearing and Language Teachers
2.2.3.4.4. Functions of the Teacher of Occupational Training and Guidance
2.2.4. Guidance and Tutorial Action in Occupational Training
2.2.5. The Holland Typology's Model
2.3. Tutorial Action Tools
2.3.1. Introduction
2.3.2. The Tutorial Action Plan (TAP)
2.3.2.1. Modalities of Autonomy
2.3.2.1.1. Pedagogical Autonomy
2.3.2.1.2. Managerial Autonomy
2.3.2.1.3. Organizational Autonomy
2.3.3. Information and Communication Technologies (ICT) in Tutorial Action
2.3.3.1. Social Changes
2.3.3.2. Changes in Education
2.3.3.3. ICT used in Tutorial Action
2.3.3.3.1. Webquests
2.3.3.3.2. Blogs
2.3.3.3.3. Webinars
2.3.3.3.4. Wikis
2.3.3.3.5. E-mail
2.3.3.3.6. Discussion Forums
2.3.3.4. Advantages of Using ICT in Tutorial Action
2.3.3.5. Disadvantages of the Use of ICT in Tutorial Action
2.4. The Relationship of the Teacher-Tutor with the Student
2.4.1. The Individualized Interview as the Main Tool
2.4.1.1. Importance of Communication
2.4.1.2. Interview between the Tutor Teacher and the Student
2.4.1.3. The Interview in the Aid Relationship
2.4.1.4. Interviewer Skills
2.4.1.5. Types of Interviews
2.4.1.5.1. According to the Number of Participants
2.4.1.5.2. According to the Format
2.4.1.5.3. According to the Mode or Channel
2.4.2. Group Dynamics
2.4.2.1. Group Dynamics: Some Examples of Techniques
2.4.2.1.1. Discussion Groups
2.4.2.1.2. Role-Playing
2.4.2.1.3. Dialogical Pedagogical Discussion
2.4.2.1.4. Cineforum
2.4.2.2. Benefits of Applying Group Dynamics
2.4.3. Techniques for the Management of Coexistence
2.4.3.1. Learning Values and Norms
2.4.3.2. Social Emotional Education and Classroom Climate
2.4.3.3. Strategies that Facilitate School Coexistence
2.4.3.4. Programs to Educate in Coexistence

2.5. Family and School Centers
- 2.5.1. Introduction
- 2.5.2. The Evolution of the Family and Society
- 2.5.3. Demands Made by the Family to the Educational Center and Vice-Versa
  - 2.5.3.1. Demands from the School to the Family
  - 2.5.3.2. Demands from the Family to the School
- 2.5.4. Family-Educational Center Communication Channels: the School for Parents
  - 2.5.4.1. School for Parents

2.6. The Family Interview
- 2.6.1. Introduction
  - 2.6.1.1. The Ecological Theory of Bronfenbrenner
- 2.6.2. The Family Interview
  - 2.6.2.1. Keys to an Effective Interview
  - 2.6.2.2. Emotional Education.
  - 2.6.2.3. Classification of Interviews
- 2.6.3. Structure of Interviews
- 2.6.4. Factors Involved in Family Interview
- 2.6.5. Steps in Family Interview
- 2.6.6. Interview Techniques
  - 2.6.6.1. Educational Coaching
  - 2.6.6.2. Context
  - 2.6.6.3. Origins of Coaching
  - 2.6.6.4. Principles of Coaching
  - 2.6.6.5. Models of Coaching
  - 2.6.6.6. Agents Involved in the Coaching Process
  - 2.6.6.7. Benefits of Coaching

Module 3. Complements for the Disciplinary Formation in Biological and Geology

3.1. The nature of science as a teaching objective and the construction of scientific knowledge
- 3.1.1. The restricted and simplifying concept of science
- 3.1.2. The decontextualized, accumulative and objective view of science
- 3.1.3. Science as a neutral, individualistic and elitist activity
- 3.1.4. A teaching proposal

3.2. The history of biology and geology. Scientific knowledge, school science and science education.
- 3.2.1. The history of science as a teaching resource
- 3.2.2. The history of science as a training tool
- 3.2.3. The history of science in science education
- 3.2.4. Is there room for improvement in science education?
- 3.2.5. The science of scientists
- 3.2.6. School science
- 3.2.7. From teaching content to teaching competencies

3.3. What science to teach: literacy and scientific competence.
- 3.3.1. What science to teach?
- 3.3.2. Student perception of science education.
- 3.3.3. International evaluations of science education
- 3.3.4. Demand. of science in science education
- 3.3.5. Society's demand for science education
- 3.3.6. Why teach science
- 3.3.7. Characteristics of scientific literacy curricular materials
- 3.3.8. Scientific competence
- 3.3.9. Criteria for the selection of scientific contents under the competency approach.
- 3.3.10. Need for a contextualized treatment of the scientific curriculum.
- 3.3.11. The current curriculum and scientific competence
- 3.3.11. Some proposals for developing the curriculum based on scientific competence

3.4. The big questions of biology
- 3.4.1. What Is Life?
- 3.4.2. What is the origin of life?
- 3.4.3. What is the origin of the species?
- 3.4.4. What gives each organism its specific identity and individual identity?
- 3.4.5. How does the individual develop?
- 3.4.6. What relationships do living things have with each other and with their environment?

3.5. Biology and the world of the 21st century.
The evolution of geological knowledge up to the 21st century.
- 3.5.1. Basis of the new biology
- 3.5.2. Improvement of human health
- 3.5.3. Promotion of industries that respond to global problems
- 3.5.4. Knowledge in basic biology
- 3.5.5. What remains to be known
- 3.5.6. Evolution of geological knowledge
- 3.5.7. Challenges of planetary geology
- 3.5.8. The new era of seismotectonics
- 3.5.9. New Challenges of plate tectonics
- 3.5.10. The long road of hominid evolution
- 3.5.11. Exploration of natural resources
- 3.5.12. The geological perspective on climate change

3.6. Environmental issues and sustainability
- 3.6.1. What are the main environmental problems?
- 3.6.2. Characteristics of environmental degradation
- 3.6.3. Individual and collective behaviors associated with environmental problems.
- 3.6.4. Sustainability
- 3.6.5. Scientific-technological, educational and political measures

3.7. Biology and geology and their relationship with the science-technology-society (cts) approach.
- 3.7.1. New curricular trends in science education
- 3.7.2. The cts education movement
- 3.7.3. Teachers' cts practice in classrooms and schools
- 3.7.4. Some cts curriculum materials
- 3.7.5. Advantages and disadvantages of cts practice in science education
- 3.7.6. The Iberian cts movement and prospective

3.8. Teacher Didactic Research: Planning, Development and Evaluation of Projects in Biological and Geology Education
- 3.8.1. Characteristics of Today's Society
- 3.8.2. Faculty Research and its Cycles
- 3.8.3. Elaboration of a Work Plan
- 3.8.4. Performance in the Classroom
- 3.8.5. Data Analysis and Process Evaluation

3.9. Design of Didactic Experiments
- 3.9.1. Safety Rules and Cleaning in the Laboratory
- 3.9.2. Introduction: the didactic experiment
- 3.9.3. Didactic experiments in biology
- 3.9.4. Didactic experiments in geology
- 3.9.5. Low-cost didactic experiments or experiments with recycled materials

3.10. Practical experiences in teaching biology and geology.
- 3.10.1. Practical activities for teaching biology
- 3.10.2. Dissemination of practical activities
- 3.10.3. Web pages on practical activities and virtual laboratories
- 3.10.4. Fundamental characteristics of practical activities in geology
- 3.10.5. Practical activities for teaching geology
- 3.10.6. Field practices

Module 4. Biology and Geology Curriculum Design

4.1. Curriculum and its Structure
- 4.1.1. School Curriculum: Concept and Components
- 4.1.2. Curriculum Design: Concept, Structure and Functioning
- 4.1.3. Levels of Curriculum Specification
- 4.1.4. Curriculum's Model
- 4.1.5. Educational Programming as a Working Tool in the Classroom.

4.2. Legislation as a Guide to Curriculum Design and Key Competencies
- 4.2.1. Review of Current National Educational Legislation
- 4.2.2. What are Competencies?
- 4.2.3. Types of Skills
- 4.2.4. Key Competencies
- 4.2.5. Description and Components of Key Competencies

4.3. The Spanish Educational System. Levels and Modalities of Education
- 4.3.1. Education System: Interaction between Society, Education and the School System
- 4.3.2. The Educational System: Factors and Elements
- 4.3.3. General Characteristics of the Spanish Educational System
- 4.3.4. Configuration of the Spanish Educational System
- 4.3.5. Secondary Education
- 4.3.6. Baccalaureate
- 4.3.7. Professional Training
- 4.3.8. Artistic Education
- 4.3.9. Language Teaching
- 4.3.10. Sports Education
- 4.3.11. Adult Education

4.4. Analysis of the curriculum of the biology and geology specialty.
- 4.4.1. Establishment of the Biology and Geology teaching specialty.
- 4.4.2. Official curriculum of the subjects assigned to the teaching specialty of Biology and Geology (ESO).
- 4.4.3. Official curriculum of the subjects assigned to the teaching specialty of Biology and Geology (Baccalaureate).
- 4.4.4. Vocational training and its management
- 4.4.5. Biology and Geology teachers in the organization chart of secondary schools.

4.5. Didactic programming i: introduction to didactic programming in biology and geology specialization
- 4.5.1. What is pedagogical autonomy (center autonomy)?
- 4.5.2. What Is a Teaching Plan? Characteristics and Functions
- 4.5.3. Justification and contextualization of a didactic program
- 4.5.4. Basic elements of a didactic program: objectives, contents and key competencies.
- 4.5.5. Didactic programming by key competences. Contribution of our specialty to the competences
- 4.5.6. Considerations for vocational training cycles

4.6. Didactic programming II: the treatment of methodology, evaluation, resources and other elements of didactic programming.
- 4.6.1. Concept and General Considerations on Methodology. Autonomy
- 4.6.2. Main aspects to be considered within the methodology
- 4.6.3. Concretization of methodological principles
- 4.6.4. Practical application of constructivism
- 4.6.5. Learning Styles
- 4.6.6. General Aspects to consider Scheduling the Evaluation Process
- 4.6.7. Recovery of pending subjects
- 4.6.8. Resources
- 4.6.9. Extracurricular and complementary activities
- 4.6.10. Attention to Diversity
- 4.6.11. Evaluation of the Program and Teaching Practice
- 4.6.12. Final conclusions for programming

4.7. The didactic unit I: general aspects of the didactic units. Didactic objectives and competences
- 4.7.1. Introduction to the Teaching Unit
- 4.7.2. Identification / justification
- 4.7.3. Contextualization
- 4.7.4. Teaching Objectives
- 4.7.5. Criteria for Definition OBJECTIVES
- 4.7.6. Competencies
- 4.7.7. Objectives in terms of competencies (relation of objectives and competencies)

4.8. The didactic unit II: inclusion of contents, evaluation and methodology as the central axis of the didactic unit.
- 4.8.1. Criteria for the selection, organization and time distribution of content
- 4.8.2. Treatment of the evaluation in the didactic unit
- 4.8.3. Differences between the inclusion of the methodology in a didactic program and in a didactic unit
- 4.8.4. Definition of the didactic strategy
- 4.8.5. Methodology according to teaching model
- 4.8.6. Methodological strategies and techniques according to teaching model
- 4.8.7. Strategies and techniques that may favor each learning style.
- 4.8.8. Methodologies favoring the development of competencies
- 4.8.9. Methodology for the attention to diversity
- 4.8.10. Methodology to deal with transversal elements and education in values.

4.9. Classroom work management
- 4.9.1. Classroom Work Planning
- 4.9.2. Classroom management and attention to diversity
- 4.9.3. Time Distribution
- 4.9.4. Criteria for the selection and sequencing of activities

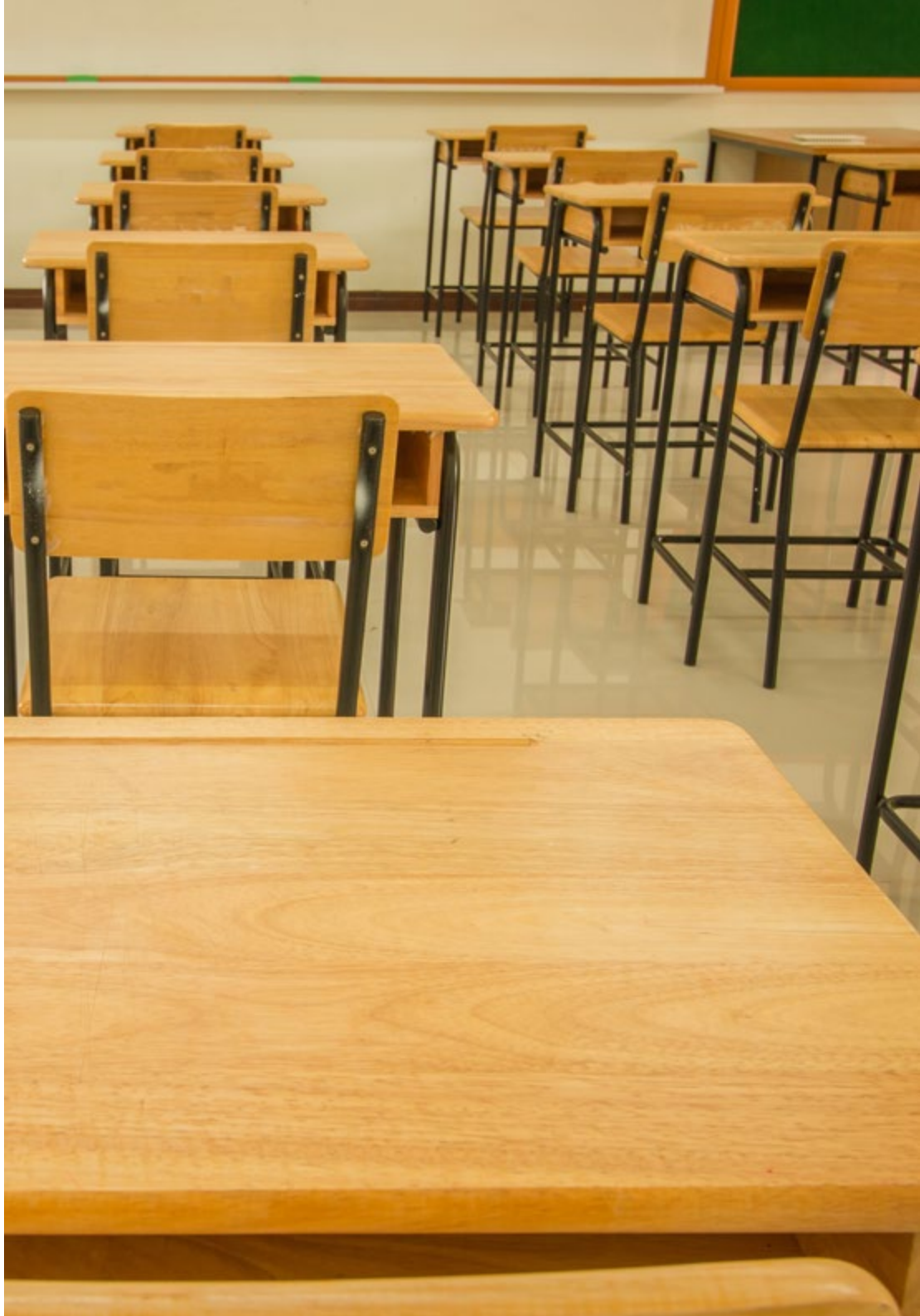
4.10. Recommendations and Mass Common Syllabus Design Errors
- 4.10.1. Compilation scheme of the elements of a teaching program
- 4.10.2. Compilation scheme of the elements of a teaching program for ESO and High School
- 4.10.3. Comparison between didactic programming and didactic unit for ESO and High School and between didactic programming and work unit in vocational training cycles.
- 4.10.4. Recommendations for good curriculum design
- 4.10.5. Most common mistakes that can be made in the curricular design of didactic programs and didactic or work units.

Module 5. Biological and geology Didactics

5.1. General Didactics and Science Didactics
- 5.1.1. Origin and Evolution of Didactics
- 5.1.2. Definition of Didactics
- 5.1.3. Internal Classification of Didactics
- 5.1.4. Learning to Teach Science: Science Didactics
- 5.1.5. Objects of Study of Science Didactics

5.2. The role of the teacher and his role as a generator of a good context for learning biology and geology.
- 5.2.1. The role of the teacher and the development of teaching skills
- 5.2.2. The Teacher as Researcher
- 5.2.3. The Motivating Teacher
- 5.2.4. Characteristics of High School and vocational training students
- 5.2.5. The teacher as a manager of coexistence and promoter of the functioning of the groups.

5.3. Learning Techniques and Strategies in Biology and geology. Stages
- 5.3.1. What are learning strategies?
- 5.3.2. Thinking Phases and Corresponding Strategies
- 5.3.3. Conditioning or Supporting Strategies
- 5.3.4. Acquisitive Stage Receptive Stage: Strategies for Information Acquisition and Selection
- 5.3.5. Acquisitive Stage Reflective Phase: Strategies of Knowledge Organization and Comprehension
- 5.3.6. Acquisitive Stage Retentive Stage: Memorization Strategies for the Storage and Retrieval of Knowledge
- 5.3.7. Reactive Stage Extensive-creative phase. Inventive and creative strategies
- 5.3.8. Reactive Stage Extensive-reactive phase. Strategies for knowledge transfer. transfer of knowledge
- 5.3.9. Reactive Stage Symbolic expressive phase. Oral and written expression strategies
- 5.3.10. Reactive Stage Practical expression phase. Technical, artistic and ethical expression strategies.
- 5.3.11. Metacognition.



5.4. New teaching approaches.
Models and methodologies applied to the specialty of biology and geology
- 5.4.1. New approaches to teaching biology and geology: stem/steam.
- 5.4.2. Differences between didactic model, methodology and methodological technique
- 5.4.3. Transmission-reception model.
Expository model
- 5.4.4. Models by discovery
- 5.4.5. Constructivist model (meaningful learning and cognitive conflict)
- 5.4.6. Gagné instruction model
- 5.4.7. Planning in Science Classes
- 5.4.8. Explanations in science classes
- 5.4.9. Problem-based learning, case studies and project work
- 5.4.10. Cooperative versus collaborative
- 5.4.11. Flipped classroom
- 5.4.12. Game-Based Learning (Gamification)

5.5. Learning difficulties associated with the teaching-learning of biology and geology.
- 5.5.1. The language of science and the language of school science
- 5.5.2. Difficulties arising from the school environment
- 5.5.3. Difficulties arising from ways of thinking
- 5.5.4. Concrete and formal thinking
- 5.5.5. Misconceptions in biology
- 5.5.6. Erroneous preconceptions in geology
- 5.5.7. Teaching strategies to overcome learning problems associated with biology and geology.

5.6. General Aspects of Didactics Activities. Classification and selection.
Type of activity: problems
- 5.6.1. Definition and importance of activities in science exercises vs. activities
- 5.6.2. General classification of activities
- 5.6.3. Criteria for the design and/or selection of learning activities.
Revised bloom taxonomy
- 5.6.4. Classification of activities in science classes
- 5.6.5. Problem definition and classifications
- 5.6.6. Problem Solving
- 5.6.7. Methodological proposals to improve problem solving.

5.7. Practical activities and activities outside the classroom
- 5.7.1. Practical work in science
- 5.7.2. Grading of practical work
- 5.7.3. Factors affecting the difficulty of practical assignments
- 5.7.4. Importance of the use of the environment in the teaching of natural sciences.
- 5.7.5. Choice of the place to carry out the activity
- 5.7.6. Types of activities outside the classroom according to the time they are carried out
- 5.7.7. Types of activities outside the classroom according to their relation to the contents of the curriculum
- 5.7.8. Types of activities outside the classroom according to their methodological approach

5.8. General aspects of teaching resources. Conventional resources in biology and geology
- 5.8.1. What Are Didactics Resources?
- 5.8.2. Classification of Didactic Resources
- 5.8.3. Selection of Teaching Resources
- 5.8.4. The Textbook
- 5.8.5. Conventional resources in the biology and geology classroom.
- 5.8.6. Conventional resources in the biology and geology laboratory
- 5.8.7. Conventional resources outside the biology and geology classroom.

5.9. New information and communication technologies (ict).Educational resources in the biology and geology classroom.
- 5.9.1. Concept and Characteristics of New information and communication technologies (ict)
- 5.9.2. Didactic possibilities of ICTs
- 5.9.3. Appearance of new educational modalities after the use of ICTs.
- 5.9.4. Technical requirements for the use of ict in the classroom.
- 5.9.5. Integrating educational technology into the classroom
- 5.9.6. The web 2.0 and the virtual classroom
- 5.9.7. Emerging educational technologies
- 5.9.8. Websites for searching and obtaining ict resources.
- 5.9.9. Virtual laboratories
- 5.9.10. Video Games and Serious Games
- 5.9.11. Augmented Reality(AR)
- 5.9.12. Virtual Reality

5.10. The Evaluation of Learning in the Subjects from the Specialty of Biology and geology in Secondary Education and Professional La Formation
- 5.10.1. Evaluation: Concept and Basic Characteristics
- 5.10.2. Why evaluate and what to evaluate?
- 5.10.3. Evaluation Systems
- 5.10.4. Types of Evaluations
- 5.10.5. Academic performance: satisfactory versus sufficient
- 5.10.6. Evaluation and Grading Criteria and Evaluable Learning Standards
- 5.10.7. Evaluation Sessions
- 5.10.8. Introduction to the Learning Evaluation Techniques and Instruments in Experimental Sciences
- 5.10.9. Observation Techniques and Instruments
- 5.10.10. Dialogues/Interviews
- 5.10.11. Review of Class Work
- 5.10.12. Tests
- 5.10.13 Surveys/Questionnaires
- 5.10.14. The Evaluation of Learning in the Subjects Assigned to the Specialty of biology and geology in ESO, Baccalaureate and Professional Formation

Module 6. Teaching Innovation and Initiation to Educational Research

6.1. Educational Innovation as a Process and School Improvement
- 6.1.1. Education and the New Scenarios of the Global and Local Context
- 6.1.2. Key Concepts: Educational Innovation, Change, Reform and Educational Improvement
- 6.1.3. Educational Paradigms and Innovation Purposes
- 6.1.4. Why Innovate, the Meaning of Innovation
- 6.1.5. Process Models to Generate Educational Innovation
- 6.1.6. The Importance of a Strategic Approach to Incorporate Educational Innovations
- 6.1.7. Challenges of Educational Innovation: the Need for a Paradigm Shift and the Role of Research for Educational Improvement

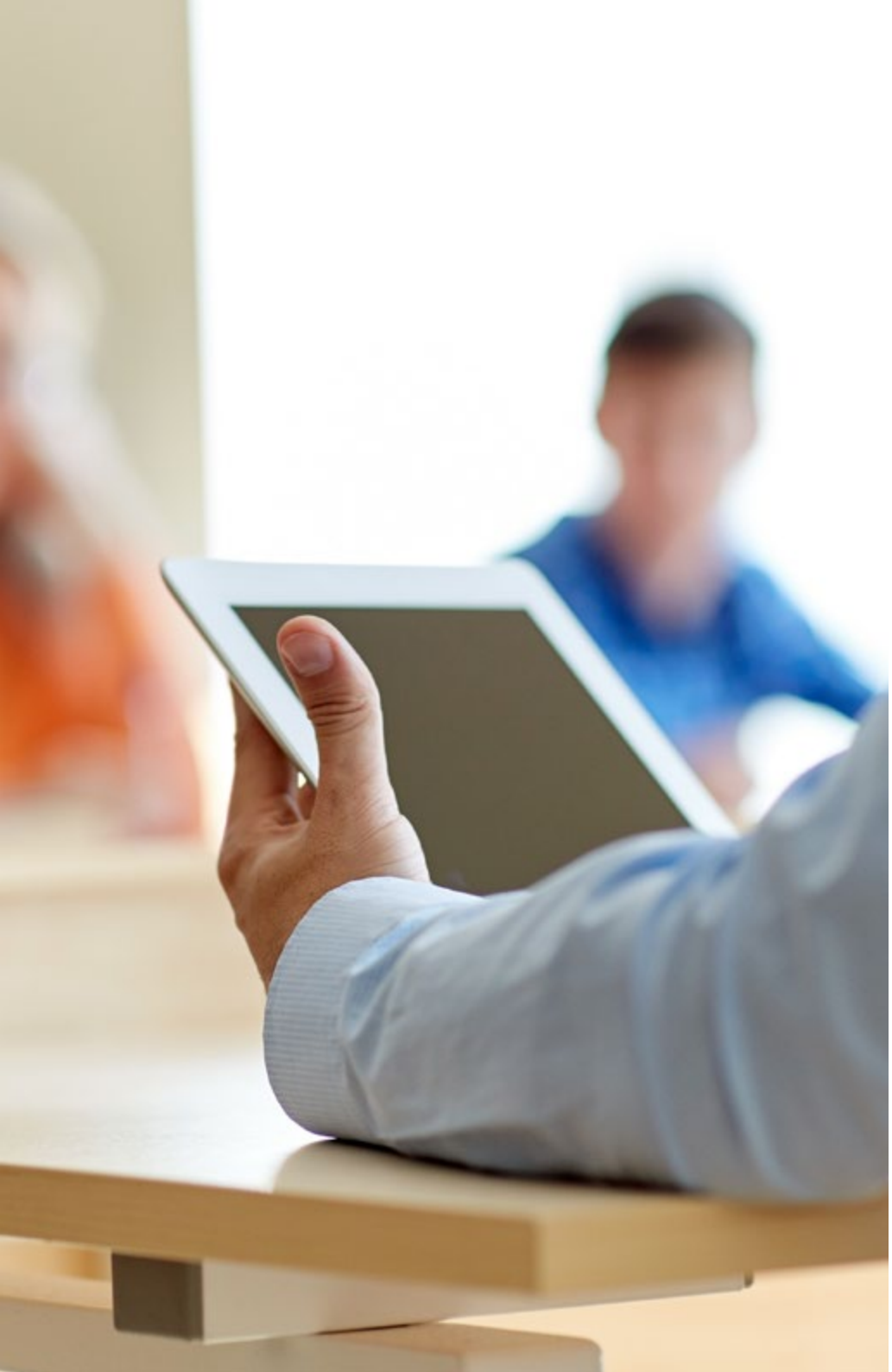
6.2. Teaching Innovation: Perspectives, Challenges and Professional Learning
- 6.2.1. Areas of Innovation in the Educational Context
- 6.2.2. The Case of Learning Communities
- 6.2.3. The Obstacles and Challenges of Innovation in the Educational Context
- 6.2.4. How Do Teachers Learn? From Transmitting Teachers to Inquiring and Creative Teachers
- 6.2.5. Factors to Promote Learning and Professional Development
- 6.2.6. From Collective Learning to the Professional Development of the Teaching Staff
- 6.2.7. Spaces for Meeting and Professional Learning: Congresses, Innovation Conferences, Professional Networks, Communities of Practice and MOOCS

6.3. The Design of a Good Practice of Teaching Innovation
- 6.3.1. From Professional Learning to Good Teaching Practices
- 6.3.2. Good Practices and the Necessary Conceptual Change
- 6.3.3. Aspects to be Taken into Account in the Design of Good Teaching Practice
- 6.3.4. One More Step: Designing and Self-Evaluating Innovative Projects and Practices

6.4. Innovative Learning-Centered Designs to Promote Learner Ownership: Innovative Strategies and Practices
- 6.4.1. The Learner is the Protagonist of its Learning
- 6.4.2. Rationale for Selecting Learning-Centered Teaching Strategies: Situated Cognition
- 6.4.3. Rationale for Selecting Learning-Centered Teaching Strategies: The Learning Approach
- 6.4.4. Generalization and Transfer of Learning: Keys to Promote Learner Protagonism
- 6.4.5. Teaching Strategies to Encourage Students' Engagement with their Learning
- 6.4.6. Design of Innovative Practices Focused on Learning: Service-Learning

6.5. Innovative Use of Didactic Resources and Means
- 6.5.1. Paradigm Shift: From Solid Knowledge to Liquid Information
- 6.5.2. Metaphors on Web 2.0 and their Educational Implications
- 6.5.3. New Literacies: Educational Visions and Consequences
- 6.5.4. Digital Literacy and the Development of Competencies
- 6.5.5. The Meaning and Practices of Digital Literacy in Schools
- 6.5.6. Literacy and Citizenship: More than ICT Integration
- 6.5.7. Good Practices in the Innovative Use of Technological Resources

6.6. Learning-Oriented Evaluation: Orientation and Design of Good Practices
- 6.6.1. Evaluation as a Learning Opportunity
- 6.6.2. Characteristics of Innovative Evaluation
- 6.6.3. The Dimensions of Evaluation: the Ethical and the Technical-Methodological Question



6.6.4. Innovative Evaluation: How to Plan the Evaluation to Orient it to Learning
6.6.5. Quality Criteria for Developing a Learning-Oriented Evaluation Process
6.6.6. How to Foster Improvement and Learning from Evaluation Results

6.7. Teacher Self-Assessment and Learning Improvement: The Challenge of Educational Innovation
6.7.1. Educational Improvement Makes it Essential to Self-Evaluate the Teaching Task
6.7.2. The Self-Evaluation of Teaching Practice as a Process of Reflection and Formative Accompaniment
6.7.3. Areas of Self-Evaluation of the Teaching Task
6.7.4. Self-Evaluation of Schools for the Improvement of their Educational Processes from an Inclusive Perspective

6.8. New Technologies and Educational Research: Tools for Educational Improvement
6.8.1. Educational Research has its Own Character
6.8.2. The Research Process and the Educational Researcher's Viewpoint
6.8.3. Educational Research in the Current Context
6.8.4. Technological Tools for the Development of Educational Research
6.8.4.1. Searching and Updating Information on the Internet
6.8.4.2. Organizing Information
6.8.4.3. Collection of Information in the Field Work
6.8.4.4. Analysis of the Information: Quantitative and Qualitative
6.8.4.5. Report Writing and Publication of Information

6.9. From Educational Research to Classroom Research: Improving the Teaching-Learning Process
6.9.1. Educational Research Functions
6.9.2. From Educational Research to Research in the Classroom
6.9.3. Classroom Research and Teachers' Professional Development
6.9.4. Ethical Considerations for the Development of Educational Research

6.10. Educational Challenges for the Research and Improvement of Teaching Practice of the Specialty
6.10.1. Educational Challenges for the 21st Century
6.10.2. Research, Innovation and Best Practices in the Specialty
6.10.3. Deontological Framework for Teaching Practice

Module 7. Educational Processes and Contexts

7.1. The White Paper and the 1970 Education Law
- 7.1.1. Introduction
- 7.1.2. White Paper
  - 7.1.2.1. What is a White Paper?
  - 7.1.2.2. White Paper. Educational in Spain: Bases for an Educational Policy
- 7.1.3. The General Education Law of 1970: Preamble and Goals
  - 7.1.3.1. Preamble
  - 7.1.3.2. Purposes
- 7.1.4. The General Law of Education of 1970: Educational Levels
  - 7.1.4.1. Preschool Education
  - 7.1.4.2. General Basic Education
  - 7.1.4.3. Baccalaureate
  - 7.1.4.4. University Education
  - 7.1.4.5. Professional Formation
- 7.1.5. The General Education Law of 1970: Schools and Teachers
  - 7.1.5.1. Educational Centers
  - 7.1.5.2. Professors

7.2. The LODE of 1985 and the LOGSE of 1990
- 7.2.1. Introduction
  - 7.2.4.1. Early Childhood Education
  - 7.2.4.2. Primary Education
  - 7.2.4.3. High School
  - 7.2.4.4. Baccalaureate
  - 7.2.4.5. Professional Training
  - 7.2.4.6. Special Education

7.3. The Organic Law on Education (LOE)
- 7.3.1. Introduction
- 7.3.2. Organic Law on Education (LOE):Principles
- 7.3.3. Organic Law on Education (LOE): Teaching
  - 7.3.3.1. Early Childhood Education
  - 7.3.3.2. Primary Education

7.3.3.3. Secondary Education
7.3.3.4. Baccalaureate
7.3.3.5. Professional Formation
7.3.4. Organic Law on Education (LOE): Itineraries
7.4. The Organic Law for the Improvement of the Quality of Education (LOMCE)
7.4.1. Introduction
7.4.2. LOMCE: Currículum
7.4.3. LOMCE: Secondary Education
7.4.4. LOMCE: Baccalaureate
7.4.5. LOMCE: Professional Training
7.4.5.1. Basic Vocational Training
7.4.5.2. Intermediate Vocational Training
7.4.5.3. Higher Vocational Training
7.4.5.4. Dual Vocational Training
7.4.6. LOMCE: Educational System Itineraries
7.4.7. LOMCE: Key Skills
7.5. The Organization of the Institutions
7.5.1. Concept of School
7.5.2. Components of the School Center
7.5.3. Characteristics of Educational Centers
7.5.3.1. Autonomy of the Centers
7.5.3.2. Functions of The School
7.6. Management and Leadership Applied to the Educational Institution: Management Team
7.6.1. Management of the Educational Institution
7.6.1.1. Conceptions of the Term Management
7.6.2. Leadership.
7.6.2.1. Concept of Leader
7.6.2.2. Gestation of the Leader
7.6.2.3. The Authentic Leader
7.6.3. Leadership in Today's Organizations
7.6.3.1. Importance of Authentic Leadership
7.6.3.2. The Need for Authentic Leadership in Education
7.6.3.3. Types of Leadership
7.6.4. Leadership in the Management of Educational Institutions and Initiatives
7.6.4.1. Leadership of the Management Team
7.6.4.2. Pedagogical Leadership of the Director
7.6.4.3. Leadership of the Head of Studies
7.7. Management and Leadership Applied to the Educational Institution: Teaching Team
7.7.1. Teaching Team: Functions and Rights of the Teaching Staff
7.7.2. Teachers Organization
7.7.2.1. Teamwork
7.7.2.1.1. Working Groups
7.7.2.2. The Teacher as Tutor
7.7.2.2.1. The Profile of the Tutor
7.7.2.2.2. Duties of the Tutor
7.7.2.3. The Teacher-Coach
7.7.2.3.1. Conceptualization and Characteristics
7.7.2.3.2. The Coach
7.7.2.4. Networking
7.7.3. Leadership of the Teaching Staff
7.7.3.1. The Leadership of the Tutor
7.7.3.2. Teacher Leadership
7.8. The Guidelines of a School Center
7.8.1. School-Based Education Project
7.8.1.1. The Content of School-Based Education Project
7.8.1.2. Development of School-Based Education Project
7.8.1.3. Implementation of School-Based Education Project
7.8.1.4. Evaluation of School-Based Education Project
7.8.2. Internal Rules
7.8.2.1. The Content School-Based Education Project, a Discretionary Matter
7.8.3. Specific Plans
7.8.3.1. Purpose, Typology and Content
7.8.3.2. Another Way of Expressing the School-Based Education Project
7.8.4. Annual Report
7.8.4.1. Guidelines for the Preparation of an Educational Center's Annual Report
7.8.5. Autonomy as a Requirement

7.9. The Organizational Structure of a Center and Communication Instruments
- 7.9.1. Collegiate Bodies
  - 7.9.1.1. The School Council
    - 7.9.1.1.1. Composition
    - 7.9.1.1.2. Election and Renewal of the School Board
    - 7.9.1.1.3. Competencies
  - 7.9.1.2. The Teaching Staff
- 7.9.2. Educational Coordination Bodies
  - 7.9.2.1. Teaching Departments
  - 7.9.2.2. Guidance Department in Compulsory Secondary Education
  - 7.9.2.3. Complementary and Extracurricular Activities Department
  - 7.9.2.4. Pedagogical Coordination Commission

7.10. Curriculum Management
- 7.10.1. The School Space: the Organization of the Classroom
- 7.10.2. Assessment of the Spatial Design of the Classroom
  - 7.10.2.1. Systematic Observation of Users in the Course of Using the Space
  - 7.10.2.2. Self-Application and Evaluation
- 7.10.3. The School Space as a Dynamic Creation of the Teacher
- 7.10.4. School Time
- 7.10.5. Student Organization
  - 7.10.5.1. Vertical Organization of the Student Body
    - 7.10.5.1.1. Graduate School
    - 7.10.5.1.2. The Ungraded School
    - 7.10.5.1.3. The Multigrade School
  - 7.10.5.2. Horizontal Organization of the Student Body
    - 7.10.5.2.1. The Autonomous Class
    - 7.10.5.2.2. Departmentalization
    - 7.10.5.2.3. Team Teaching by Teachers

7.11. Change and Innovation in the School
- 7.11.1. Improvement in Education
  - 7.11.1.1. From Change as a Necessity to Change as an Opportunity
  - 7.11.1.2. Global Versus Partial Change
  - 7.11.1.3. Organizational Versus Social Change
  - 7.11.1.4. Towards Successful Change

7.11.2. Institutional Innovation
7.11.3. The Creation and Management of Collective Knowledge
7.11.3.1. Departments and Educational Teams as Structures for Innovation
7.11.3.2. Strategies for Intervention in Collaborative Contexts
7.11.4. Teachers and Managers as Agents of Change
7.12. Change and Innovation in the School Center: Spatial Context and Didactic Project
7.12.1. The Planning Process for the Improvement of the Spatial Context of Learning
7.12.2. The Imperatives for Change and the School in its Environment
7.12.3. The Traditional Model
7.12.4. Spatial Context and Didactic Project
7.12.5. Infrastructure of the New Learning Contexts
7.12.6. Strategies for the Improvement of the Quality of Life in the School Center
7.12.6.1. Search for Correspondence between the Designs of the Building and the Furniture
7.12.6.2. Development of a New Conception of the Workplace of the Student
7.12.6.3. Redistribution of the Work Areas by Means of the Furniture
7.12.6.4. The Participation of Students in the Appropriation of Space
7.12.6.5. The Urban Planning Dimension

Module 8. Inclusive Education and Attention to Diversity

8.1. Concept of Inclusive Education and its Key Elements
8.1.1. Conceptual Approach
8.1.2. Difference Between Integration and Inclusion
8.1.2.1. Integration Concept
8.1.2.2. Inclusion Concept
8.1.2.3. Difference Between Integration and Inclusion
8.1.3. Key Elements of Educational Inclusion
8.1.3.1. Key Strategic Aspects
8.1.4. The Inclusive School and the Education System
8.1.4.1. The Challenges of the Education System
8.2. Inclusive Education and Attention to Diversity
8.2.1. Concept of Attention to Diversity
8.2.1.1. Types of Diversity
8.2.2. Diversity and Educational Inclusion Measures
8.2.2.1. Methodological guidelines
8.3. Multilevel Teaching and Cooperative Learning
8.3.1. Key Concepts
8.3.1.1. Multilevel Teaching
8.3.1.2. Cooperative Learning
8.3.2. Cooperative Teams
8.3.2.1. Conceptualization of Cooperative Teams
8.3.2.2. Functions and Principles
8.3.2.3. Essential Elements and Advantages
8.3.3. Benefits of Multilevel Teaching and Cooperative Learning
8.3.3.1. Benefits of Multilevel Teaching
8.3.3.2. Benefits of Cooperative Learning
8.3.4. Barriers to the Implementation of Inclusive Schools
8.3.4.1. Political Barriers
8.3.4.2. Cultural Barriers
8.3.4.3. Didactic Barriers
8.3.4.4. Strategies to Overcome Barriers
8.4. Social Inclusion
8.4.1. Inclusion and Social Integration
8.4.1.1. Definition of Integration and Elements
8.4.1.2. Concept of Social Inclusion
8.4.1.3. Inclusion vs. Integration
8.4.2. Inclusion in Education
8.4.2.1. Social Inclusion at School
8.5. Inclusive School Assessment
8.5.1. Assessment Parameters
8.6. ICT and UDL in Inclusive Schools
8.6.1. Traditional Teaching Methods
8.6.2. ICT
8.6.2.1. Concept and Definition of ICT
8.6.2.2. Characteristics of ICT
8.6.2.3. Telematics Applications and Resources
8.6.2.4. ICT in the Inclusive School

8.6.3. Universal Design for Learning
8.6.3.1. What is DUA?
8.6.3.2. UDL Principles
8.6.3.3. The Application of the UDL to the Curriculum
8.6.3.4. Digital Resources and UDL
8.6.4. Digital Media to Individualize Classroom Learning

Module 9. Creativity and Emotional Education in the Classroom

9.1. Emotional Intelligence and the Education of Emotions According to the Mayer and Salovey Model
9.2. Other Models of Emotional Intelligence and Emotional Transformation
9.2.1. Emotional Competence Models
9.2.2. Social Competence Models
9.2.3. Multiple Models
9.3. Socio-Emotional Skills and Creativity According to Level of Intelligence
9.4. Concept of Emotional Quotient, Intelligence and Dyssynchrony Accommodation in High Intellectual Capacities
9.5. Concept of Hyperemotivity
9.6. Current Scientific Studies on Creativity, Emotions, Self-Awareness and Intelligence
9.6.1. Neuroscientific Studies
9.6.2. Applied Studies
9.7. Practical Classroom Resources to Prevent Demotivation and Hyperemotivity
9.8. Standardized Tests to Assess Emotions and Creativity
9.8.1. Creativity Tests and Quizzes
9.8.2. Assessing Emotions
9.8.3. Laboratories and Valuation Experiences
9.9. Inclusive Schools: Humanist Model and Emotional Education Interrelation

Module 10. Neuroeducation

10.1. Introduction to Neuroeducation
10.2. Main Neuromyths.
10.3. Attention
10.4. Emotion
10.5. Motivation
10.6. The Learning Process.
10.7. Memory
10.8. Stimulation and Early Interventions.
10.9. Importance of Creativity in Neuroeducation
10.10. Methodologies that Allow the Transformation of Education into Neuroeducation

Module 11. Communication in the Classroom

11.1. Learning to Teach
  11.1.1. Communication Processes
  11.1.2. Teaching Transmission Processes
11.2. Oral Communication
  11.2.1. Voice in the Classroom
  11.2.2. Voice Care in the Classroom
11.3. Communication Support Systems
  11.3.1. The Use of the Blackboard
  11.3.2. The Use of Projectors
11.4. The Use of Images in Teaching
  11.4.1. Images and Licenses for Use
  11.4.2. Author Images
11.5. The Use of Video in Teaching
  11.5.1. Video as a Support Material
  11.5.2. Teaching through Videos
11.6. Written Communication
  11.6.1. The Reports and Written Assignments
  11.6.2. Blogs and Forums
11.7. Communication Difficulties
  11.7.1. Teaching Difficulties
  11.7.2. Classroom Difficulties
11.8. Collaborative Processes vs. Competition
  11.8.1. Advantages and Disadvantages of Collaborative Learning
  11.8.2. Advantages and Disadvantages of Competency-Based Learning
11.9. Development of Support Materials
  11.9.1. Classroom Supplies
  11.9.2. Consultation Material
11.10. Development of Network Teaching
  11.10.1. Teaching Resources on the Internet
  11.10.2. Wikis and Reference Material on the Internet

This will provide key Preparation to advance in your career"

06

Methodology

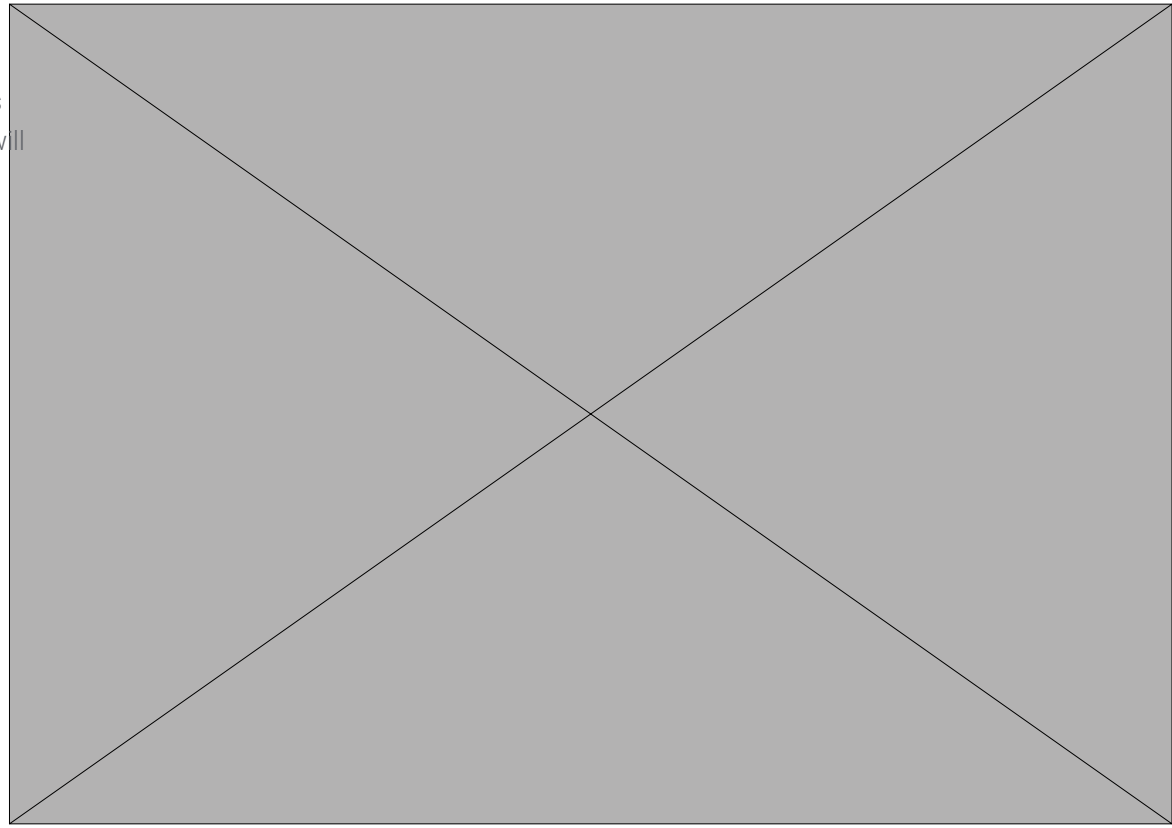
This training program offers a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

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 Global University 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:

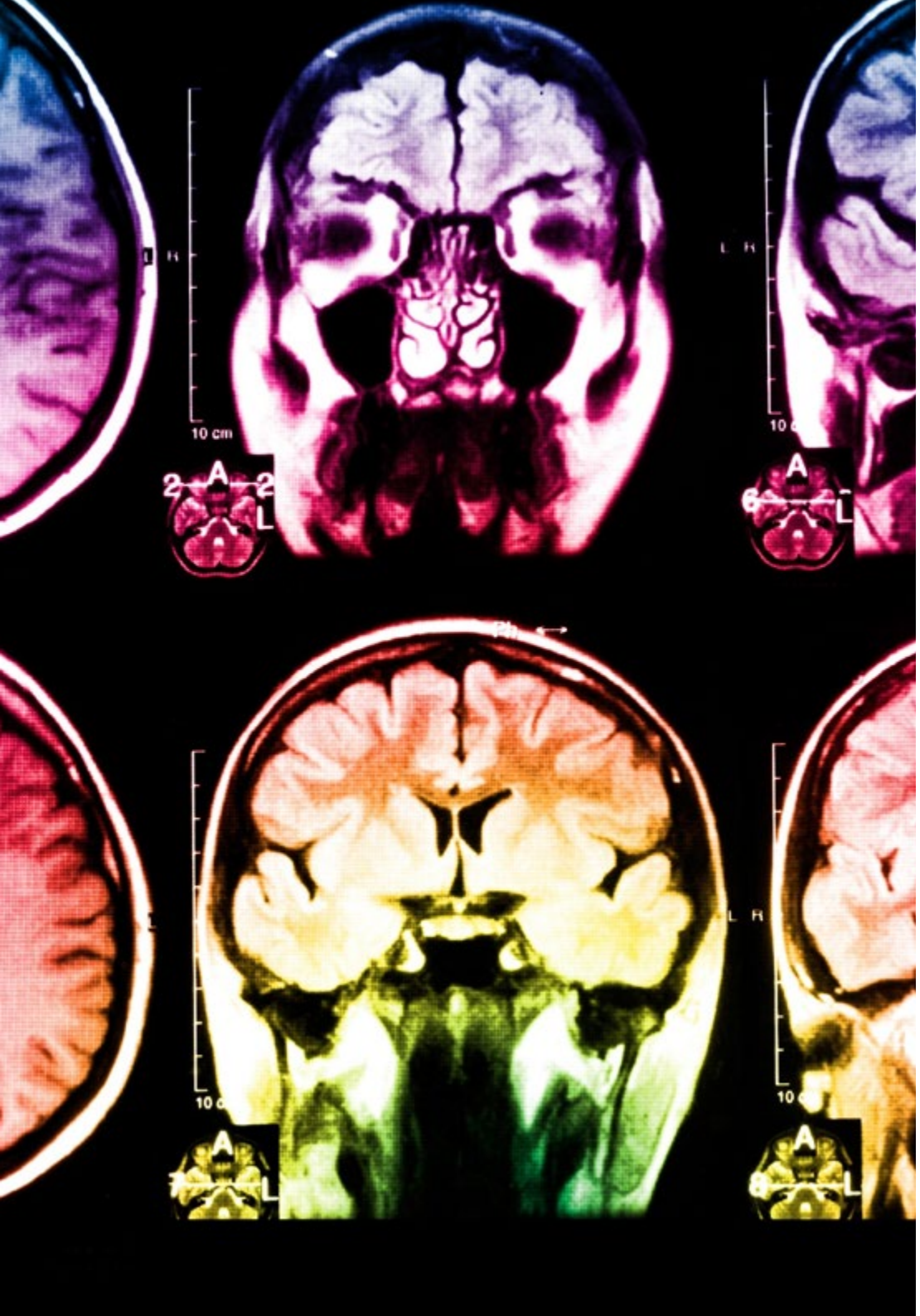
1. Educators who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3.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

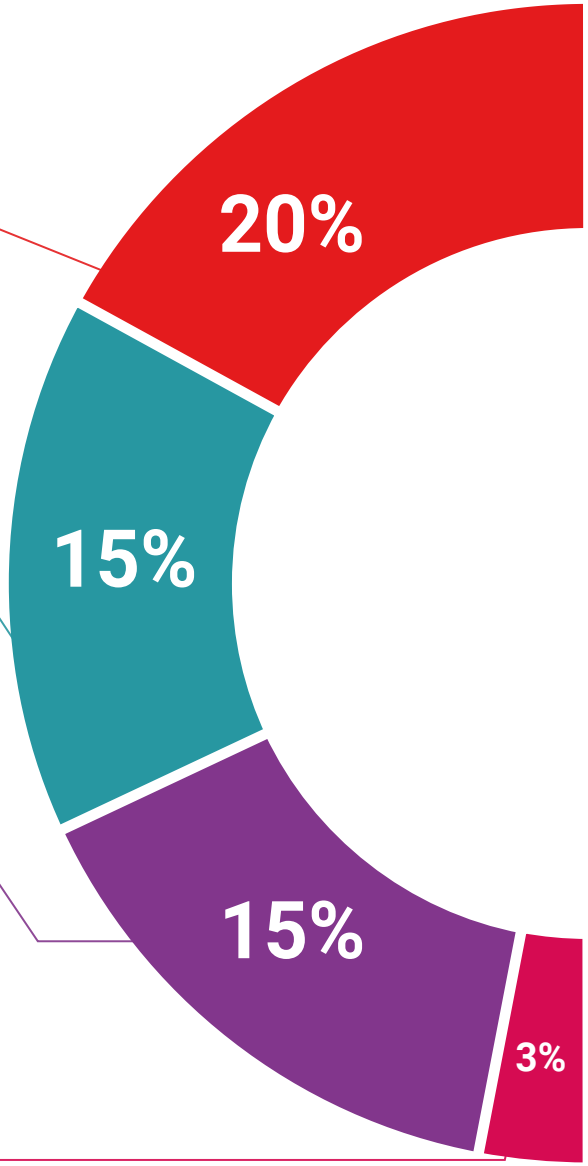
Interactive Summaries

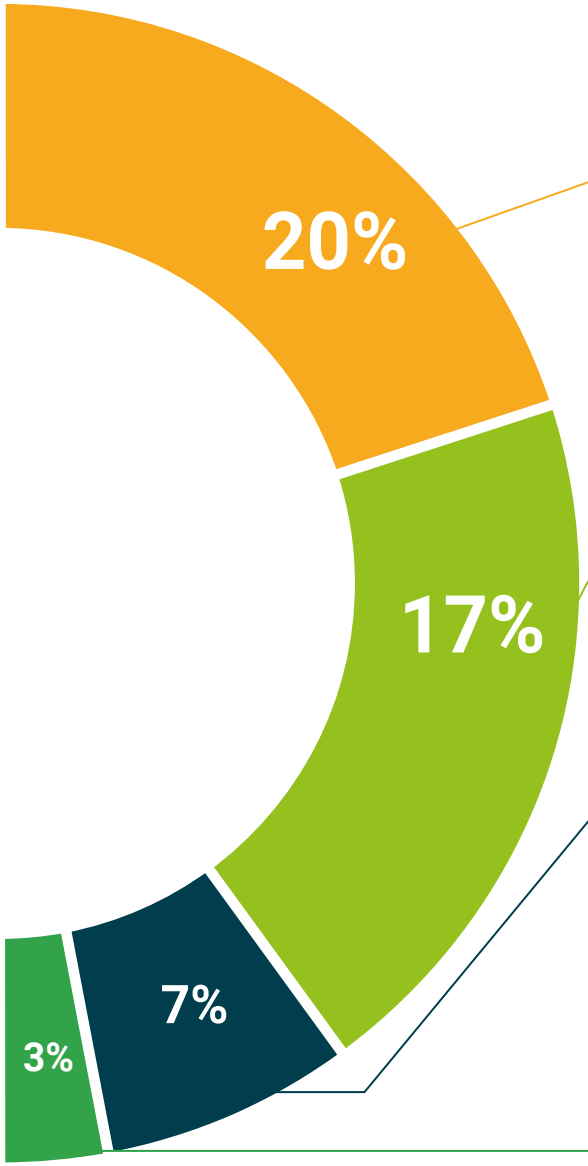
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Master's Degree in Biology and Geology Teacher Training in High School Education guarantees, in addition to the most rigorous and updated education, access to a Professional Master's Degree issued by TECH Global University.

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

This program will allow you to obtain your **Professional Master's Degree diploma in Biology and Geology Teacher Training in High School 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: **Professional Master's Degree in Biology and Geology Teacher Training in High School Education**

Modality: **online**

Duration: **12 months**

Accreditation: **60 ECTS**


tech global university

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

Professional Master's Degree in Biology and Geology Teacher Training in High School Education

This is a program of 1,500 hours of duration equivalent to 60 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
Rector

Unique TECH Code: AFWORD23S techtitute.com/certificates


Professional Master's Degree in Biology and Geology Teacher Training in High School Education

General Structure of the Syllabus

Subject type	ECTS
Compulsory (CO)	60
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 60

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Learning and Development of Personalities	6	CO
1º	Society, Family and Education	6	CO
1º	Complements for the Disciplinary Formation in Biological and Geology	6	CO
			CO
1º	Biology and Geology Curriculum Design	6	CO
1º	Biological and geology Didactics	6	CO
1º	Teaching Innovation and Initiation to Educational Research	5	CO
1º	Educational Processes and Contexts	5	CO
1º	Inclusive Education and Attention to Diversity	5	CO
1º	Creativity and Emotional Education in the Classroom	5	CO
1º	Neuroeducation	5	CO
1º	Communication in the Classroom	5	CO

Dr. Pedro Navarro Illana
Dean

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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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Professional Master's Degree

Biology and Geology Teacher Training in High School Education

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

Professional Master's Degree

Biology and Geology Teacher Training in High School Education

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