

Postgraduate Diploma

Teaching of Science in Primary Education





Postgraduate Diploma Teaching of Science in Primary Education

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 24 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitude.com/us/education/postgraduate-diploma/postgraduate-diploma-teaching-science-primary-education

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Structure and Content

p. 14

04

Methodology

p. 22

05

Certificate

p. 30

01

Introduction

The teaching of Social and Natural Sciences requires a communicative capacity on the part of the teacher to capture the students' attention and awaken their interest in this subject. To this end, it is essential that the teacher masters certain pedagogical skills that enable them to offer a complete and enriching learning experience to the classroom. For that reason, TECH has designed this program, which delves into the basic skills and attitudes for organizing and directing science learning. In addition, thanks to the program's 100% online methodology, graduates can adapt their study time, combining their work and personal life with total flexibility.



“

Acquire all the necessary didactic resources to teach Science in an attractive way thanks to this Postgraduate Diploma"

Primary Education teachers who work in the field of Science must know the most innovative and appropriate didactic procedures to awaken the interest of students. Therefore, it is not only important to have a comprehensive knowledge of these subjects, whether Natural Sciences or Social Sciences, but it is also essential that they acquire the necessary pedagogical strategies to effectively promote this knowledge in their classrooms.

For this reason, TECH has developed the most complete program of the moment on knowledge and teaching of Science, offering the student a unique opportunity to specialize in this field. Thus, the graduate will delve into concepts such as energy, magnetism, geology or biodiversity, to continue with the approach of economic activity and social organization in Europe or the different historical stages experienced in Spain. In addition, he will delve into the design of a didactic unit and ICT as a pedagogical resource, among other issues.

And all this, with a set of subjects and topics that are specially designed to allow each student to self-manage their time and decide their dedication. In addition, you will have access to an online space 24 hours a day with theoretical materials presented through enriched texts, multimedia presentations, exercises and guided practical activities, motivational videos and case studies.

This program is distinguished by the fact that it can be taken in a completely online format, which allows students to combine their studies with their personal and work responsibilities. This way, they can choose which days, at what time and how much time to dedicate to the contents of the program. A university program that is presented as the best option in the academic market

This **Postgraduate Diploma in Teaching of Science in Primary Education** contains the most complete and up-to-date educational program on the market. The most important features include:

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



You only need an electronic device and an Internet connection to become an expert teacher in Science Education. A program tailored to you, with no demands and total flexibility"

“*Theoretical materials, multimedia presentations, exercises and guided practical activities, motivational videos, etc. Innovative and disruptive multimedia content for acquiring quality and dynamic learning*”

The program's teaching staff includes professionals from sector who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive education programmed to learn in real situations.

The design of this program focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

Deepen your knowledge in the design and planning of learning processes in Natural and Social Sciences and become the expert that educational centers are looking for.

Take a step further in your professional career and compete with the best. Don't wait any longer and enroll now.



02

Objectives

The design of this Postgraduate Diploma in Teaching of Science in Primary Education will allow students to acquire and perfect the necessary skills to update their profession and develop educational strategies that arouse the interest of students. Thus, they will be able to elaborate original and motivating activities related to science. It will also be prepared to include in its educational proposals the use of ICT and promote behaviors to contribute to the construction of a sustainable future. A program that will allow the student to develop full faculties in a versatile and continuously growing area.





“

Chooses, adapts and elaborates didactic units of Natural Sciences that contribute to a quality learning by the students"



General Objectives

- ♦ Design, plan, deliver, and evaluate teaching and learning processes, both individually and in collaboration with other teachers and professionals of the center
- ♦ Recognize the importance of rules in all educational processes
- ♦ Promote participation and respect for the rules of coexistence
- ♦ Teaching Natural and Social Sciences lessons to Primary School students





Specific Objectives

Module 1. Knowledge of Natural Sciences in Primary Education

- ♦ Acquire basic knowledge, skills and attitudes that allow organizing and directing the learning of Natural Sciences
- ♦ Know the current trends in the teaching-learning of Natural Sciences
- ♦ Know and apply the scientific method both in their work as students and in their future work as teachers
- ♦ Analyze the basic concepts of Natural Sciences and the peculiarities of their teaching-learning
- ♦ Know how to choose, adapt and/or elaborate didactic units of Natural Sciences according to their own purposes
- ♦ Develop original and motivating activities related to Natural Sciences for primary school students

Module 2. Knowledge of Social Sciences in Primary Education

- ♦ Know the fundamentals and main contents of Social Sciences and their presence in the Primary Education curriculum: Geography, History, Art, Religion and Culture
- ♦ Specify the basic contents of Social Sciences in the development of critical thinking and democratic values
- ♦ Discover the possibilities of new technologies and other didactic resources and materials for the teaching of Social Sciences
- ♦ Develop research and innovative skills in Social Sciences
- ♦ Design different learning assessment mechanisms in Social Sciences

Module 3. Didactics of Natural Sciences in Primary Education

- ♦ Appropriately use (express and apply) basic scientific knowledge associated with the experimental sciences to explain the physical environment and the functioning of living organisms
- ♦ Recognize the contribution of experimental sciences to the formation of the individual in primary education
- ♦ Have a general idea of the distribution and sequencing of natural science contents throughout primary education
- ♦ Identify, pose and adequately solve problems associated with science in everyday life
- ♦ Know and appreciate the way science constructs knowledge and the evolution of scientific theories over time
- ♦ Identify and assess the influence of science on social and economic development (technological applications, scientific advances in the field of medicine, agriculture, industry)
- ♦ Acquire and promote relevant citizenship behaviors to ensure a sustainable future.
- ♦ Recognize the human dimension of science and the influence of policies and ideologies on scientific development
- ♦ Design and assess curriculum content through appropriate didactic resources, adapting to different levels
- ♦ Apply appropriate resources and strategies to promote the acquisition of basic competencies in primary school students

Module 4. Didactics of Social Sciences in Primary Education

- ♦ Maintain a critical and active attitude towards current relevant social issues
- ♦ Know the evolution of the child between 6 and 12 years of age with regard to the development of the understanding of socio-cultural phenomena, and of the spatio-temporal axes in which they develop, and know how to apply them to the development of teaching/-learning proposals in the social sciences
- ♦ Master the strategies of observation and analysis of sociocultural facts
- ♦ Program didactic units on social sciences content for students from 6 to 12 years old, taking into account the attention to diversity
- ♦ Have the competences to develop a didactic program in Social Sciences for students from 6 to 12 years old that includes ways to motivate the student
- ♦ Know the most appropriate resources to use in the teaching- learning of Social Sciences with students from 6 to 12 years old and know how to arrange them in relation to the socio-cultural context of the student
- ♦ Know and include in their educational proposals the use of ICT in the study of the social environment
- ♦ Evaluate student achievement and design extension and reinforcement activities, if necessary, based on the results observed
- ♦ Evaluate the teaching-learning processes and creative and investigative attitude to incorporate modifications to improve them



“Improves the design and evaluation of curriculum content through didactic resources adapted to the different levels of Primary Education. All thanks to this program”

03

Structure and Content

The contents of this program have been designed by a highly prestigious teaching team with extensive professional experience. In addition, they have the latest developments in the field of educational didactics in the sciences, which ensures the graduate an effective and quality update of knowledge. Thus, from module 1 the student will see their pedagogical skills broadened, which will enable him or her to grow professionally and aspire to new and great work challenges.



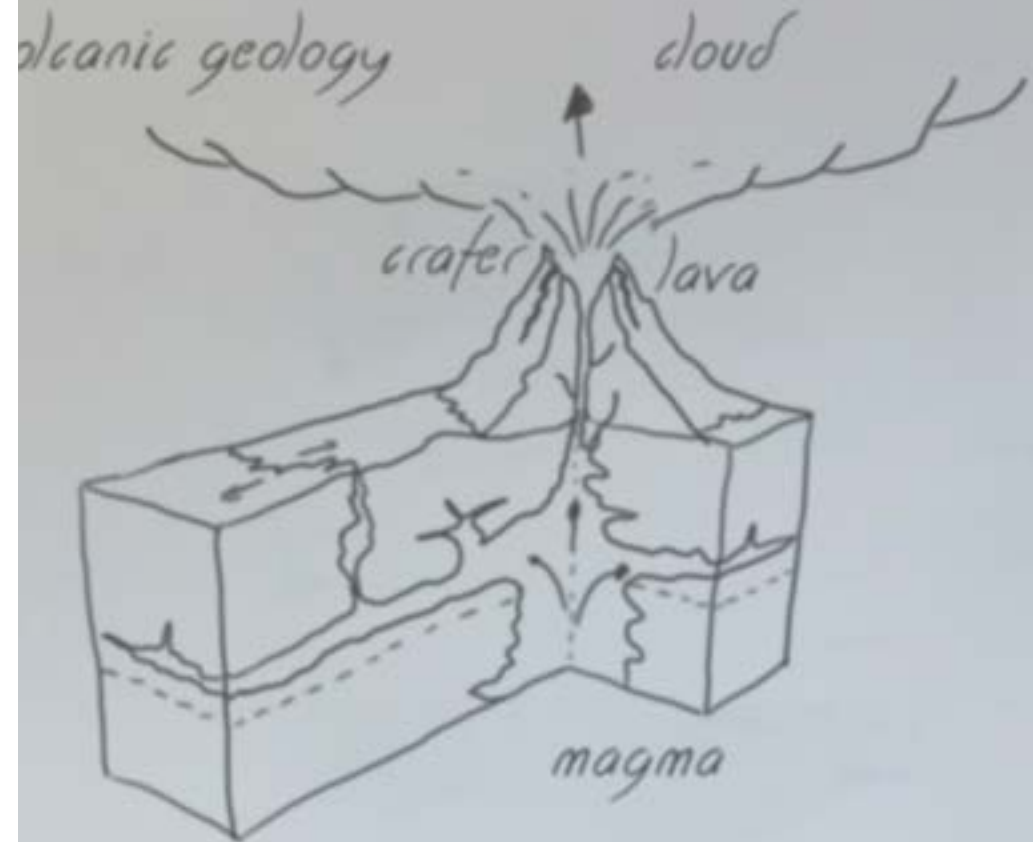


“

A curriculum designed by a prestigious teaching team to offer the most up-to-date content available"

Module 1. Knowledge of Natural Sciences in Primary Education

- 1.1. Scientific Knowledge
 - 1.1.1. Scientific Knowledge
 - 1.1.2. Inductivism
 - 1.1.3. Falsificationism
 - 1.1.4. Kuhn: the scientific paradigm
- 1.2. Our planet: The Earth
 - 1.2.1. Our Solar System
 - 1.2.2. The Earth: movements
 - 1.2.3. The atmosphere that surrounds us
 - 1.2.4. The quantities of mass and weight
- 1.3. The energy
 - 1.3.1. Definition and concept of energy
 - 1.3.2. Simple manifestations of energy
 - 1.3.3. Energy Conservation
 - 1.3.4. Energy transfer through mechanisms
- 1.4. Electricity and Magnetism
 - 1.4.1. What is electrical energy?
 - 1.4.2. Static electricity through Coulomb's Law
 - 1.4.2. Electrical current through Ohm's Law
 - 1.4.3. Magnetism and its ways
- 1.5. Various energy sources
 - 1.5.1. What are energy sources?
 - 1.5.2. Renewable Energies
 - 1.5.3. Non-renewable energies
 - 1.5.4. Matter: concept and characteristics
- 1.6. What is matter?
 - 1.6.1. We pay attention to the structure of the material
 - 1.6.2. What are pure substances and mixtures?
 - 1.6.3. What are the properties of matter?
 - 1.6.4. Some chemical reactions we found
 - 1.6.5. Carbon Chemistry





- 1.7. Let's talk about Geology
 - 1.7.1. Research of the interior of the Earth: Methods used
 - 1.7.2. Minerals and rocks
 - 1.7.3. The theory of plate tectonics
 - 1.7.4. What is the cell?
- 1.8. The cell as a unit of life
 - 1.8.1. Let's talk about prokaryotic cells.
 - 1.8.2. Let's talk about the eukaryotic cell.
 - 1.8.3. What are the main differences between cell types?
- 1.9. What is biodiversity?
 - 1.9.1. Introduction
 - 1.9.2. What are the kingdoms of nature?
 - 1.9.3. The five kingdoms
 - 1.9.4. Monera Kingdom
 - 1.9.5. Protista Kingdom
 - 1.9.6. Fungi Kingdom
 - 1.9.7. Plant Kingdom
 - 1.9.8. Animal Kingdom
 - 1.9.9. What do we mean by ecology?
- 1.10. The human body and its evolution
 - 1.10.1. Introduction
 - 1.10.2. The human body and its functions
 - 1.10.3. The three vital functions
 - 1.10.4. Other non-vital functions
 - 1.10.5. What is genetics? Do we all have it?
 - 1.10.6. Evolution and its evidence
 - 1.10.7. Some evolutionary theories

Module 2. Knowledge of Social Sciences in Primary Education

- 2.1. Earth in different contexts
 - 2.1.1. Introduction: Representations of the Earth
 - 2.1.2. The Earth represented in planes
 - 2.1.3. The Earth represented in maps
 - 2.1.4. Maps and their typologies
 - 2.1.5. Use of conventional scales and signs
 - 2.1.6. The Earth represented in planispheres
 - 2.1.7. Conceptualization and practical application of parallels and meridians and coordinates
 - 2.1.8. The Earth represented on a globe
 - 2.1.9. Orientations about our spatial orientation. Is it as simple as we think or do we get lost?
- 2.2. Earth's atmosphere and climate
 - 2.2.1. What is the atmosphere?
 - 2.2.2. Let's talk about the greenhouse effect on Earth
 - 2.2.3. Differences between weather and climate
 - 2.2.4. Weather: maps, characteristics, elements
 - 2.2.5. Climate: factors and elements
 - 2.2.6. What is temperature?
 - 2.2.7. What is precipitation?
 - 2.2.8. What are the main climates of Spain?
 - 2.2.9. What are climograms?
- 2.3. Hydrosphere, lithosphere and relief
 - 2.3.1. Material system consisting of water: Hydrosphere
 - 2.3.2. The solid, superficial layer of the Earth: Lithosphere
 - 2.3.3. What is an ecosystem?
 - 2.3.4. What is the environment?
 - 2.3.5. Let's talk about biodiversity
 - 2.3.6. Relief characteristics in Spain
 - 2.3.7. Relief characteristics in Europe
 - 2.3.8. Pollution and climate change the order of the day

- 2.4. Economic activity and social organization in Spain and Europe
 - 2.4.1. Spain and its characteristics
 - 2.4.2. Social Organization
 - 2.4.2. Political Structure
 - 2.4.3. Territorial organization
 - 2.4.4. The European Union
 - 2.4.5. World, European and Spanish population factors
 - 2.4.6. Main productive activities in Spain and Europe
 - 2.4.7. Transportation and road safety education

Module 3. Didactics of Natural Sciences in Primary Education

- 3.1. Talking about Scientific Knowledge
 - 3.1.1. Introduction to the Subject
 - 3.1.2. The Current Situation of Science
 - 3.1.3. Features of Experimental Sciences
 - 3.1.4. What is the Scientific Method?
- 3.2. Relationship between Science Education and Primary Education
 - 3.2.1. The Need for Science in Primary Education
 - 3.2.2. Strategies for Science Education
 - 3.2.3. Strategies for Teaching Science: Experiences
 - 3.2.4. Strategies for Teaching Science: Project Work
 - 3.2.5. Strategies for Teaching Science: Educational Videos
 - 3.2.6. Strategies for Teaching Science: Adapted Language
 - 3.2.7. The Analogy
 - 3.2.8. Metaphors
 - 3.2.9. Similes
 - 3.2.10. Transpositions

- 3.3. The Practical Part of Science
 - 3.3.1. Fundamental Strategies of Science
 - 3.3.2. Observation
 - 3.3.3. Experimentation
 - 3.3.4. Measurement
 - 3.3.5. Estimation
 - 3.3.6. Inquiry
 - 3.3.7. Scientific Activities: Importance, Classification and Design
 - 3.3.8. A Laboratory Work
 - 3.3.9. Field Work: Excursions, Itineraries, Visits to Museums, Industries and Workshops
- 3.4. Elements that Mark the Teaching of Science in Primary Education
 - 3.4.1. Introduction
 - 3.4.2. Learning objectives
 - 3.4.2. Learning Planning
 - 3.4.3. Assessment Criteria and their Representation
- 3.5. Design of a Teaching Unit(1.ªparte)
 - 3.5.1. Assessment Criteria
 - 3.5.2. Establishment of Objectives
 - 3.5.3. Selection, Organization and Sequencing of Contents
 - 3.5.4. Selection, Creation and Sequencing of Activities
 - 3.5.5. Selection, Creation and Sequencing of Assessment Activities
- 3.6. Design of a Teaching Unit (Part 2)
 - 3.6.1. Classroom Organization
 - 3.6.2. Final Conclusions
 - 3.6.3. Resources Used: Material Resources, Technological Resources, Teaching Resources, etc.
- 3.7. Pedagogical Approaches
 - 3.7.1. The Use of Classical Approaches
 - 3.7.2. Model-Based Teaching
 - 3.7.3. Global Perspective on Science-Technology and Society
- 3.8. Concepts from Which Science Starts
 - 3.8.1. Definition of Previous Concepts. What are they?
 - 3.8.2. Non-Heterogeneity of Previous Concepts
 - 3.8.3. Strategies for Extracting Previous Concepts from Learners' Starting Points
 - 3.8.4. Conceptual Change
- 3.9. Cognitive Development of Children from 6 to 12 Years of Age
 - 3.9.1. To Be Taken into Account
 - 3.9.2. Characteristics of Children from 6 to 7 Years of Age
 - 3.9.3. Characteristics of Children from 8 to 9 Years of Age
 - 3.9.4. Characteristics of Children from 10 to 11 Years of Age
- 3.10. ICT as a Teaching Resource
 - 3.10.1. What are ICTs?
 - 3.10.2. Characteristics of ICT
 - 3.10.3. Web Resources: Webquest, Treasure Hunt, Wikis, Educablog, Digital Comics

Module 4. Didactics of Social Sciences in Primary Education

- 4.1. Social Sciences in the 21st Century (Concept and Epistemological Field)
 - 4.1.1. What do We Mean by Social Science? Conceptual Delimitation
 - 4.1.2. Characteristics and Elements Common to All Social Sciences
 - 4.1.3. Origin and Evolution of Some Social Sciences
 - 4.1.4. Didactics of Social Sciences as Specific Didactics
- 4.2. Didactic Strategies and Methods for Teaching- Learning in Social Sciences
 - 4.2.1. Curricular Models in Social Sciences
 - 4.2.2. Methodological Orientations: Physical, Intellectual and Psychological Characteristics
 - 4.2.3. Methodological Strategies: Interaction, Cooperation and Participation
- 4.3. Geography
 - 4.3.1. Concept of Space in Primary Education
 - 4.3.2. The Visualization of the World from the Mind of Children in Primary Education
 - 4.3.2. Teaching Geography through Maps
 - 4.3.4. Teaching Geography through Fieldwork
- 4.4. History (Part 2)
 - 4.4.1. Argumentation of the Teaching - Learning of History
 - 4.4.2. Difference Between Chronological Time and Historical Time
 - 4.4.3. Teaching and Learning Over Time
 - 4.4.4. Variable Dimensions
- 4.5. History (Part 2)
 - 4.5.1. Main Complications in the Teaching of History
 - 4.5.2. from Teaching- Learning Process
 - 4.5.3. Correct Formulation of Hypotheses
 - 4.5.4. The Search for Quality Sources
 - 4.5.5. Chance as a Learning Problem
- 4.6. Competencies Associated with the Social Sciences
 - 4.6.1. To Speak of Competencies is to Speak of...
 - 4.6.2. Social and Civic Competences
 - 4.6.3. Cultural Awareness and Expressions
 - 4.6.4. Competency-Based Assessment, the Right Thing to Do in the Social Sciences
- 4.7. Teaching Art in Primary Education
 - 4.7.1. To Speak of Art is to Speaking About Artists
 - 4.7.2. Full Analysis of the Works of Art
 - 4.7.3. Art History: Resources for Teaching Art History
 - 4.7.4. Recording and Observation Guidelines
- 4.8. Social Subjects
 - 4.8.1. The Person as an Individual
 - 4.8.2. The Person as a Social Being
 - 4.8.3. Social Children, Happy Children
- 4.9. To Live in Society is to Live in Coexistence
 - 4.9.1. The Social World in a Child's Mind
 - 4.9.2. Strategies for Teaching in Society
 - 4.9.3. Democratic Values
 - 4.9.4. Citizenship Education



“

Acquire all the necessary knowledge to apply ICT to your educational planning in Geography and History"

04

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.



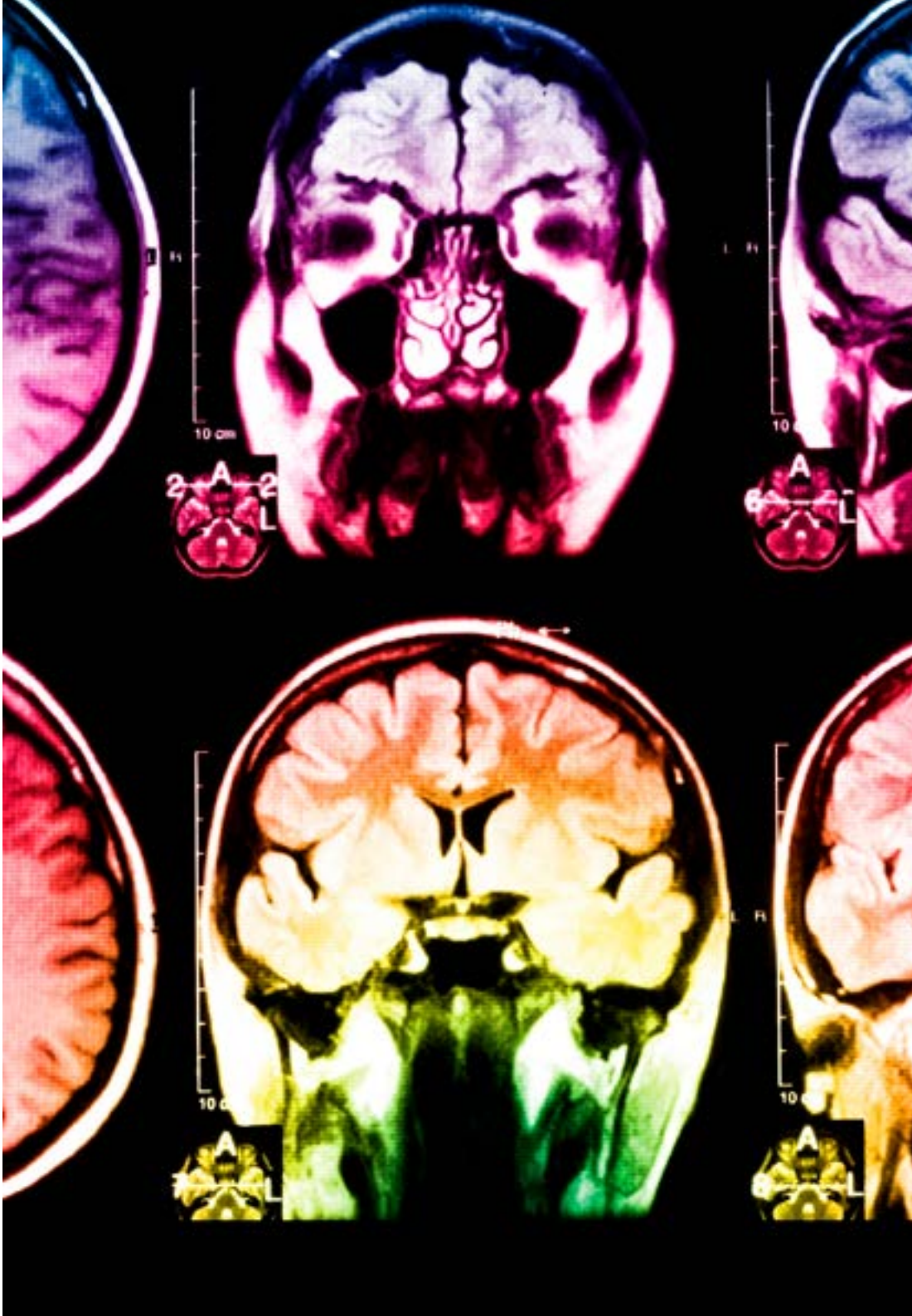
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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.

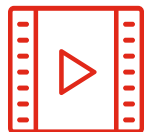
*Relearning will allow you to learn with less effort
and better performance, involving you more in
your specialization, developing a critical mindset,
defending arguments, and contrasting opinions:
a direct equation to success.*

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

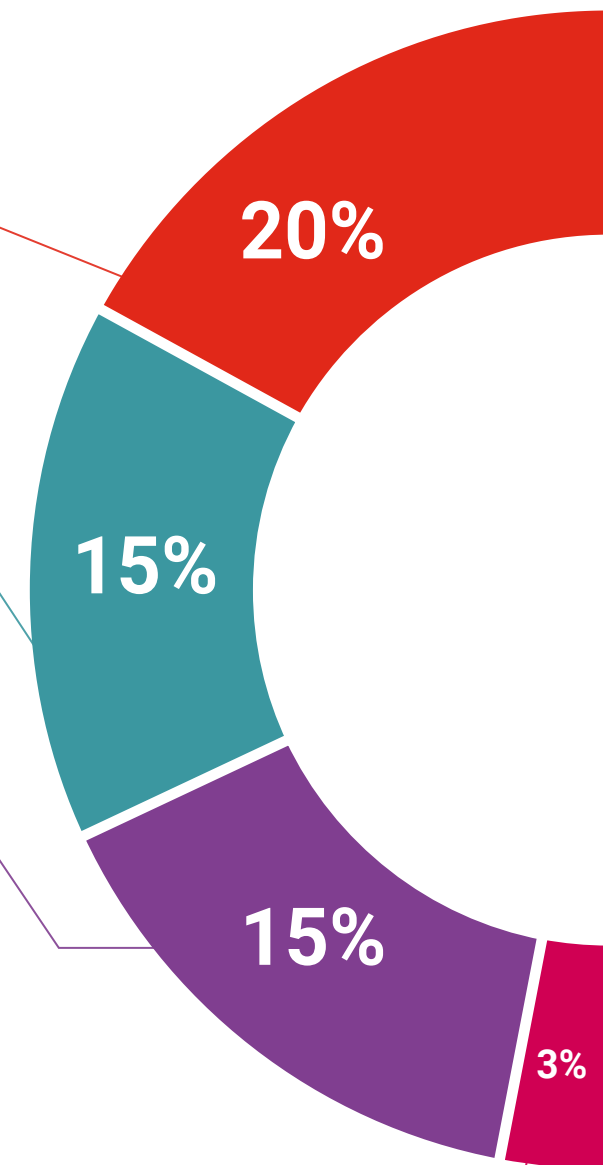
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

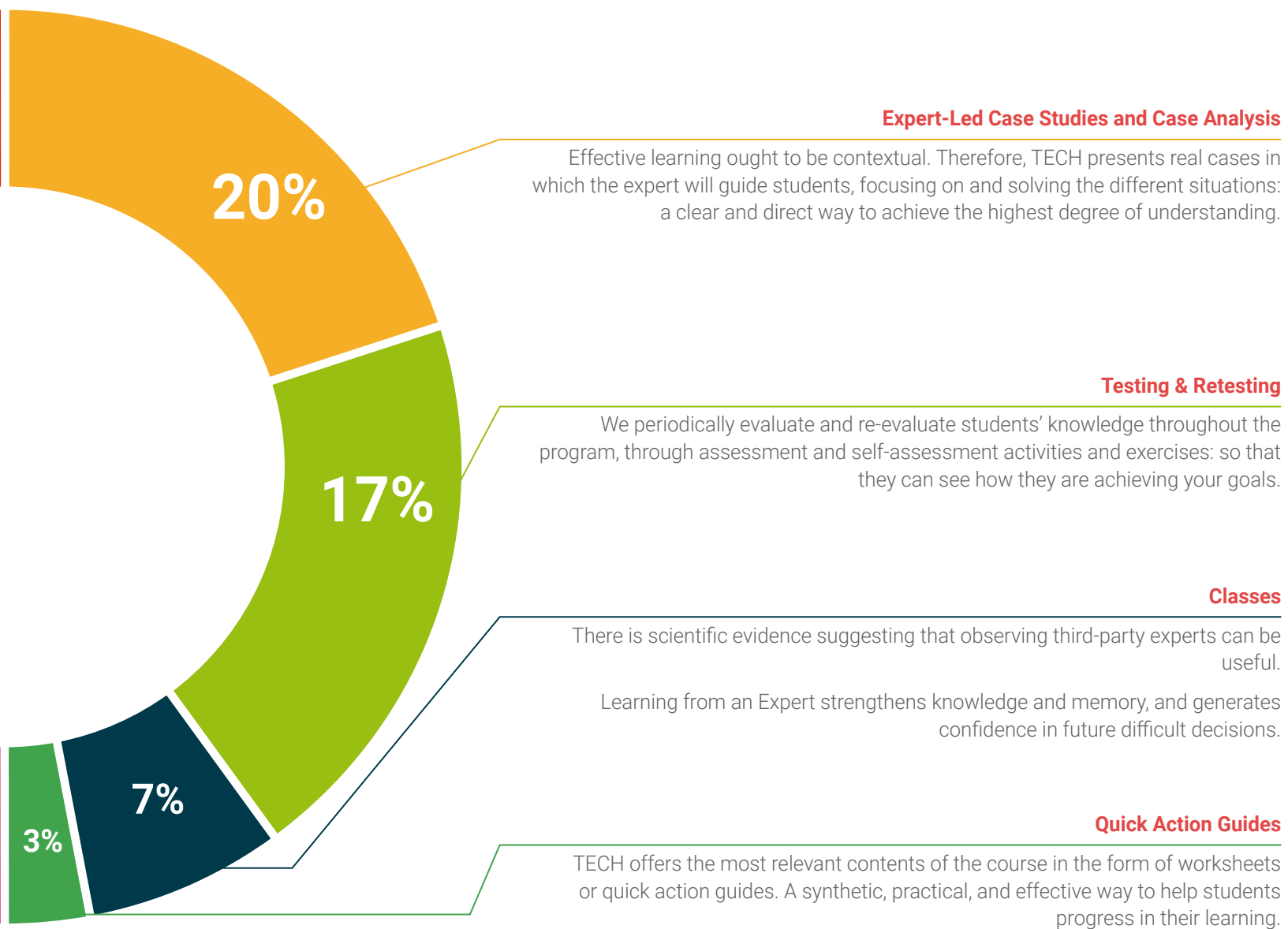
This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".



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.





05 Certificate

The Postgraduate Diploma in Teaching of Science in Primary Education guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma 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 **Postgraduate Diploma in Teaching of Science in Primary 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.

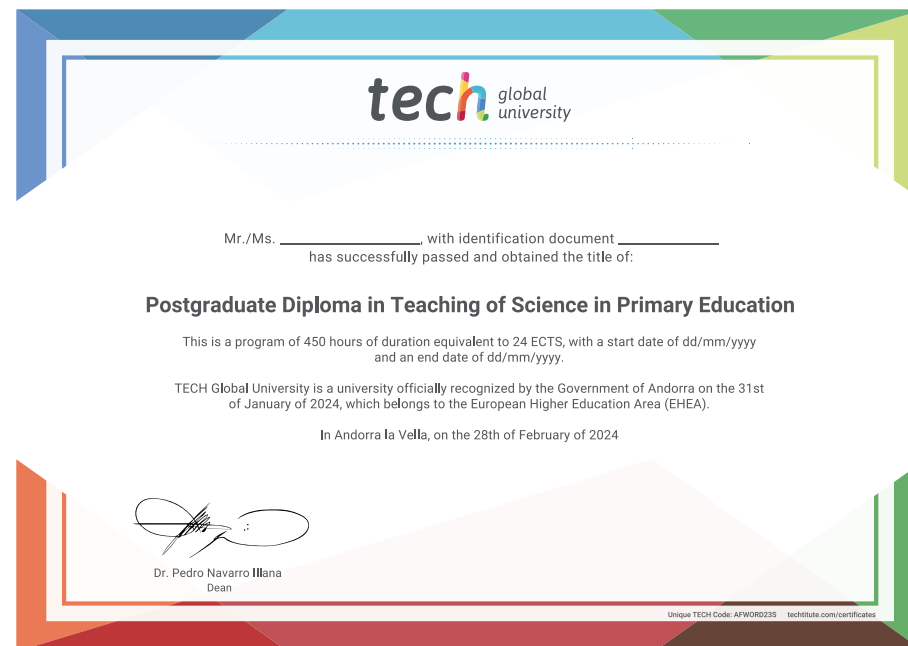
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Teaching of Science in Primary Education**

Modality: **online**

Duration: **6 months**

Accreditation: **24 ECTS**



future
health confidence people
education information tutors
guarantee accreditation teaching
institutions technology learning
community commitment
personalized service innovation
knowledge present
development languages
virtual classroom



Postgraduate Diploma Teaching of Science in Primary Education

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 24 ECTS
- » Schedule: at your own pace
- » Exams: online

Postgraduate Diploma

Teaching of Science in Primary Education

