

Postgraduate Diploma

Design and Development of
Mathematics Teaching Materials for
the Pre-School Classroom





Postgraduate Diploma Design and Development of Mathematics Teaching Materials for the Pre-School Classroom

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/education/postgraduate-diploma/postgraduate-diploma-design-development-mathematics-teaching-materials-pre-school-classroom

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01

Introduction

The continuous research that has been carried out in the field of teaching has made it possible to design new teaching strategies that have proven to be considerably more effective than those that had been used previously. One of the subjects that has benefited the most from these advances is Mathematics. In order for Pre-School education teachers to implement in their practice the most innovative pedagogical techniques for the creation of resources, TECH has developed this complete program. This is a 100% online program that will allow you to implement the best methodologies in your practice through workshops and games, to contribute to teaching at the highest level with the use of ICT and interactive materials.





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The aim of this program is to provide you with the essential skills for effective and fun education using ICT as an indispensable tool"

Fostering students' investigative spirit through the dynamic teaching of Mathematics has become an objective widely pursued by Pre-School Education professionals. Thanks to the incorporation, for example, of ICT in the classroom, it is now possible to design state-of-the-art pedagogical plans in which students learn while having fun, while also fostering other skills such as teamwork, problem solving, self-management and control of logical reasoning.

And with the objective of facilitating the updating of their teaching strategies from the knowledge of the best and most avant-garde methodologies, TECH, together with a team specialized in Pre-School Education, has developed a complete program that gathers, precisely, the most dynamic and exhaustive information on the subject.

This is a Postgraduate Diploma distributed over 540 hours, in which students will be able to explore the learning methods providing the best results in the main educational systems of the world, as well as techniques and the elaboration of materials to teach through games and workshops. In addition, it focuses on the inclusion of ICT in the classroom through the configuration of interactive materials and the use of specialized applications for different age groups.

All this 100% online, for 6 months, during which you will have unlimited access to a state-of-the-art Virtual Campus where, in addition to theory, you will find case studies and a variety of additional content: detailed videos, research articles, complementary readings, news, self-knowledge exercises and much more! The program includes the participation of a prestigious International Guest Director. This specialist, with an outstanding research career, will accompany the graduates in the exploration of the most recent innovations in the field of Mathematics Education and Teaching, through exclusive and detailed Masterclasses.

This **Postgraduate Diploma in Design and Development of Mathematics Teaching Materials for the Pre-School Classroom** contains the most complete and up-to-date educational program on the market. Its most notable features are:

- ♦ The examination of practical cases presented by experts in Mathematics teaching
- ♦ The graphic, schematic and practical contents of the book provide technical and practical information on those 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.



Boost your professional profile with TECH and enjoy a set of exclusive Masterclasses, led by a renowned international expert in the area of Mathematics Education”

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You will explore the most advanced and innovative pedagogical methodologies, so that your classes become dynamic, inclusive and highly educational environments"

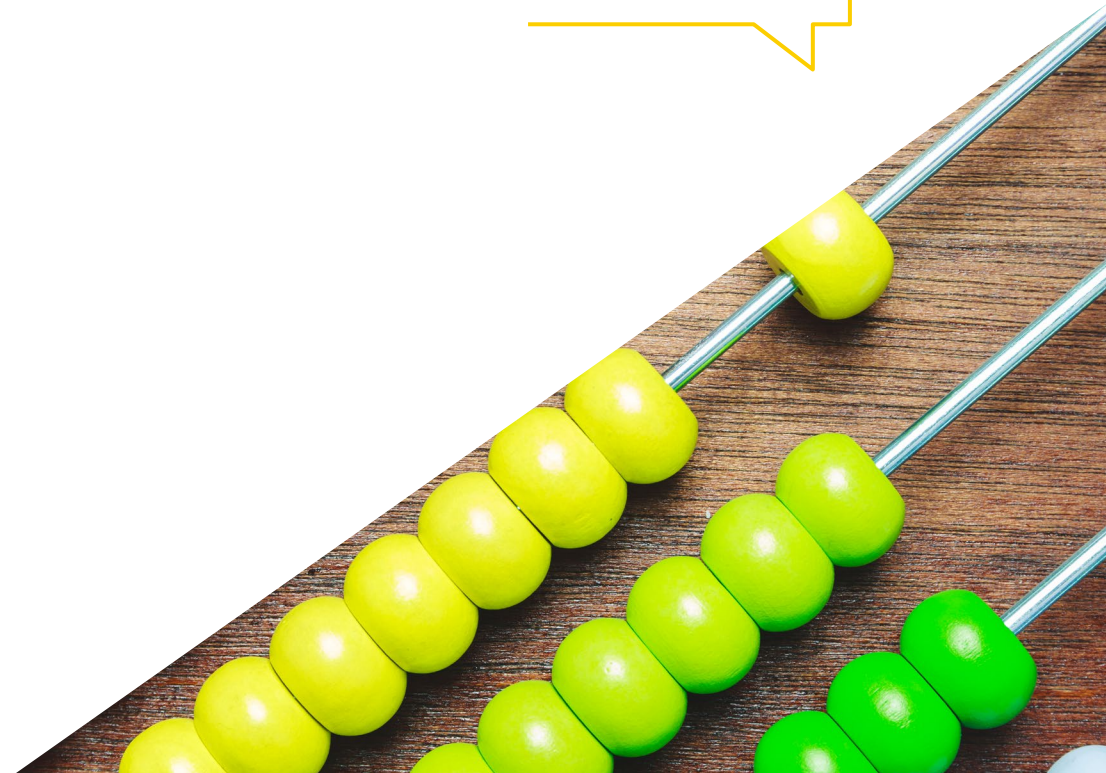
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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

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

Teaching Mathematics through fun and multidisciplinary practices will be your goal on this program.

The best program on the academic market to get you up to date on the most advanced learning theories in a 100% online way.



02

Objectives

To teach at the highest level today, professionals have to use the most innovative tools to capture children's attention. For this reason, the objective of this program is none other than to provide teachers with the information they need to transform their classes into dynamic and fun environments in which mathematics learning is enhanced through games and the use of ICT.





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If you want to transform your classes into dynamic, entertaining and highly empowering environments for your students, in this program you will find the keys to achieve it in just 6 months”



General Objectives

- Understand geometry within the curricular framework of Pre-school and Primary School Education
- Learn about the contributions of Piaget, Duval and the Van Hiele couple to the field of geometry
- Create and design interactive content and resources for later use in the classroom





Specific Objectives

Module 1. Methodology and Classroom-Based Learning in Pre-school Education

- ♦ Know the basic concepts for the teaching of mental arithmetic in the classroom
- ♦ Develop materials and games to work on mental arithmetic in the classroom
- ♦ Learn about other resources available for the development of mental arithmetic in Pre-School and Primary School Education classrooms
- ♦ Explore and implement cooperative work in the mathematics classroom
- ♦ Identify the properties of objects and discover the relationships established between them through comparisons, classifications, serialization and sequencing

Module 2. Design and Development of Didactic Materials: Mathematics Workshop/Mathematics Games

- ♦ Know the basic principles for the elaboration of resources and teaching materials
- ♦ Design materials adapted to the learning of measurement quantities
- ♦ Design materials adapted to the learning of probability and statistics
- ♦ Design materials adapted to the learning of geometry
- ♦ Relate the teaching of mathematics from other disciplines
- ♦ Create audiovisual resources for teaching mathematics
- ♦ Use comics as a didactic resource in the teaching of mathematics
- ♦ Create and implement practical workshops for the consolidation of mathematical concepts

Module 3. ICT in Pre-School and Primary Education. Development of Interactive Materials for the Classroom Workshops

- ♦ Understand the importance of the use of ICT in the Pre-school and Primary School Education classroom and the previous considerations to take into account
- ♦ Take into account the needs when implementing ICT in the classroom, both personal and material
- ♦ Become familiar with Bloom's Taxonomy, as well as its updating and digital application



If you are looking to create an academic environment incorporating gamification and the use of ICT for Mathematics learning, this program will provide the answer"

03

Course Management

Any education professional knows that having a good teaching team is always conducive to learning. For this reason, the best specialists in different areas such as pedagogy, psychology and, of course, teaching have been selected for this Postgraduate Diploma. As a result, students will have their support and will be able to implement the education strategies that are currently trending, especially those related to early education.





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The teaching team has worked intensively on the design of the best content, in which you will find practical cases extracted from their classes to perfect your teaching skills in a guaranteed way”

International Guest Director

Doctor Noah Heller is a leading professional in the field of **Education**, specializing in the teaching of **Mathematics** and **Science**. With a focus on **teaching innovation**, he has dedicated his career to improving **educational practices** in the **K-12 system**. In addition, his main interests include the **professional development** of teachers and the creation of **teaching strategies** to improve the understanding of **Mathematics**, in **Primary** and **High School** students, through **innovative didactic approaches**.

Throughout his career, he has held positions of great relevance, for example, as **Faculty Chair** of the **Leadership Institute** at the **Harvard Graduate School of Education**. He has also directed the "**Master Math for America**" **Teacher Fellowship Program**, where he has overseen the instruction and expansion of a program that has impacted over **700 math and science teachers** in **New York City**, working closely with senior **mathematics and science professionals**.

At the same time, he has collaborated as a researcher in several publications on the **teaching of mathematics** and **new didactics** applied to **Primary Education**. He has also given conferences and seminars in which he has promoted **pedagogical approaches** that encourage **critical thinking** in students, making **mathematics teaching** a dynamic and accessible process.

Internationally, Dr. Noah Heller has been recognized for his ability to implement innovative strategies in **STEM education**. In fact, his leadership in "**Master Math for America**" has positioned him as a key figure in teacher training, receiving accolades for his ability to connect **academia** with **classroom practice**. His work has also been instrumental in the creation of one of the most prestigious **professional development programs** in education.



Dr. Heller, Noah

- ♦ Faculty Chair at the Harvard Graduate School of Education, Cambridge, United Kingdom
- ♦ Director of the “*Master Math for America*” Teacher Fellowship Program
- ♦ Doctor of Philosophy from New York University
- ♦ B.S. in Science, Physics and Mathematics from The Evergreen State College

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Thanks to TECH you will be able to learn with the best professionals in the world”

Management



Ms. Delgado Pérez, María José

- ♦ TPR and Mathematics teacher at Peñalar College
- ♦ Professor of High School Education
- ♦ Expert in management of educational centers
- ♦ Co-author of technology books with McGraw Hill Publishers
- ♦ Master's Degree in Educational Center Management and Administration.
- ♦ Leadership and management in Primary and High School
- ♦ Graduate in teaching with a specialization in English
- ♦ Industrial Engineer

Professors

D. López Pajarón, Juan

- ♦ Secondary and High School Science Teacher at Montesclaros College Educare Group
- ♦ Coordinator and Head of Educational Projects in High School Education
- ♦ Technician at Tragsa
- ♦ Biologist with experience in the field of environmental conservation.
- ♦ Master's Degree in Management and Administration of Educational Centers by the University International of La Rioja

Ms. Vega, Isabel

- ♦ Specialized Teacher in teaching mathematics and learning disabilities.
- ♦ Primary Education Teacher
- ♦ Primary School Education Cycle Coordinator.
- ♦ Specialization in Special Education and Mathematics Didactics
- ♦ Graduate in Teaching



Ms. Hitos, María

- ♦ Pre-School and Primary School Teacher Specialized in Mathematics
- ♦ Pre-school and Primary Education Teacher
- ♦ Child English Department Coordinator
- ♦ Language qualification in English by the Community of Madrid.

Ms. Iglesias Serranilla, Elena

- ♦ Teacher of Pre-school and Primary School Education with specialization in Music
- ♦ Primary School Education First Cycle Coordinator.
- ♦ Training in New Learning Methodologies.

Ms. Soriano de Antonio, Nuria

- ♦ Spanish Language and Literature Teaching
- ♦ Master's Degree in Compulsory High School Education and Vocational Training from the Alfonso X El Sabio University
- ♦ Master's Degree in Spanish for Foreigners
- ♦ Expert in Management and Administration of Educational Centers
- ♦ Expert in Spanish Teaching
- ♦ Bachelor's Degree in Hispanic Philology from the Complutense University of Madrid



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

04

Structure and Content

The program's syllabus has been designed by the teaching team in accordance with TECH's criteria: originality, thoroughness, accuracy and dynamism. As such, a comprehensive and innovative syllabus has been developed, in which students will find the essential information to update their teaching skills based on the latest trends in Mathematics teaching. As such, through 540 hours of theoretical, practical and supplementary material, you will receive 100% online professional development at the highest level which will help you to achieve even your most ambitious objectives.





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Are you aware of the benefits of using the Internet in education? This program will teach you the best strategies to employ it in a healthy and child-safe manner”

Module 1. Methodology and Classroom-Based Learning in Pre-school Education

- 1.1. Globalized Teaching in Pre-school Education
 - 1.1.1. Cooperative Learning
 - 1.1.2. Project Method
 - 1.1.3. Play
 - 1.1.4. Mathematics Corner
 - 1.1.5. Daily Activities (Routines)
 - 1.1.6. Workshops
 - 1.1.7. Large Regulated Group Activities
- 1.2. Construction of Mathematical Knowledge in Pre-school Education
 - 1.2.1. Introduction
 - 1.2.2. Models for the Teaching-Learning of Mathematics
 - 1.2.3. Specificity and Significance of Mathematical Knowledge
 - 1.2.4. Learning and Management of Didactic Variables
 - 1.2.5. Errors and Obstacles in Mathematical Learning
- 1.3. Mathematics Curriculum in Pre-school Education
 - 1.3.1. Introduction
 - 1.3.2. Didactic Transposition
 - 1.3.3. General Considerations for the Mathematics Curriculum in Pre-school Education
 - 1.3.4. National Council of Teachers of Mathematics (NCTM) Considerations
 - 1.3.5. Curriculum and Inferential Relationships in Pre-school Education
 - 1.3.6. Inferential Elements in Pre-school Education
 - 1.3.7. School Mathematics Curriculum and Relationship Building
 - 1.3.8. Argument and Mathematical Discourse in Pre-school Education
- 1.4. Creativity in Mathematics. Intelligence Bits Method
 - 1.4.1. Introduction
 - 1.4.2. Main Creativity Theories
 - 1.4.3. Principles of School Mathematics
 - 1.4.4. Mathematics Standards
 - 1.4.5. Intelligence Bits Method
- 1.5. Methodological Proposals for Students with Educational Needs
 - 1.5.1. Introduction
 - 1.5.2. Create a Learning Environment to Include Children's Diversity
 - 1.5.3. Diversity of the Classroom in Today's Society
 - 1.5.4. Inclusive Classroom Climate as an Educational Response to Diversity
 - 1.5.5. Methodological Change
 - 1.5.6. Mathematical Knowledge is Built From One's Own Experience
 - 1.5.7. Teaching Methods of Mathematics
 - 1.5.8. Fundamental Principles
 - 1.5.9. Description of the Method
- 1.6. Principles of Didactic Methodology for the Teaching-Learning of Mathematics in Pre-School Education
 - 1.6.1. Methodology
 - 1.6.2. Basic Methodological Lines
 - 1.6.3. Child Stimulation
 - 1.6.4. Sequence of Learning
 - 1.6.5. Characteristics of Learning Assessment
 - 1.6.6. Evaluation Tools
- 1.7. Theory of Didactical Situations
 - 1.7.1. Introduction
 - 1.7.2. Didactic Contract
 - 1.7.3. TDS-Based Learning
 - 1.7.4. Analysis of Real Situations
 - 1.7.5. Variables and their Management
- 1.8. Teaching Resources and Activities
 - 1.8.1. Main Principles of Mathematical Learning
 - 1.8.2. Strategies that Create a Positive Predisposition Toward Mathematics
 - 1.8.3. Logical-Mathematical Materials and Resources. Utilities
 - 1.8.4. Non-Material Resources
 - 1.8.5. Mathematical Activities Suitable for Pre-school
 - 1.8.6. Constructive Logical-Mathematical Activities

- 1.9. Analysis of Objectives, Contents and Evaluation Criteria
 - 1.9.1. Analysis of Objectives (First Cycle)
 - 1.9.2. Analysis of Objectives (Second Cycle)
 - 1.9.3. Content Analysis
 - 1.9.4. Evaluation Criteria (First Cycle)
 - 1.9.5. Criteria of Evaluation (Second Cycle)
- 1.10. Evaluation in Pre-school Education
 - 1.10.1. Introduction
 - 1.10.2. Characteristics of Pre-school Evaluation
 - 1.10.3. Evaluation of Teaching in Pre-school Education
 - 1.10.4. Evaluation of Learning in Pre-school Education
 - 1.10.5. Regulatory Framework
 - 1.10.6. Headings

Module 2. Design and Development of Didactic Materials: Mathematics Workshop/Mathematics Games

- 2.1. Mathematics Teaching Materials
 - 2.1.1. Introduction
 - 2.1.2. Teaching Resources
 - 2.1.3. Disadvantages of Teaching Materials
 - 2.1.4. Advantages of Teaching Materials
 - 2.1.5. Factors for the Utilization of Didactic Material
 - 2.1.6. Functions of Teaching Materials
 - 2.1.7. Didactic Material in the Teaching-Learning Process
 - 2.1.8. Types of Material
- 2.2. Introduction to the Design and Development of Teaching Materials
 - 2.2.1. Introduction
 - 2.2.2. Introduction to the Design of Teaching Materials
 - 2.2.3. Establishment of a Didactic Situation
 - 2.2.4. Design and Development of Didactic Material
 - 2.2.5. Didactic material to Support the Teaching-Learning Process
 - 2.2.6. Adequacy of the Material for Teaching Purposes
 - 2.2.7. Assessment of Didactic Material
 - 2.2.8. Self-evaluation

- 2.3. Manipulative Materials
 - 2.3.1. Introduction
 - 2.3.2. Logic Blocks
 - 2.3.3. The Abacus
 - 2.3.4. Multibase Blocks
 - 2.3.5. Cuisenaire Strips
 - 2.3.6. The Geoplane
 - 2.3.7. Tangram
 - 2.3.8. Meters, Scales and Graduated Glasses
 - 2.3.9. Other Materials
- 2.4. Use of Manipulative Materials in the Classroom
 - 2.4.1. Active and Participative Methodology
 - 2.4.2. Manipulative Materials
 - 2.4.3. Introducing Manipulative Materials in the Classroom through Challenges
 - 2.4.4. Criteria for Manipulative Materials
 - 2.4.5. Development of the Students
 - 2.4.6. The Teacher as Project Guide
 - 2.4.7. Mathematical Contents for the Elaboration of Manipulative Materials
 - 2.4.8. Classroom Work Project
 - 2.4.9. The Teacher and Teaching Materials
- 2.5. Numerical Learning Materials
 - 2.5.1. Introduction
 - 2.5.2. Types of Numbers: Natural, Integer, Fractional and Decimal Numbers
 - 2.5.3. Contents
 - 2.5.4. Logical-Mathematical Thinking
 - 2.5.5. Materials for Working with Integers
 - 2.5.6. Materials for Working with Fractions
 - 2.5.7. Materials for Working with Decimals
 - 2.5.8. Materials for Working with Operations
 - 2.5.9. Crafts for Learning Numbers

- 2.6. Materials for Learning to Measure
 - 2.6.1. Introduction
 - 2.6.2. Units and Instruments for the Measurement of Magnitudes
 - 2.6.3. Contents of the Measurement Block
 - 2.6.4. Teaching Resources
 - 2.6.5. Materials for Working with Units of Length
 - 2.6.6. Materials for Working with Units of Mass
 - 2.6.7. Materials to Work with Capacity or Volume Units
 - 2.6.8. Materials to Work with Surface Units
 - 2.6.9. Materials to Work with Time and Money Units
- 2.7. Geometric Learning Materials
 - 2.7.1. Block 3: Geometry
 - 2.7.2. Importance of Geometry
 - 2.7.3. Puzzle of the Blind Hen
 - 2.7.4. Square Geoplane
 - 2.7.5. Orient Yourself
 - 2.7.6. The Boat Game
 - 2.7.7. Chinese Tangram
 - 2.7.8. Memory Game
- 2.8. Comic Books for Learning Mathematics
 - 2.8.1. Introduction
 - 2.8.2. Comic Concept
 - 2.8.3. Comic Structure
 - 2.8.4. Educational Uses of Digital Comics
 - 2.8.5. Objectives Achieved According to Experiences Developed
 - 2.8.6. Proposed Method of Use
 - 2.8.7. How to Use it According to the Teaching Cycles?
 - 2.8.8. Proposed Activities
 - 2.8.9. Comics, ICT and Mathematics
- 2.9. Audiovisual Resources in the Teaching-Learning of Mathematics
 - 2.9.1. Audiovisual Language: A New Language, A New Method
 - 2.9.2. Benefits of Audiovisual Language in Education
 - 2.9.3. Audiovisual Competence in the Classroom
 - 2.9.4. 10 Principles for the Use of Audiovisuals in the Classroom
 - 2.9.5. Audiovisual Resources and the Teaching of Mathematics
 - 2.9.6. Importance of the Use of New Technologies in Mathematics
 - 2.9.7. Video in Mathematics
 - 2.9.8. Mathematical Photography
- 2.10. The Game in the Teaching Methods of Mathematics
 - 2.10.1. Introduction
 - 2.10.2. Game Concept
 - 2.10.3. The Importance of the Game
 - 2.10.4. The Importance of Games in Mathematics
 - 2.10.5. Advantages of the Game
 - 2.10.6. Disadvantages of the Game
 - 2.10.7. Phases of the Game
 - 2.10.8. Strategies
 - 2.10.9. Mathematical Games

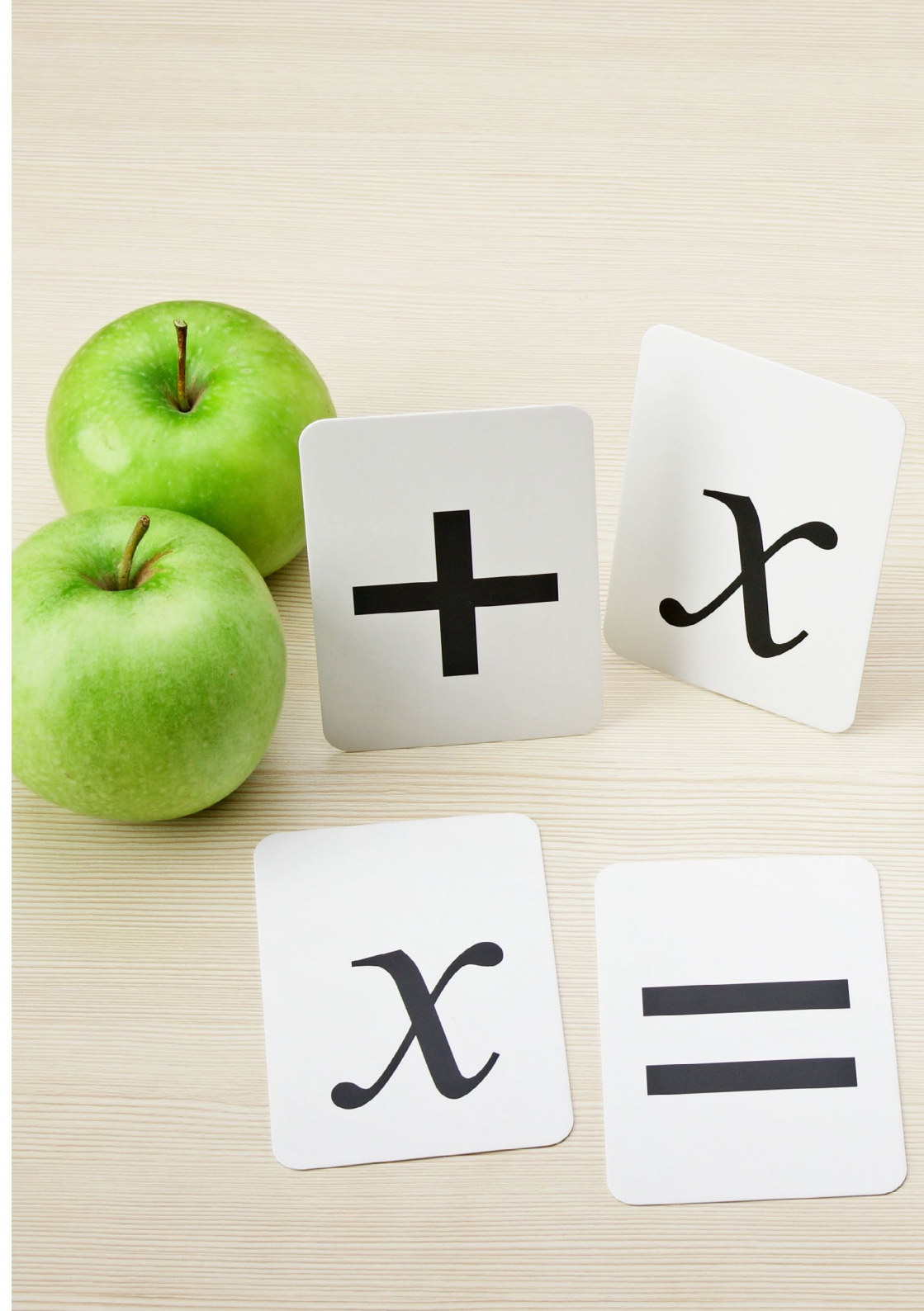
Module 3. ICT in Pre-school and Primary Education. Development of Interactive Materials for the Classroom Workshops

- 3.1. Information and Communication Technologies
 - 3.1.1. What are ICTs?
 - 3.1.2. Theoretical Framework
 - 3.1.3. General Characteristics of ICTs
 - 3.1.4. ICT Issues in Education
 - 3.1.5. Need for the Use of ICTs in Educational Institutions
 - 3.1.6. Use of ICT in Educational Centers
 - 3.1.7. ICT Integration Plan



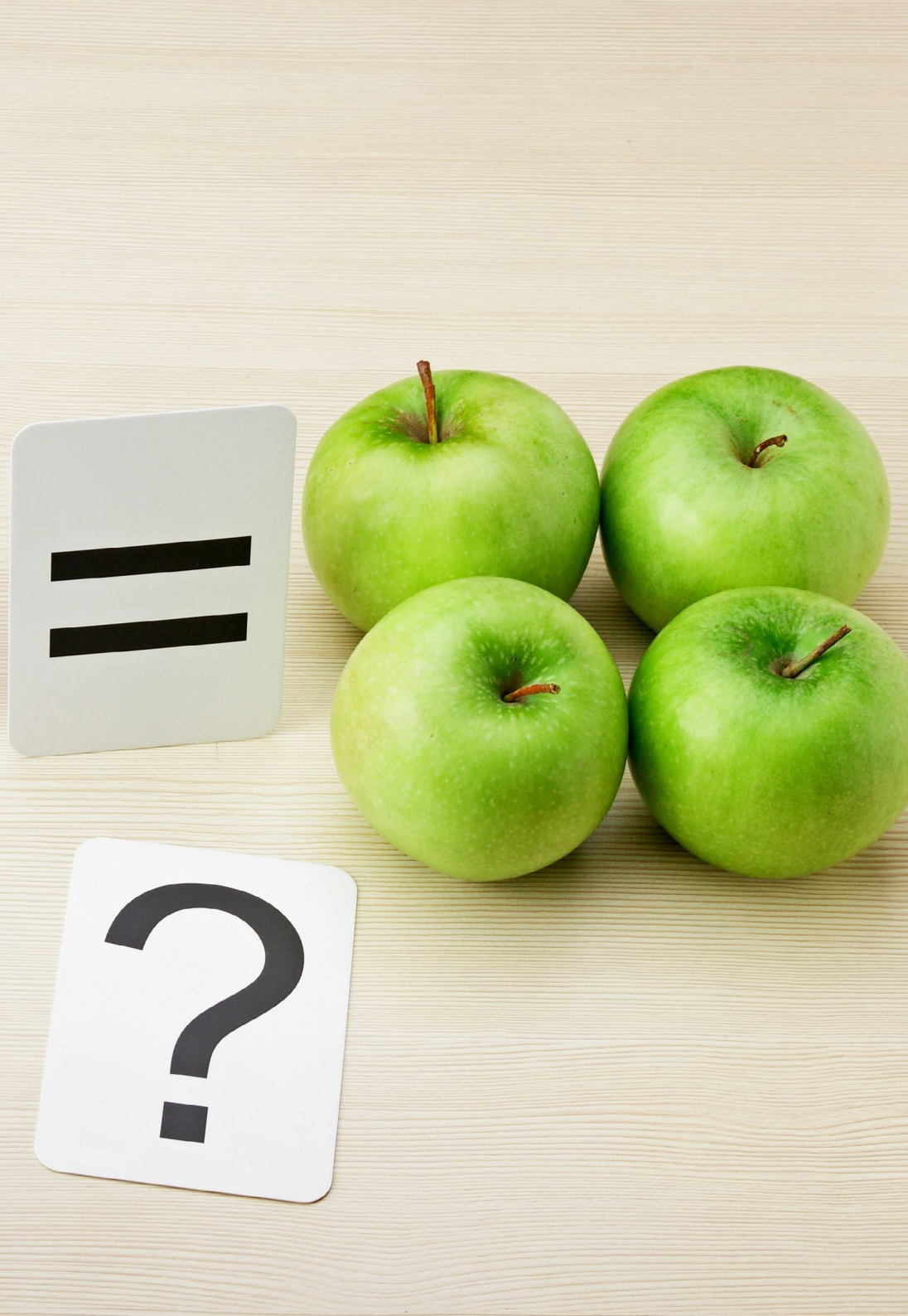
- 3.2. Needs for the Implementation of ICT in the Classroom
 - 3.2.1. Equipment
 - 3.2.2. Education
 - 3.2.3. Role of the Coordinator
 - 3.2.4. The Teacher and ICT
 - 3.2.5. ICT in Pre-school Classrooms
 - 3.2.6. ICT Projects
 - 3.2.7. ICT in Primary School Education
 - 3.2.8. ICT in Education: Disadvantages
 - 3.2.9. ICT Assessment
- 3.3. ICT in Pre-school Education
 - 3.3.1. ICT in Pre-school Classrooms
 - 3.3.2. ICTs in the Legal Framework of Pre-school Education
 - 3.3.3. ICT and Gardner's Multiple Intelligences
 - 3.3.4. Some Possible Uses of ICT in Pre-school
 - 3.3.5. The Computer Corner
 - 3.3.6. Approach to the Potential of ICTs in Pre-school Education
 - 3.3.7. Teaching Methods of Mathematics in Pre-School
 - 3.3.8. ICT Resources for Pre-school Education
- 3.4. ICT in Primary School Education
 - 3.4.1. Impacts of ICT in Primary School School Education
 - 3.4.2. Incorporation of ICTs in Education: Possibilities and Challenges
 - 3.4.3. Educational Legislation: ICT in Primary Education BORRAR
 - 3.4.4. Advantages and Disadvantages of ICT Incorporation
 - 3.4.5. New Teaching Methodologies Supported by ICT: an Active and Constructive Pedagogy
 - 3.4.6. Inclusion of Virtual Platforms in the Teaching-Learning Process
 - 3.4.7. Adaptation of a New Methodology. Online and Virtual Teaching
 - 3.4.8. Educational Applications

- 3.5. Use of ICTs and Active Methodologies
 - 3.5.1. Active Methodologies
 - 3.5.2. Advantages
 - 3.5.3. Educational Principles of Active Methodologies
 - 3.5.4. Active Methodologies with the use of ICT
 - 3.5.5. Project Based Learning
 - 3.5.6. Collaborative and Cooperative Learning
 - 3.5.7. Service Learning in the use of ICT
 - 3.5.8. *Flipped Classroom*
 - 3.5.9. Problem-Based Learning
- 3.6. IT Resources for the Mathematics Classroom
 - 3.6.1. Tablets in Education
 - 3.6.2. ICT in Primary School School Education, a Formative Proposal
 - 3.6.3. Best Tools for your Math Class according to AulaPlaneta
 - 3.6.4. ICT Resources for Pre-school Education
- 3.7. Computer and Internet in Education
 - 3.7.1. Computer-Assisted Learning
 - 3.7.2. Internet
 - 3.7.3. Internet and the Expansion of the Educational Framework
 - 3.7.4. Benefits of the Internet in Education
 - 3.7.5. Disadvantages of the Internet on Education
 - 3.7.6. Mathematics on the Internet
 - 3.7.7. Websites to Work on Mathematics
- 3.8. Gamification in the Classroom
 - 3.8.1. What is Gamification and Why Is It Important?
 - 3.8.2. Elements of Gamification
 - 3.8.3. Gamification Objectives
 - 3.8.4. Fundamentals of Gamification in the Teaching-Learning Process
 - 3.8.5. How to Gamify in Education?
 - 3.8.6. Gamification in Pre-school Education
 - 3.8.7. Rewards Classification
 - 3.8.8. Gamification vs. Ludification
 - 3.8.9. Negative Aspects of Gamification
 - 3.8.10. ICT Use in Gamification



- 3.9. ICT Tools and Resources for Assessment
 - 3.9.1. Evaluation
 - 3.9.2. ICT as a Means of Assessment
 - 3.9.3. ICT Assessment Tools
 - 3.9.4. Other Tools to Assess in a Different Way
- 3.10. ICT in the Attention to Special Needs Education
 - 3.10.1. Legal Framework BRRAR
 - 3.10.2. How ICT Supports Students with SEN?
 - 3.10.3. ICT for Students with Physical Disabilities
 - 3.10.4. ICT in students with Mental Disabilities
 - 3.10.5. ICT for Students with Auditory Disabilities
 - 3.10.6. ICT for Students with Visual Disabilities
 - 3.10.7. Pervasive Developmental Disorders
 - 3.10.8. ICT Resources for SEN

“*A program with which you will revolutionize education through the design of the best and most innovative teaching materials and you will become a reference in the teaching of Mathematics”*



05

Methodology

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

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



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

The student: the priority of all TECH programs

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

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

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

“

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



The most comprehensive study plans at the international level

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

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

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

“

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

Case Studies or Case Method

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

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

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



Relearning Methodology

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

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

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

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



A 100% online Virtual Campus with the best teaching resources

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

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

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

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



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

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

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

The university methodology top-rated by its students

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

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

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

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



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



Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise. This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



Practicing Skills and Abilities

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



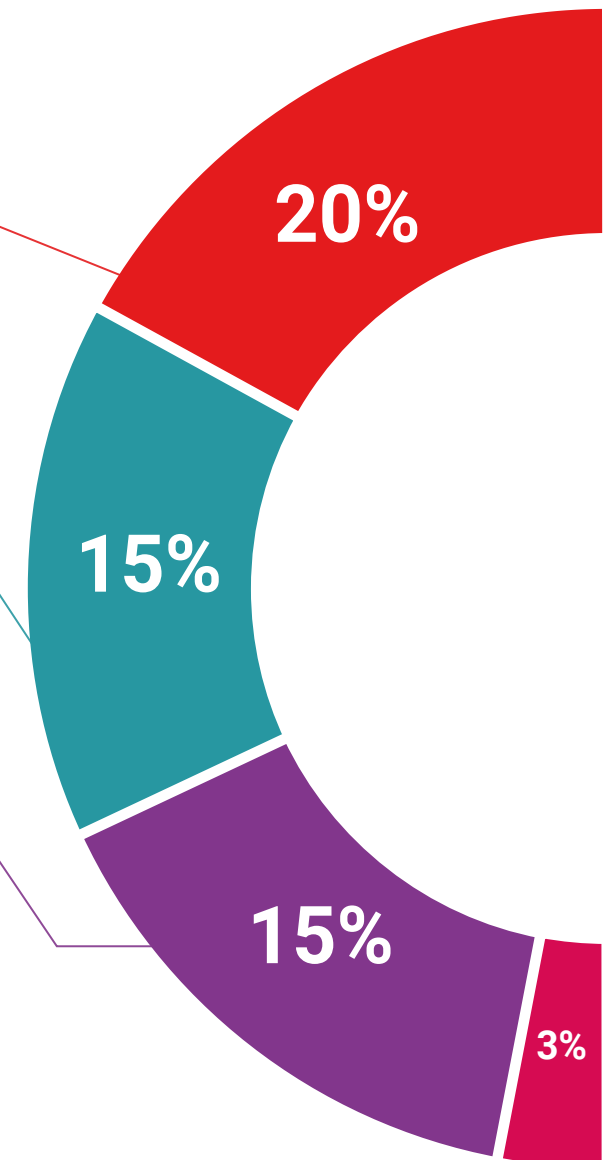
Interactive Summaries

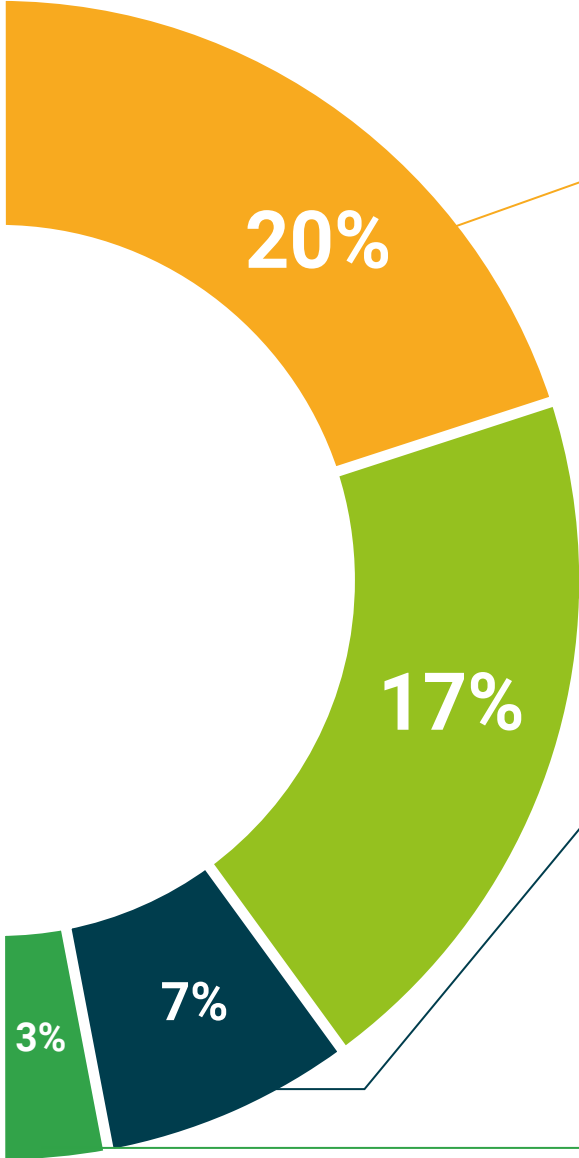
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge. This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



Additional Reading

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





Case Studies

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



Testing & Retesting

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



Classes

There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an expert strengthens knowledge and memory, and generates confidence for 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.



06

Certificate

The Postgraduate Diploma in Design and Development of Mathematics Teaching Materials for the Pre-School Classroom 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 private qualification will allow you to obtain a **Postgraduate Diploma in Design and Development of Mathematics Teaching Materials for the Pre-School Classroom** endorsed by **TECH Global University**, the world's largest online university.

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

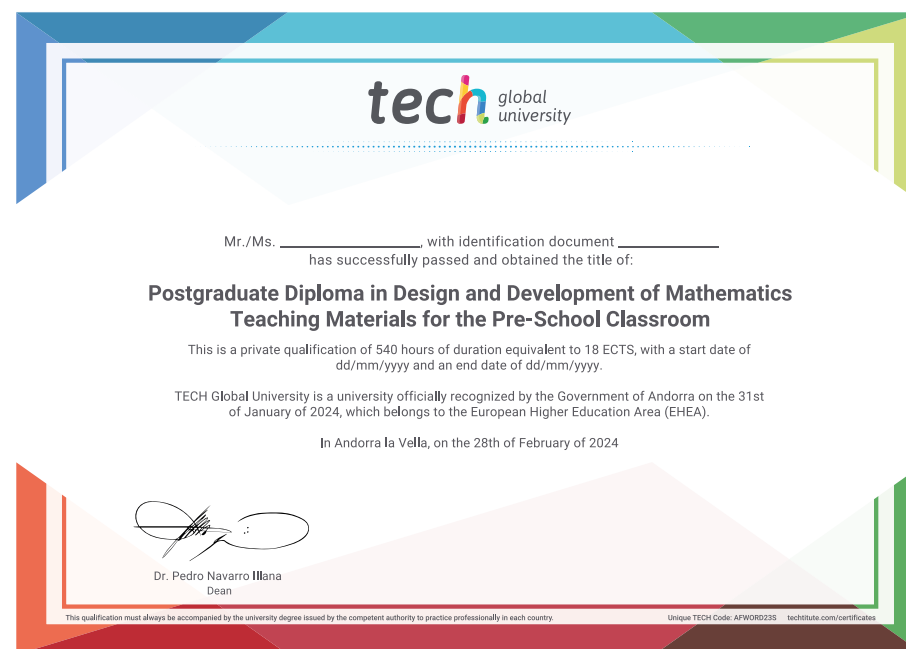
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Design and Development of Mathematics Teaching Materials for the Pre-School Classroom**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**





Postgraduate Diploma
Design and Development
of Mathematics Teaching
Materials for the Pre-School
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- » Exams: online

Postgraduate Diploma

Design and Development of
Mathematics Teaching Materials
for the Pre-School Classroom

$$625 = \frac{1}{4}$$

$$x = \frac{12}{9}$$

$$x = \frac{7 \cdot 4}{12} = \frac{28}{12} = \frac{7}{3}$$

$$\begin{cases} +5y = 12 \\ 7x + 8y = 22 \\ 1x + 9y = 5 \end{cases}$$

$$\begin{cases} 12x + 20y = 48 \\ 12x + 24y = 66 \\ 1x + 9y = 5 \end{cases}$$