

# Postgraduate Certificate ICT in Pre-school and Primary Education: Gamifying the Mathematics Classroom

$$0.25 = \frac{1}{4}$$
$$x = \frac{12}{9}$$
$$x = \frac{7 \cdot 4}{12} = \frac{28}{12} = \frac{7}{3}$$

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

$$\begin{cases} 12x + 20y = 48 \\ 12x + 29y = 66 \\ 1x + 9y = 5 \end{cases}$$



## Postgraduate Certificate

### ICT in Pre-school and Primary Education: Gamifying the Mathematics Classroom

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

Website: [www.techtute.com/us/education/postgraduate-certificate/ict-pre-school-primary-education-gamifying-mathematics-classroom](http://www.techtute.com/us/education/postgraduate-certificate/ict-pre-school-primary-education-gamifying-mathematics-classroom)

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# 01

# Introduction

The incursion of new technologies to contribute to the effective processing of information by students establishes avant-garde guidelines that allow teachers to improve their teaching process. In this way and through the use of applications and games, children become involved in their own learning. In order for the teacher to learn first-hand about these new methodologies, TECH has created a complete degree through which the teacher can delve into the inclusion of virtual platforms in the educational field. A 100% online program that will allow you to implement the best tools in your practice and contribute to an elite teaching through the gamification of the mathematics classroom.





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*The best program in the current academic market to delve into the use of applications and games in the teaching of mathematics in a dynamic and participatory way is this one. Don't miss it"*

Education has been positively affected by the many technological advances that are continually occurring in the digital sector. In this way, the use of new technological tools to promote participatory and dynamic teaching allows professionals to create more effective learning environments in which the student wants to be involved. The fact is that the fame acquired by mathematics through its study with the most traditional and orthodox methodology has been transformed to give way to a new era, in which thousands of students are able to recover their interest in this science. Therefore, ICT is here to stay and it is imperative that teachers update their knowledge to maintain and enhance the interest of their students in one of the least popular core subjects so far.

In this context, TECH and its team of professional experts in technology applied to education have developed a complete program, which provides graduates with the latest and most comprehensive information. In this way, the professional who successfully completes this program will be able to update his or her knowledge of the most cutting-edge didactic and pedagogical tools in the current teaching panorama. This is an academic experience in which the educator will be able to delve into the new teaching methodologies supported by ICT, as well as the computer media that can be included in the mathematics classroom. It will also provide the necessary tools and resources for evaluation in a modern technological environment.

All this, through 6 weeks of a fully online program with the best theoretical and practical content presented in different audiovisual formats such as detailed videos, complementary readings and multimedia summaries, among many others. In addition to the quality of its contents, the exclusive *Relearning* methodology allows the student to acquire knowledge in a natural and progressive way, avoiding long hours of study.

This **Postgraduate Certificate in ICT in Pre-school and Primary Education: Gamifying the Mathematics Classroom** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ The development of practical cases presented by experts in Arithmetic, Algebra, Geometry and Measurement
- ♦ 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 self-assessment can be used 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 have before you the unique opportunity to become an up-to-date, skilled professional who will take mathematics education to the next level"*

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*You will have at your disposal a Virtual Campus available 24 hours a day and you will be able to download the material to consult it whenever you need it”*

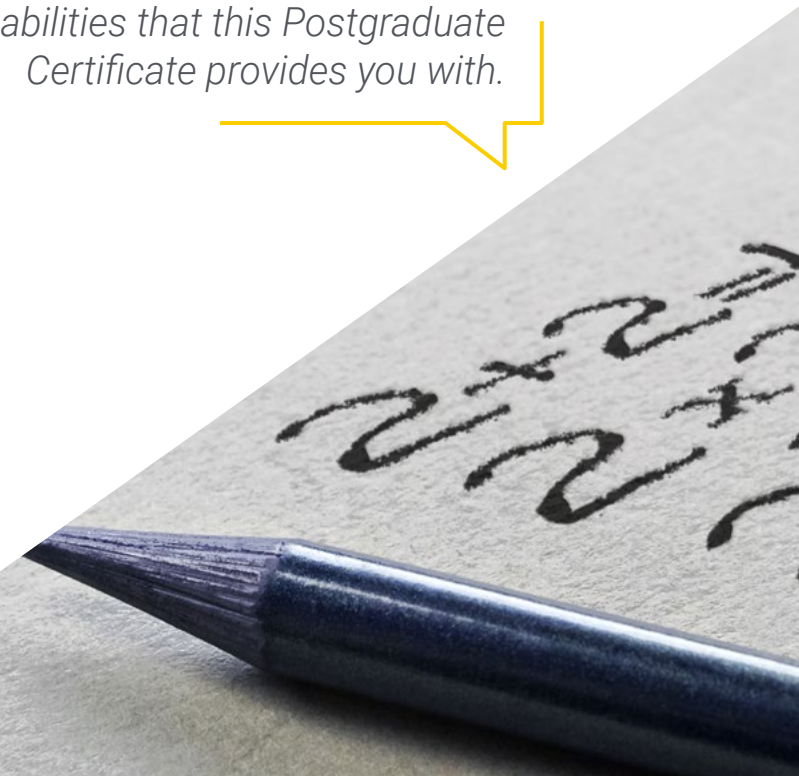
The program's teaching staff includes professionals from the field who contribute their work experience to this educational program, as well as renowned specialists from leading societies and prestigious universities.

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 academic year. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Access now to a library full of high quality multimedia content.*

*Become an expert and access the most demanded positions by standing out with the skills and abilities that this Postgraduate Certificate provides you with.*



# 02

# Objectives

This exclusive program has been created so that the education professional can acquire the necessary tools to develop in the teaching of mathematics through ICT and the gamification of mathematical content. In this way, through a first level academic teaching, they will integrate to their work the new strategies to be used in teaching in order to transmit knowledge to their own students with a renewed methodology adapted to current requirements.





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*Update your skills in the teaching of mathematics in kindergarten and primary education through the most innovative theoretical and practical methodology of the online academic market"*



## General Objectives

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- Provide students with theoretical and practical knowledge that will allow them to acquire and develop essential competencies and skills for their role as teachers
- Design didactic games for learning mathematics
- Gamify the classroom, a new resource for motivation and learning applied to mathematics



*Develop your full potential and achieve your professional goals by mastering active methodologies and project-based learning"*





## Specific Objectives

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- Understand the importance of the use of ICT in the Pre-school and Elementary 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
- Create and design interactive content and resources for later use in the classroom.



03

# Course Management

TECH has selected a team of experts in ICT in education for the design of this Postgraduate Certificate. Therefore, the quality of its contents is based on the excellence of the contents and in accordance with current educational requirements. As a result, students who decide to take this program will enjoy the opportunity to renew their knowledge and learn from the most qualified professionals in this field. Experts who will put their real experience at the student's service to help them become an elite professional in education.





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*Delve into the gamification of the mathematics classroom in Early Childhood and Primary Education with the help of experts that TECH puts at your disposal in this exclusive course”*

## Management



### Ms. Delgado Pérez, María José

- ♦ TPR and Mathematics teacher at Peñalar College
- ♦ Professor of Secondary and Baccalaureate 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 Elementary, Middle School and High School
- ♦ Graduate in teaching with a specialization in English.
- ♦ Industrial Engineer

## Professors

### Mr. López Pajarón, Juan

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

### Ms. Vega, Isabel

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



**Ms. Hitos, María**

- ♦ Early Childhood and Elementary 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 Elementary School Education with specialization in Music
- ♦ Elementary School Education First Cycle Coordinator
- ♦ Training in New Learning Methodologies

**Ms. Soriano de Antonio, Nuria**

- ♦ Language and Literature teacher for Secondary Education and High School
- ♦ Language and Literature teacher for Secondary Education and High School at Colegio Montesclaros. Madrid, Spain
- ♦ Spanish Philologist Specializing in Language and Literature



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



04

# Structure and Content

The design of the syllabus for this academic program has been carried out by a team versed in the area of teaching, specifically in mathematics. Thanks to this, it has been possible to create a unique and intensive program that gathers the necessary information for the graduate to be able to master this discipline in just 6 weeks of training. In addition, TECH uses in all its programs the effective *Relearning* methodology, designed to ensure that the student's learning process is natural and progressive, assimilating the most important concepts repeatedly throughout the entire syllabus.







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*Would you like to implement the use of ICT in the schools where you teach mathematics? With this Postgraduate Certificate you will be able to do it efficiently”*

**Module 1. ICT in Pre-school and Primary Education. Development of Interactive Materials for the Classroom Workshops**

- 1.1. Information and Communication Technologies
  - 1.1.1. What are ICTs?
  - 1.1.2. Theoretical Framework
  - 1.1.3. General Characteristics of ICTs
  - 1.1.4. ICT Issues in Education
  - 1.1.5. Need for the Use of ICTs in Educational Institutions
  - 1.1.6. Use of ICT in Educational Centers
  - 1.1.7. ICT Integration Plan
- 1.2. Needs for the Implementation of ICT in the Classroom
  - 1.2.1. Equipment
  - 1.2.2. Training
  - 1.2.3. Role of the Coordinator
  - 1.2.4. The Teacher and ICT
  - 1.2.5. ICT in Pre-school Classrooms
  - 1.2.6. ICT Projects
  - 1.2.7. ICT in Elementary School Education
  - 1.2.8. ICT in Education: Disadvantages
  - 1.2.9. ICT Assessment
- 1.3. ICT in Pre-school Education
  - 1.3.1. ICT in Pre-school Classrooms
  - 1.3.2. ICTs in the Legal Framework of Pre-school Education
  - 1.3.3. ICT and Gardner's Multiple Intelligences
  - 1.3.4. Some Possible Uses of ICT in Pre-school
  - 1.3.5. The Computer Corner
  - 1.3.6. Approach to the Potential of ICTs in Pre-school Education
  - 1.3.7. Teaching Methods of Mathematics in Pre-School
  - 1.3.8. ICT Resources for Pre-school Education



- 1.4. ICT in Elementary School Education
  - 1.4.1. Impacts of ICT in Elementary School Education
  - 1.4.2. Incorporation of ICTs in Education: Possibilities and Challenges
  - 1.4.3. Educational Legislation: ICT in Elementary School Education
  - 1.4.4. Advantages and Disadvantages of ICT Incorporation
  - 1.4.5. New Teaching Methodologies Supported by ICTs: an Active and Constructive Pedagogy
  - 1.4.6. Inclusion of Virtual Platforms in the Teaching-Learning Process
  - 1.4.7. Adaptation of a New Methodology Online and Virtual Teaching
  - 1.4.8. Educational Applications
- 1.5. Use of ICTs and Active Methodologies
  - 1.5.1. Active Methodologies
  - 1.5.2. Advantages
  - 1.5.3. Educational Principles of Active Methodologies
  - 1.5.4. Active Methodologies with the use of ICT
  - 1.5.5. Project-Based Learning
  - 1.5.6. Collaborative and Cooperative Learning
  - 1.5.7. Service Learning in the use of ICT
  - 1.5.8. *Flipped Classroom*
  - 1.5.9. Problem-based Learning
- 1.6. IT Resources for the Mathematics Classroom
  - 1.6.1. *Tablets* in Education
  - 1.6.2. ICT in Elementary School Education, a Formative Proposal
  - 1.6.3. Best Tools for your Math Class according to AulaPlaneta
  - 1.6.4. ICT Resources for Pre-school Education
- 1.7. Computer and Internet in Education
  - 1.7.1. Computer-Assisted Learning
  - 1.7.2. Internet
  - 1.7.3. Internet and the Expansion of the Educational Framework
  - 1.7.4. Benefits of the Internet in Education
  - 1.7.5. Disadvantages of the Internet on Education
  - 1.7.6. Mathematics on the Internet
  - 1.7.7. Websites to Work on Mathematics
- 1.8. Gamification in the Classroom
  - 1.8.1. What is Gamification and Why Is It Important?
  - 1.8.2. Elements of Gamification
  - 1.8.3. Gamification Objectives
  - 1.8.4. Fundamentals of Gamification in the Teaching-Learning Process
  - 1.8.5. How to Gamify in Education?
  - 1.8.6. Gamification in Pre-school Education
  - 1.8.7. Rewards Classification
  - 1.8.8. Gamification vs. Ludification
  - 1.8.9. Negative Aspects of Gamification
  - 1.8.10. ICT Use in Gamification
- 1.9. ICT Tools and Resources for Assessment
  - 1.9.1. Evaluation
  - 1.9.2. ICT as a Means of Assessment
  - 1.9.3. ICT Assessment Tools
  - 1.9.4. Other Tools to Assess in a Different Way
- 1.10. ICT in the Attention to Special Needs Education
  - 1.10.1. How ICT Supports Students with SEN
  - 1.10.2. ICT for Students with Physical Disabilities
  - 1.10.3. ICT in students with Mental Disabilities
  - 1.10.4. ICT for Students with Auditory Disabilities
  - 1.10.5. ICT for Students with Visual Disabilities
  - 1.10.6. Pervasive Developmental Disorders
  - 1.10.7. ICT Resources for SEN



05

# 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.







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

## At TECH Education School we use the Case Method

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

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



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

“

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

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

1. Educators who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life teaching.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



## Relearning Methodology

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

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



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



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

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

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

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

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



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



### Study Material

All teaching material is produced by the specialist educators who teach the course, specifically for the course, so that the teaching content is really specific and precise. These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Educational Techniques and Procedures on Video

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



### Interactive Summaries

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

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



### Additional Reading

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





**Expert-Led Case Studies and Case Analysis**

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



**Testing & Retesting**

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



**Classes**

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

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



**Quick Action Guides**

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





# 06

# Certificate

This Postgraduate Certificate in ICT in Pre-school and Primary Education: Gamifying The Mathematics Classroom guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.



The image features two black graduation caps (mortarboards) against a blue sky with light clouds. One cap is in the foreground on the left, and another is slightly behind it to the right. The background is split diagonally into a white lower-right section and a red upper-right section. The quote is positioned in the white section.

“

*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 a **Postgraduate Certificate in ICT in Pre-school and Primary Education: Gamifying The Mathematics 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.

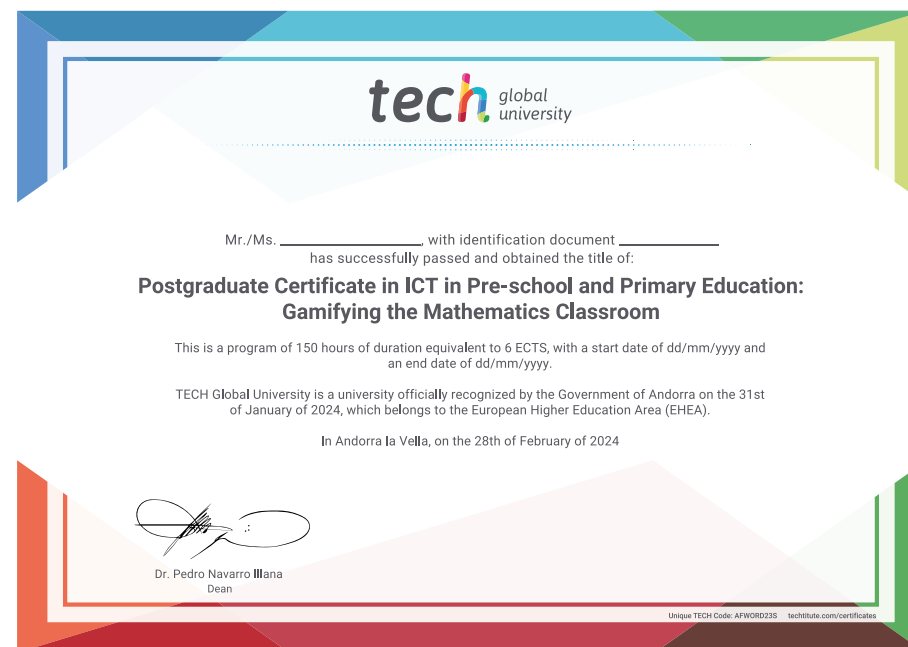
This **TECH Global University** title, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in ICT in Pre-school and Primary Education: Gamifying the Mathematics Classroom**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**







**Postgraduate Certificate**  
ICT in Pre-school and Primary  
Education: Gamifying the  
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Postgraduate Certificate  
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