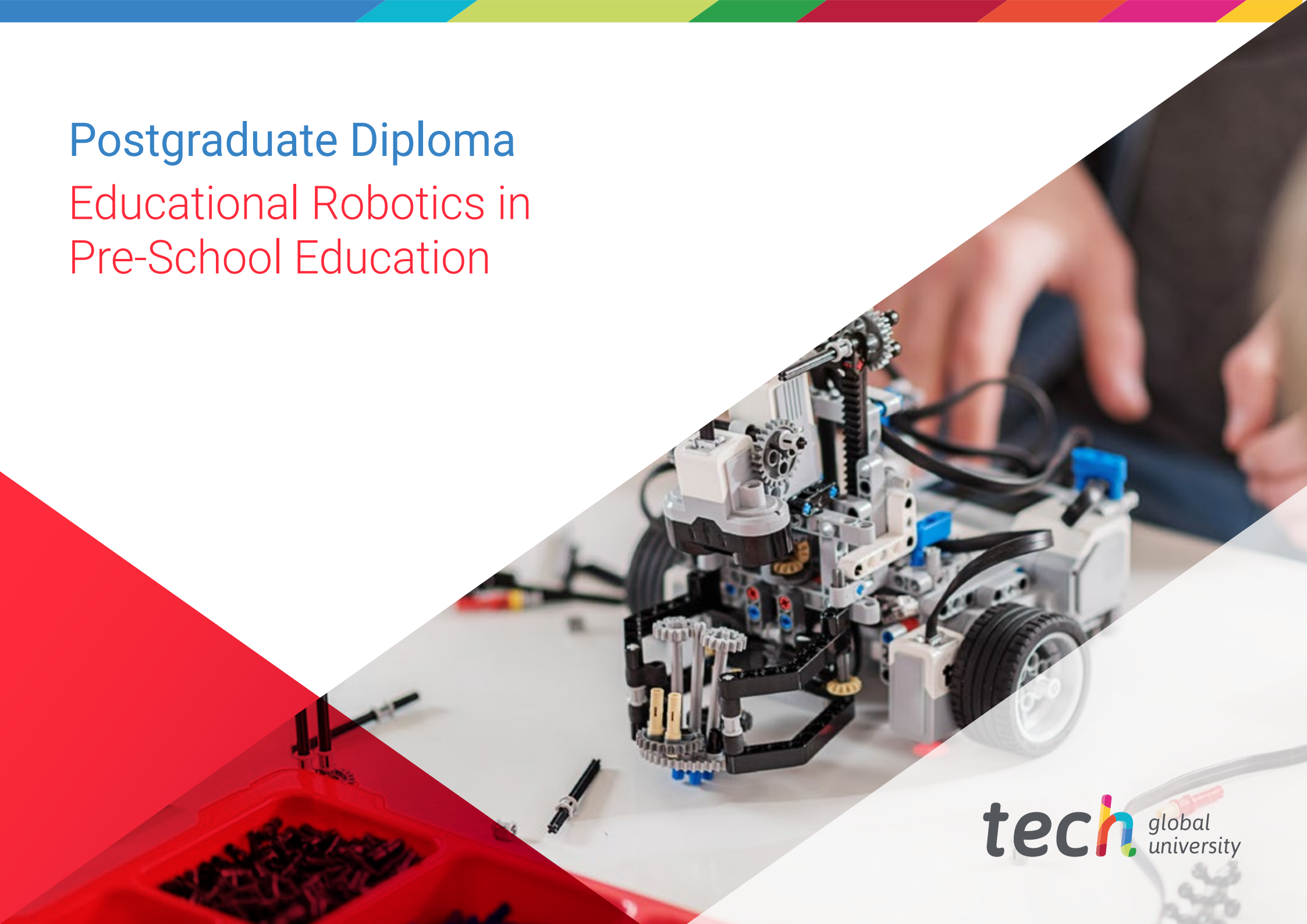
Postgraduate Diploma

Educational Robotics in Pre-School Education



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Postgraduate Diploma
Educational Robotics in Pre-School Education

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Global University**
- Credits: **17 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/education/postgraduate-diploma/postgraduate-diploma-educational-robotics-pre-school-education

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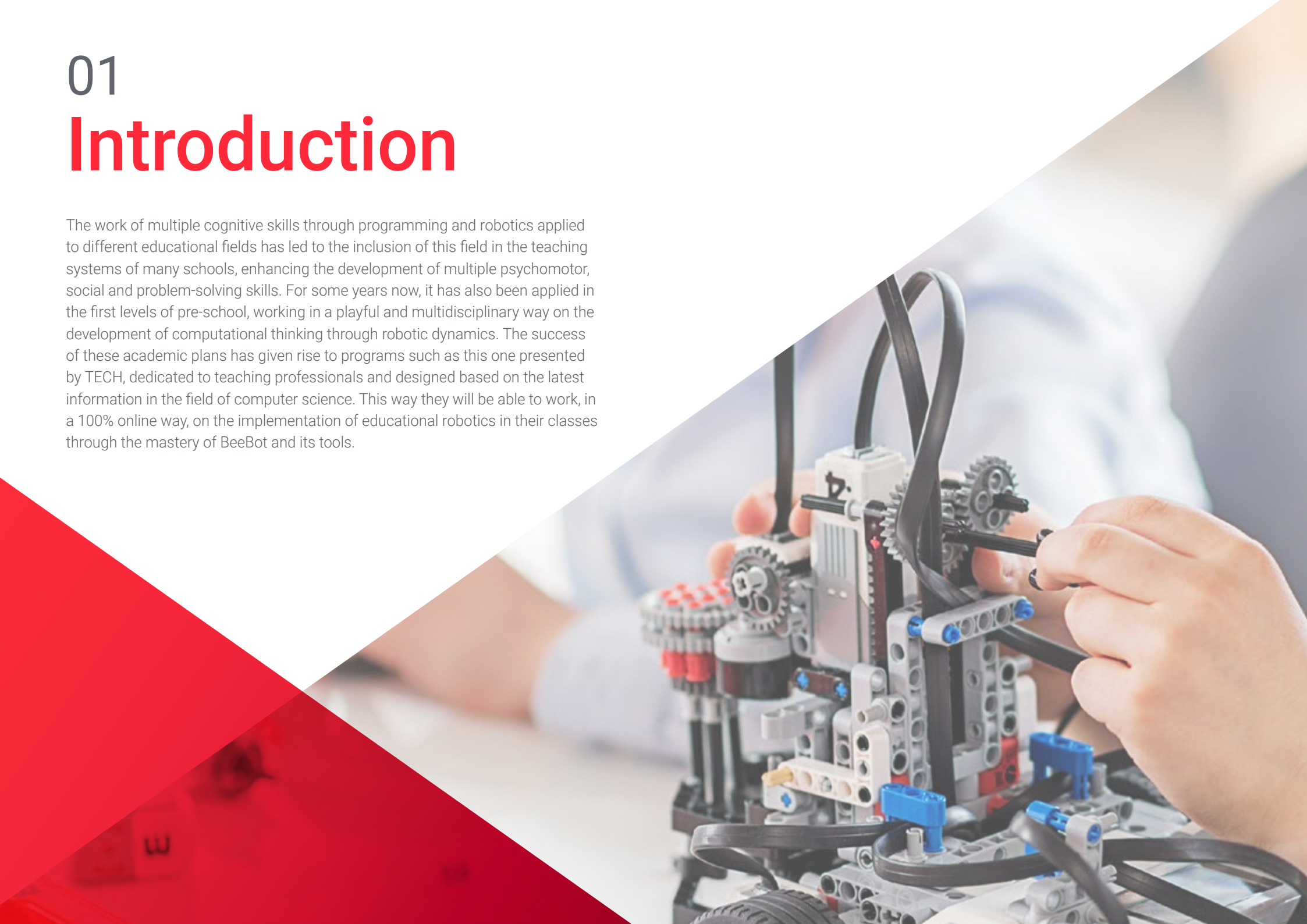
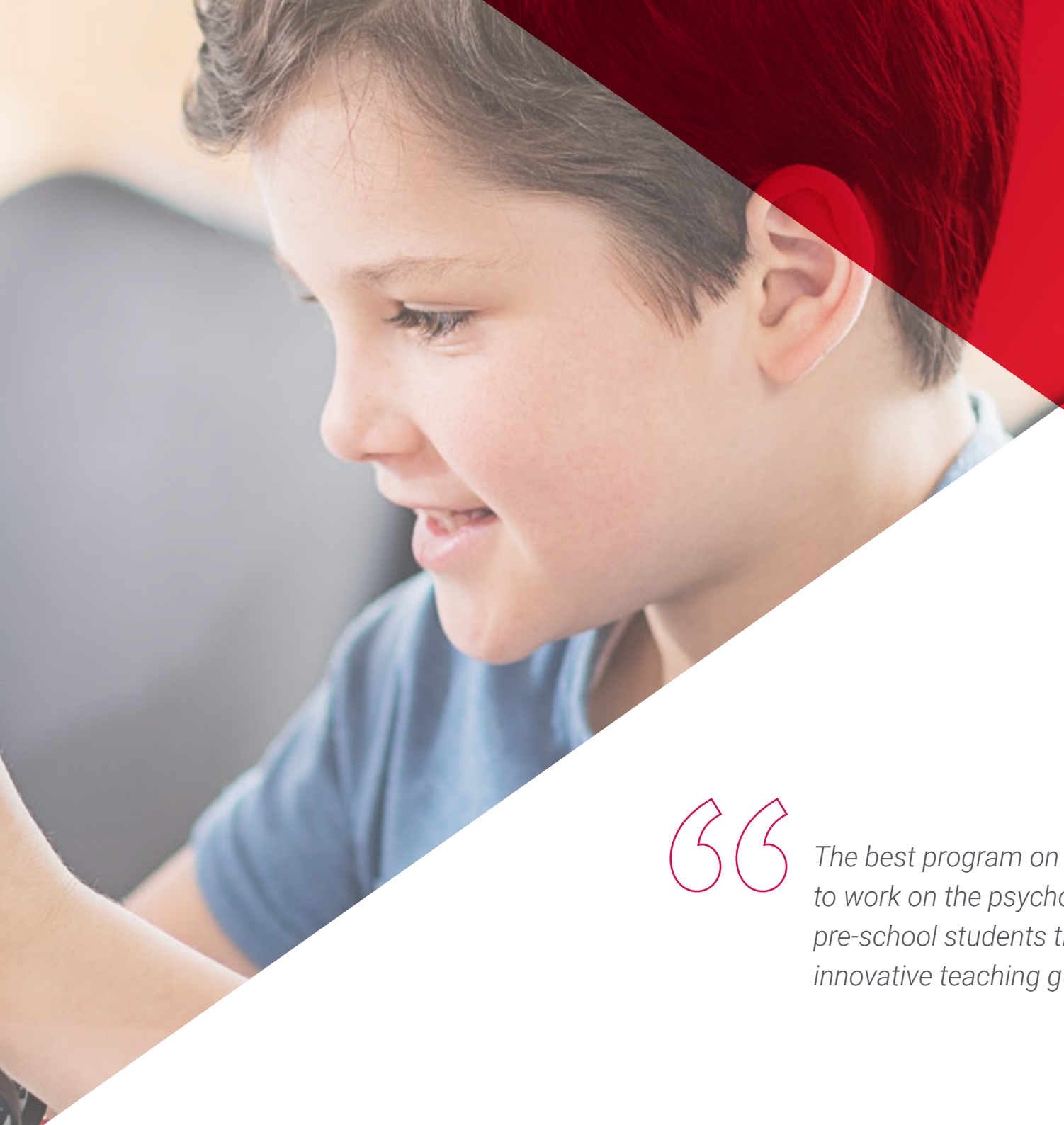
01

Introduction

The work of multiple cognitive skills through programming and robotics applied to different educational fields has led to the inclusion of this field in the teaching systems of many schools, enhancing the development of multiple psychomotor, social and problem-solving skills. For some years now, it has also been applied in the first levels of pre-school, working in a playful and multidisciplinary way on the development of computational thinking through robotic dynamics. The success of these academic plans has given rise to programs such as this one presented by TECH, dedicated to teaching professionals and designed based on the latest information in the field of computer science. This way they will be able to work, in a 100% online way, on the implementation of educational robotics in their classes through the mastery of BeeBot and its tools.





The best program on the current academic market to work on the psychomotor development of your pre-school students through robotics and the most innovative teaching guidelines available"

The educational experimentation that has been carried out in recent years and that has allowed the adaptation of educational teaching methods to the advance of new technologies has considered the inclusion of Robotics in the classroom, from the first levels of education and up to High School. This way, children interact with digital tools from an early age, effectively developing exceptional cognitive and functional skills while playing. Enriching their capacity for exploration and interaction through their own experience allows them to learn in a multidisciplinary way, and also favors socialization and teamwork.

For this reason, it is an increasingly widespread practice in infants and toddlers. And in order for its professionals to be updated on the teaching and pedagogical novelties it contemplates, TECH has developed a Postgraduate Diploma in which they will find the most exhaustive and innovative information related to teaching through Robotics in children between 3 and 6 years old. Through 6 months of 100% online specialization, the specialist will delve into different sections of this field, from the fundamentals of technological evolution in training, to the management of the most beneficial computer tools for students, perfect for promoting autonomous problem solving and interactive thinking through play and fun. In addition, it focuses on the mastery of the Bee-Bot, a toy to get started in programming in a playful way.

And for this you will have the best syllabus, case studies based on real situations and hours of high-quality additional material presented in different formats: detailed videos, research articles, complementary readings, self-knowledge exercises, news, content to work with children, images, diagrams and much more! Everything will be available on the Virtual Campus from the start of the program and can be downloaded to any device with an internet connection, giving you absolute freedom to design the academic calendar based on your availability. This way, you will be able to work in a guaranteed way to update your teaching practice by implementing the most dynamic and entertaining robotic guidelines for pre-school students.

This **Postgraduate Diploma in Educational Robotics in Pre-School Education** contains the most complete and up-to-date program on the market. The most important features include:

- Case studies presented by experts in Education and Innovation
- The graphic, schematic, and practical contents with which they are created, provide techniques and 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

The educational experience consists of 425 hours of the best and most cutting-edge theoretical, practical and additional material based on the fundamental aspects of technology applied to education"

Why is it necessary to innovate in Education? TECH has the answer. And if you also want to get to know it, you only have to enroll and start with the program that will mark a before and after in your teaching career"

A 100% online program at the forefront of Pre-School Education thanks to which you will be able to learn in detail the analytical tools of knowledge and implement them in your classes immediately.

This Postgraduate Diploma includes a section with the 6 tips to promote in a guaranteed way the different intelligences in students from 0 to 6 years old.

The program's teaching staff includes professionals from the sector who contribute their work experience to this 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 knowledge 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 throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

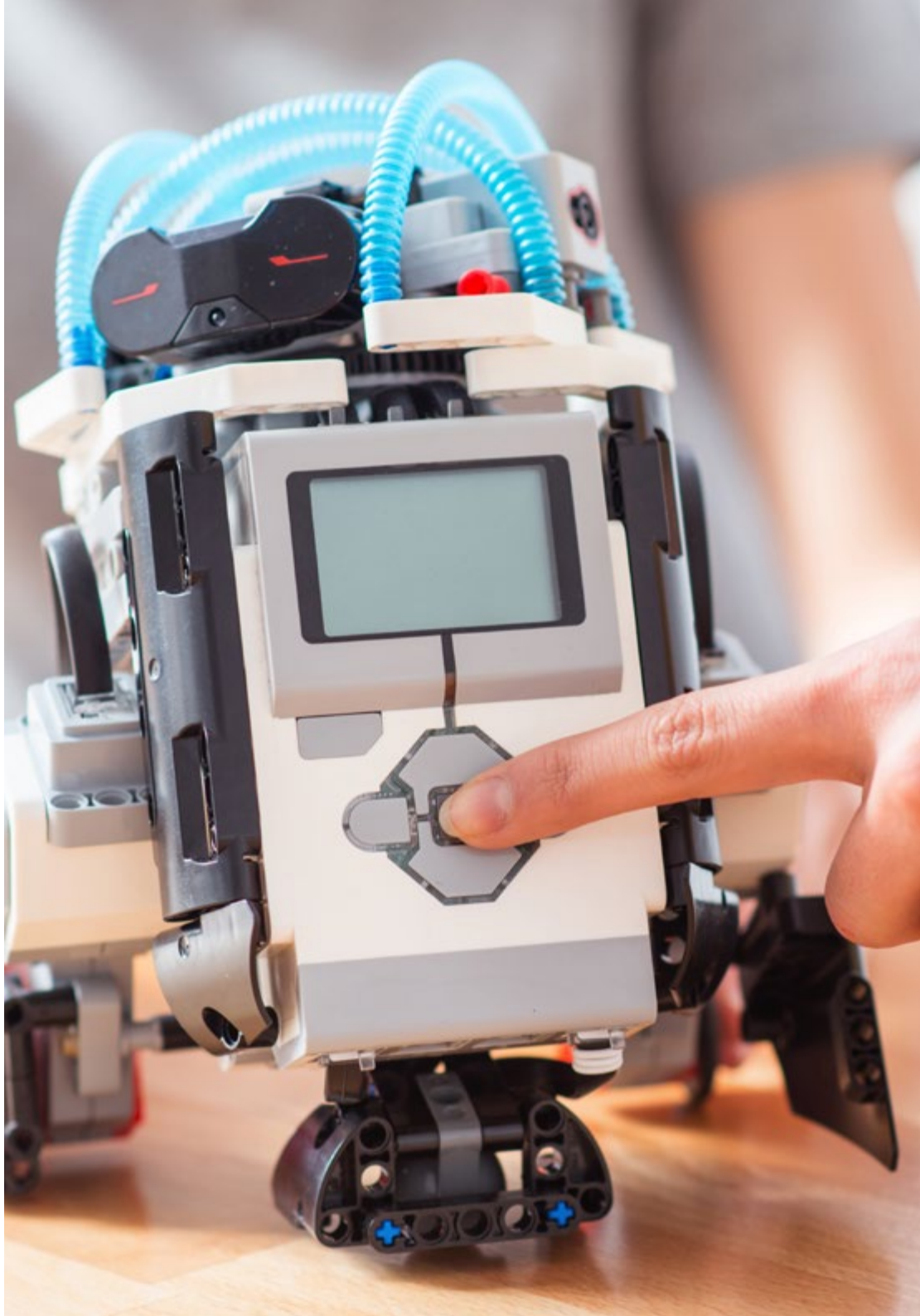
The objective of this Postgraduate Diploma is none other than to provide the graduate with the latest and most exhaustive information related to the use of Robotics in the educational field, specifically at pre-school levels. This way, you will be able to delve into the most effective, dynamic and innovative teaching strategies and techniques related to this technological sector, thanks to which you will be able to design classes of the highest level based on learning through active student participation, experimentation and problem solving.

Whatever your goals are, TECH has designed this program so that you will be able to achieve and surpass them through an academic program of the highest level"

General Objectives

- Learn how to plan in a transversal and curricular way in children's educational stages, where education professionals can incorporate new technologies and methodologies in the classroom
- Make teachers aware of the importance of a transformation in education, motivated by the new generations
- Learn about new learning models and the application of educational robotics to motivate students towards technological careers

You will master the structural characteristics of each of the parts of a robot, as well as the laws of Pedagogical Robotics for DIY techniques"



Specific Objectives

Module 1. Fundamentals and Evolution of Applied Technology in Education

- Raise teachers' awareness of new educational trends and the direction of their role in education
- Provide knowledge of new information and communication technology skills.
- Train teachers to promote educational change within the classroom to create environments that improve student achievement
- Introduce learning theories related to Educational Robotics
- Understand the laws of robotics

Module 2. Educational Robotics Robots in the Classroom

- Substantiate the application of robotics pedagogy in the classroom
- Know the legal and ethical aspects of robotics and 3D printing
- Teaching STEAM skills as a learning model
- Transfer the teacher to new physical environments that improve the educational practice
- Knowledge of computational thinking skills
- Know the aspects of robotics, educational robotics
- Learning the impact between Emotional Intelligence and Educational Robotics
- Explain the introduction of Robotics in early childhood education

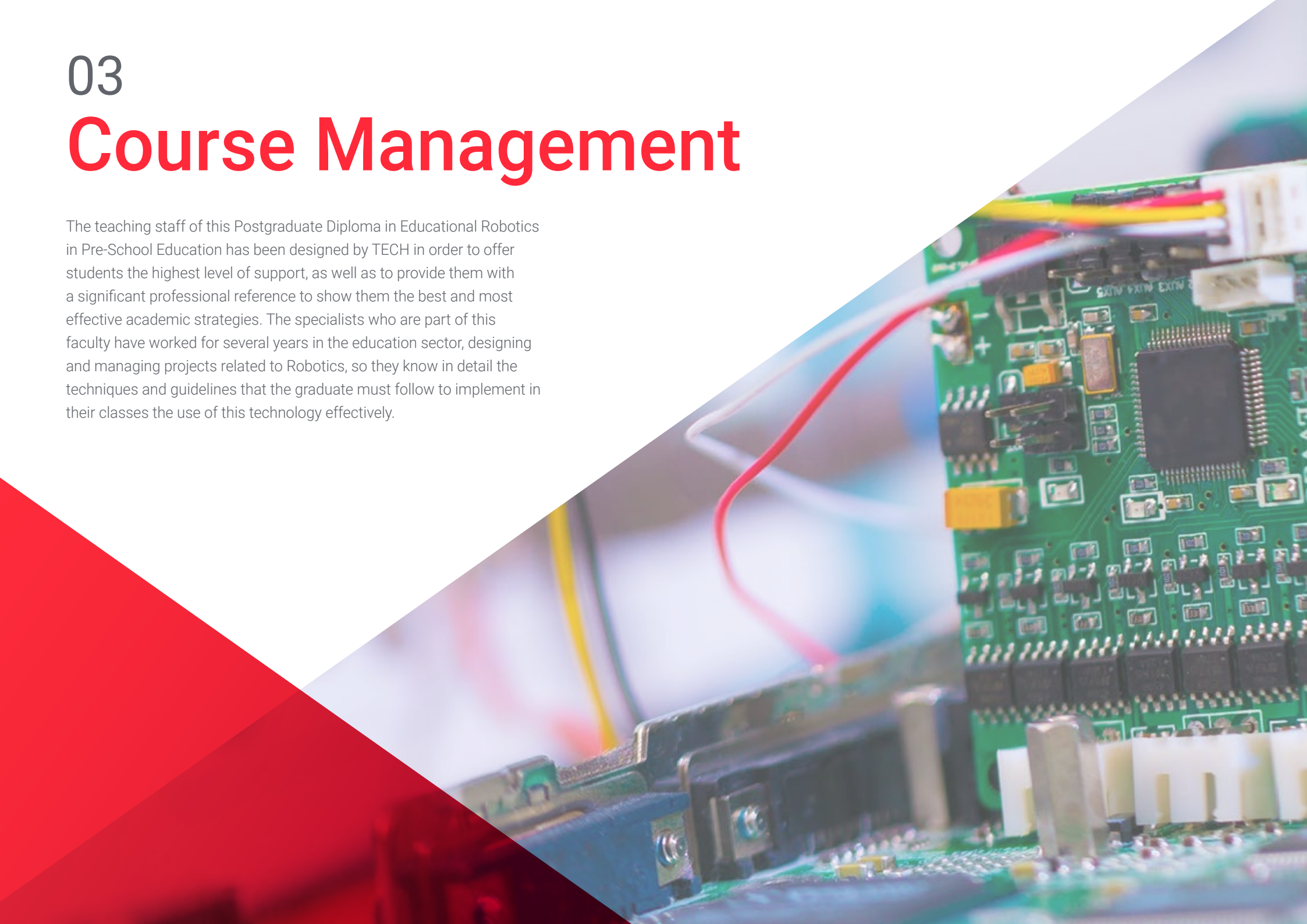
Module 3. Working with Robots in Pre-School "Not to Learn Robotics, But to Learn with Robotics"

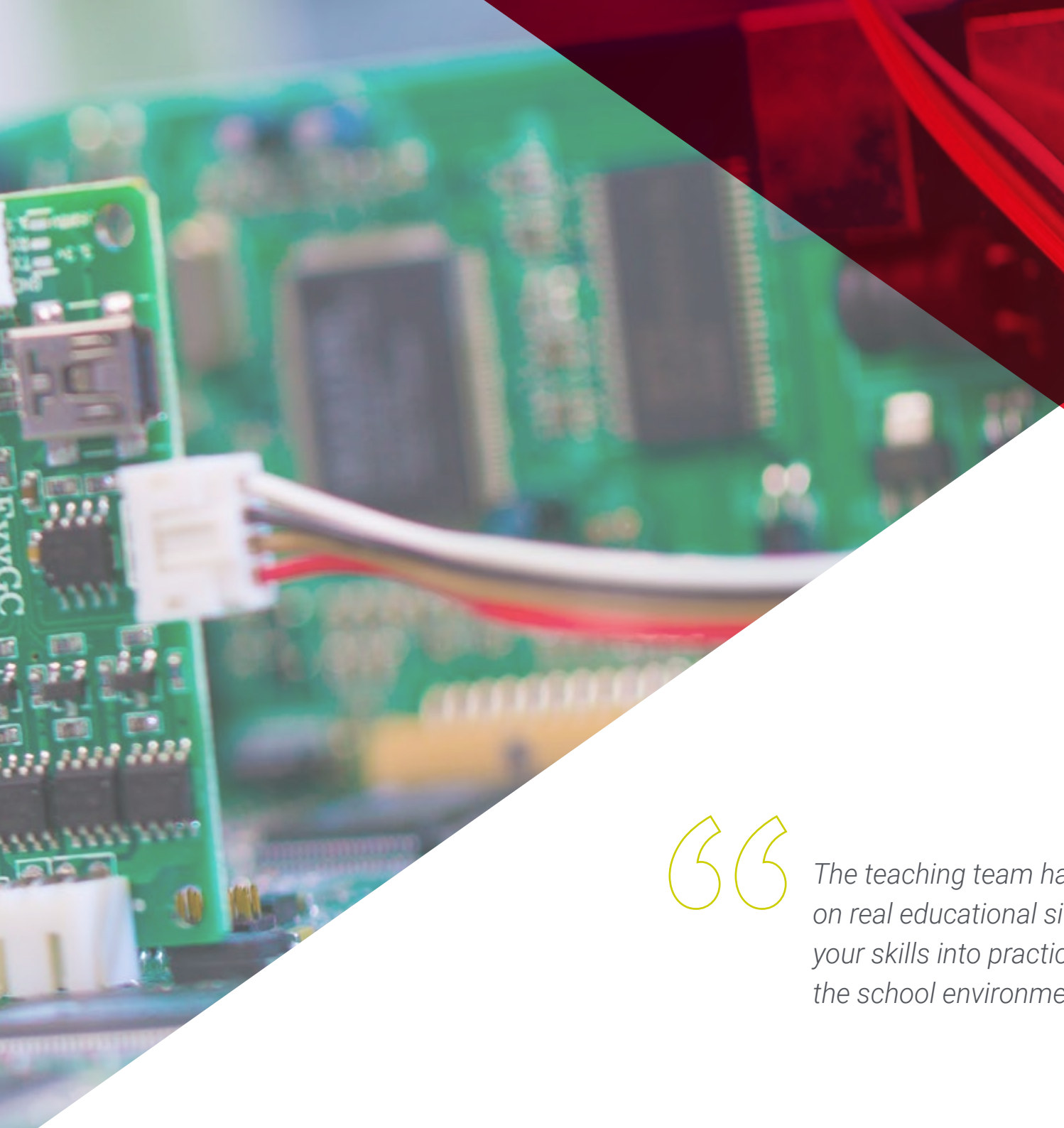
- Turn classrooms into workspaces for their own learning
- Provide teachers with knowledge related to the brain's functioning
- Train the teacher to transform the traditional methodology into a playful methodology
- Understand what a robot is, types and elements that make it up
- Working Beebot as a Robot for beginners
- Learn about BeeBot's contributions to education
- Analyze BeeBot's operation
- Set up sessions with Bee-Bot
- Learn about other BeeBot resources for teachers
- Integrate Robotics as a learning resource in the first cycles

03

Course Management

The teaching staff of this Postgraduate Diploma in Educational Robotics in Pre-School Education has been designed by TECH in order to offer students the highest level of support, as well as to provide them with a significant professional reference to show them the best and most effective academic strategies. The specialists who are part of this faculty have worked for several years in the education sector, designing and managing projects related to Robotics, so they know in detail the techniques and guidelines that the graduate must follow to implement in their classes the use of this technology effectively.





The teaching team has selected use cases based on real educational situations, so that you can put your skills into practice through problem solving in the school environment"

Management

Ms. Muñoz Gambín, Marina

- Teacher and Expert in Educational Technology
- Head of Educational Robotics and Programming at Robotuxc Academy for Kindergarten and Primary School.
- Certified in Lego Education© methodology
- Degree in Early Childhood Education Teaching from CEU Cardenal Herrera University.
- Educational Coach certified by the Alicante Chamber of Commerce.
- Emotional Intelligence in the Classroom Trainer
- Neuroscience Teacher Training
- Expert in Neurolinguistic Programming certified by Richard Bandler.
- Certified in Music Education as therapy

Professors

Ms. Gambín Pallarés, María del Carmen

- Social Worker and Family Therapist
- Systemic Family Therapist
- Social Worker
- Founder and director of "Educa Diferente" Positive Discipline Alicante.
- Family and teacher educator in Positive Discipline
- Lego Serious Play methodology facilitator.
- Coaching training for professionals

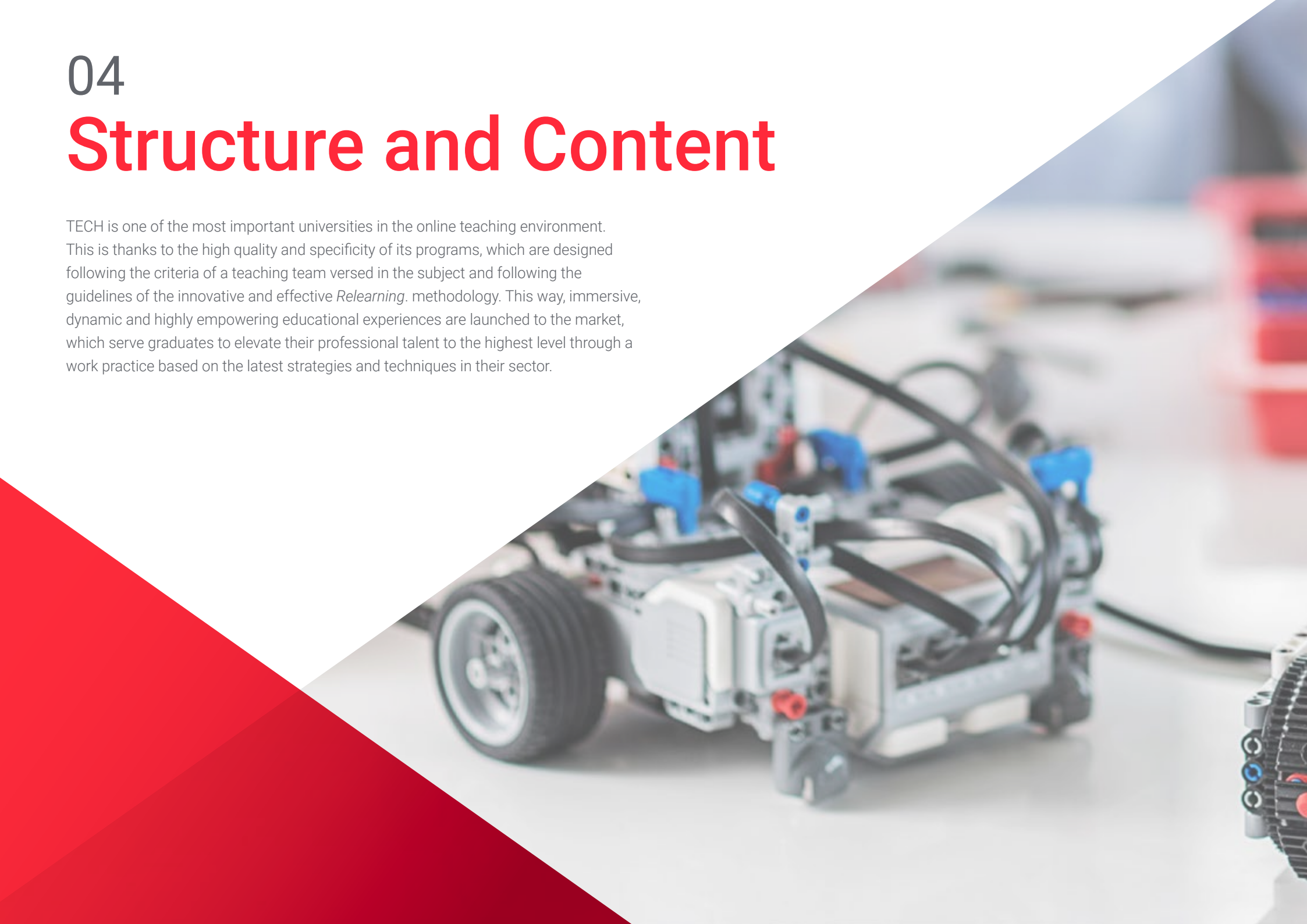
Mr. Coccaro Quereda, Alejandro

- Specialist in Educational Robotics
- Expert in Educational Robotics, Design and 3D Printing
- Robotuxc Academy Robotics National Competition Challenges Specialist
- Certified in Lego Education© methodology
- Head of Educational Robotics, Design and 3D Printing for Primary and
- High School at Robotuxc Academy

04

Structure and Content

TECH is one of the most important universities in the online teaching environment. This is thanks to the high quality and specificity of its programs, which are designed following the criteria of a teaching team versed in the subject and following the guidelines of the innovative and effective *Relearning*. methodology. This way, immersive, dynamic and highly empowering educational experiences are launched to the market, which serve graduates to elevate their professional talent to the highest level through a work practice based on the latest strategies and techniques in their sector.



Thanks to the Relearning methodology, you won't have to spend extra hours memorizing, but you will witness a natural, progressive learning process without even realizing it!"

Module 1. Fundamentals and Evolution of Applied Technology in Education

1.1. Aligning with HORIZON 2020
- 1.1.1. Early Advances in ICTs and Teacher Participation
- 1.1.2. Horizon 2020 European Plan Progress
- 1.1.3. UNESCO: ICT Skills for Teachers
- 1.1.4. The Teacher as a Coach

1.2. Pedagogical Foundations of Educational Robotics
- 1.2.1. MIT - a Pioneering Center of Innovation
- 1.2.2. Jean Piaget - Forerunner of Constructivism
- 1.2.3. Seymour Papert - Transformer of Technology Education
- 1.2.4. George Siemens' Connectivism

1.3. Regularization of a Technological-legal Environment
- 1.3.1. Ethical Agreement on Applied Robotics European Report

1.4. Importance of the Curricular Implementation of Robotics and Technology
- 1.4.1. Educational Skills
  - 1.4.1.1. What Is a Skill?
  - 1.4.1.2. What Is an Educational Skill?
  - 1.4.1.3. Core Skills in Education
  - 1.4.1.4. Application of Educational Robotics to Educational Skills
- 1.4.2. STEAM. New learning Approach. Innovative Education to Train Future Professionals
- 1.4.3. Technological Classroom Designs
- 1.4.4. Creativity and Innovation Included in the Curricular Model.
- 1.4.5. The Classroom as a MAKERSPACE
- 1.4.6. Critical Thinking

1.5. Another Way of Teaching
- 1.5.1. Why Should we Innovate in Education?
- 1.5.2. Neuroeducation; Emotion as Success in Education
  - 1.5.2.1. Some Neuroscience to Understand How do we Produce Learning in Children?
- 1.5.3. The 10 Keys to Gamify your Classroom
- 1.5.4. Educational Robotics: The Flagship Methodology of the Digital Age
- 1.5.5. Advantages of Robotics in Education
- 1.5.6. Design with 3D Printing and its Impact on Education
- 1.5.7. Flipped Classroom y Flipped Learning

1.6. Gardner and Multiple Intelligences
- 1.6.1. The 8 Types of Intelligence
  - 1.6.1.1. Logical-Mathematical Intelligence
  - 1.6.1.2. Linguistic Intelligence
  - 1.6.1.3. Spatial Intelligence
  - 1.6.1.4. Musical Intelligence
  - 1.6.1.5. Body and Kinesthetic Intelligence
  - 1.6.1.6. Intrapersonal Intelligence
  - 1.6.1.7. Interpersonal Intelligence
  - 1.6.1.8. Naturalistic Intelligence
- 1.6.2. The 6 Keys to Apply the Different Intelligences

1.7. Knowledge Analytical Tools
- 1.7.1. Application of BIG DATA in Education

Module 2. Educational Robotics; Robots in the Classroom

2.1. Beginnings of Robotics
2.2. Robo... What?
  2.2.1. What Is a Robot? What Isn't a Robot?
  2.2.2. Robot Types and Classification
  2.2.3. Components of a Robot
  2.2.4. Asimov and the Laws of Robotics
  2.2.5. Robotics, Educational Robotics and Pedagogic Robotics
  2.2.6. DIY (*Do It Yourself*) Techniques
2.3. Educational Robotics Learning Systems
  2.3.1. Meaningful and Active Learning
  2.3.2. Project-Based Learning (PBL)
  2.3.3. Play Based Learning
  2.3.4. Learning to Learn and Problem Solving
2.4. Computational Thinking (CT) Comes to the Classrooms
  2.4.1. Nature
  2.4.2. The PC Concept
  2.4.3. Computational Thinking Techniques
  2.4.4. Algorithmic Thinking and Pseudocode
  2.4.5. Computational Thinking Tools
2.5. Educational Robotics Work Formula
2.6. Four C methodology to Boost Your Students
2.7. General Educational Robotics Advantages

Module 3. Working with Robots in Pre-School "Not to Learn Robotics, But to Learn with Robotics"

3.1. The Revolution of New Technologies in Pre-School Education
  3.1.1. How Have New Technologies Evolved in Pre-School Education?
  3.1.2. Digital Teaching Skill
  3.1.3. The Importance of Merging Emotional Intelligence and Educational Robotics
  3.1.4. Teaching Children to Innovate from an Early Age
3.2. Robotics in the Pre-School Classroom Educating for the Future
  3.2.1. Emergence of Educational Robotics in the Pre-School Classroom
  3.2.2. Why Introduce Computational Thinking Development in Pre-School Education?
  3.2.3. Use of Educational Robotics as a Learning Strategy
  3.2.4. Curricular integration of Educational Robotics
3.3. Robots in the Classroom!
  3.3.1. Which Robots Can We Introduce in Pre-School Education?
  3.3.2. LEGO DUPLO as a Complementary Tool
  3.3.3. Software to Get Started in Programming
3.4. Getting to Know Bee-Bot!
  3.4.1. The Bee-Bot Programmable Robot
  3.4.2. Contributions of Bee-Bot Robots in Education
  3.4.3. Software Study and Performance
  3.4.4. Bee-Bot Cards
  3.4.5. Classroom Resources and Beyond
3.5. Classroom Tools
  3.5.1. How Do I implement Robotics in the Classroom?
  3.5.2. Working with Educational Robotics in the Pre-School Curriculum
  3.5.3. Relationship of Robotics with the contents
  3.5.4. Bee-Bot Session Development in the Classroom

05

Methodology

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

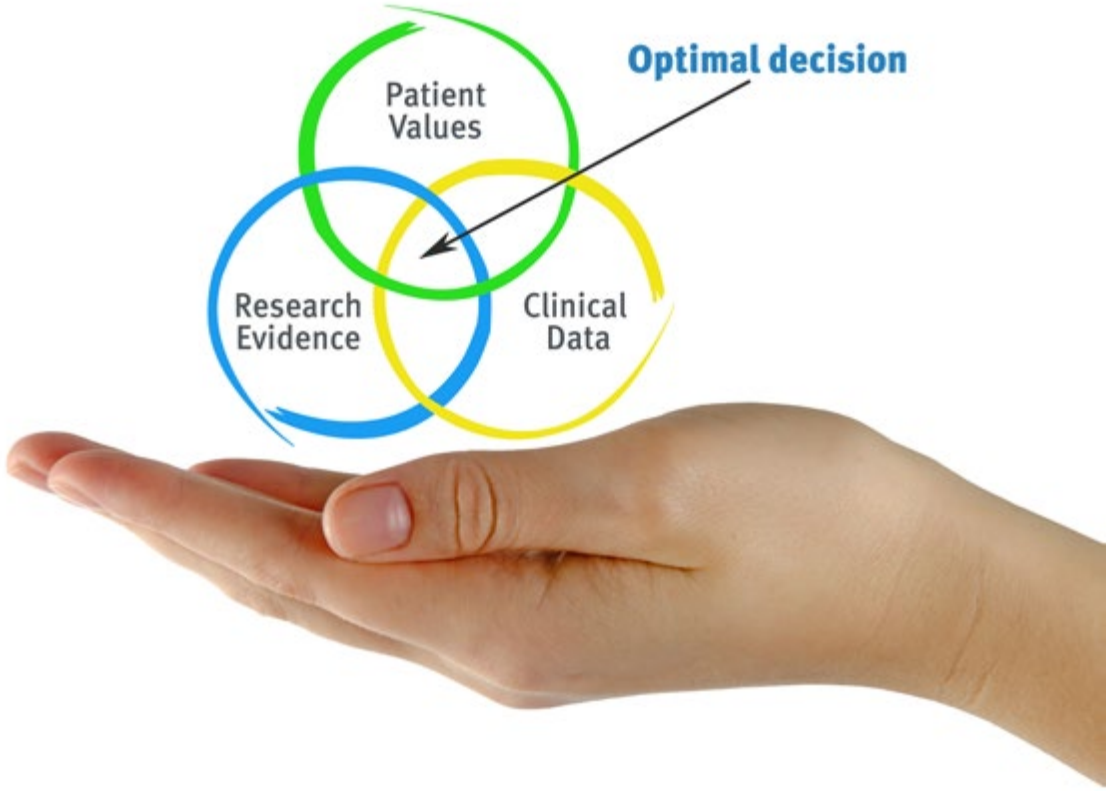
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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:

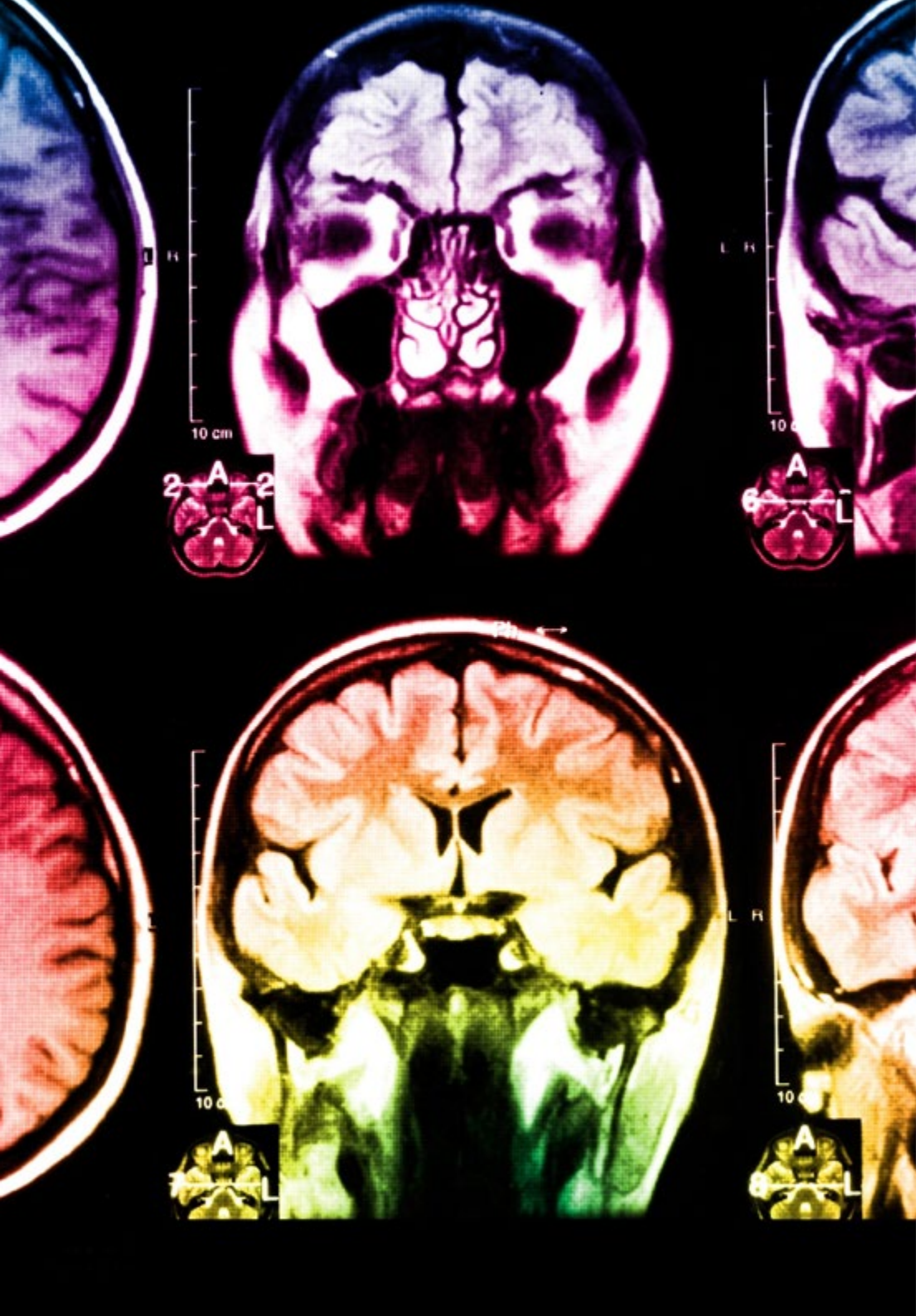
1. Educators who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process is solidly focused on practical skills that allow educators to better integrate the knowledge into daily practice.
3.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

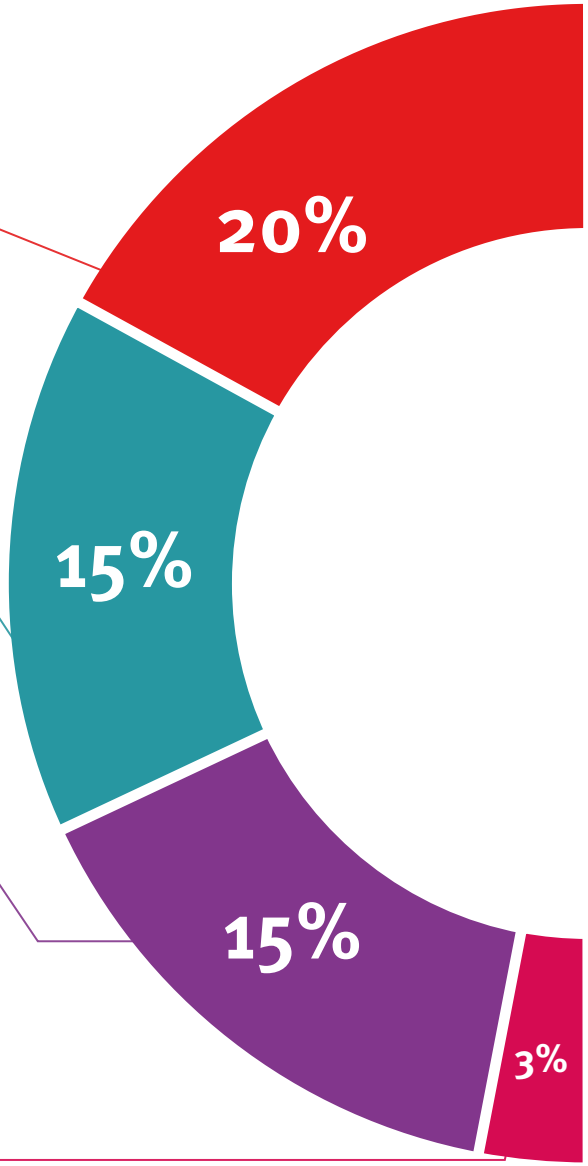
Interactive Summaries

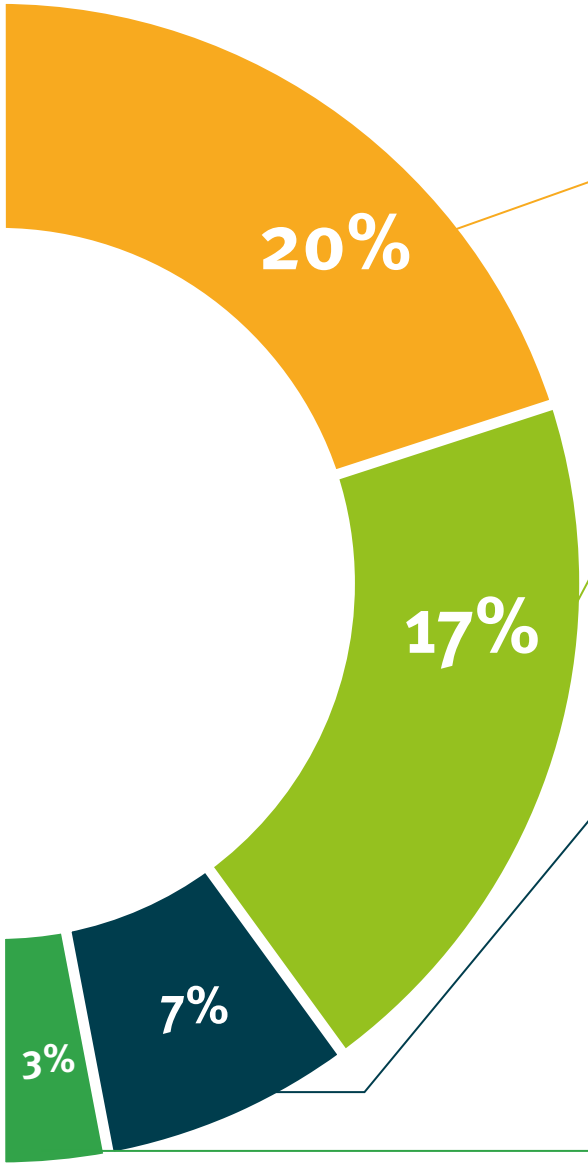
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

The Postgraduate Diploma in Educational Robotics in Pre-School 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 Educational Robotics in Pre-School Education** endorsed by **TECH Global University**, the world's largest online university.

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

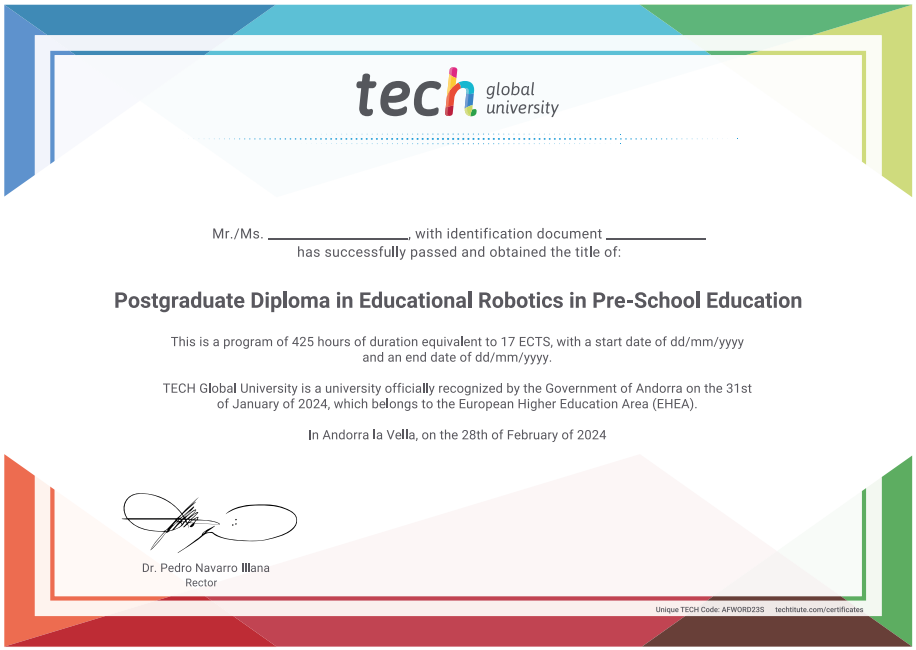
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Educational Robotics in Pre-School Education**

Modality: **online**

Duration: **6 months**

Accreditation: **17 ECTS**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Mr./Ms. _____, with identification document _____
has successfully passed and obtained the title of:

Postgraduate Diploma in Educational Robotics in Pre-School Education

This is a program of 425 hours of duration equivalent to 17 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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

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

Dr. Pedro Navarro Illana
Rector

Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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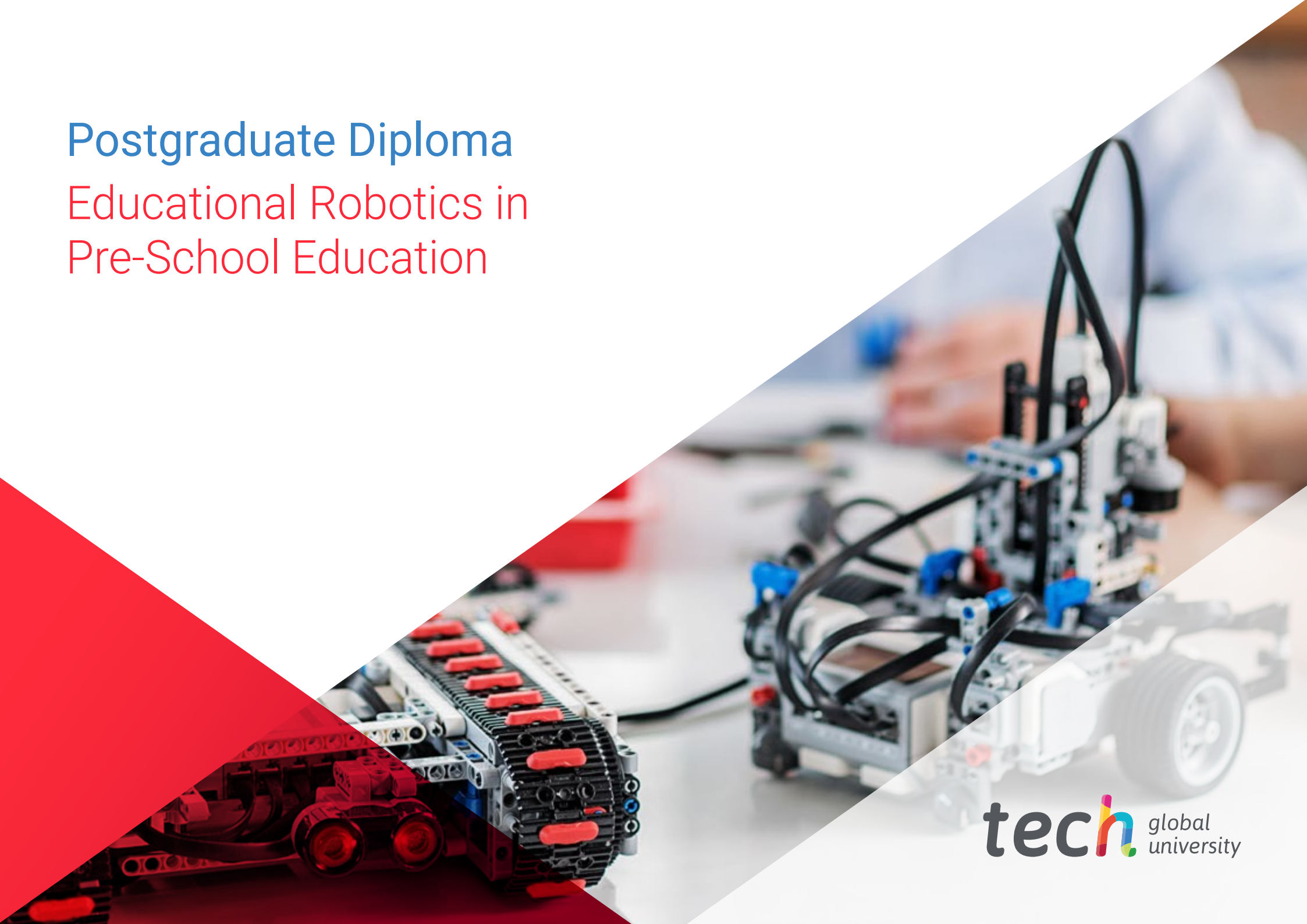

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