

Postgraduate Diploma Art for Virtual Reality with Unity, Blender, and 3ds MAX



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- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/in/videogames-design/postgraduate-diploma/postgraduate-diploma-art-virtual-reality-unity-blender-3ds-max

Index

01

Introduction

p. 4

02

Objectives

p. 8

03

Course Management

p. 12

04

Structure and Content

p. 16

05

Methodology

p. 20

06

Certificate

p. 28

01

Introduction

The wide acceptance and demand for Virtual Reality Video Games opens a wide range of possibilities in business and labor development in a growing field. The creation of projects requires skills and abilities in the main 3D animation modeling programs. In this program the professional of the Gamer industry will delve into the main tools for the design in VR and the creation of a professional Pipeline from start to end. This program presents, precisely, quality multimedia content, accompanied by the Relearning methodology to facilitate learning and to be able to direct the career path in an increasingly specialized VR video game industry.





“

Specialize in the three programs that will make the difference in your 3D animation projects in the world of Gaming”

Beat Saber or Half-Life Alex are examples of the great social repercussion and the potential of Virtual Reality in the Gaming sector. This technology has meant a change in the landscape of the industry that has experienced the most growth in recent years, as it has amplified the connection of gamers with video games while it has boosted the creation of content of higher artistic quality. For this reason, this Postgraduate Diploma covers the three main 3D modeling programs focused on the Video Game industry.

Thanks to the extensive experience of the teaching staff, the Video Game professionals will perfect their knowledge in the field being able to create his own graphic projects and launch them to the market with the necessary requirements for success. A program with a practical approach similar to the reality demanded by the industry, with digital multimedia content that will facilitate understanding and professional growth in a highly competitive environment.

An excellent opportunity to specialize, with the advantage of studying a 100% online program, with a flexible methodology that will allow the Video Game professionals to increase their knowledge at the time and pace they wish.

This **Postgraduate Diploma in Art for Virtual Reality with Unity, Blender, and 3ds MAX** contains the most complete and up-to-date program on the market. The most important features include:

- ◆ Development of practical cases presented by experts in video game creation and design through Virtual Reality technology
- ◆ The graphic, schematic, and practical contents with which they are created, provide practical information on the disciplines that are essential for professional practice
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



Video games like Assassin's Creed have been created with 3ds Max. What are you waiting for to succeed with your own project thanks to the mastery of this program?"

“

You will begin to develop the path you were looking for in the VR Video Games sector with the guarantees of mastering the tools most used by companies in the sector”

The program includes, in its teaching staff, professionals from the sector who bring to this program the experience of their work, in addition to recognized specialists from prestigious reference societies and universities.

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

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

You will have at your disposal up-to-date multimedia resources developed by a teaching team specialized in Virtual Reality in Video Games.

You will be able to combine your personal life with the learning of Virtual Reality Game Design in the Gaming industry, thanks to a 100% online methodology.



02 Objectives

In order to understand the main advantages and limitations of Virtual Reality in Video Games, a Postgraduate Diploma has been created, where each of the Graphic Design software used, the main tools used and their application in each situation are studied in depth. With an eminently practical approach, this program will allow students to achieve their goal of perfecting their knowledge in the field of Video Game Arts.



“

You will achieve your professional goals delving into the main 3D object design and modeling tools in the Gamer universe”



General Objectives

- ◆ Understand the advantages and constraints provided by Virtual Reality
- ◆ Develop high-quality hard surface modeling
- ◆ Create high-quality organic modeling
- ◆ Understand the principles of retopology
- ◆ Understand the principles of UVS
- ◆ Master Baking in Substance Painter
- ◆ Expertly manage layers
- ◆ Be able to create a dossier and submit works at a professional level, at the highest quality
- ◆ Make a conscious decision as to which programs best fit your Pipeline



Your advanced knowledge will allow you to surpass the rest of the competitors in the career of Virtual Reality graphic design for video games. Enroll and move on to the next phase”





Specific Objectives

Module 1. The Project and the Unity Graphics Engine

- ◆ Develop a VR project
- ◆ Delve into Unity for VR
- ◆ Import textures and implement the necessary materials efficiently
- ◆ Create realistic and optimized lighting

Module 2. Blender

- ◆ Develop procedural materials
- ◆ Be able to animate a modeling
- ◆ Use fluid, hair, particle, and clothing simulations with ease
- ◆ Create high-quality renders in both Eevee and Cycles
- ◆ Learn how to operate the new grease pencil and how to get the best out of it
- ◆ Learn how to use the new geometry nodes and be able to do fully procedural modeling

Module 3. 3ds Max

- ◆ Master modeling in 3DS Max
- ◆ Learn the compatibility of 3DS Max with Unity for VR
- ◆ Learn the most used modifiers and be able to handle them with ease
- ◆ Use real workflow techniques

03

Course Management

The industry professionals responsible for the development of the program of this Postgraduate Diploma have been selected by TECH Technological University for their experience and advanced knowledge in Virtual Reality technology in the gaming industry. The students will obtain the essential techniques to be able to undertake their own titles in the Video Game sector from the hand of professionals versed in the use of Unity, Blender and 3ds Max.





“

Make the most of the opportunity to be accompanied in this teaching by expert designers of Virtual Reality Video Games”

Management



Mr. Menéndez Menéndez, Antonio Iván

- Senior environment and element artist and 3D consultant at The Glimpse Group VR
- 3D model designer and texture artist at Inmoreality
- Props and environment artist for PS4 games at Rascal Revolt
- Graduated in Fine Arts at the UPV
- Specialist in Graphic Techniques from the University of the Basque Country
- Master's Degree in Sculpture and Digital Modeling by the Voxel School of Madrid
- Master's Degree in Art and Design for Video Games by U-Tad University of Madrid

Professors

Mr. Morro, Pablo

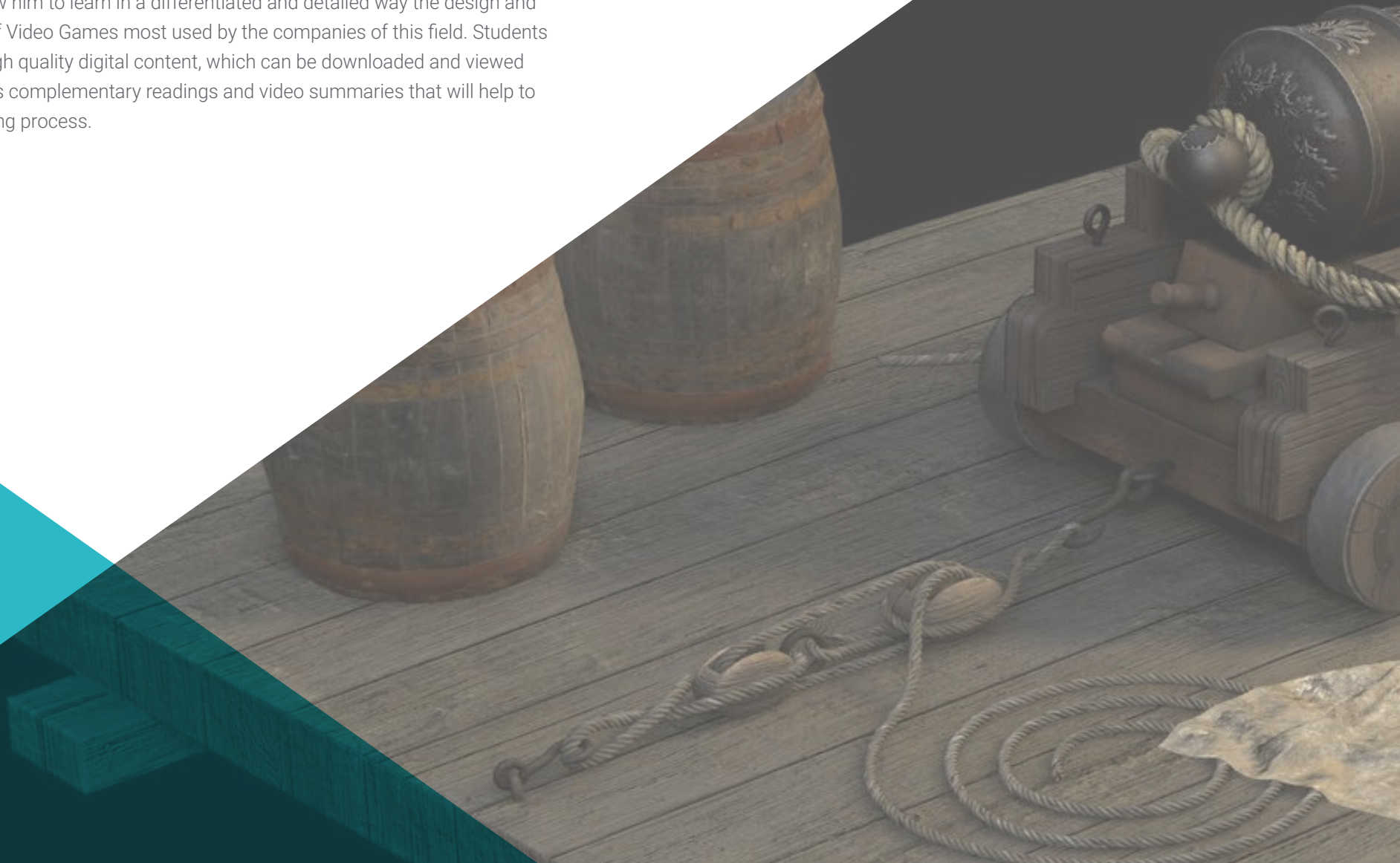
- 3D Artist specialized in modeling, VFX, and textures
- 3D Artist at Mind Trips
- Graduated in Video Game Creation and Design at Jaume I University



04

Structure and Content

The professionals who delve into this Postgraduate Diploma will have access to three modules that will allow him to learn in a differentiated and detailed way the design and modeling programs of Video Games most used by the companies of this field. Students will have access to high quality digital content, which can be downloaded and viewed at any time. It also has complementary readings and video summaries that will help to consolidate the learning process.





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Make the most of all the content provided by professional teachers in the industry to excel in your own Virtual Reality projects in the Gaming field”

Module 1. The Project and the Unity Graphics Engine

- 1.1. The Design
 - 1.1.1 PureRef
 - 1.1.2. Scaling
 - 1.1.3. Differences and Limitations
- 1.2. Project Planning
 - 1.2.1. Modular Planning
 - 1.2.2. Blockout
 - 1.2.3. Assembly
- 1.3. Visualization in Unity
 - 1.3.1. Setting up Unity for Oculus
 - 1.3.2. The Oculus App
 - 1.3.3. Collision and Camera Adjustments
- 1.4. Visualization in Unity: Scene
 - 1.4.1. Setting up Scene for VR
 - 1.4.2. Export of APKs
 - 1.4.3. Installing APKs on Oculus Quest 2
- 1.5. Materials in Unity
 - 1.5.1. Standard
 - 1.5.2. Unlit: Features of This Material and When to Use It
 - 1.5.3. Optimization
- 1.6. Textures in Unity
 - 1.6.1. Importing Textures
 - 1.6.2. Transparency
 - 1.6.3. Sprite
- 1.7. Lighting
 - 1.7.1. VR Lighting
 - 1.7.2. Lighting Menu in Unity
 - 1.7.3. VR Skybox
- 1.8. Lighting: Lightmapping
 - 1.8.1. Lightmapping Settings
 - 1.8.2. Types of Lights
 - 1.8.3. Emissive

- 1.9. Lighting 3: Baking
 - 1.9.1. Baking
 - 1.9.2. Ambient Occlusion
 - 1.9.3. Optimization
- 1.10. Organizing and Exporting
 - 1.10.1. Folders
 - 1.10.2. Prefab
 - 1.10.3. Exporting and Importing Unity Packages

Module: 2. Blender

- 2.1. Interface
 - 2.1.1. Software Blender
 - 2.1.2. Controls and Shortcuts
 - 2.1.3. Scenes and Customization
- 2.2. Modeling
 - 2.2.1. Data Science
 - 2.2.2. Mesh
 - 2.2.3. Curves and Surfaces
- 2.3. Modifiers
 - 2.3.1. Modifiers
 - 2.3.2. How Are They Used?
 - 2.3.3. Types of Modifiers
- 2.4. Hard Surface Modeling
 - 2.4.1. Prop Modeling
 - 2.4.2. Prop Modeling's Evolution
 - 2.4.3. Prop Modeling's Final Assessment
- 2.5. Materials
 - 2.5.1. Assignment and Components
 - 2.5.2. Creating Materials
 - 2.5.3. Creating Procedural Materials
- 2.6. Animation and Rigging
 - 2.6.1. Keyframes:
 - 2.6.2. Armatures
 - 2.6.3. Constraints

- 2.7. Simulation
 - 2.7.1. Fluids
 - 2.7.2. Hair and Particles
 - 2.7.3. Clothing
- 2.8. Rendering
 - 2.8.1. Cycles and Eevee
 - 2.8.2. Light
 - 2.8.3. Cameras
- 2.9. Grease Pencil
 - 2.9.1. Structure and Primitives
 - 2.9.2. Properties and Modifiers
 - 2.9.3. Examples:
- 2.10. Geometry Nodes
 - 2.10.1. Attributes
 - 2.10.2. Types of Nodes
 - 2.10.3. Practical Example

Module 3. 3ds Max

- 3.1. Interface Set-up
 - 3.1.1. Project Start
 - 3.1.2. Automatic and Incremental Saving
 - 3.1.3. Measuring Units
- 3.2. The Create Menu
 - 3.2.1. Objects
 - 3.2.2. Light
 - 3.2.3. Cylindrical and Spherical Objects
- 3.3. The Modify Menu
 - 3.3.1. The Menu
 - 3.3.2. Button Configuration
 - 3.3.3. Uses
- 3.4. Edit Poly: Polygons
 - 3.4.1. Edit Poly Mode
 - 3.4.2. Edit Polygons
 - 3.4.3. Edit Geometry
- 3.5. Edit Poly: Selection
 - 3.5.1. Selection
 - 3.5.2. Soft Selection
 - 3.5.3. IDs and Smoothing Groups
- 3.6. The Hierarchy Menu
 - 3.6.1. Pivot Conditions
 - 3.6.2. Reset XForm and Freeze Transform
 - 3.6.3. Adjusting the Pivot Menu
- 3.7. Material Editor
 - 3.7.1. Compact Material Editor
 - 3.7.2. Slate Material Editor
 - 3.7.3. Multi/Sub-Object
- 3.8. Modifier List
 - 3.8.1. Modeling Modifiers
 - 3.8.2. Modeling Modifier Evolution
 - 3.8.3. Modeling Modifier Final Assessment
- 3.9. XView and Non-Quads
 - 3.9.1. XView
 - 3.9.2. Checking for Errors in Geometry
 - 3.9.3. Non-Quads
- 3.10. Exporting to Unity
 - 3.10.1. Triangulating the Asset
 - 3.10.2. DirectX or OpenGL for normal maps
 - 3.10.3. Conclusions

05

Methodology

This academic program offers students 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"

Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

“

At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



The student will learn to solve complex situations in real business environments through collaborative activities and real cases.

A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“ *Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method has been the most widely used learning system among the world's leading business schools for as long as they have existed. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Over the course of 4 years, you will be presented with multiple practical case studies. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



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.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



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



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.

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.



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.



Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



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.





Case Studies

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



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 educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



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 their goals.



06 Certificate

The Postgraduate Diploma in Art for Virtual Reality with Unity, Blender, and 3ds MAX guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Technological University.



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

This **Postgraduate Diploma in Art for Virtual Reality with Unity, Blender, and 3ds MAX** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Art for Virtual Reality with Unity, Blender, and 3ds MAX**

Official N° of Hours: **450 h.**



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

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

tech technological
university

personalized service innovation

knowledge present

online training

development language

virtual classroom

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