

Navigating The Maze of The Ever-Changing World of XR For Efficient Implementation in an Educational Setting: The Case of VR

The Case of the CUTing Edge Innovation center (Makerspace)

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VR at CUTing Edge Innovation center (Makerspace)

Organisers:



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1. What is the CUTing Edge (An American Space)

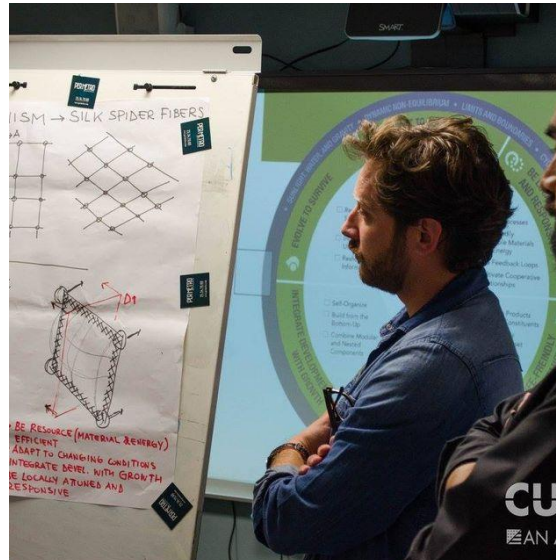
- The CUTing Edge is a kind of Makerspace.
- It opened its doors in 2014.
- It is a collaboration between the Cyprus University of Technology and the U.S. Embassy in Cyprus.
- It is run by students

CUTingedge
AN AMERICAN SPACE



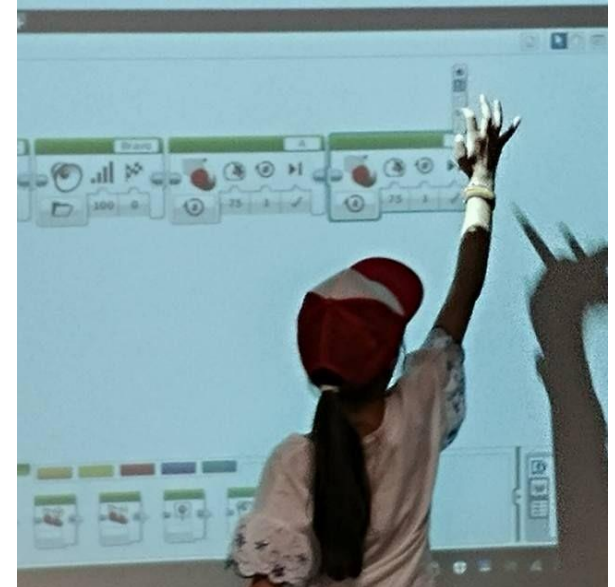
What do we do and what do we offer at the CUTing Edge?

- We expose and allow visitors to explore various emerging technologies such as
- 3D printing.
- Virtual Reality
- Robotics
- Drone photography
- Photography and Videography training
- Entrepreneurship and 21st century soft skills
- Multimedia coverage for CUT



The student experience

We offer students the opportunity to gain valuable work experience.



Navigating the maze of VR

Finding a new e-tool for education and language learning

- 2014 was the year that I was introduced to a VR project.
- It was the Oculus Rift DK2.
- It ignited my interest in this technology even though it wasn't a pleasant one.



Our first VR

Smartphone supported VR

Google Cardboard (2015)

Samsung Gear VR (2016)

Samsung Gear was exciting, but I was trying to see how to embed it in my language courses and into the CUTing Edge.





2017 SONY VR

An introduction to the world of VR gaming



Choosing the first tethered fully immersive 6 DOF VR

Oculus Rift

In 2018, the CUTing Edge purchased its first tethered fully immersive VR.

- Why Oculus Rift?
- Price
- Availability
- Applications that could be used for Language learning and other subjects
- Background knowledge regarding the company.

HTC and HoloLense were expensive and difficult to find and buy.



Examples

COTS APPS

Google earth

Titans of Space

The Body VR

Dreams of Dali

Mona Lisa Beyond the Glass

VR Rome

Ocean Rift



COTS

How was it used?



STUDENTS IMMERSED THEMSELVES IN THE
WORLD OF VR AND LEARNED HOW TO INTERACT
WITH THE VIRTUAL WORLD.



CUT LANGUAGE INSTRUCTORS WERE
INTRODUCED TO THE WORLD OF VR AND HOW
THIS TOOL COULD ENHANCE THEIR CLASSROOM

Difficulties we encountered

- More space than I anticipated was needed to set up the VR system.
- Difficult to move it to another location and set the VR system up.
- Internet issues in other locations where we set up the VR system.
- Too many components . (external sensors etc.)
- Students and educators struggled to interact with the digital world and with the technical knowledge required for an effective experience.

Becoming more sophisticated

- **HTC VIVE COSMOS (2019)**

The requirements for the new VR system were:

- Better resolution
- Better refreshment rate
- Less equipment.



Stand- alone VR headset (Something simple)

Oculus Go (2019)

- Building high powered computers became expensive.
- Lack of mobility due to the various VR parts and computer requirement.
- A system that required less training and technical knowledge so that we could effectively embed into our classrooms.





Hello Quest 2

- The device that permeated into our mainstream classroom and into our Makerspace programs

Why Quest 2?

- It was affordable. (I was able to buy more than 1)
- It was accessible. (Easy to order and buy in Cyprus)
- It had a good COTS library.
- It could link to PC Oculus Rift library.
- Better specs than Pico.
- 6 DOF
- Familiar with the Oculus (META) devices.



COVID and Virtual Exchange

Spreading the word



It allowed us to conduct Virtual Exchanges with universities. (i.E Utrecht)



It was easier to develop a training program for educators.



It was easier to teach students how to navigate the virtual world.



VR applications from Oculus Rift could be used.



It was embedded in three courses. English for Fine Arts, (Maria Christoforou), English for Electrical Engineering and Information Technology.



We were able to follow, record and analyze VR interactions. (Very frustrating in the beginning)

Engaging international students through VR gaming experience

Sony PlayStation 5 VR



What about the future?



- New devices entering the market.
- Which one will prevail?
- Are the results or the effectiveness of new devices justify the device's price tag?
- Should I wait?
- Which VR system should I buy?
- Which XR technology will be relevant?



Thank you for your attention

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