θ THETA

Transformative Hospitality Education through Tech Abilities:

A blueprint for creating immersive (learning) experiences using VR/AR

Erasmus+   TU DUBLIN OLLSCOIL TEICNEOLAÍOCHTA BHAILE ÁTHA CLIATH TECHNOLOGICAL UNIVERSITY DUBLIN   Haaga-Helia   HOTELSCHOOL THE HAGUE Hospitality Business School   UIB Universitat de les Illes Balears

Using low technology Augmented Reality (AR) and Virtual Reality (VR) to enhance hospitality education

https://theta-project.eu
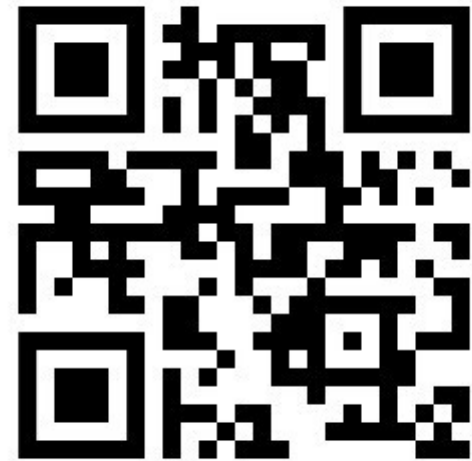
Project Summary

- Development of five prototypes
- Design-based research and co-creation
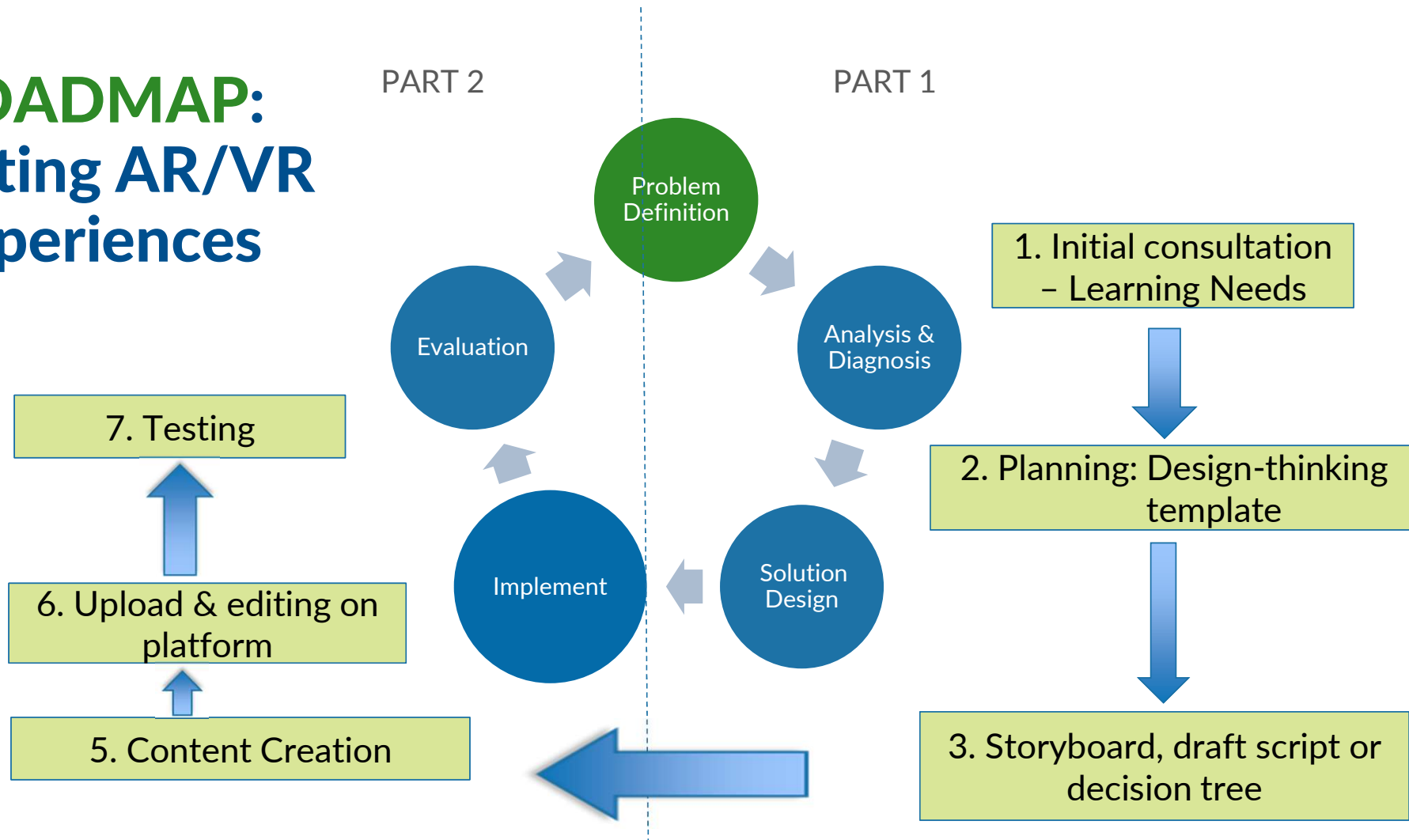- Student centric approach
- Embedding in education

21/02/22 ——————————————→ 20/02/24

| IO1 AR/VR enhanced Learning Spaces | IO2 The development of educational courses using digital spaces | IO3 Iterative Research | IO4 Preparing instruction manual and virtual training for faculty |

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Haaga-Helia University of Applied Sciences Ltd.

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Four Intellectual Outputs - IOs

ROADMAP: creating AR/VR experiences

PART 2   PART 1

Problem Definition

Evaluation

Analysis & Diagnosis

Implement

Solution Design

1. Initial consultation – Learning Needs

2. Planning: Design-thinking template

3. Storyboard, draft script or decision tree

7. Testing
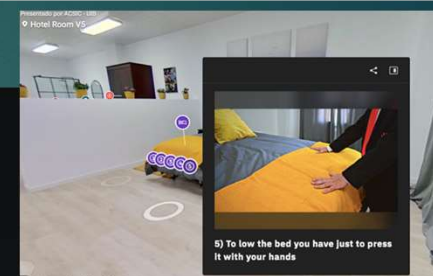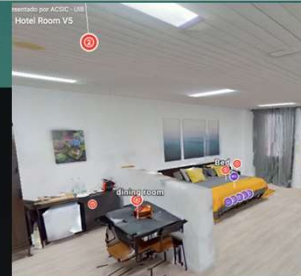
6. Upload & editing on platform

5. Content Creation

6

Prototype: Holographic Chef

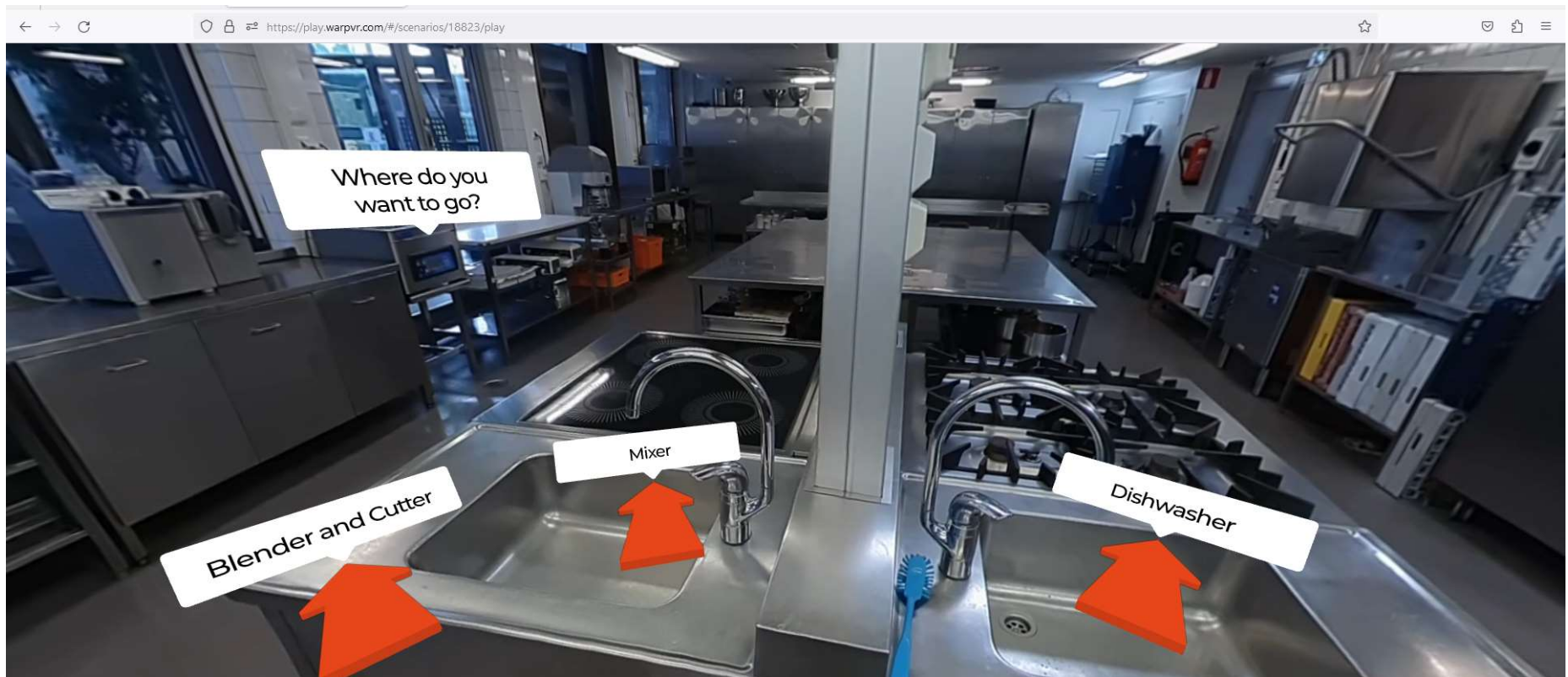▶ Holographic character that provides step by step instructions that can be projected into an educational space
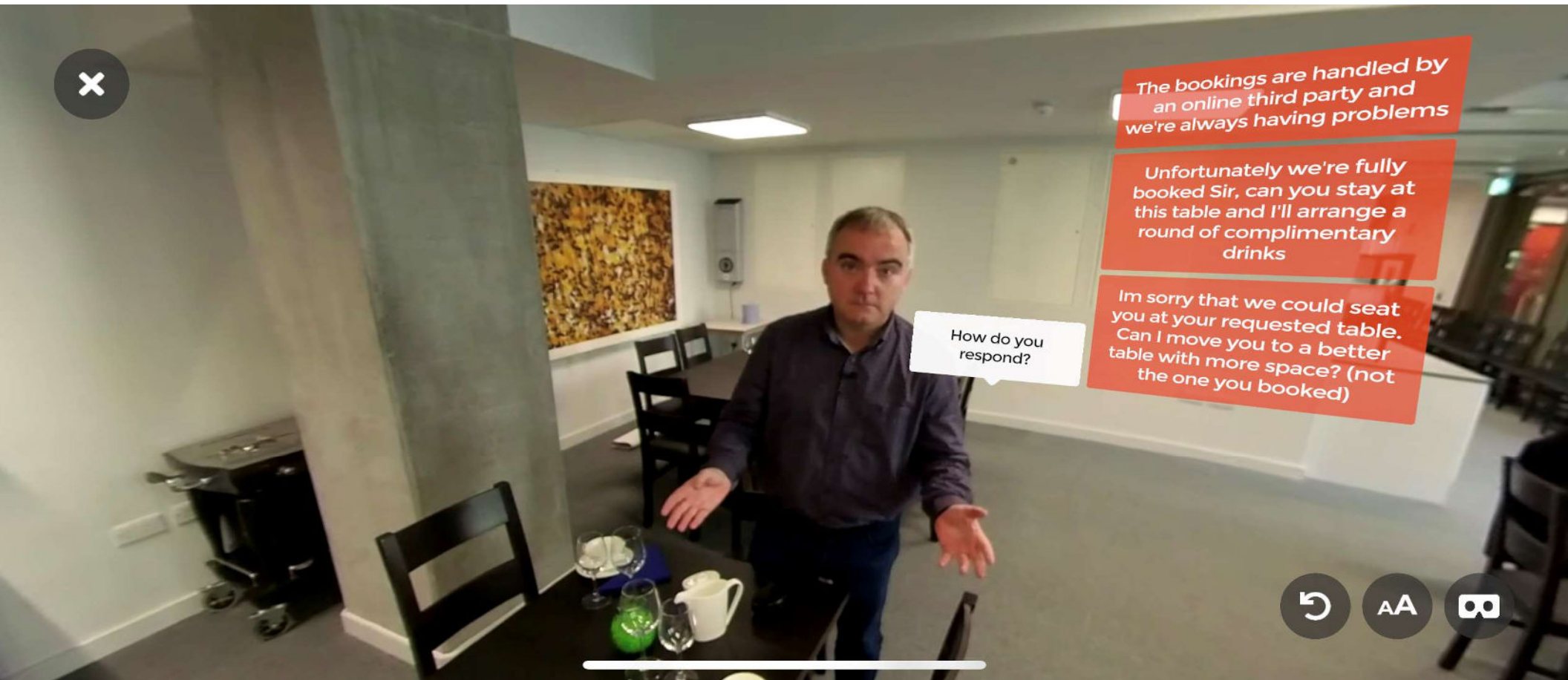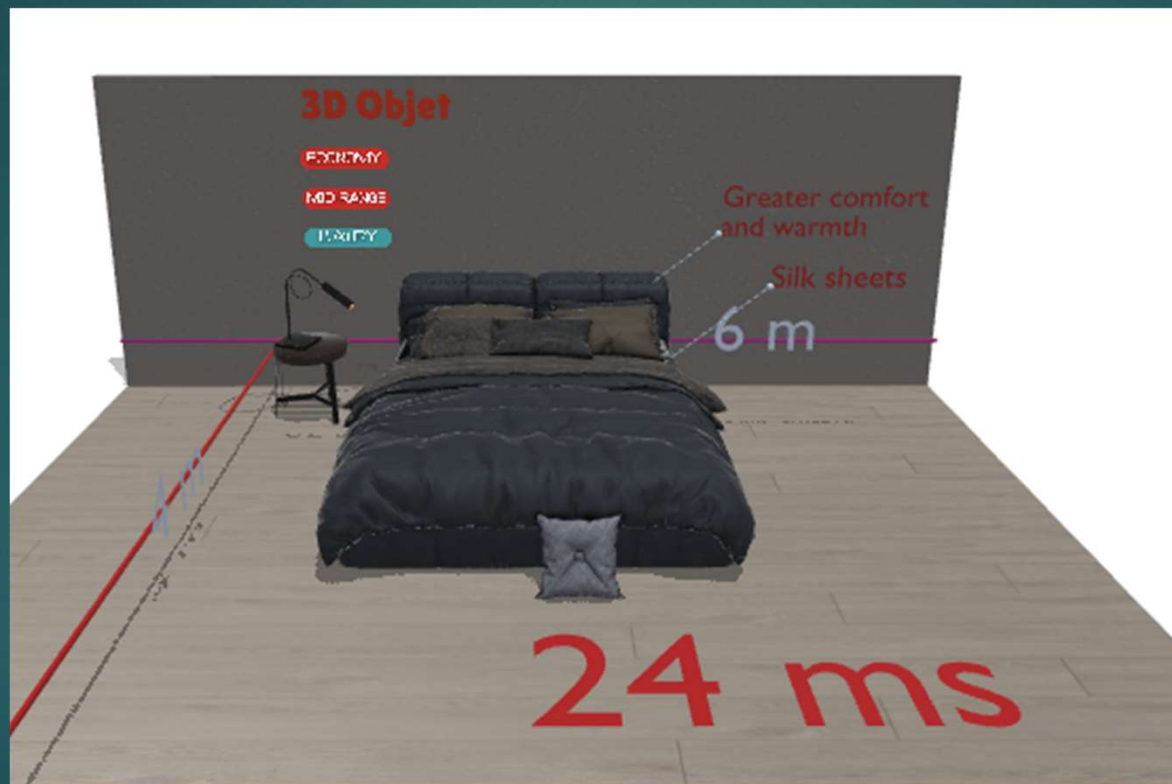
Matterport Virtual tour

Prototype: Introduction to Kitchen Outlet using WarpVR

Prototype: Difficult Customer using WarpVR

Prototype: AR Hotel Room

Illustrate the difference between room categories using Fectar

Prototype Manuals aka Cookbooks

- We created a cookbook type manual for each of the prototypes
- The cookbooks contain:
  - Overview
  - Preparation time
  - Ingredients
  - Needed equipment
  - Instructions
  - Links

- https://theta-project.eu/manuals/

3D SPACE CAPTURE (*DIGITAL TWIN REAL ENVIRONMENT SCAN*) - HOTEL ROOM

3D space capture software can transform real-life spaces into immersive digital 3D models and is effective for visualizing environments and creating virtual tours for Hospitality Education.

This software can help guests visualize their stay in a hotel or showcase the wonders of a destination.

Matterport is one of the leading 3D space capture software companies focused on digitizing and indexing the built world. The Matterport Capture app (which you can download from the App Store or Google Play) will allow you to scan any space as illustrated in the diagram below.
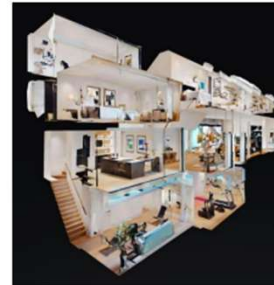
- Allows a safe space to practice conducting a room assessment before doing it in real-life.

Preparation Time:

Brainstorming: 3 ~ 4 hours

Decision Tree/Flowcharts: 1 hour

Filming and Editing: 4 ~ 5 hours

Total time: 7 ~ 9 hours (a full day)

Level of Complexity: 3

Service Scenario: 3D Space Capture (Digital Twin Real Environment Scan)

INGREDIENTS:

- Equipment required includes a 360-camera compatible with Matterport, a cell phone or a mid-range tablet
- A starter pack for creating a 360-degree educational environment costs around €450 (excluding a phone or tablet).
- Click on this link to see a suggested list with prices: 360 Camera Prices
- Software (*list of software and suppliers and link to website*)
- You will need a Matterport Starter licence (free for one space only).

Train the Trainer Lecturer Workshops

- Aim for Participants:
  - Be able to plan and create a prototype (within WarpVR, Fectar & Matterport) as a team using the design-thinking template and necessary equipment (hardware and software)
  - Understand the benefits and drawbacks of each medium understand how to think through the design of an immersive learning experience
  - Learn how to develop rapid AR/VR prototypes for hospitality education (?) in a quick and dirty way
  - Gain an overview of how to go about integrating AR/VR prototypes in their courses
  - Create prototypes for teaching

Train the Trainer Helsinki

Barriers

- Tech know how – skills
- Content creation
- Software / hardware availability – budget
- Resistance to change
- Fear of the unknown
- Usability, perceived usefulness – user acceptance
- Time

Benefits in the Classroom

▶ Student engagement

▶ Using mobile tech that they are familiar with

▶ Presence – real life experience

▶ Ability to have experiences that are otherwise not possible

▶ Visualisation of theory, experience, knowledge, concepts from the curriculum

▶ Discussion opener

How to Embed into Education

- Train the trainer
- Choose an area or topic and continuously experiment
- Get students to do it
- Don't reach for the star- KISS
- Short term wins
- Engaging lecturers – finding innovators – focus on core unit of staff who are interested
- Host awareness events – showcases
- Student evaluations
- Develop your own XR content (prototype)
- Design thinking

Main Findings From the Case Study

- Students want
  - Interaction
  - Gamification
  - 3D NOT 2D
- Difficult Customer & AR Hotelroom received highest engagement scores
- High Quality of equipment and production – limitation!
- Health concerns (discomfort, motion sickness)
- Accessibility of technology
- Prerequisite knowledge
- Opportunity vs opportunity cost!
- Students take responsibility for own learning
- Ability to practice repeatedly / without consequence / safe environment
- AR/VR as a complementary tool