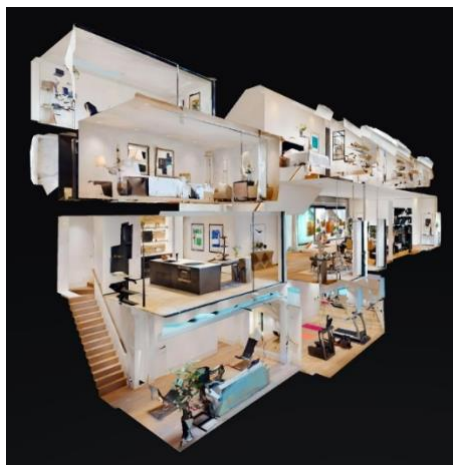


3D SPACE CAPTURE (VISUAL DIGITAL TWIN REAL ENVIRONMENT SCAN) - HOTEL ROOM VR

With this manual you will learn easily and without having programming knowledge to generate a 3D digital twin, this is an exact virtual representation of a real-life place that we will use to incorporate information for a class.

Digital twins are effective for visualizing environments and creating virtual tours for Hospitality Education.

In this manual we will use a hotel room as an example. But you can follow these steps to create the digital twin of whatever you want and use it for teaching.



Intended outcomes/aims:

- Create a visual digital twin.
- Use highlights to display educational material.
- Allows a safe space to practice

Preparation time:



Brainstorming/Planning: 3 ~ 4 hours

Decision Tree/Step Plan: 1 hour

Filming and editing: 4 ~ 5 hours

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

Level of Complexity: 2

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

Ingredients:

- Equipment required includes a 360-camera compatible with Matterport (See Annex, Camera List, [Here](#)), a cell phone or a mid-range tablet.
- A tripod is essential to get good quality 3D scans.
- A starter pack for creating a 360-degree educational environment costs around €450 (excluding a phone or tablet).
- Software: Matterport Starter licence (free for one space only).



Other Equipment You Might
Need:

- Whiteboards/Flipcharts/Sheets
- Pens and markers
- Sticky notes (different colours)

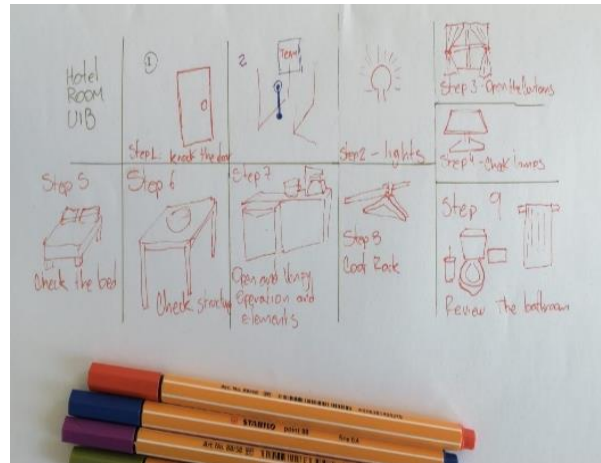
- Develop a plan of sequence of steps, where you will show content and what the student will follow. As shown in the picture.

Instructions:

Step 1: Planning

The lecturer defines the learning gaps that need to be addressed, as well as the learning outcomes. For information on [Design Based Learning click here](#). Also, the context or environment for the experience needs to be set. In this planning and as a particularity of digital twins, a place or space must be chosen to which you can have access and have time to digitize it.

In our example, a hotel room that functions as a classroom at the University of the Balearic Islands was used.



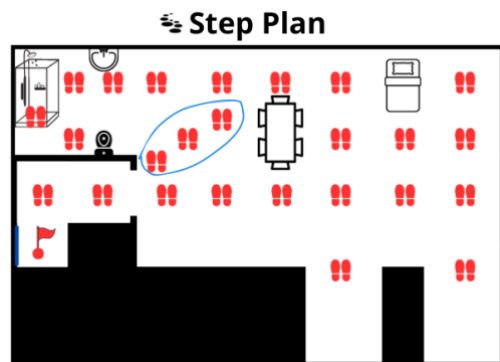
Step 2: Develop Storyboard and Step plan

Generate ideas (**Brainstorming sessions**) about of your scenario you wish to use and the programme / modules

Remember that it is a twin of an existing place, your stage will be the existing place, it can be a classroom, a restaurant, an industrial area.

For our hotel room example, we used the cleaning review steps.

We created a storyboard with the places where a step or an explanation was carried out, here you must think about the study material. If you have video, images or PDFs Where in your scenario would you put them?



- The Storyboard and Step Plan will be the guide as we begin creating the digital twin in Matterport.

Step 3: Creating the Digital Twin.

We will use the Matterport platform to create our twin. This twin will be hosted on Matterport servers and we can share it with a simple link.

- See "How-To" video an easy guide to capturing spaces [Here](#)
- You need to create an account on Matterport.



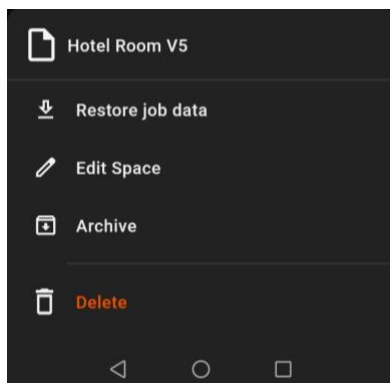
The Matterport App
Getting Started With the App
Here

Section A: Visual Digital Twin

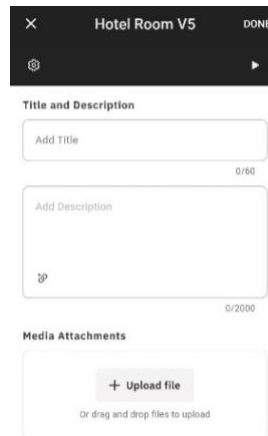
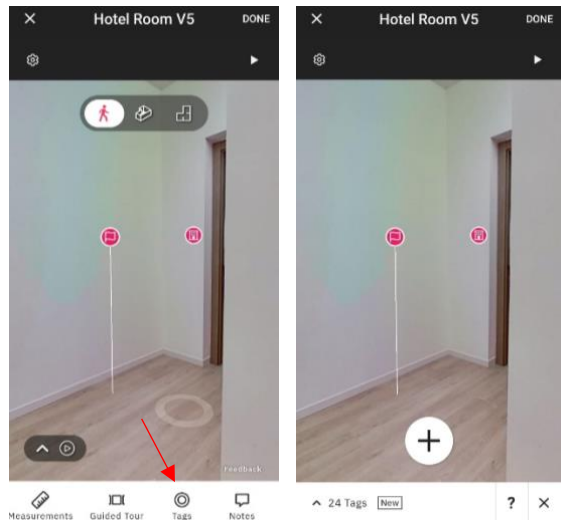
1. Download the Matterport app and the Insta 360 app on the same phone
2. Click on the “+” Button and then click “New Scan” then Scan options: 3D Scan, Simple Scan
3. On the Matterport app: Connect to camera and start shooting 360 images 1.5 – 2 metres away from the previous shot to create a walk-through. Siga el Step Plan
4. Check that all dark spots in the 3D model are filled up with light, by taking a 360 image in that area of the room so enough data is provided to create the 3D model
5. Click “Upload” and wait for 3D model to generate (will receive an email)

Section B: Feeding your visual digital twin

1. With your Matterport account, you can open this last space on both your computer and phone and edit it.



2. Edit the model by Adding Tags to objects to provide information. (See guide [Here](#))

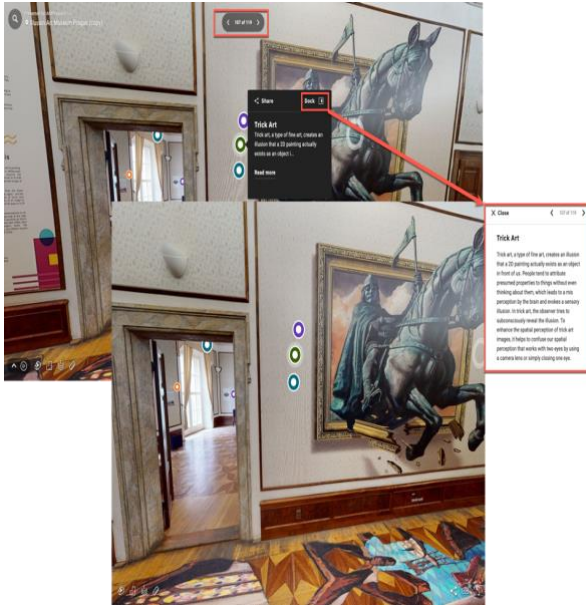


3. You can upload information in the Tags (Video, Images, Links, Audios, PDFs) add titles and a description.

4. With the Tags you will load the information you need, following your Historyboard.

Section C: Additional Material

1. Useful Guidelines/blogs and links for creating VR content for educational purposes
2. **[VR in Education \(structural-learning.com\)](http://VRinEducation.com)**
 (see picture on next page).



(an example of some outputs from Matterport).

TIPS FOR EXCELLENT RESULTS

- Put all the lights on for good lighting
- Open curtains for natural lighting (best)
- Make sure to hide so no one shows up in the shot
- Keep camera 0.5 metre away from any walls or objects to avoid distortion
- Try to keep scans in line with each other – this will influence the flow of your Matterport tour
- Requires good lighting
- No need for a "word-for-word" script: the text that is to be shown will be useful when taking the shot.
- Remember, the camera is the student, and elements should be at an appropriate height for viewing.
- Preferably, the camera should be at the height of an average person. It may be slightly higher or lower, but keep in mind that this influences the viewing angle.
- Remember that the 360-degree camera captures everything in the room (everyone who is not an actor or an element you want to show

should leave before recording or be removed).

- Capture each shot as if you were moving in a straight line. Think about how you would move through a room or environment to plan this, considering the storyboard and content plan.

FAQS

- Q: Do you have to create a 360 twin every semester?
- A: No, you can adapt the content of the digital twin, embedding new videos or presentations without having to capture the digital environment again.
- Q: Do you need any special training to use a 360-video camera?

A: No. **To view a step-by-step video guide on how to set up the Insta 360 One R click [here](#).**



An image of the Insta 360 One R camera.

This camera is very similar to a GoPro/action camera, but with two lenses (one on each side).

Excellent link: ([3D for Travel & Hospitality](#))