

**I M M E R S I V E
L E A R N I N G
S O L U T I O N S**

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VR
AR
MR/XR

Gartner Hype Cycle for Emerging Technologies, 2019

It deals with surveys and opinion polls



Immersive work- and learning spaces

Immersive learning:

- being immersed into a virtual world
- exploring the virtual world
=> learning
- Feeling of physical presence



Strategies for Implementation of EduTech (AR/VR/XR) Solutions:

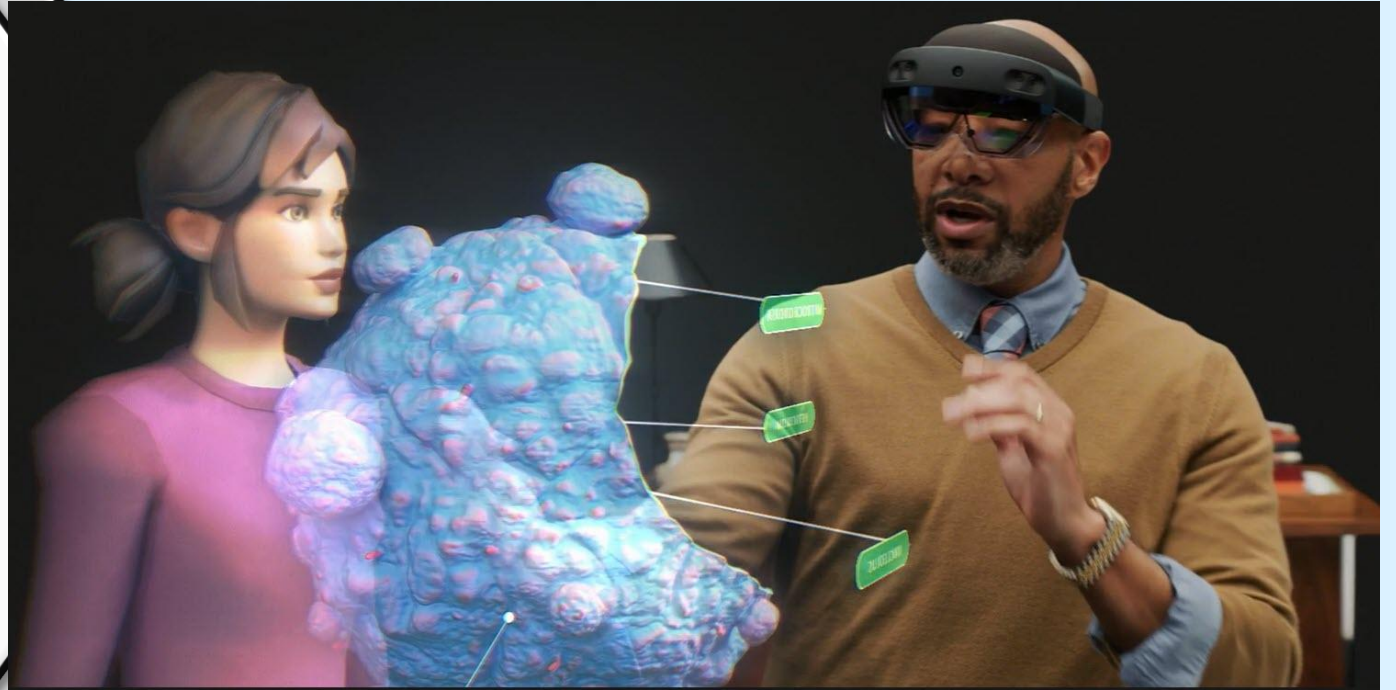
Factors:

- Digital competence of students
- Digital competence of the teachers
- Educational goals, methods
- **Financial background, budget**
 - High-budget solutions
 - Mid-budget solutions
 - Low-budget solutions



High-budget solutions

- Microsoft Hololens
- Magic Leap
- Interactive walls and tables



Mixed Reality vs. AR vs. VR

VR: parallel universe, a brand new world, which hides the actual reality

AR: expands the actual reality with projections

MR/XR: AR, which interacts with the actual reality + create a new one



Mixed Reality

- Combination of the real and the virtual spaces
- Not only immerse but interact
- Human body as the part of the technological experience (Human-Computer Interaction - HCI)

HCI controls:

- **Eye**-tracking and **head** movement detection
- **Hand** movement and gestures (HTC Vive controller, detects the finger movements)
- **Voice**-based commands

<https://www.spatial.io>



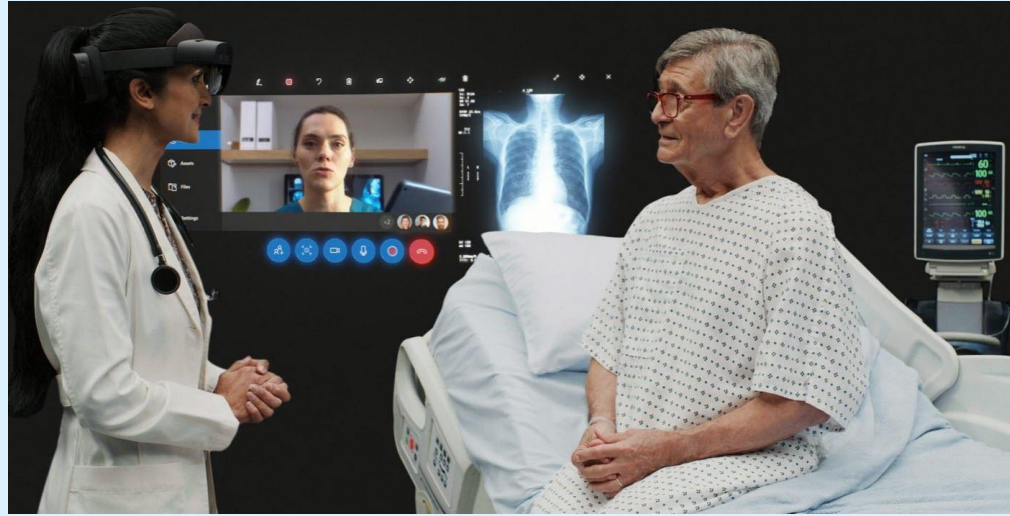
Mixed Reality (MR/XR)

- Magic Leap



Mixed Reality (MR/XR)

- Microsoft HoloLens



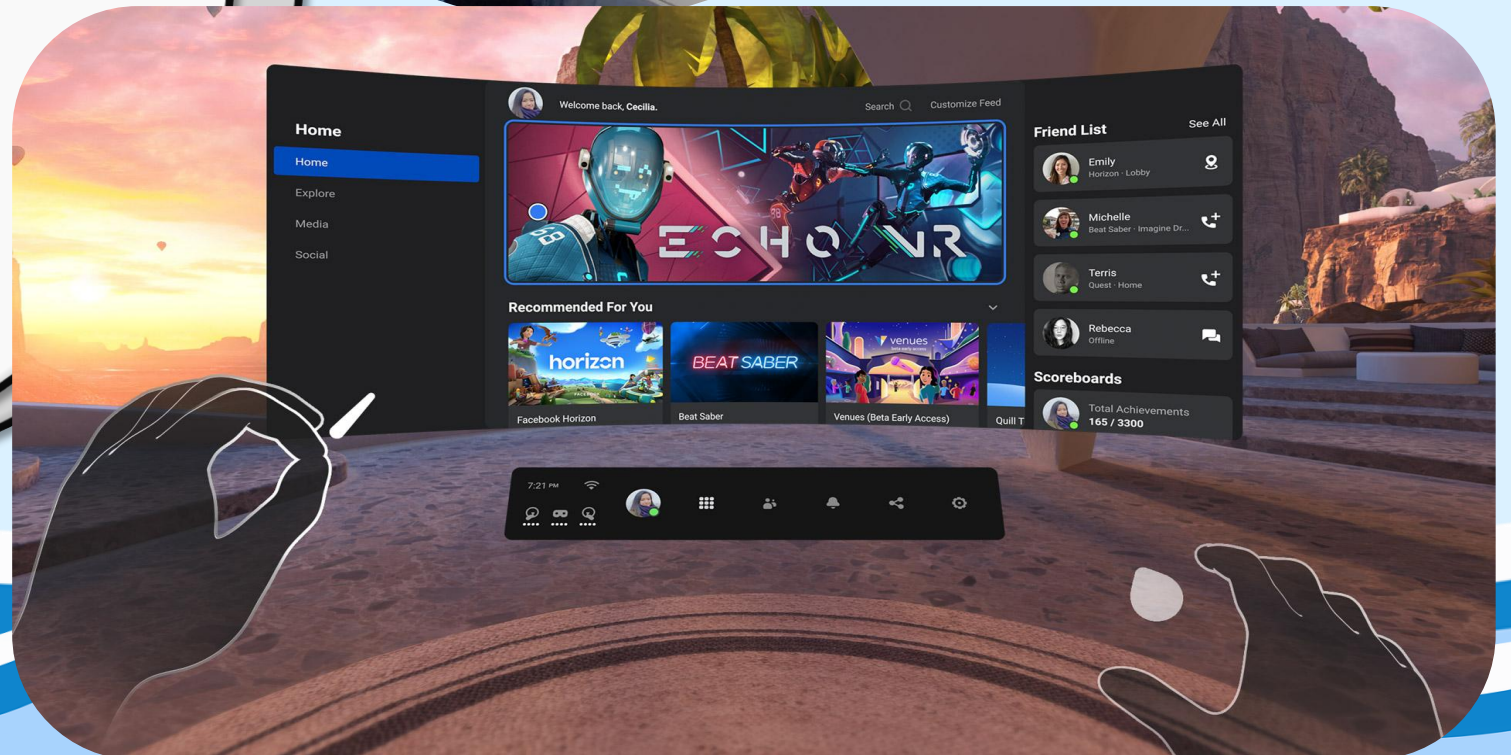
Interactive walls and tables

Virtual Dissection Table
(Western University
of Health Sciences)



Mid-budget solutions:

- Oculus Rift (with cable, since 2014)
- Oculus Go (not supported)
- Oculus Quest (wireless)
- HTC Vive



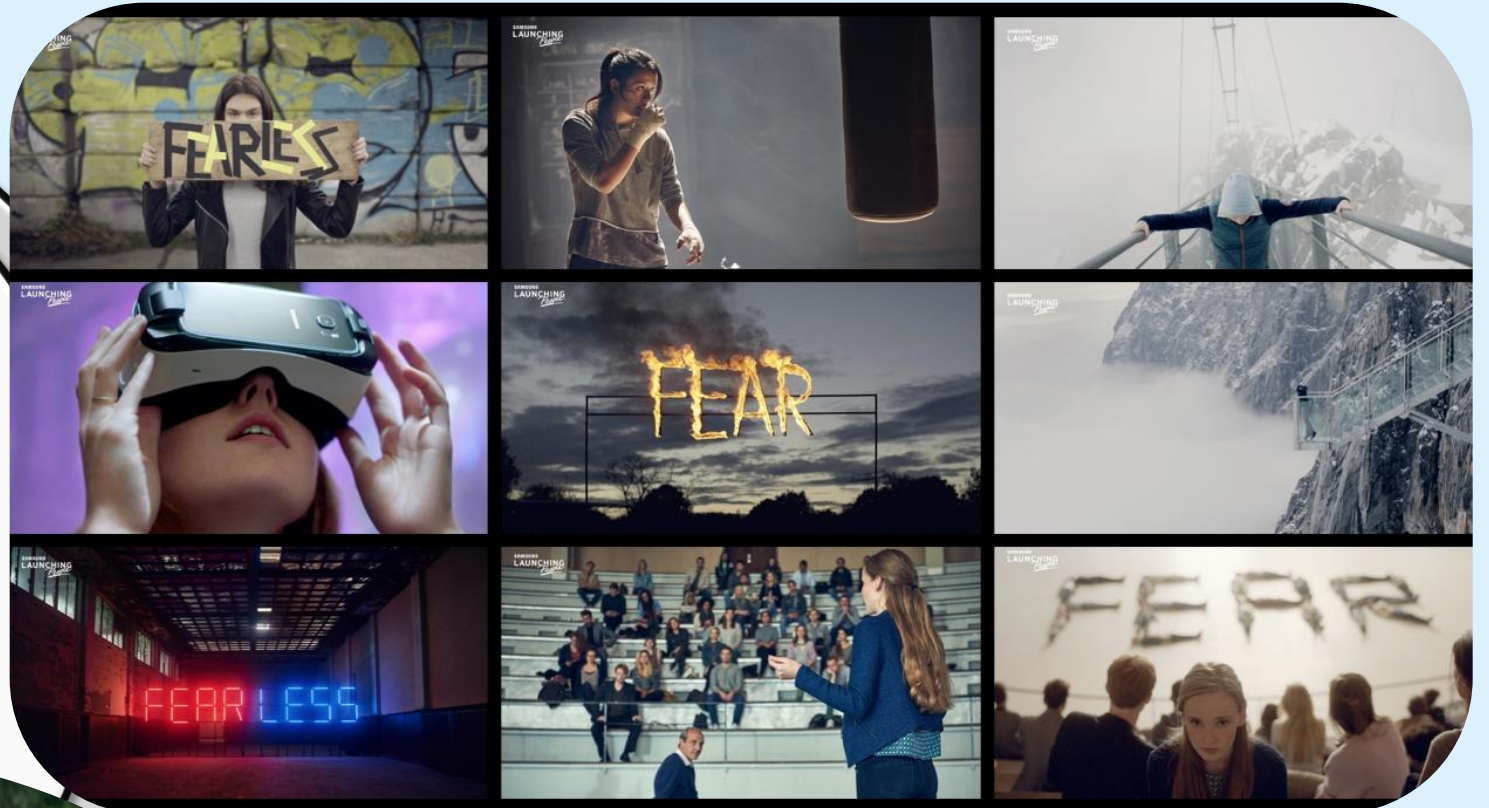
VR Accessories

- Manual consol (Oculus Quest)
- Gloves – OptiTrack Manus VR
- Cyber shoes



Samsung Be FearlessS

- Simulation of fearful situationspl, e.g. public speech, high places, job interview ;-)
- Oculus Quest



Low-budget solutions

- Google Cardboard
- VR glasses for mobile phones
- iPad



Apps

- Google Maps /Lens
- AR Anatomy
- Mozaik
- Metaverse Studio



Google Lens

- OCR and text scan
- Automatical language recognition (translation as AR experience)
- Recognition of unknown objects, places

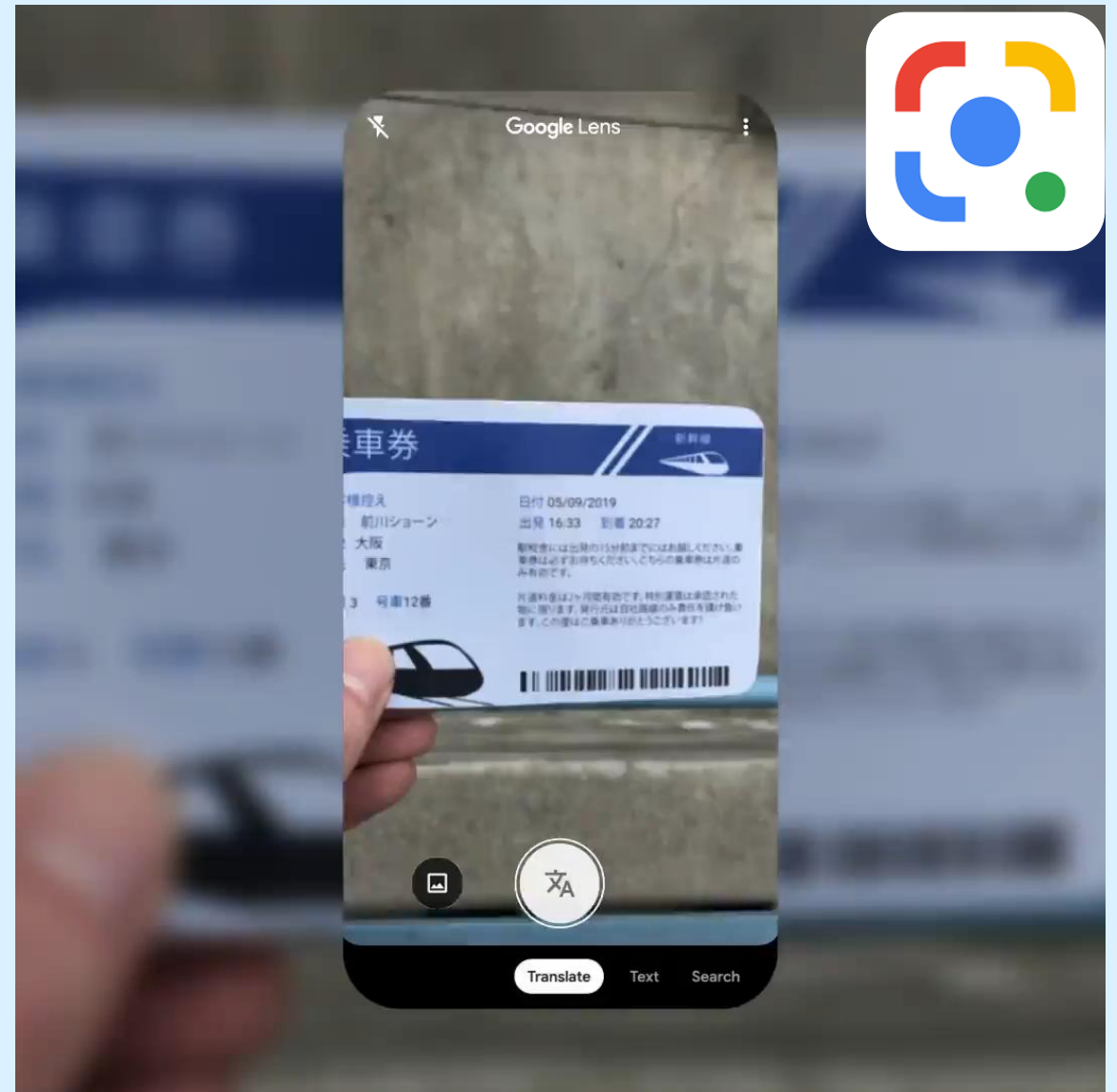
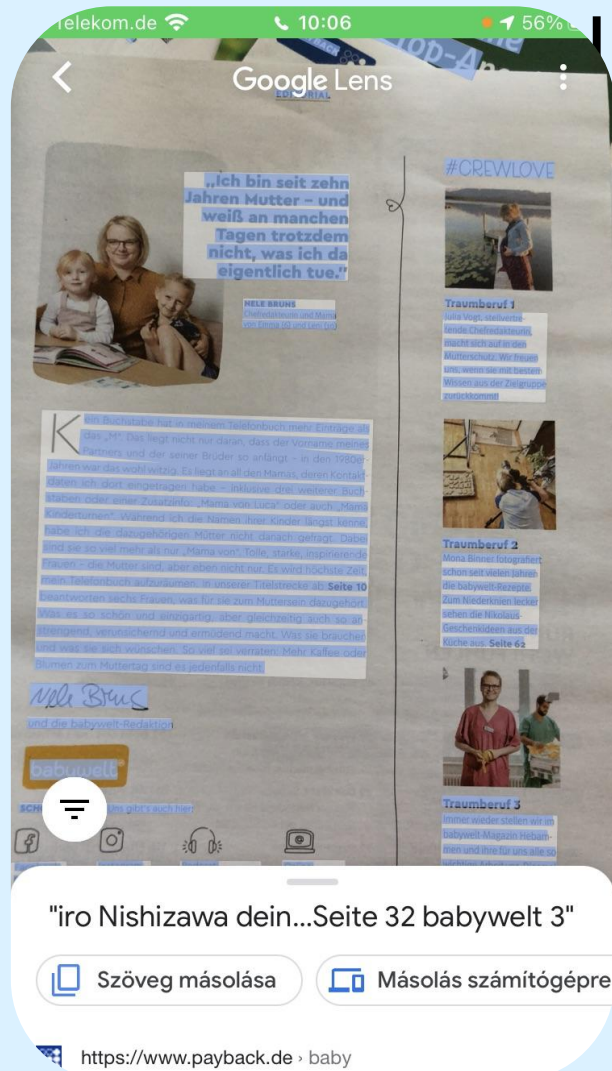


Functions

- **Translation**
- **Copy (text)**
- **Search**
- **Recognizing places**



iOS, Android



AR Anatomy

- for Ipads, Mobile phones

<https://www.visiblebody.com/artrial>





**MOZAIK**

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Innovative digital education solutions

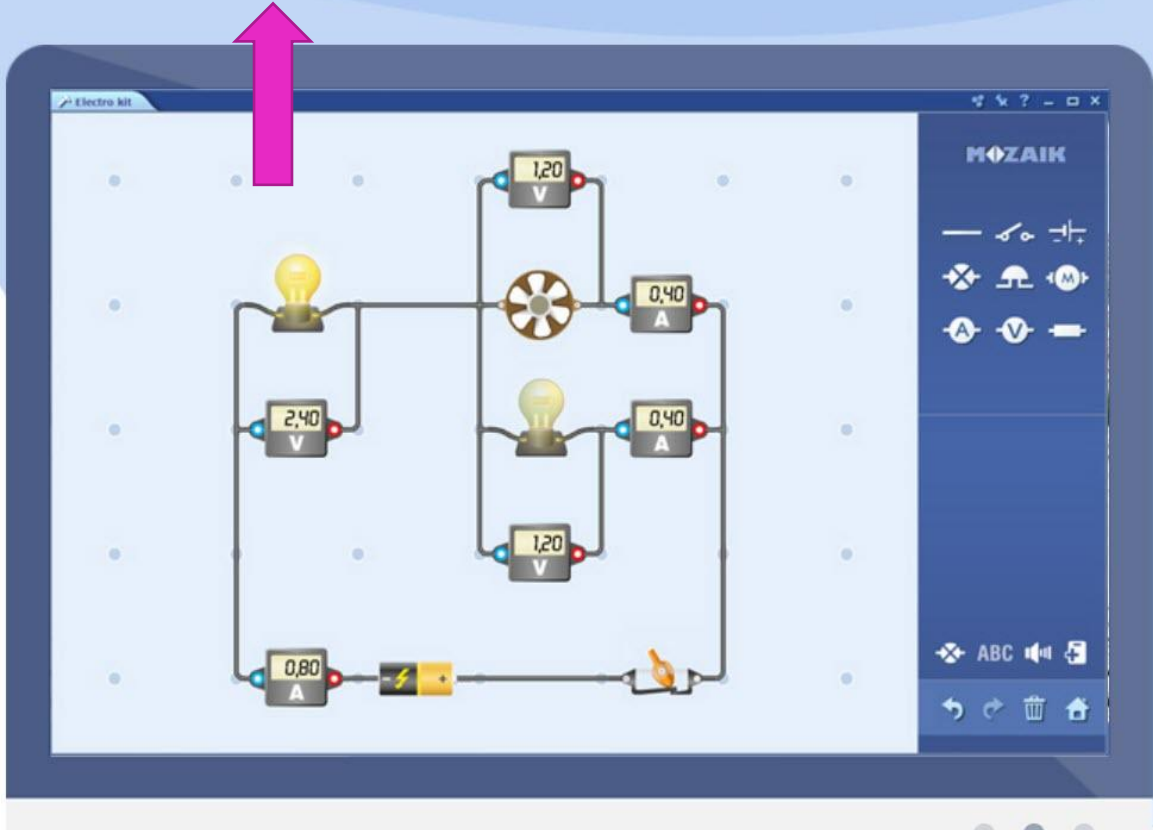
- ✓ For teachers, for the classroom
- ✓ For students, for learning at home
- ✓ For schools, for digital education

Educational software

Interactive content

Pricing

Further functions



<https://www.mozaweb.com/>

Mozaik3D App

- Collection of VR experiences in every subjects (appr.1200) for mobile phones and tablets



3D-view button

Merge cube

- The cube works as a marker
- Merge Explorer app
- 3D tactile learning



www.mergeedu.com



Metaverse Studio

<https://studio.gometa.io/>

The image shows a screenshot of the Metaverse Studio website. The background is a vibrant pink and red gradient. At the top left is the 'metaverse' logo, consisting of three white slanted bars. To the right of the logo are navigation links: 'BLOG', 'TUTORIALS', 'LEARN', and 'LOGIN'. A green arrow points upwards towards the 'LOGIN' link. In the center, the text 'Create Amazing Things' is written in a large, white, sans-serif font. Below it, 'The #1 Augmented Reality Platform' is written in a smaller, white, sans-serif font. A blue button with the text 'Get Started' and 'It's Free!' below it is centered. At the bottom, there is a preview of the Metaverse Studio interface, showing a mobile device screen with a LEGO Magic Brick AR experience. The interface includes a 'Tap to replay audio' button, an 'AR' icon, and a 'Background style' selector with options for 'AR' and 'Background'. A 'SORRY' message is visible in the interface.

metaverse

BLOG TUTORIALS LEARN LOGIN

Create Amazing Things

The #1 Augmented Reality Platform

Get Started

It's Free!

Tap to replay audio AR

LEGO Magic Brick Adver

Watch the video and answer a question to see this Magic Brick!

Quick question: What did these kids do to the present to find out if they were Legos?

You got it! Take this Magic Brick as a reward!

+ Add new

Background style

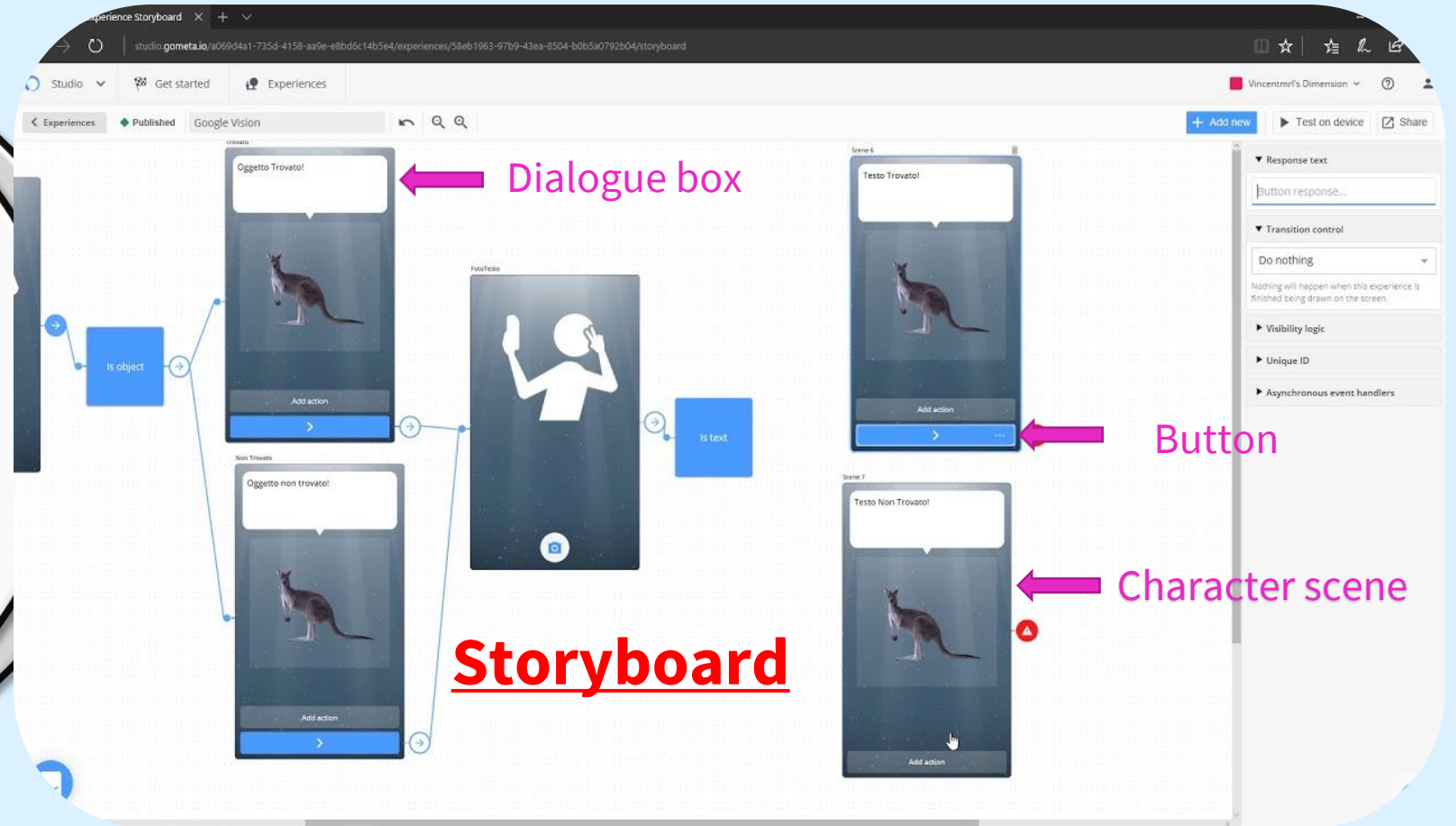
AR Background

SORRY

Metaverse Studio

Interaktive AR-experience:

- quiz
- voting



<https://studio.gometa.io/>



Summary HW

- High-budget solutions (HB)
 - Magic Leap
 - Microsoft Hololens
 - Interactive walls, tables
- Mid-budget solutions (MB)
 - Oculus Rift/Quest
 - HTC Vive
- Low-budget solutions (LB)
 - Mobile phone
 - Tablets

Summary SW

- HB-MB: software included
- LB: optional (e.g. AR Anatomy, Metaverse Studio, Google Lens, Mozaik)