



IMMERSIVE LEARNING SOLUTIONS

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VR
AR
MR/
XR

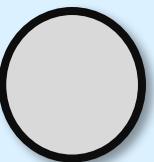
Gartner Hype Cycle for Emerging Technologies, 2019



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:

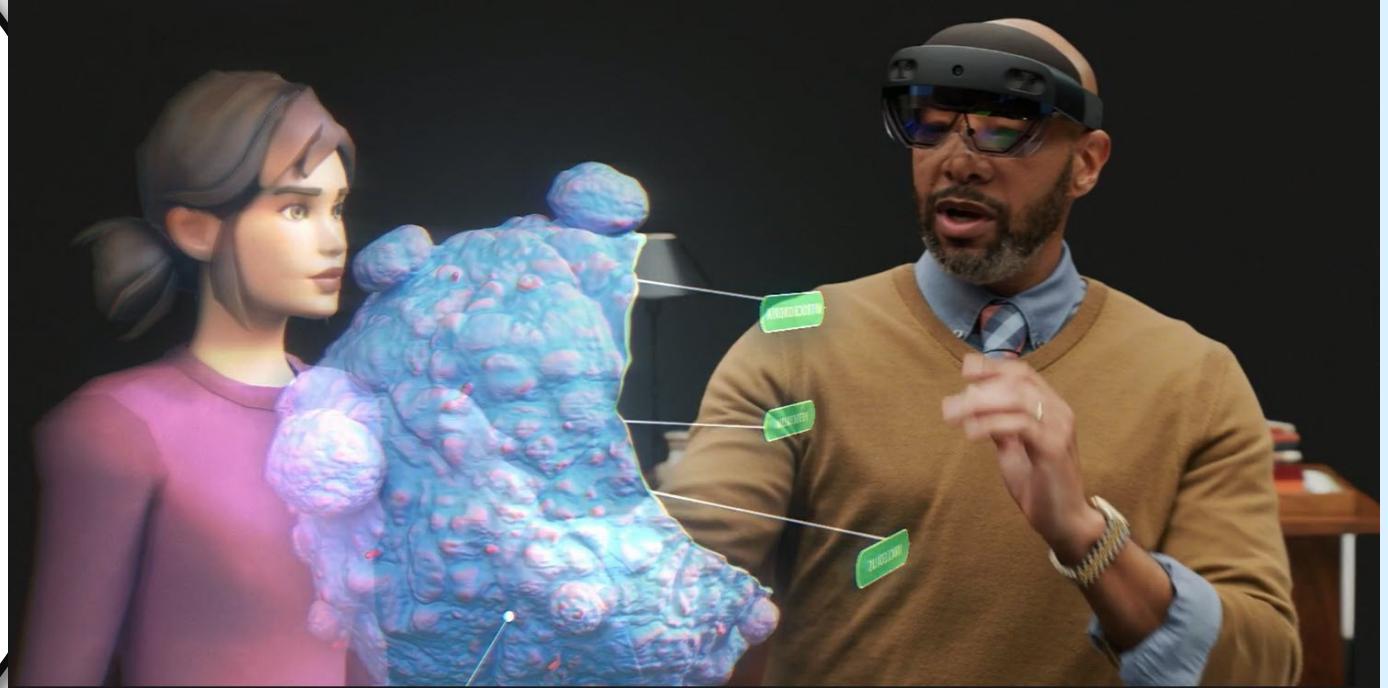
Factors:

- 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>



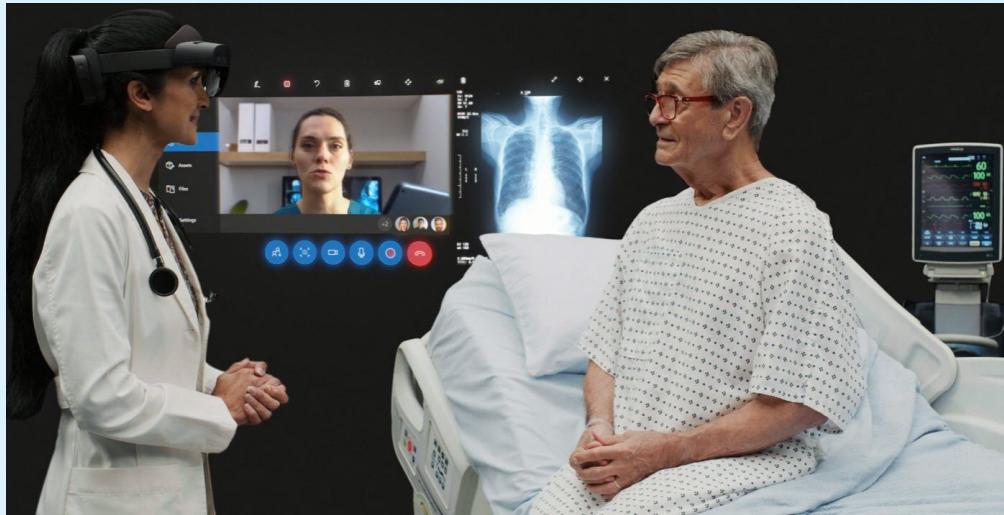
Mixed Reality (MR/XR)

- Magic Leap



Mixed Reality (MR/XR)

- Microsoft Hololens



Interactive walls and tables

Virtual Dissection Table
(Western University
of Health Sciences)

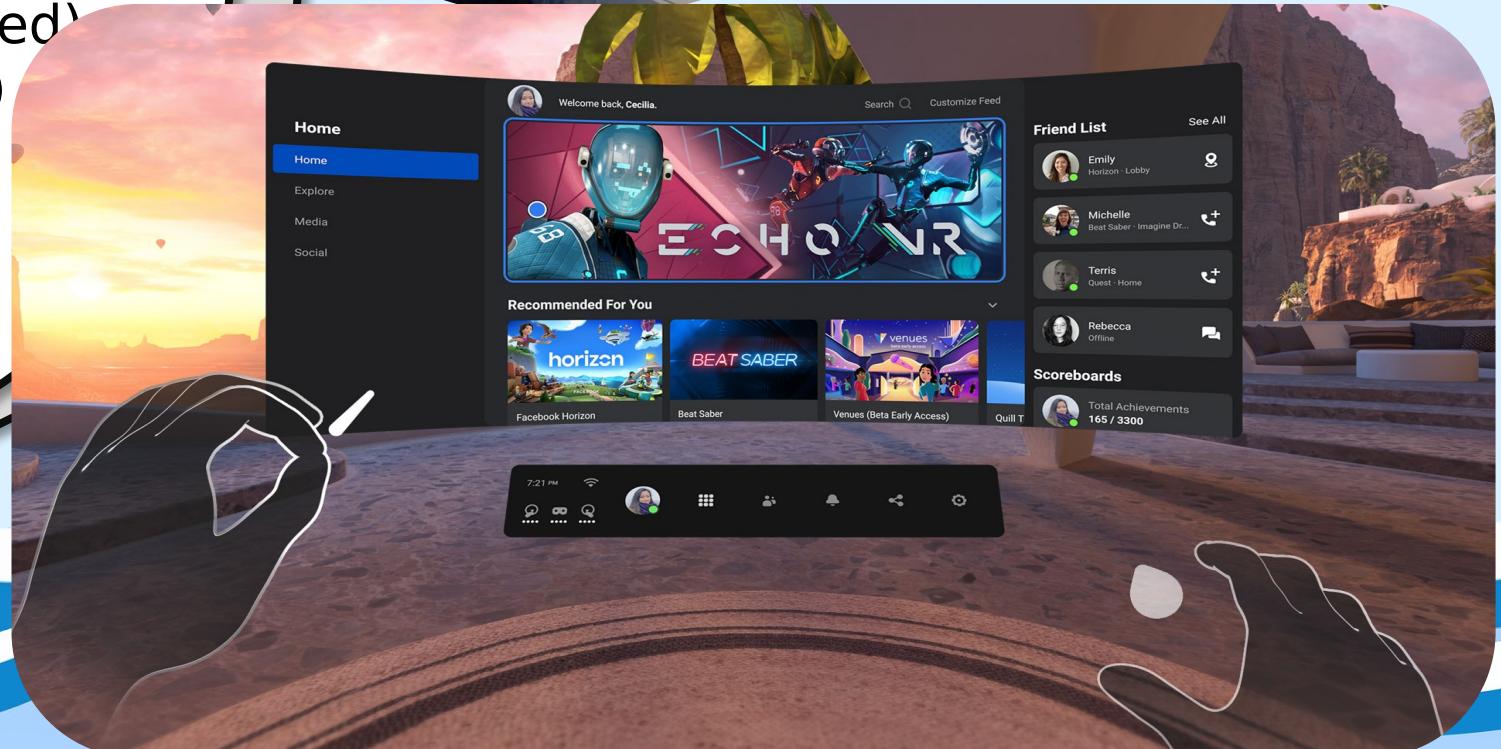


Mid-budget solutions:

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



QUEST 2



VR Accessories

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



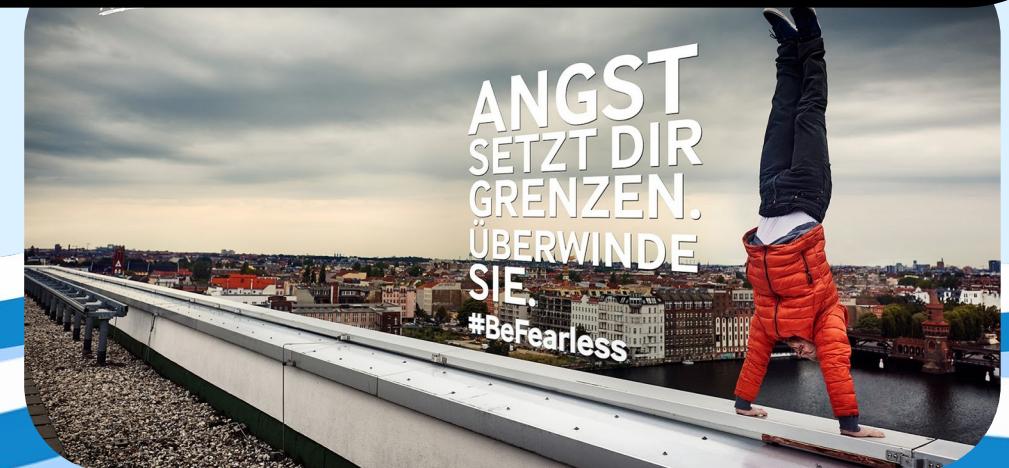
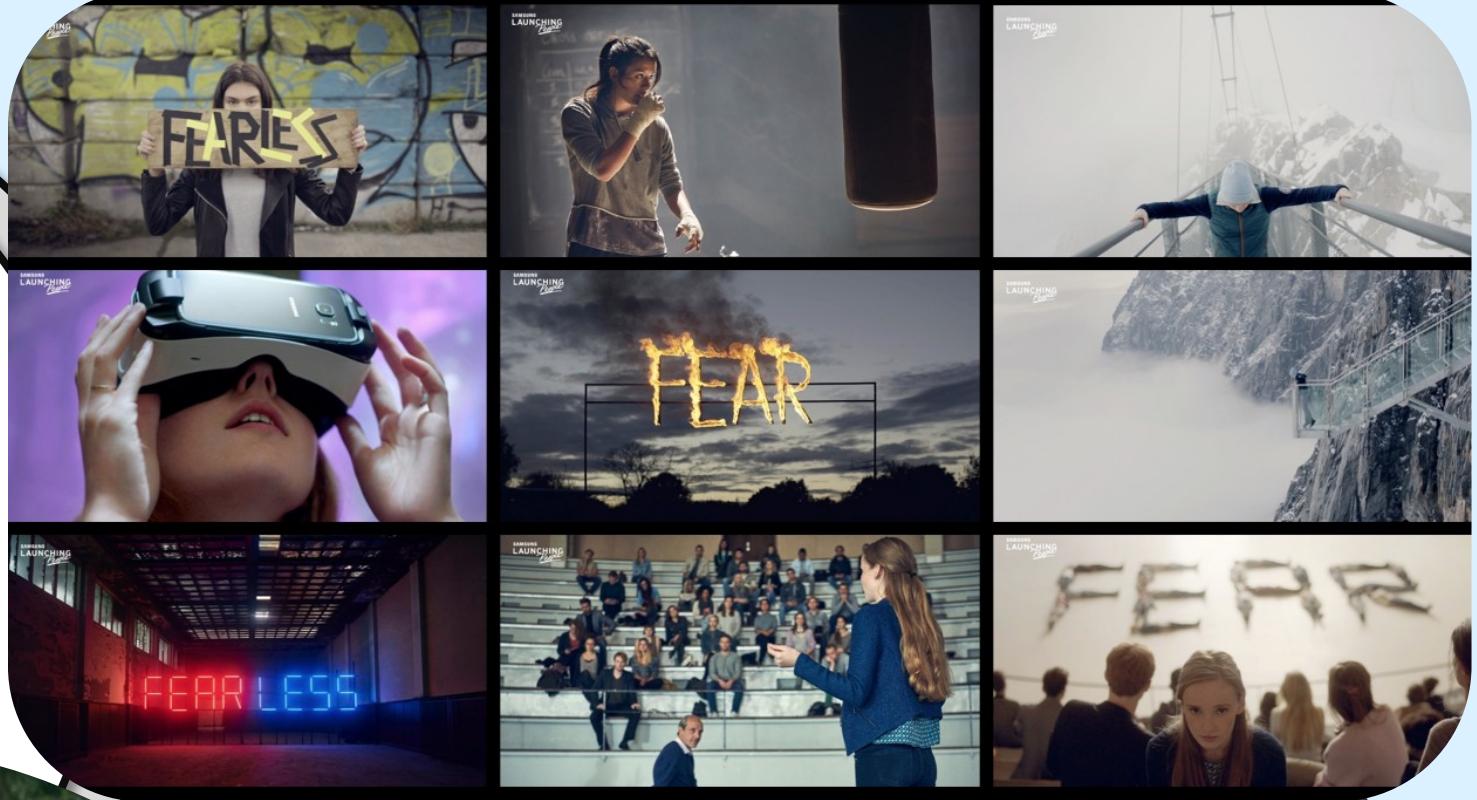
QUEST 2



oculus
from FACEBOOK

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

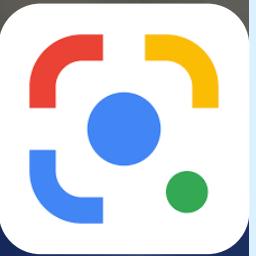
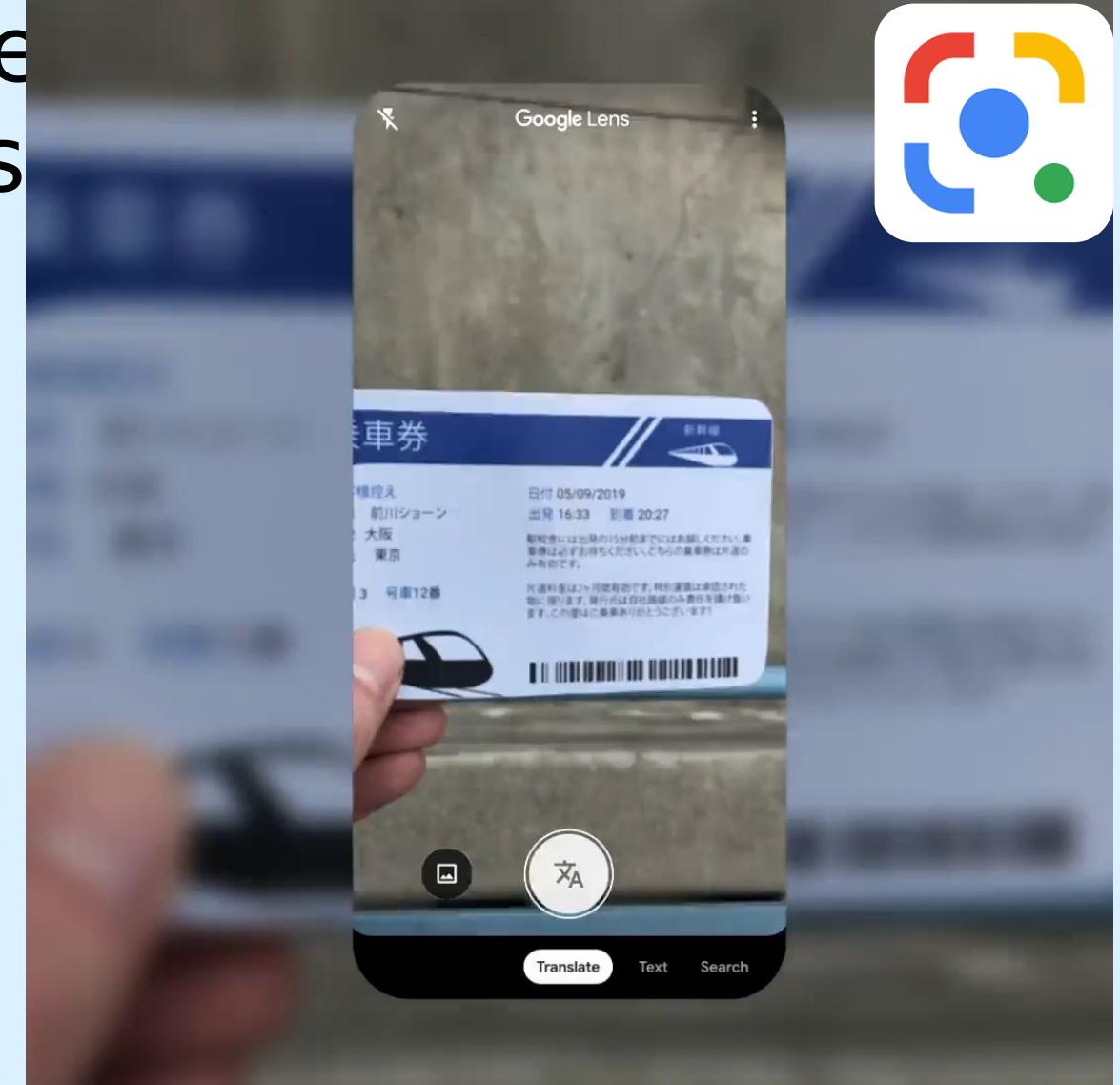
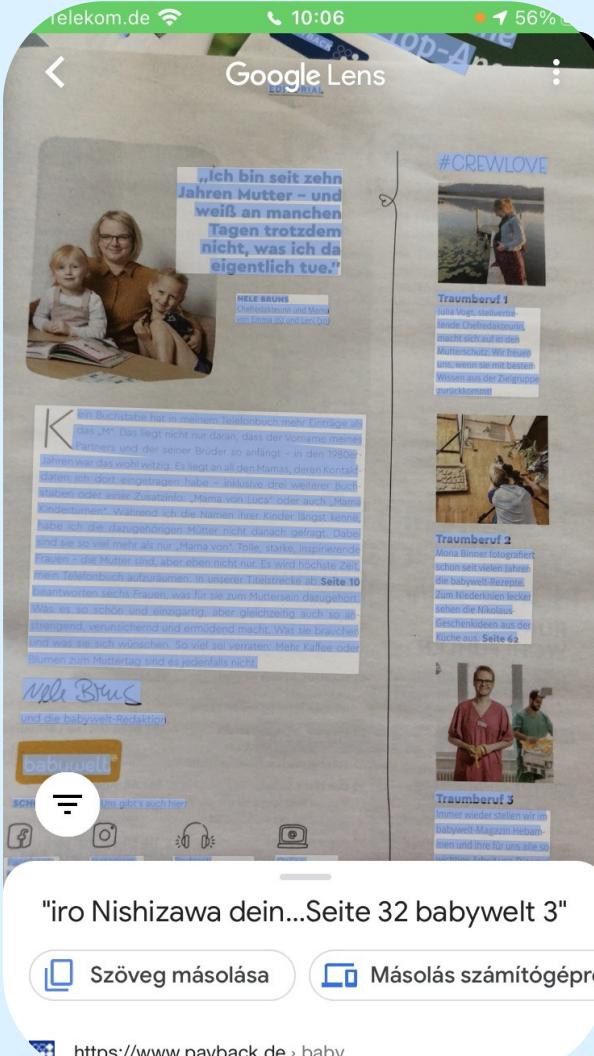
- OCR and text scan
- Automatical language recognition (translation as AR experience)
- Recognition of unknown objects, places

iOS, Android



Function

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



AR Anatomy

- for Ipads, Mobile phones

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





Innovative digital education solutions

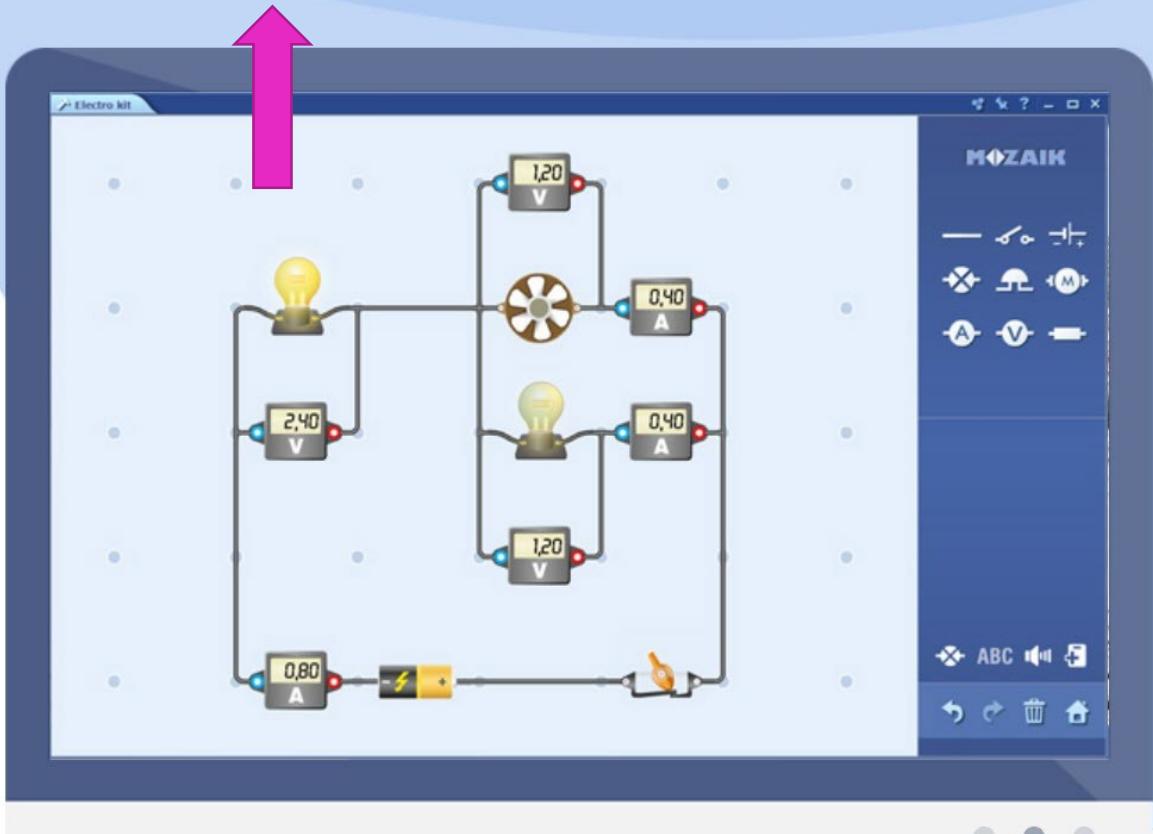
- ✓ For teachers, for the classroom
- ✓ For students, for learning at home
- ✓ For schools, for digital education

[Educational software](#)

[Interactive content](#)

[Pricing](#)

[Further functions](#)



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

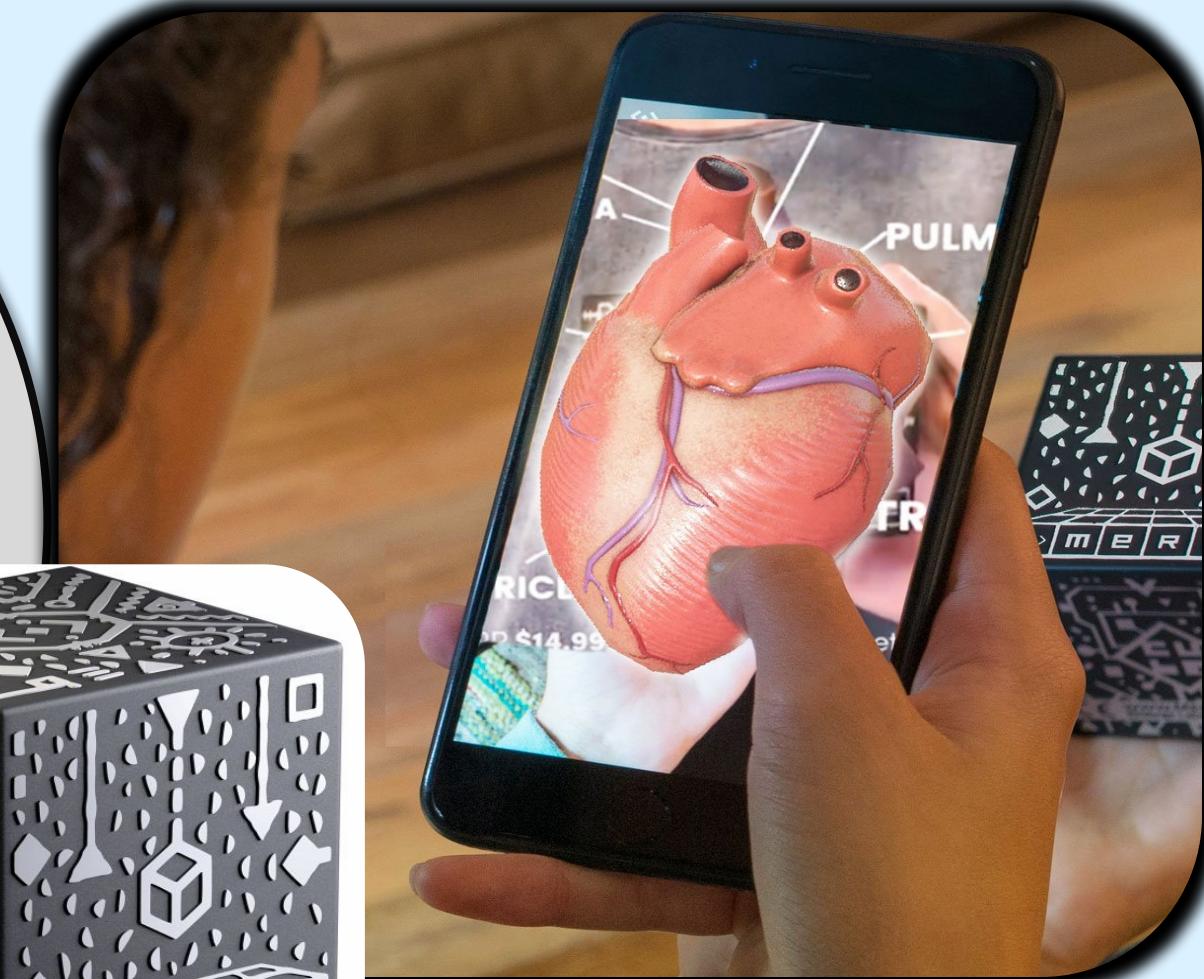
Mozaik3D App

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



Merge cube

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



[www.mergeedu.co
m](http://www.mergeedu.com)

Metaverse Studio

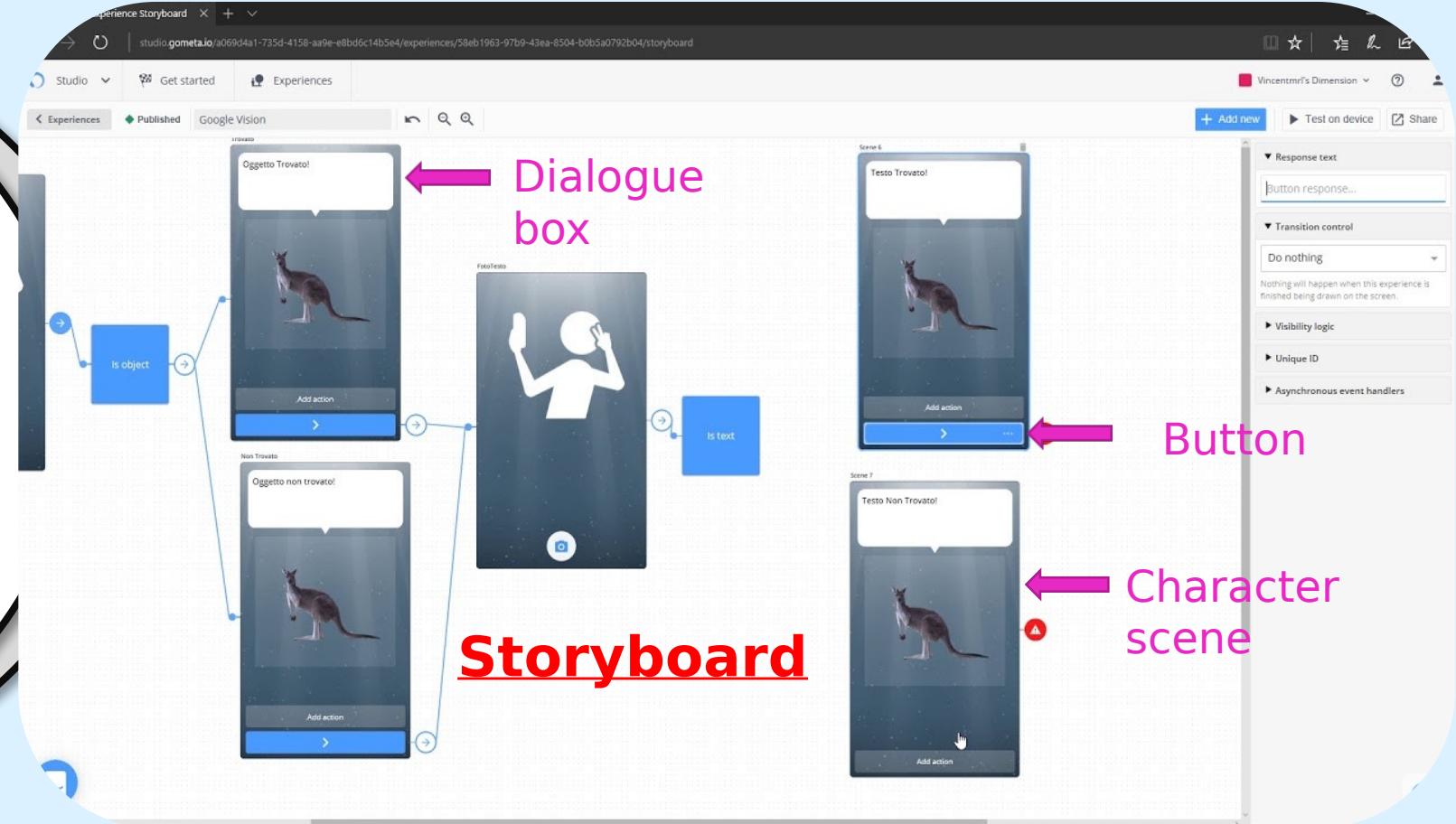
<https://studio.gometaverse.io/>

The Metaverse Studio homepage features a vibrant red and orange background with a large white text area in the center. At the top left is the Metaverse logo, and at the top right are links for BLOG, TUTORIALS, LEARN, and LOGIN, with a green arrow pointing upwards next to the LOGIN link. The main headline reads "Create Amazing Things" in large white letters, followed by the subtext "The #1 Augmented Reality Platform". Below this is a blue button labeled "Get Started" and the text "It's Free!". A screenshot of the Metaverse Studio interface shows a dashboard with various AR elements and video feeds. The interface includes a toolbar with icons for Test, Share, Publish, and a "Background style" section with options for AR and Background.

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)