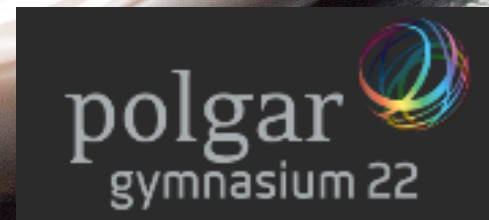


Mag. Josef Buchner

Lernumgebungen mit Augmented Reality gestalten

Lernstudio Ganztägig Lernen, Universität Rostock, 20.3.2018



Apps:

HP Reveal

Areeka

Ozeane

Virtuali Tee

Inhalt

Didaktischer Zugang

Beispiele & Anregungen

Was und Warum AR?

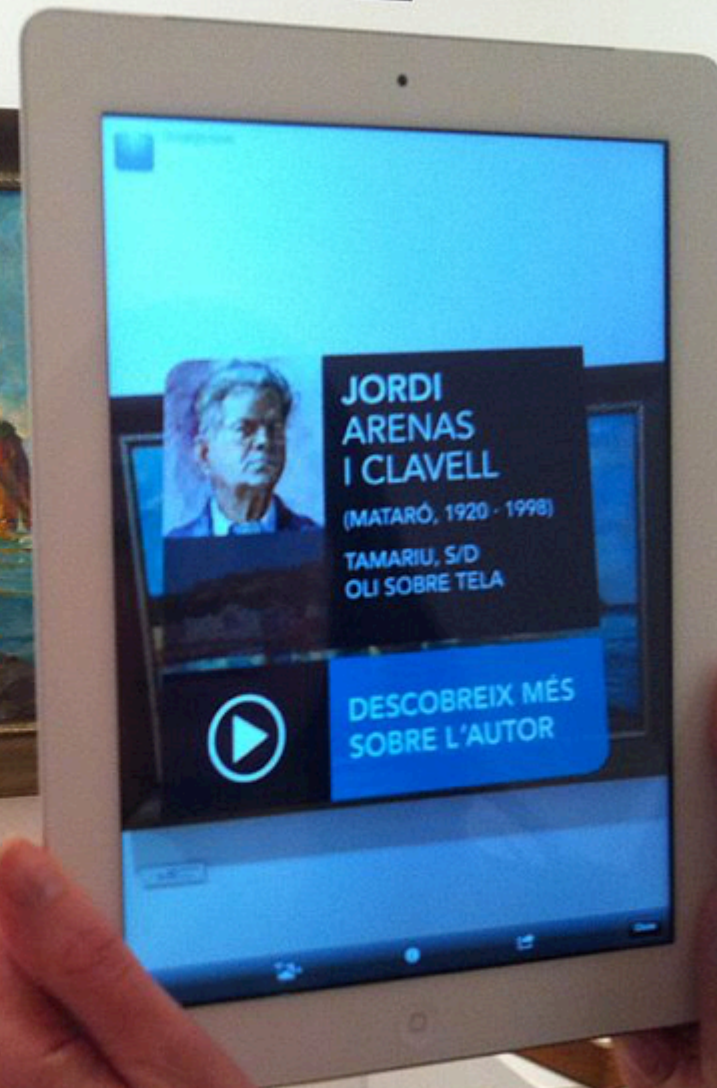
Menkar

S

Uranus

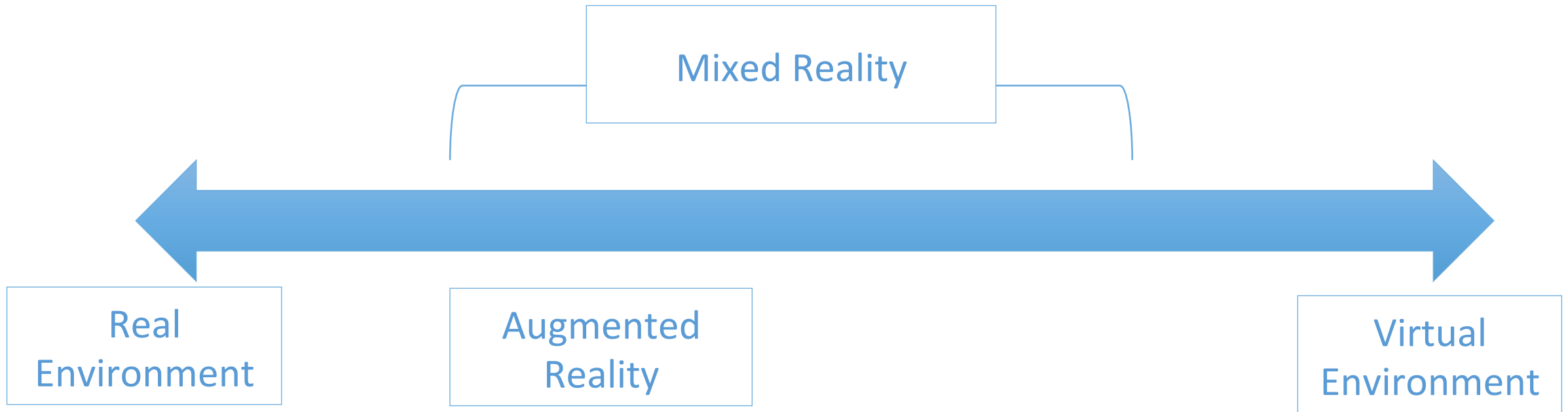


Was ist AR?

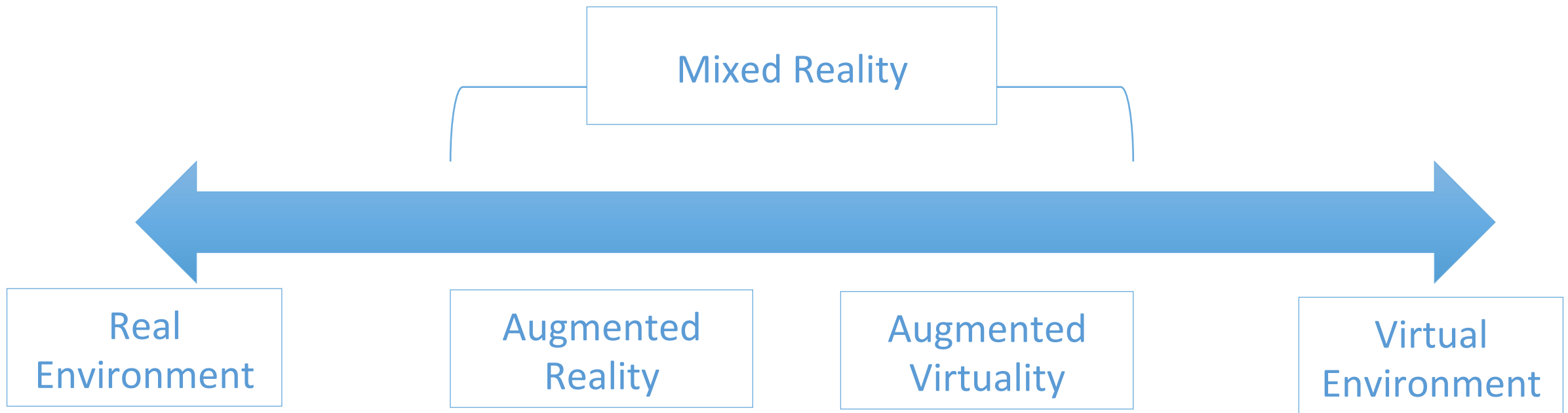


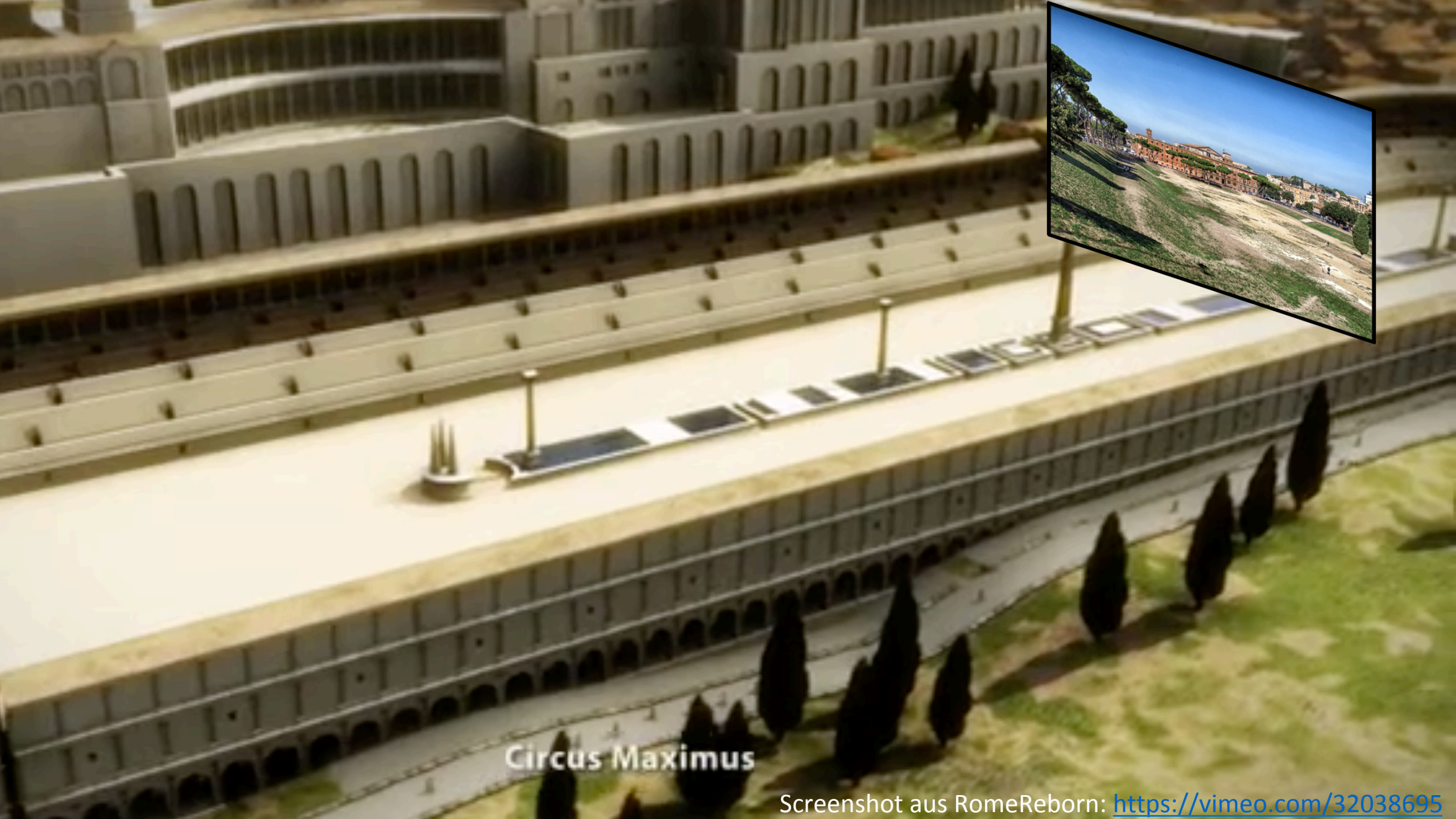
tant en essència com per la immensitat de la natura com un violent onatge que trenca
nificència es tradueix en un na, on també hi té presència persones accentua aquesta el qual ens n'allunyem quan de color, llum i moviment.

By Kippelboy (Own work) [CC BY-SA 3.0 (<http://creativecommons.org/licenses/by-sa/3.0>)], via Wikimedia Commons



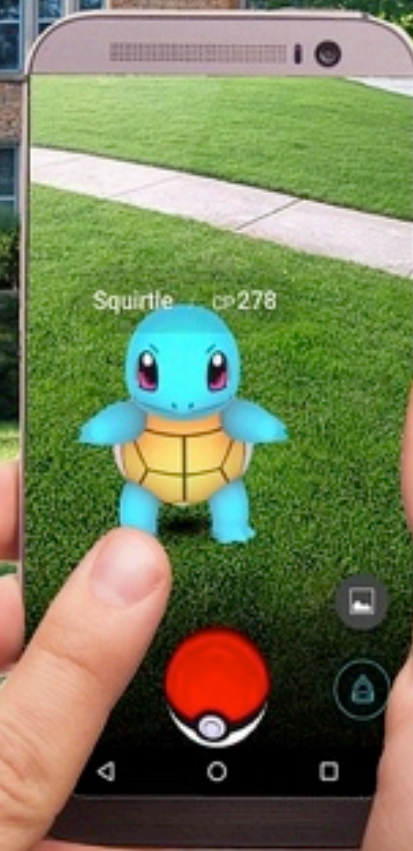






Circus Maximus

PokemonGo



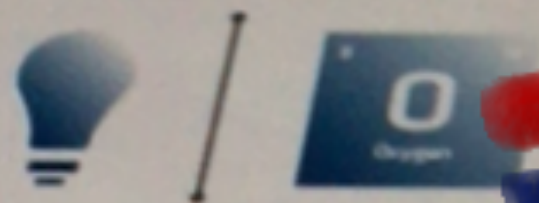


<http://www.financiallifepark.at/de/willkommen-im-flip-web>

THE HEART

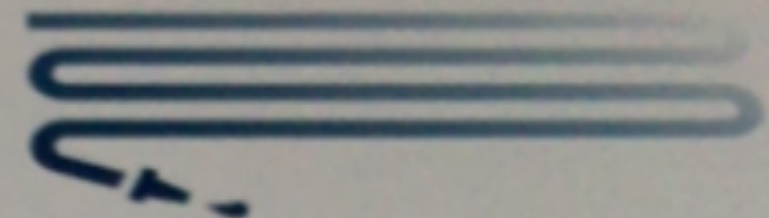
ELECTRICALLY CHARGED

Because the heart has its own electrical system, it can continue to beat even when separated from the body, as long as it has an adequate supply of oxygen.



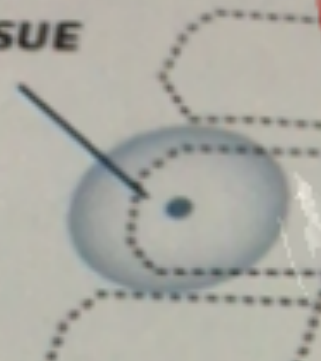
HOSE VS. HAIR

The aorta, the largest artery in the body, is almost the diameter of a garden hose. Capillaries, on the other hand, are so small that it takes ten of them to equal the thickness of a human hair.



CROSS THE TISSUE

Each cell is actually a tiny house.

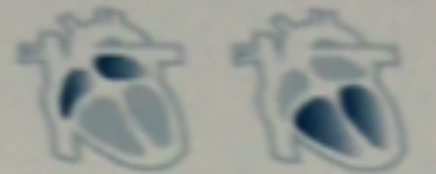


HEART POWER

Volume of blood pumped by the heart over a period of time from five to 30 minutes.

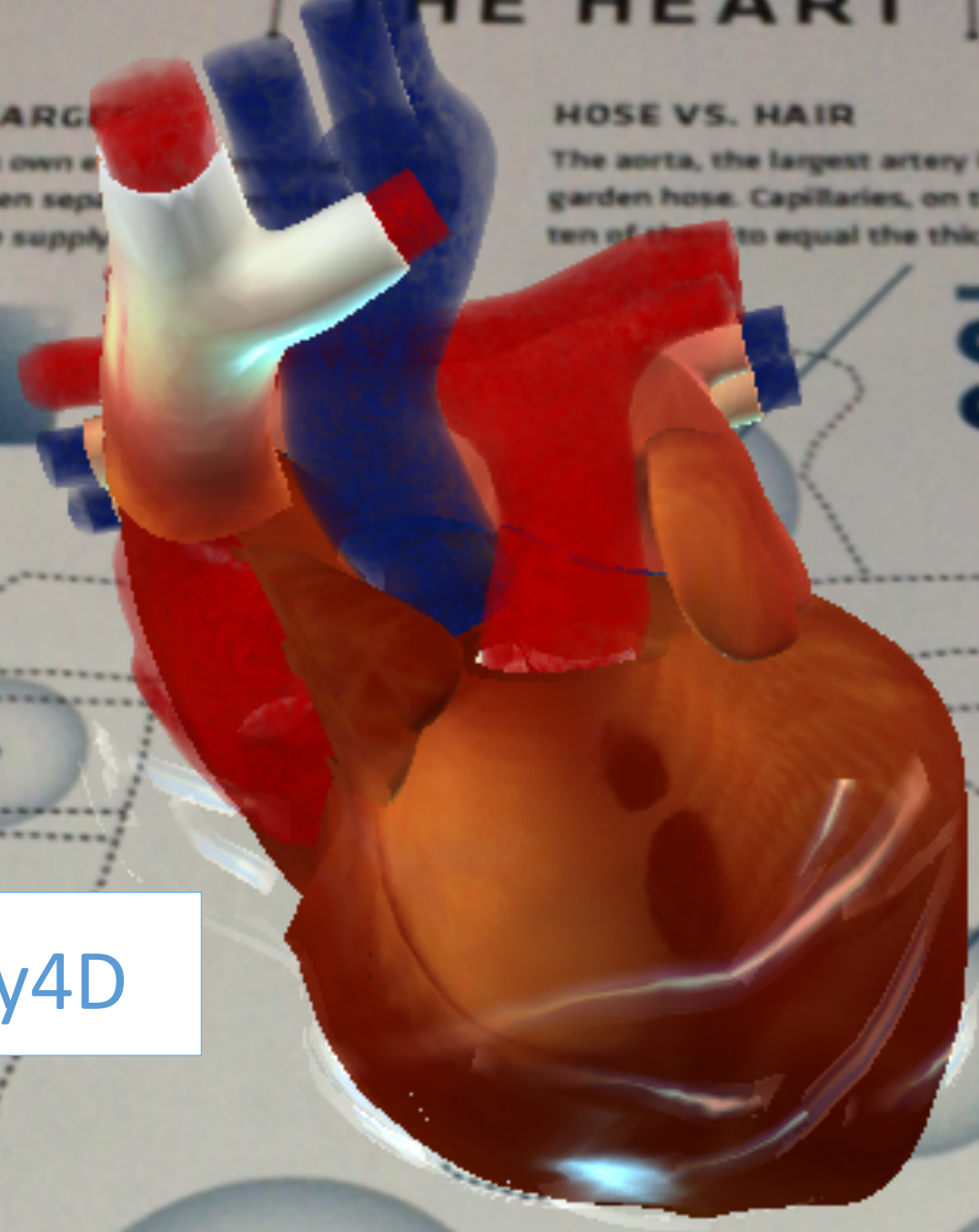
ENTRANCE HALL & LITTLE BELLY

"Atrium" is Latin for "entrance hall" and "ventricle" is Latin for "little belly."



HEART SPRINTS

Even at rest, the muscles of the heart work hard—twice as hard as the muscles of the rest of the body.



Anatomy4D

THE HUMAN BODY

WE GOT THE BEAT

Before each beat, your heart fills with blood. The muscle then contracts to squirt the blood along. An adult heart beats **60-80 times per minute**.

60 - 80

BEATS PER MINUTE

RIGHT VS. LEFT

Right-handed people live, on average, **nine years longer** than left-handed people do. The majority of the machines and tools we use on a daily basis are designed for those who are right handed, resulting in thousands of accidents and deaths each year.

MILES OF VESSELS

The human body has **60,000 miles of blood vessels**. The distance around the earth is about 25,000 miles, making the distance your blood vessels could travel if laid end to end more than 2x around the earth.



WET FEET

Feet have **500,000 sweat glands** and can produce more than a pint of sweat a day.

BRAIN POWER

The brain operates on the same amount of power as a **10-watt light bulb** and generates as much energy as a small light bulb even when you're sleeping.



BREATHE IN

The surface area of a human lung is equal to a **tennis court**.



The large amount of surface area makes it easier for the exchange of oxygen and carbon dioxide to take place, and makes sure you stay properly oxygenated at all times.

"SMALL" INTESTINE

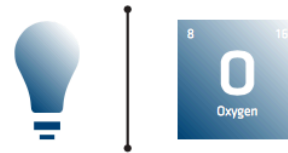
The largest internal organ is the small intestine. In fact, it's so long that it is actually **four times as long as the average adult is tall**.



THE HEART

ELECTRICALLY CHARGED

Because the heart has its own electrical impulse, it can continue to beat even when separated from the body, as long as it has an adequate supply of oxygen.



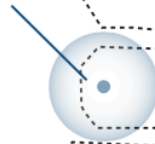
HOSE VS. HAIR

The aorta, the largest artery in the body, is almost the diameter of a garden hose. Capillaries, on the other hand, are so small that it takes ten of them to equal the thickness of a human hair.



PASS THE TISSUE

Blood is actually a **thick** tissue.



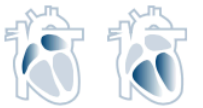
HEART POWER

The volume of blood pumped by the heart can vary over a wide range, from five to 30 liters per minute.



ENTRANCE HALL & LITTLE BELLY

"Atrium" is Latin for "entrance hall" and "ventricle" is Latin for "little belly."



HEART SPRINTS

Even at rest, the muscles of the heart work hard—twice as hard as the leg muscles of a person **sprinting**.

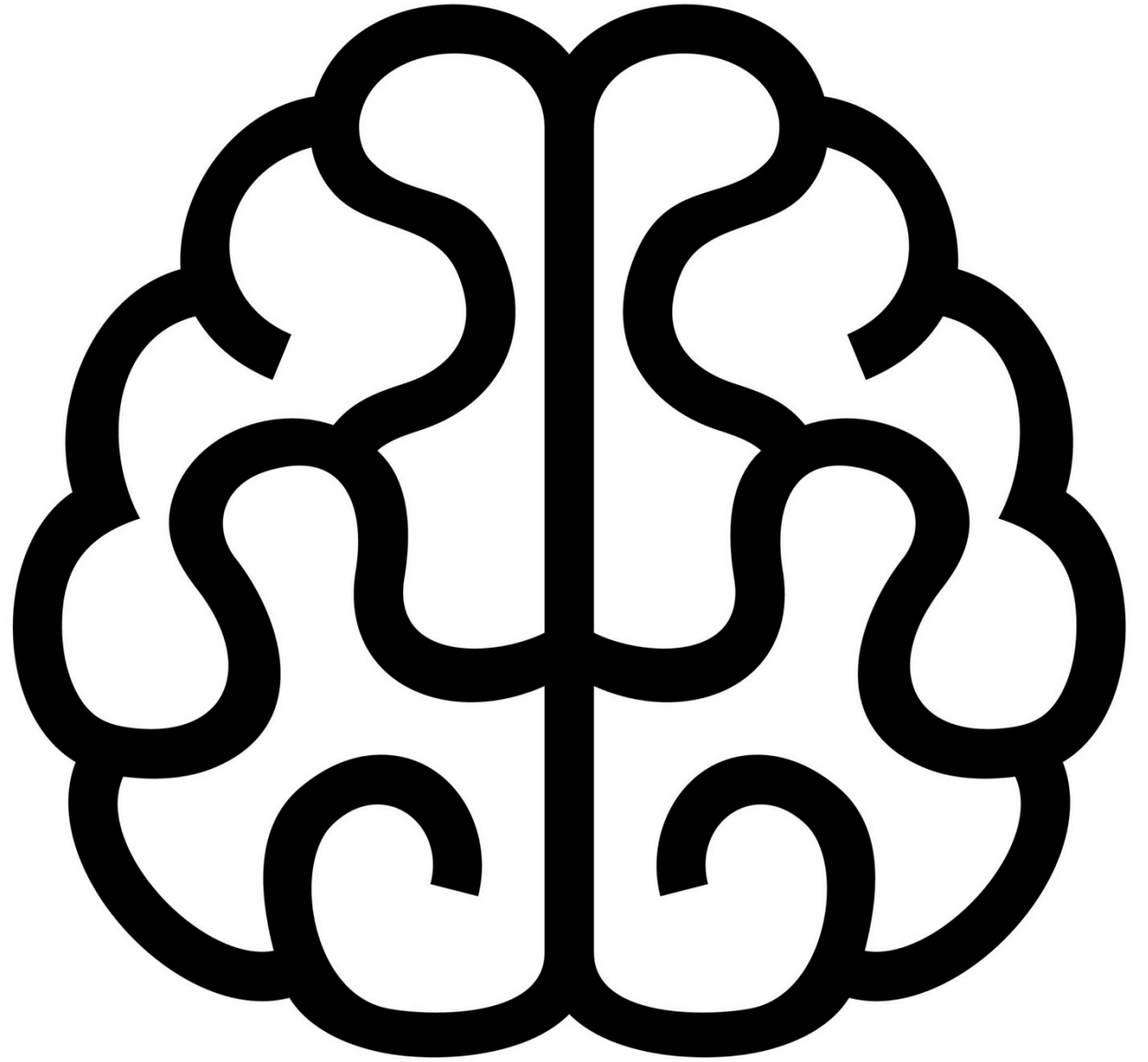


Organ traveled to

Amount of time blood takes to return to heart (in seconds)

TRAVEL PRO

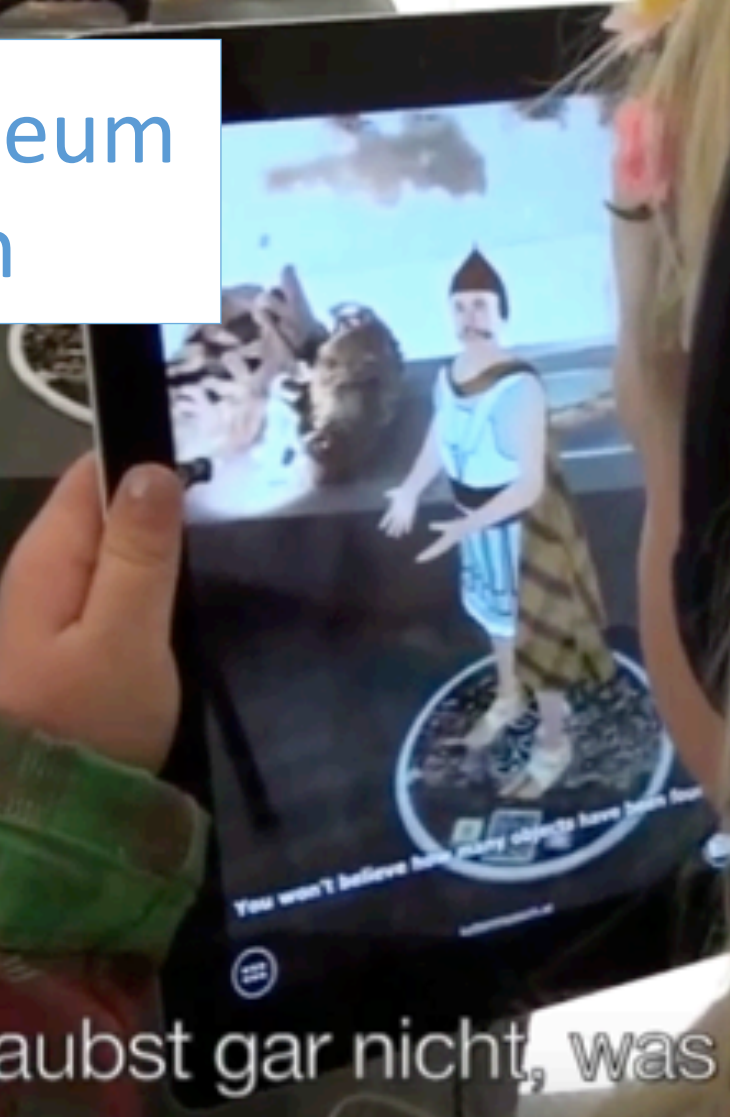
CorticalBrain





ZooKazam

Keltenmuseum
Hallein



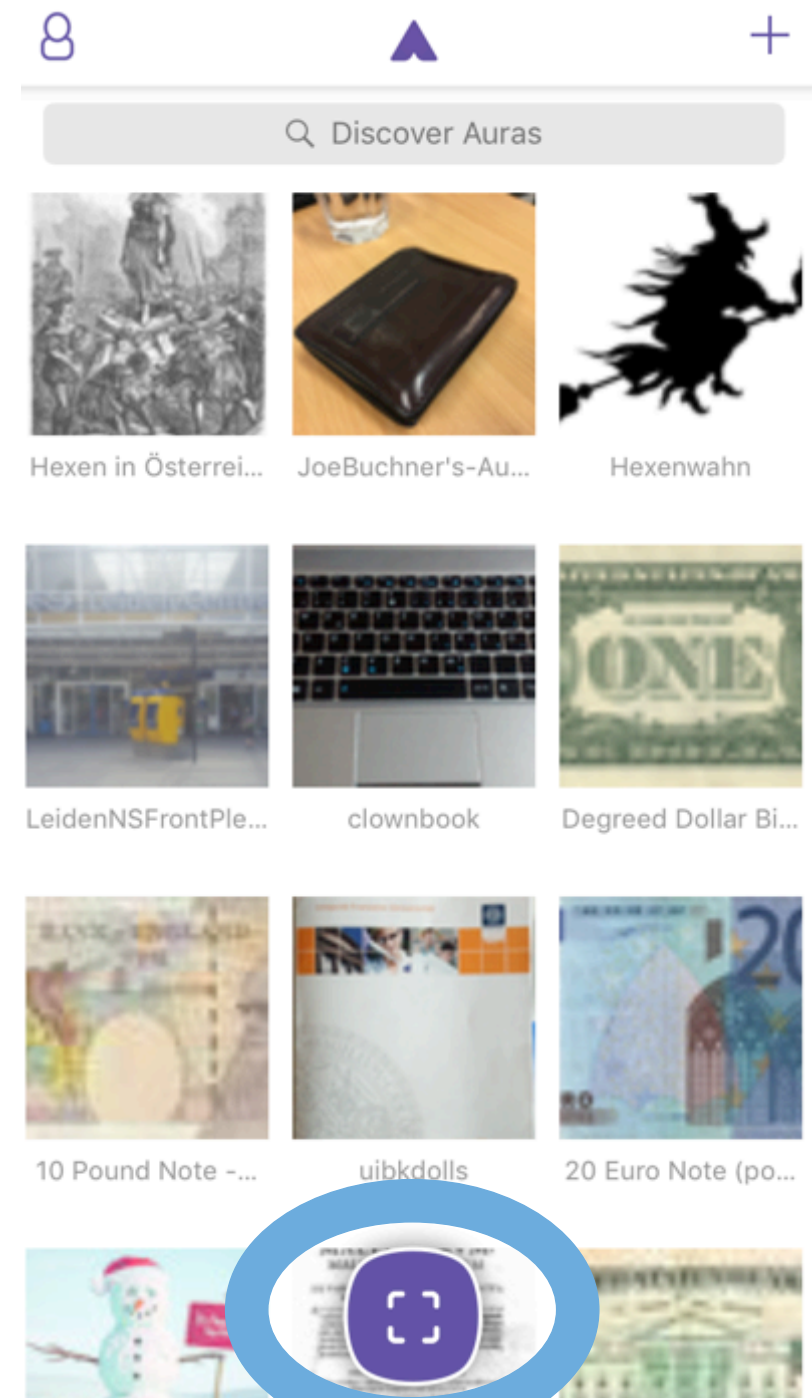
Du glaubst gar nicht, was nach so langer Zeit

AR Schulbuch



AR selber erleben...

- App HP Reveal
 - iOS: <https://itunes.apple.com/at/app/aurasma/id432526396?mt=8>
 - Android: <https://play.google.com/store/apps/details?id=com.aurasma.aurasma&hl=de>
- Log in:
 - Username: Polgargsk
 - Password: polgargsk



Warum AR/VR im Unterricht/in der Schule?

→ Give P's a chance (Mitchel Resnick)

PASSION

PEERS

PLAY

PROJECTS



Warum AR/VR im Unterricht/in der Schule?

→ Give P'S a chance (Mitchel Resnick)

PASSION

PEERS

PLAY

SMARTPHONE

PROJECTS



MOBIL

SELBSTBESTIMMT

INTERAKTIV

KOOPERATIV

AUTHENTISCH

vgl. Ferrer-Terregrosa et al., 2016; Santos et al., 2016; Herber et al., 2013

MOBIL

SELBSTBESTIMMT

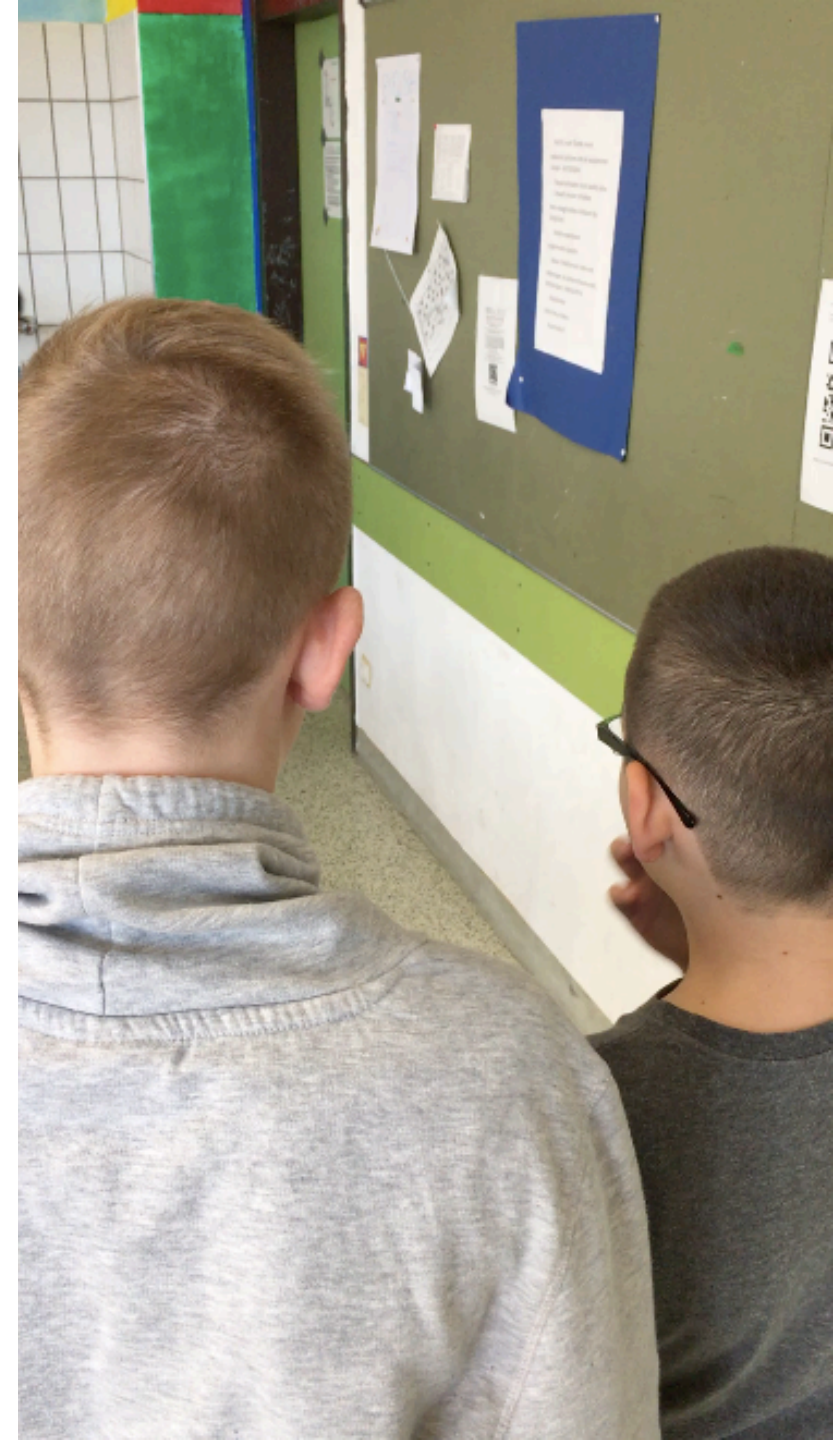
INTERAKTIV

Buchner (in Press) Promoting Intrinsic Motivation with AR

KOOPERATIV

AUTHENTISCH

vgl. Ferrer-Terregrosa et al., 2016; Santos et al., 2016; Herber et al., 2013



„Lehrpersonen gehören zu den wirkungsvollsten Einflüssen des Lernens“

-John Hattie, Lernen sichtbar machen

<http://bit.do/rostock2003>

#teachdifferent
#promotelearning

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YouTube <http://youtube.com/josefbuchner>

Homepage <http://www.flipped-classroom-austria.at>

Twitter [@Josef Buchner](https://twitter.com/Josef_Buchner)



Links

- Anleitung HP Reveal Studio: <http://bit.do/araurasma>
- Elements4D: <http://elements4d.dagri.com/#intro>
- Anatomy4D: <http://anatomy4d.dagri.com>
- Zookazam: <http://www.zookazam.com>
- Aurasma Studio: <https://www.aurasma.com>
- PH Niederösterreich: <http://digital.ph-noe.ac.at/>
- Flipped Classroom in Österreich: <http://www.flipped-classroom-austria.at>
- Flipped Classroom DACH: <http://www.umgedrehterunterricht.de>
- Whiteboard Videos: <https://explaineverything.com>
- Education Innovation Studio: <http://eis.ph-noe.ac.at>
- Safer Internet: <https://www.saferinternet.at>
- Apps, Tipps und Tricks: <http://kids.t-mobile.at>
- Tools und Anleitungen: <http://www.medienfundgrube.at>
- Videos interaktiv machen: <https://h5p.org>

Forschung

- Wer eine offene Lernumgebung mit AR gestaltet, kann sehr gerne diesen Online-Fragebogen zur Evaluierung benutzen.
- Hilft mir auch für meine Forschung 😊
- DANKE!!!
- Link zum Fragebogen (einfach an die SuS weitergeben):
<https://goo.gl/forms/4XAEExWdUvfHQL1Xk2>