Centre for Innovation/ New Media Lab

The New Media Lab of the Centre for Innovation brings together teachers and creative professionals to explore new technologies such as Virtual and Augmented Reality, that will allow students to engage with academic education through purposeful projects that unite storytelling with innovative visual technologies.

Products: Mixed Reality, Virtual Reality, Graphic Design, High Quality Video

Example: https://www.youtube.com/watch?v=7mcFQRpdsIQ

Tools: TV Studio, VR Glasses, VR Camera, Microsoft Hololens, Writing Tablets, Self recording sets

http://centre4innovation.org/labs
The Microsoft Hololens

It’s augmented reality, not virtual reality

The lens scans the environment and works with your surroundings

Holograms are interactive

Virtual objects can be stationary while you move
New Media Lab

- Explore and evaluate
- Introduce
- Play and inspire
- Develop and co-create
- Communicate
- Evaluate
New Media Lab Projects

Winner SURF
Innovation Challenge
2016/2017

AR Experience

Discover the world at Leiden University
3D Anatomy
Online anatomy platform
CASK/TOOL

Digital Microscopy

Massive Open Online Course
Anatomy of the abdomen and pelvis

Discover the world at Leiden University
The Project
Exploring MR technology for (bio)medical education

- Using virtual anatomical models in classroom setting (*collaborative learning*)
- Linking virtual anatomical models to the real life human body (*affective learning*)
- Learning from (natural/pathological) body restrictions (*personalized learning*)
- Using ‘gaming’ scenario and direct feedback to boost motivation (*explorative learning*)
Problem

Supination

Pronation

Flexion/Extension

Randale Sechrest – eOrthopod.com
Foot Anatomy Animated Tutorial - https://www.youtube.com/watch?v=ROd1Acma64o
Inspiration

Using the HoloLens in Motion Capture / Dance / Visual Effects production - https://www.youtube.com/watch?v=THocDgV4yEQ#t=1m02s
The project
Fixation to the body
Where we are now?

Talocalcaneal/subtalar joint
Workflow – Zygote model
Workflow – 3D editing Blender
Workflow – Deploying app Visual Studio
Challenges – Ankle as interface
Challenges – Research

The Learning Experience
Stories for education

HOW STORYTELLING AFFECTS THE BRAIN

NEURAL COUPLING
A story activates parts in the brain that allows the listener to turn the story in to their own ideas and experience thanks to a process called neural coupling.

MIRRORING
Listeners will not only experience the similar brain activity to each other, but also to the speaker.

DOPAMINE
The brain releases dopamine into the system when it experiences an emotionally-charged event, making it easier to remember and with greater accuracy.

CORTEX ACTIVITY
When processing facts, two areas of the brain are activated (Broca’s and Wernicke’s area). A well-told story can engage many additional areas, including the motor cortex, sensory cortex and frontal cortex.
Gaming and stories for education
New Media Learning experiences

Multimedia
  Making use of video, audio, book, VR and AR

Human Centered
  Clear target audience

Goal oriented
  Clear learning goals
How do we get young Marco to play football again?
Mixed Reality Expertise Lab

HoloLens for Education is a project by Leiden University and the Leiden University Medical Center (LUMC) that explores the possibilities of using the Microsoft HoloLens within higher (medical) education. This website aims to share the details of the experiment, display results and connect with others in the domain of mixed reality for education.

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