Jeffrey Jacobson, Ph.D.

Director, PublicVR.org http://publicvr.org jeff@publicvr.org Boston, MA



Virtual Reality for Education

We Live in Psychological Space







Michael Stuber

We Live in Social Space



(Proxemics)



We treat humanlooking and humanacting things as real.

Only the most basic caricature or outline is needed.

It's the visual & verbal narrative that matters.

The Elastic Sense of the Self





This Old House

Star Wars' Queen Amidala

Games



World of Warcraft

Information in the Environment



Perception is an Active Process



Gestault

"Closure" – Scott McCloud 1993

Shared Cognition



Our Reality is Partly Artificial

(Partially Digital Environments)

Modern Manufacturing Helps Us Shape our World



http://formlabs.com/

Augmented Reality Lite



Uses both GPS and Compass

Layar Inc.

Google Glass



True Augmented Reality



Kaufmann 2006

Information Revealed

Satisfies the mind's desire for "Closure"

Immersive Theater



http://speakeasydollhouse.com/

Museum Exhibits



Hughes 2004

Manipulating Imaginary Objects



MetaVR

Virtual Reality

A technology or a way to produce an Environment that is

- Artificial
- Interactive
- Immersive (surrounds your senses)
- Makes spatial narratives possible
- Display is all or mostly digital.

Flight Simulators



Corner Cave



WorldViz

With a CAVE



Planetarium (Now Digital)



Inflatable Domes



E-Planetarium Inc.

Sensorially Immersive Virtual Reality with a Head Mounted Display



HMD + Treadmill



Wide Area Tracking With HMD



http://worldviz.com

Motion Capture & Haptics

Micha Cardenas 2008

Life-Scale Interaction Design

Smallab at ASU

Online Virtual Environments

MUVES, "VR"

When to Use VR

9/19/16

Understand an Interior Space.

Real Life Would be too Dangerous

Simulation Training Systems

Fine Control Over Everything

Balance Disorder Research and Treatment

Medical Virtual Reality Center, UMPC

PTSD Treatment

Rizzo & Buckwalter

Simulated Surgery

http://conquermobile.com/

Distance Collaboration

© Sealund & Associates Corporation

Driving Simulators

Engineering, Training & Practice

Fraunhofer Institute

Presence = Engagement

- The feeling of "being there."
- · Can be sensory, psychological, or both.
- Foundation of VR
- Difficult to measure or define (Slater 2009)
- Said to increase engagement and therefore learning. NO!
- Presence IS engagement, or flow.

Conceptual Change

- Student has a gap or misconception.
- Presented with evidence she can't integrate.
- Must change her conceptions on the topic.
- · We can control artificial environments.
- · VR can create unintended misconceptions.

Social Cues or Environment

Bailenson 2008

Gates Of Horus

Jacobson 2011, 2013

Egyptian Oracle

Gillam & Jacobson, 2015

Virtual Forest

Schloss, Jacobson, Handron, 2012

BostonVR.org

September 28th, at Mass Challenge Scalable Display Technologies and Lighting Talks from Six Startups.

BostonVR again on October 18th at Laugh Boston. Parcosm, MothAndFlame, and two startups.

More Events

BostonAR meets at Akamai, 6:00pm, tonight. Facial recog and Hololens.

Science Media Awards starts this Tuesday. VR at 6:00pm http://www.sciencemediasummit.org/

Harvard Innovation Labs VR/AR Event September 28th in the daytime

https://i-lab.harvard.edu/event/exploretheemergingworldsofaugmentedandvirtualreality/

Reality Virtually Hackathon MIT Media Lab, October 7-10 http://www.realityvirtuallyhack.com/

Contact Me Any Time

jeff@publicvr.org

617-435-0517

http://publicvr.org/talks/ocnerd.pdf