

*Education on the Horizon: Teaching
and Learning with Technology*

Week 7: Embodied Learning with XR

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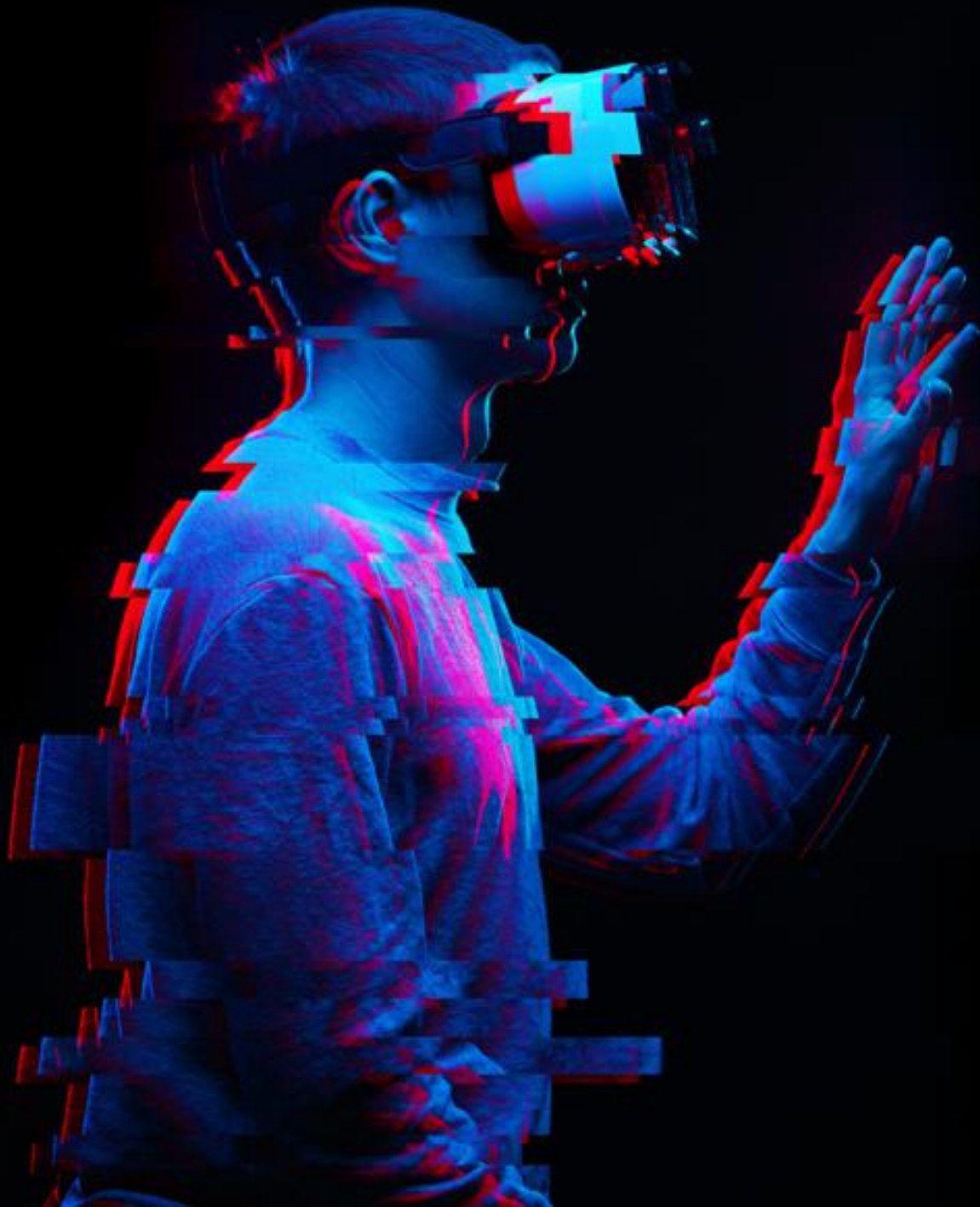
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Clarification of Terms

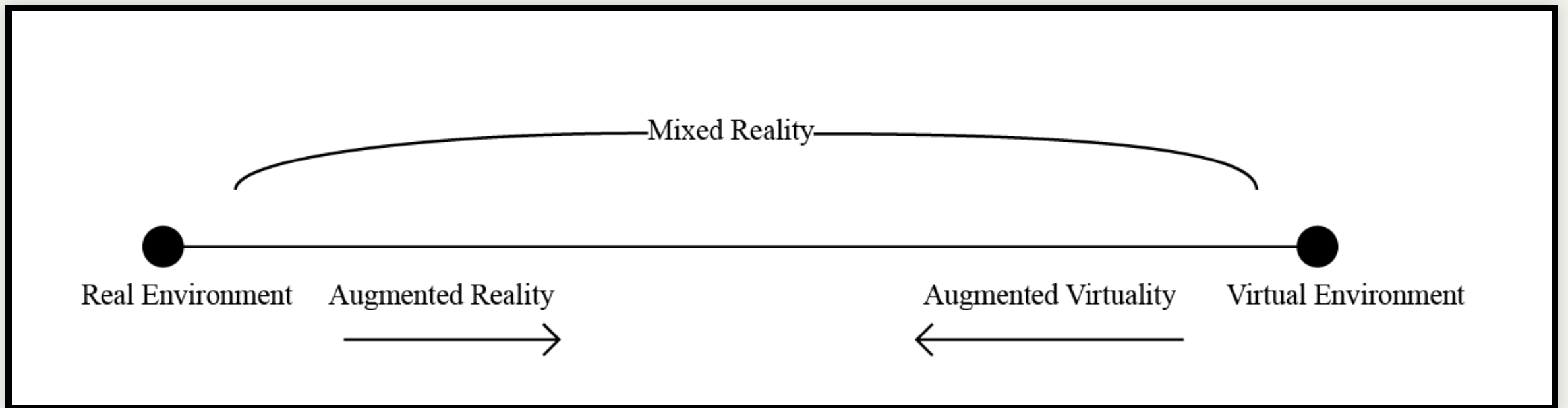
VR, XR, MR, Metaverse?



Virtuality vs. Reality

- Virtuality is commonly regarded as a self-consistent, fully synthetic world that doesn't have to follow the laws of physics of real world.
- Virtuality and reality are not opposites, but more like two ends of a continuum

Mixed Reality (MR)



- Real and virtual world objects are presented and experienced together within a single display.
- Apple Vision Pro

Extended Reality (XR)

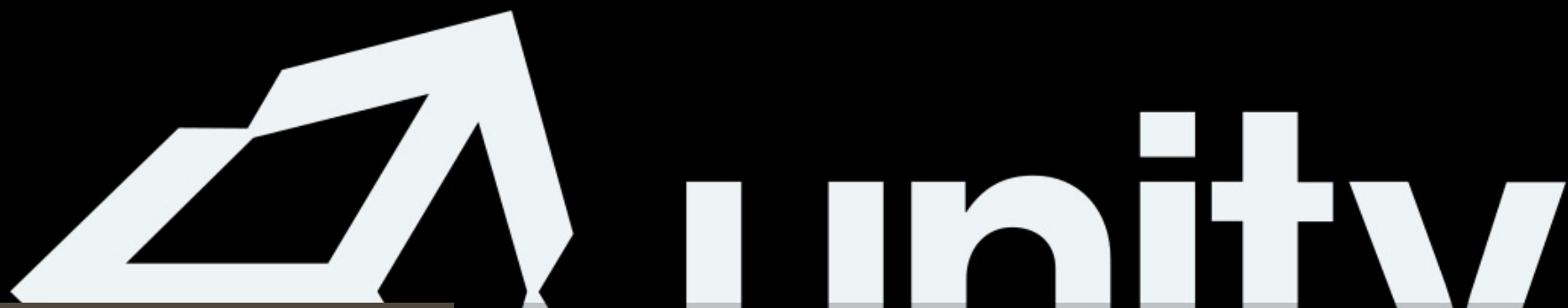
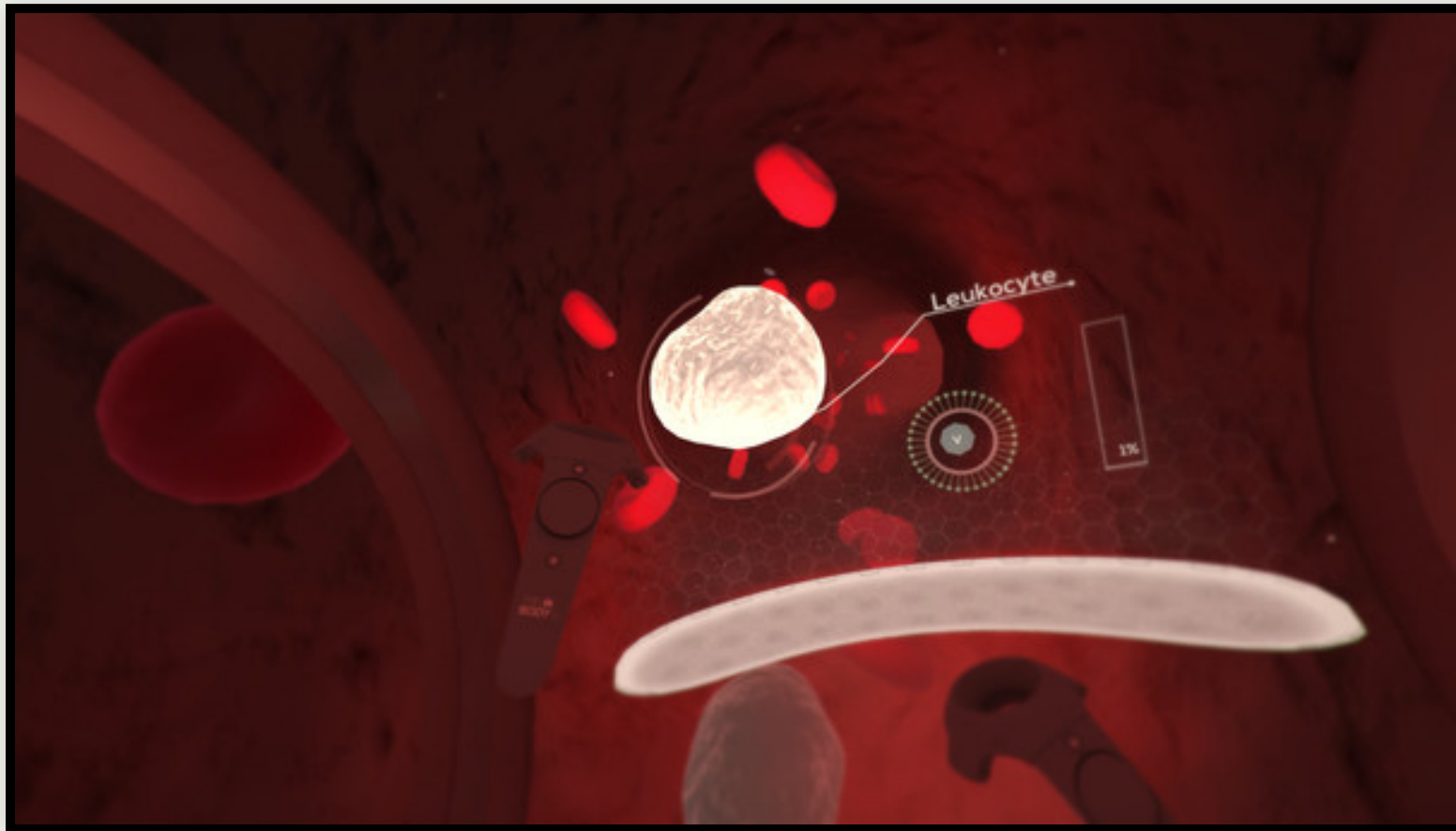
- An emerging umbrella term for all the immersive technologies, the ones we already have today plus those that are still to be created.

Metaverse

- XR-supported social networking
- Introducing the Metaverse
- Introducing the Icelandverse

VR the technology

VR app → Game Engine → VR head-mounted device
(HMD)

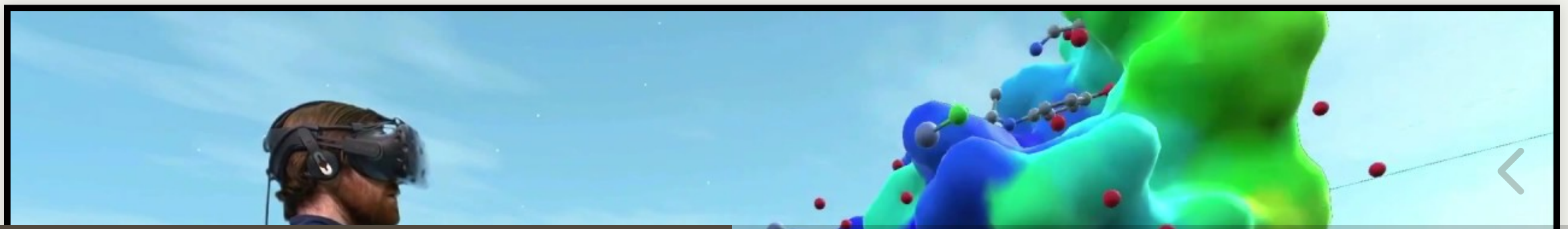
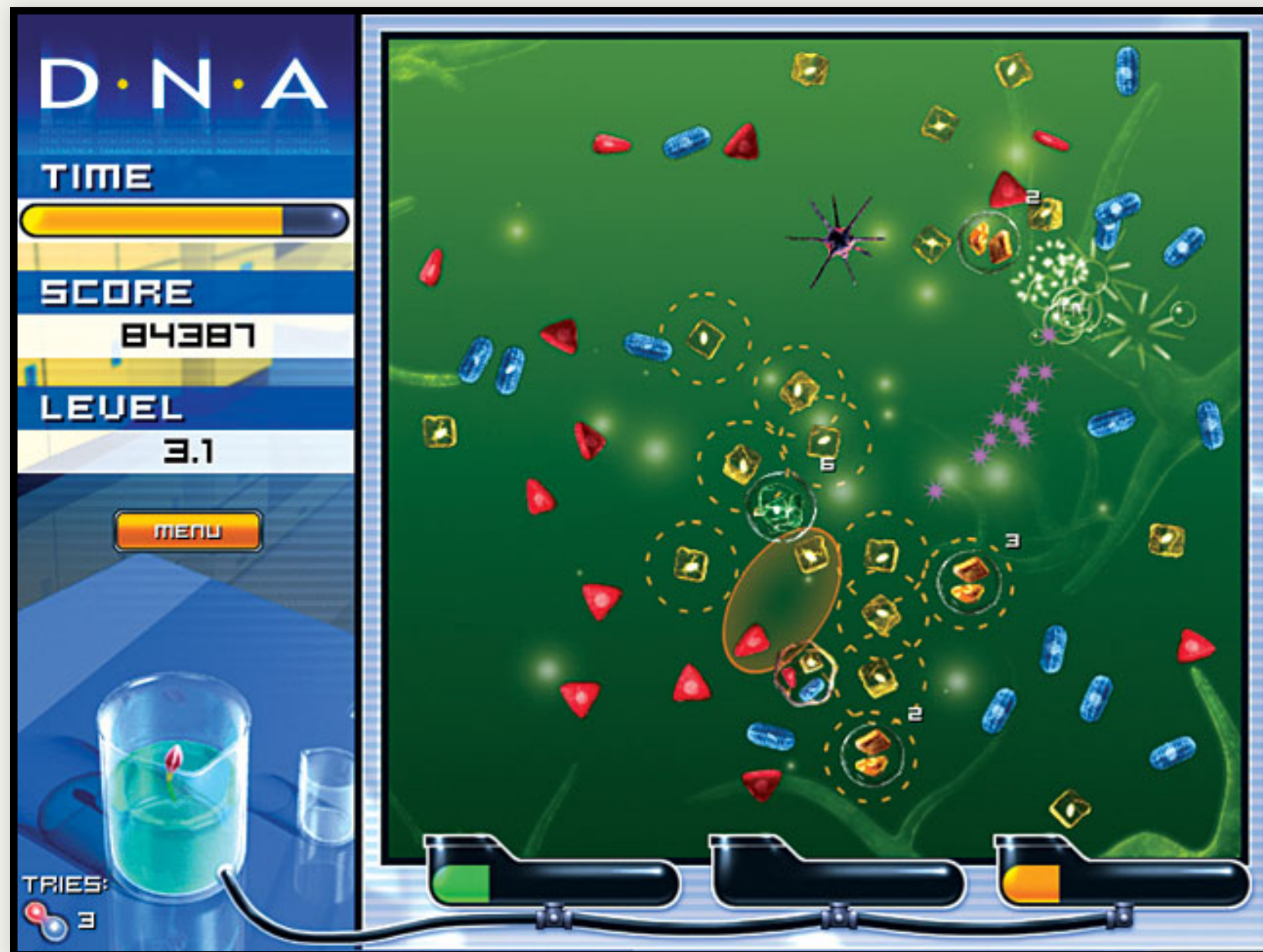


VR the experience

- VR is the virtual recreation of the physical reality we live in.
- VR > Virtuality / Reality



VR > Virtuality



Rubber hand illusion

VR > Virtuality

- VR experience is "embodied" through the virtual body ("avatar")



VR > Reality



VR classroom

VR > Reality

- Controlled, standardized, individualized environment
- Step-wise training

Demo: Immersive VR

- multi-sensory realistic experience inside an virtual environment
- ideal for training situational, adaptive, and complex skills



Source: AirForceTimes.com



Source: Bionest.com



Source: Walmart

Demo: 360 video

- 360 video

Demo: *Augmented reality*

- augmenting a real world experience with virtual objects.
 - Learning to draw with AR

Demo: Augmented virtuality

- augmenting an virtual experience with real-life objects.
 - Learning with Google Earth



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