Teacher Week

20.4.2021
Adult Education Taitaja

Virtual reality makes it possible to simulate

What is simulation?

- An imitation of reality
- Often immersive
- A technique to replace real experiences with guided experiences

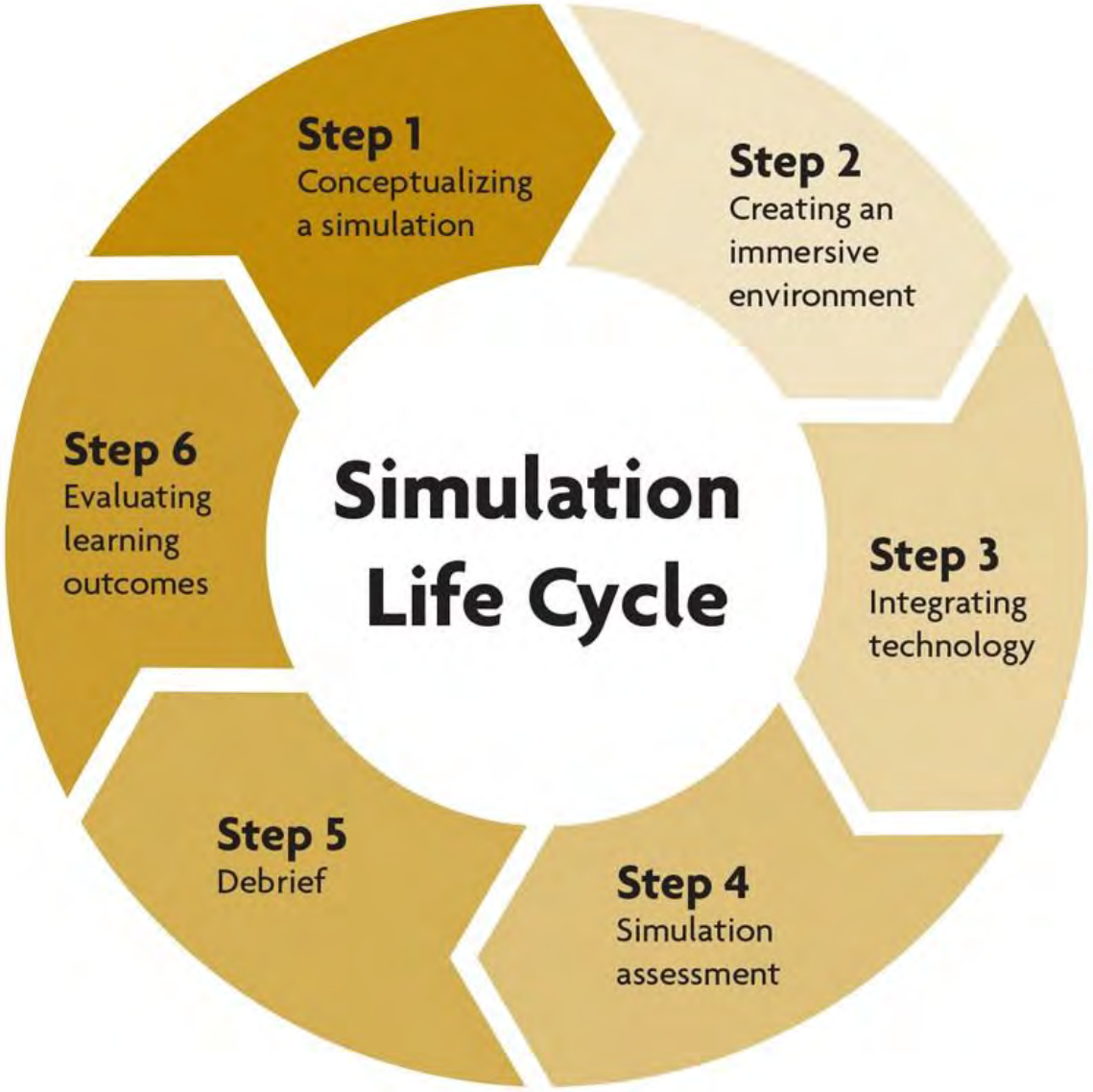
Simulation

- In actual physical reality using a mannequin: “mannequin-based simulation”.
- On a computer screen: a “screen-based simulation”.
- Using virtual reality: parts or all of the object and environment are presented to the user through two or three dimensional visual and audio representations. Can be made with or without touch (haptics) to create a more immersive experience.

  (Gaba 2004)

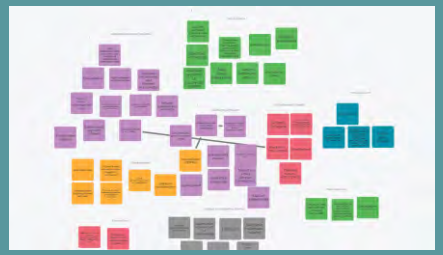
How does problem-based learning work in simulations?

- Learning is organized around working life related problems.
- Knowledge processing is guided.
- Continuous reflection and feedback
- Transparent evaluation
- Scenarios connect the learning task and the knowledge acquisition together.

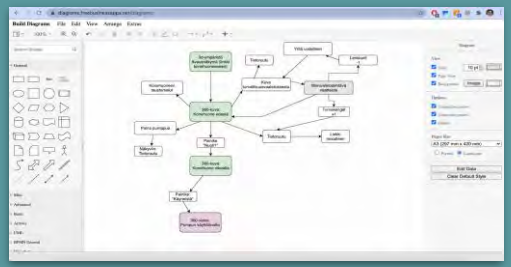

Step 1
Conceptualizing a simulation
Step 2
Creating an immersive environment
Step 3
Integrating technology
Step 4
Simulation assessment
Step 5
Debrief
Step 6
Evaluating learning outcomes
Simulation Life Cycle

VR- ja AR- learning materials

3DBear Academy & Taitaja project



Identification of the key features



Instructional material developed for AR/VR

AR/VR teaching content - made by teachers- is delivered to customer after review in the steering group.

Teachers are trained and helped to create VR/AR environments
→ Teachers can develop their own content!

Content is piloted with students to ensure match for teaching

ITERATION

We choose
- what we want to teach/ which degree to go virtual
- technology (AR, VR, 360 etc.)
- schedule

3DBear's Pedagogical Model

Engage

Show students they can succeed

Motivate students to continue

Develop confidence and perseverance

Have superior ease of use in immersive space

Learn

Learn by Doing

Explore the Concepts, procedures and tasks for jobs

Solve real problems

Teacher PD, Online CTE specific courses

Master

Advanced user design - unique as you can bring into AR/VR any standardized 3D/360 content

Apply, Analyze, Evaluate, and Create (Bloom)

Reflect, assess, and self-direct: lifetime skills

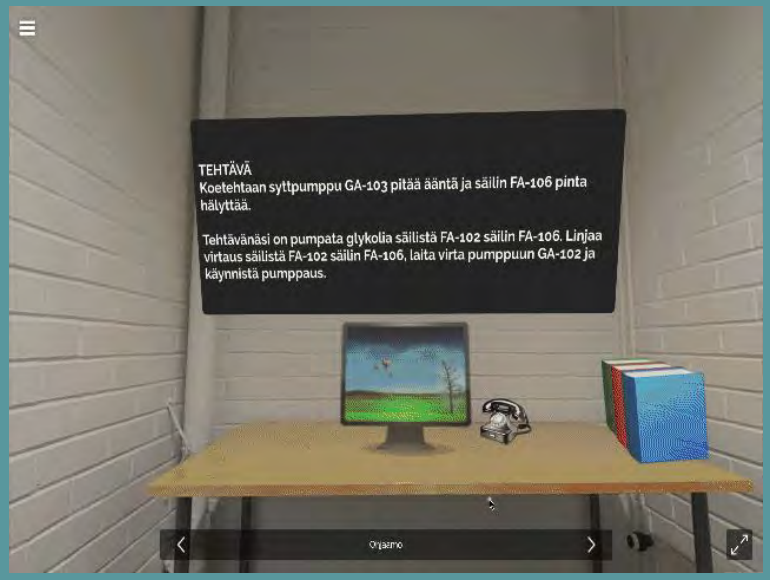
Cambelt replacement

- https://www.youtube.com/watch?v=3WO5gtfA_8o

Ship-to-Shore Crane Simulator

- https://www.youtube.com/watch?v=VnBXbPFUNRs

Virtual Learning Environments / VR



Plant Operations in Process Industry are taught using VR environment based on interactive tasks in 360-environment

- **Use of AR and VR enable teaching** activities **remotely** that would otherwise require physical presence
- Solutions **easily accessible** on mobile phone or browser and **safe.**
- **Bring joy back to learning** as creating and experimenting is an engaging experience for students.
- You can **learn basically anything virtually** and remotely.

Motorsport Simulators

https://www.youtube.com/watch?v=rE-Fge3gN9w

What are the benefits of simulation-based learning?

- Offers the possibility to develop practical and theoretical skills simultaneously for comprehensive action and the “knowing” of professionals.
- Allows students to train and experiment in a safe and controlled environment, avoiding the possibility of damage to themselves and expensive equipment.

What are the benefits of simulation-based learning?

- Makes it easier for students to understand the performance and relationship between different parts of the system.
- Can be used to assess performance and competency of individuals and teams.
- Facilitates individually targeted activities.
- Learning is possible regardless of time or place.
- Cost-effective in the long run.

Immersive Learning

Places individuals in an interactive learning environment, either physically or virtually, to replicate possible scenarios or to teach particular skills or techniques.

Why Immersive Learning?

Proven pedagogical benefits

FINNISH NATIONAL AGENCY FOR EDUCATION

DIGCIT KIDS APPROVED 2019-2020

Education Alliance Finland 2019 CERTIFIED PEDAGOGICAL QUALITY

Top Pick for Learning common sense education

BILL & MELINDA GATES foundation

Selected to global top 8
XR in education

90%

of learners think that augmented reality is good tool for learning higher order skills (communication, collaboration, critical thinking and creativity)

75%

of educators agree that using augmented reality supports deeper learning and meeting learning objectives

75%

"good tool for engaging and participating students"

*Based on a study by Helsinki Department of Education

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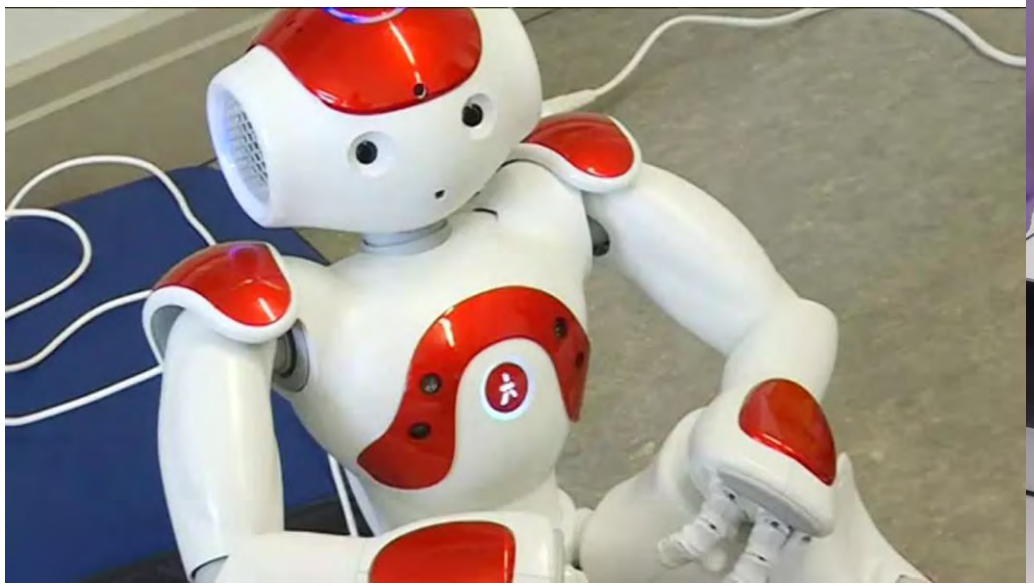
Based on a study done by Helsinki city

3D BEAR

Elias Robot teaches automotive vocabulary for immigrant students

https://www.youtube.com/watch?v=6XdNlPSS2Q0



Welcome to Adult Education Taitaja!