The Virtual Oil Rig - Simulation-based Immersive Training

Citation for published version:
Tait, J-A, Hetherington, C & Tate, A 2017, 'The Virtual Oil Rig - Simulation-based Immersive Training' Virtual Education Journal, vol Spring, pp. 32-36.

Link:
Link to publication record in Edinburgh Research Explorer

Document Version:
Peer reviewed version

Published In:
Virtual Education Journal

General rights
Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.
The Virtual Oil Rig – Simulation-based Immersive Training
Jo-Anne Tait (RGU), Colin Hetherington (RGU) & Austin Tate (University of Edinburgh)

The Oil & Gas Institute in the School of Engineering at Robert Gordon University (RGU) in Aberdeen, Scotland has made significant investment in developing methods to ensure its graduates are “industry-ready”. As visits to oil rigs are not often possible or practical for students it was decided to develop a virtual space for students to familiarise themselves with aspects of the offshore environment in a virtual environment. Such simulation tools give students immersive experiences that can increase their desirability to employers.

Virtual Oil Rig

- Development of semi-submersible rig in 3D Modeller
- Deployment in OpenSimulator (OpenSim)
- Set in ocean environment with sea life
- Moving parts and detailed machinery
- Realistic, loud, 3D sound
- Visitors click on objects for information and linked videos
- Hard hat, ear defenders and boiler suit dispensers for avatars
Seabed Equipment

- Seabed “Christmas Tree” equipment
- Blow Out Preventer
- Remote-controlled inspection robot
- Diving suit outfit for avatars

Onshore Campus

- Buildings “onshore” to showcase posters and further educational materials
- Lecture Hall for live streaming events and presentations
- Social areas for staff and students
- Based on the OpenVCE Collaboration Region (open source from OpenVCE.net project)
Collaboration – University of Edinburgh

- Experimenting with porting the Virtual Oil Rig via the OpenSim OAR Converter to Unity3D.
- Experimenting with porting to multi-user collaborative virtual worlds such as Sine.Space.
- Investigating use in virtual environments designed for immersive experiences using VR headsets.

Next Steps

- Further integration into taught modules
- Use the Virtual Oil Rig for assessment of key skills
- VR simulations
- Increasing student partnership

More Information and Image Sources

- RGU Oil and Gas Institute: http://www.rgu.ac.uk/ogi/
- Virtual Oil Rig: http://blog.inf.ed.ac.uk/atate/2013/05/08/aberdeen-oil-rig-visit-on-rgu-islands-in-opensim/
- Blog Post featuring OpenSim OAR Converter to Unity3D: http://blog.inf.ed.ac.uk/atate/2015/10/24/opensim-oar-convert-to-unity-scene-with-windows-interface/
- Blog Post featuring Virtual Oil Rig in Oculus Rift VR: http://blog.inf.ed.ac.uk/atate/2016/07/20/oil-rig-training-environment-in-vr/
- Open Virtual Collaboration Environment Region http://openvce.net/vwassets/
Contacts

- Jo-Anne Tait: j.e.tait@rgu.ac.uk
- Colin Hetherington: c.hetherington@rgu.ac.uk
- Austin Tate: a.tate@ed.ac.uk

Acknowledgements