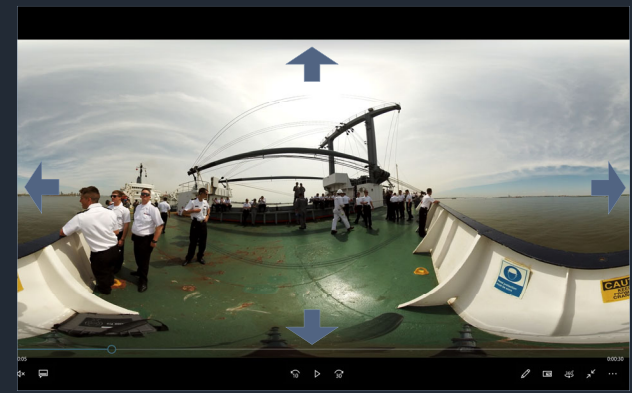


VR Training Videos



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SUNY Maritime College



Why VR Training Videos?

- 360° Video and VR technologies are now accessible and affordable
 - 360° Cameras cost \$100-\$800 and are easy to use
 - VR headsets cost \$10 for phone-based viewers and \$200 for All-In-One headsets
- They are engaging and exciting for students and highly immersive
- Allow instructors to highlight major learning points during the experience
- They are repeatable and can be played at the student's own pace

Research Findings

- Any form of instruction is beneficial, however a combination of VR Training Video followed by Discussion was most effective.
- Quality of Video Design is critical to User Experience
- Enthusiasm towards the use of VR for learning overrode frustration of using the platform or issues with Video Design
- A strong desire for more VR Training Videos covering a wide variety of operations was indicated by most students
- Offer a good opportunity for an introductory experience within the Experiential Learning Theory model, followed by simulation and real-world based experiences

How do you make a VR Training Video?

- Record with a 360° Camera, Edit, Upload to your Device, & Play. It's that easy!
- YouTube and Facebook provide players which can stream 360° Video on just about any up-to-date platform
- They can be used to replicate any experience, providing a new tool to use for experiential learning for any subject and any age group

Phases of Implementation at SUNY Maritime College

Creation of a training program using VR Training Videos along with research on its effectiveness was funded through the SUNY IITG Grant along with support from the SUNY Maritime FSA

Phase I – Pilot Study: A small number of students participated in a voluntary lesson which used initial VR Training Videos based on the operation of a vessel coming alongside. The students completed a pre-test and a post-test to measure increased knowledge on the subject and filled out a short survey focused on their opinion on the use of the videos as an educational platform.

Phase II – Bridge Resource Management: Senior students in a Bridge Resource Management course viewed a VR Training Video on Anchoring to help support their understanding of how to conduct the operation. Following the VR Training Video, the students completed a short survey focused on their opinion on the use of the videos as an educational platform.

Phase III – Summer Sea Term – Freshmen students on Summer Sea Term used the VR Training Video covering an anchoring operation to learn about anchoring. They then watched an actual anchoring operation onboard the training vessel with accompanying instruction from an instructor. Following the VR Training Video, the students completed a short survey focused on their opinion on the use of the videos as an educational platform.



Check out my website at Cadet360.org
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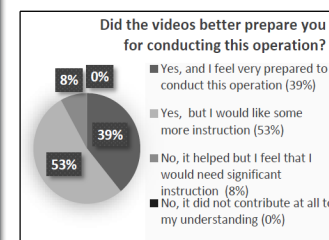


Figure 3. Effectiveness of VR Training Videos at preparing students for participation in shipboard operations. n = 90

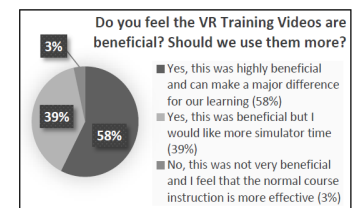


Figure 2. Student perception on how beneficial the VR Training Videos were for education. n = 90

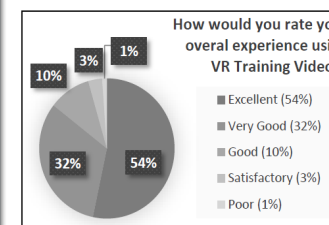


Figure 1. Overall Experience of VR Training Videos. n = 90

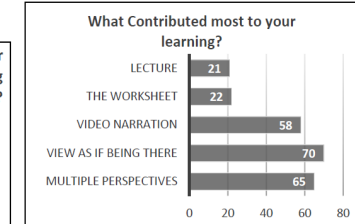
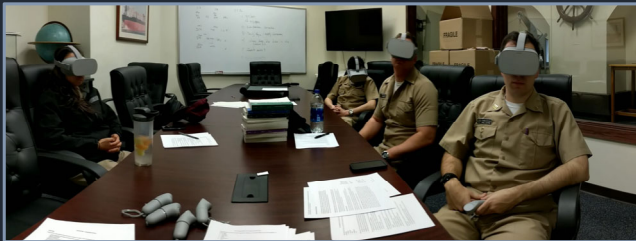


Figure 4. VR Training Video contribution to student learning. n = 90 (multiple responses allowed)



Literature on 360° Videos and VR

360 Degree Videos

- Visual Based – visual information should be used instead of audio cues
- Audio can increase level of immersion, if used correctly. Use it only for immersive purposes or to direct attention back to main focus
- Place camera in middle of action, where you would want the viewer's head
- Better visual quality, better experience
- Stability of camera is critical. A shaky camera causes VR Sickness
- Blues and blacks for backgrounds also reduce VR Sickness
- Use multiple short videos – No more than 5 min long

Virtual Reality

- Highly Immersive and Engaging
- Students are excited to use platform
- Steep learning curve for how to interact with platform
- User Experience (UX) considerations are critical to the usability and effectiveness
- Novelty of platform can take away from learning outcomes

David Kolb's Experiential Learning Theory & VR Training Videos

