Student Perceptions of Immersive 360 Video Content

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The Pennsylvania State University
Penn State World Campus Approach…
Essential Question

Does VR/360 Video provide value in an online learning environment???
The Misconception: VR vs. 360

| Level 4: Augmented Reality (AR) | • User has control over viewpoint and path  
|                                | • Live events can be modified  
|                                | • Examples: HaloLens, Pokemon Go, etc. |
| Level 3: Virtual Reality (VR)  | • User has control over viewpoint and path  
|                                | • Simulate unlikely or unsafe environments  
|                                | • Examples: Oculus Rift, HTC Vive, Playstation VR, etc. |
| Level 2: 360° Video            | • User has control over viewpoint, but not path  
|                                | • Captures events as they happen  
|                                | • Examples: Google Cardboard, Mobile Apps, YouTube 360, etc. |
| Level 1: Traditional Video    | • User has no control over viewpoint or path  
|                                | • Examples: Traditional 2D video, 3D Video, etc. |

World Campus 360 Video Use Case: Special Education

• SPLED 801: Behavior and Classroom Management
  (Lead Instructional Designer: Linas Mockus)
  — Options for Arranging Seating in a Classroom Environment
    • Clusters
    • Semi-Circles
World Campus 360 Video Use Case: Rehabilitation and Human Services

• RHS 100: Introduction to Disability Culture
  (Lead Instructional Designer: Juan Xia)
  (Consulting Instructional Designer: Joe Scott)

  — Assessment of the Paterno Library for accessibility
NURS 352: Advanced Health Assessment

- World Campus RN to BSN online program
- Case-based course following patients through the assessment and treatment procedures
- 360 Video Activity
  - Based on a home assessment for a dementia patient to evaluate the home environment for administering care based on the case
  - Observation/exploration of kitchen, living room, and bathroom via immersive 360 video
  - Guided tour of kitchen, living room, and bathroom via immersive 360 video
  - Students assessed on their reported observations and recommendations for the patient and family
Guided Bathroom Assessment (360° Video)

NOTE: keep in mind that 360° video controls only work in Chrome, Firefox and IE browsers on desktop/laptop computers. Use keys A and D for left-right, and W and S for up-down.

For best quality, select the highest quality settings available based on your connection (4K is recommended). Click "Settings" (cog icon) then "Quality" from the video player menu to make your selection. You may also choose to expand the video player to make it larger.

YouTube Settings

VR Headset:
If you would like to watch this video on a mobile device and/or with a VR headset, please use the separate link below. Make sure they open in the YouTube mobile app which is compatible with Google Cardboard and other VR viewers/headsets. Within the YouTube app tap the Cardboard/VR Viewer icon and place your smartphone in the headset to start watching the video.

Guided Bathroom Assessment (360° Video)
VR Headset Pilot
Considerations & Challenges

• Asynchronous Online Learning Environments
• Scalability
• Hardware Costs (VR headsets/viewers, cameras, etc.)
• Content Production Costs
• Bring Your Own Device (BYOD)
• Accessibility
• Knowledge Gap/Usability
Essential Question

Does VR/360 Video provide value in an online learning environment???
IRB Research

• **Goal:** The purpose of this research is to gain insight into the use of immersive 360 video and how it can contribute to enhance learning in an online environment. Also of interest is to gauge the use and perception of using Virtual Reality related hardware such as headsets to view immersive video content.

• 33 Questions

• Question Topics
  - 360 Video consumption (ie. desktop, mobile, VR Headset, etc.)
  - Overall effectiveness (ie. Furthered understanding of concepts covered, etc.)
  - Desire for more content presented in 360 video
  - VR Headset Usage
  - Interest in using a VR Headset
  - Technical issues/experience
  - Demographics (ie. age range, children under 18, language, employment, etc.)
I enjoyed the 360 Videos.

- 31% Strongly Agree
- 48% Agree
- 17% Somewhat Agree
- 2% Somewhat Disagree
- 2% Disagree
- 0% Strongly Disagree
The 360° video(s) activities were interesting enough to hold my attention.

- 32% Strongly Agree
- 45% Agree
- 17% Somewhat Agree
- 4% Somewhat Disagree
- 2% Disagree
The 360° video(s) effectively illustrated the concepts covered in the lesson.
I gained new insights shown in the 360° video(s) that I can put into practice.
How did you view the 360 video(s)?

- **Virtual Reality (VR) Headset**: 23
- **Mobile Device**: 15
- **Desktop/Web Browser**: 41

The Pennsylvania State University
Do you feel that the headset added value to the experience beyond watching the video(s) on your desktop?

- Yes: 36%
- No: 64%
Now that you've experienced the video(s) with a headset, would you recommend it to someone else?  

- Yes: 33%  
- No: 67%  

(n=27)
Open-Ended Comments

“Because it gives you a personal perspective of the content.”

“I enjoyed it, but it made me dizzy if I looked at it for too long.”

“It gave a greater visual detail to learning and envisioning the case scenario.”

“It was neat to see everything in real view but I was not used to the technology.”

“I had difficulty using the headset. Having a history of head injury, I found myself nauseated.”

“It if pertains to environmental/visual information it is easy to process information while viewing it.”

“More descriptive than reading about the setup. It makes you feel like you’re in a classroom more than online.”
• Who has experienced VR and/or 360 videos?
  • What was that experience like?
  • What equipment did you use?
• Have you integrated VR and/or 360 videos in your teaching or course design?
  • What subject areas?
  • What activities and assessments?
  • What was the student/faculty feedback?
• What were the challenges?
• If you don’t have experience, what do you want to know?
Next Steps

• Exploring new technology/platforms to make 360 videos interactive, improve quality, and improve user experience
  — Expanded Use Cases: Decision based scenarios
  — Clickable hot spots
  — WondaVR
  — Captivate 19
  — WebVR
  — Oculus Go/Quest

• Continue data collection and research
  — Focus on data analysis

• Goal: Make steps towards true VR!
Resources

- PSU News: World Campus researches effectiveness of VR headsets and video in online classes
- PSU News: Penn State World Campus implements 360-degree videos in online courses
- The Teaching Professor: Simulations for Online Learning: Getting Started with 360 Video
Let’s Collaborate!

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