Creating and Sharing VR with Google

Anymir Orellana, EdD
Orellana@nova.edu
Abraham S. Fischler College of Education & School of Criminal Justice

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Objectives

- Share a virtual tour that you create using Google Tour Creator
- Capture one or two scenes with Google Cardboard Camera using your smartphone
- Share your tours using Google Expeditions
- View shared tours using a Cardboard and a smartphone
Before we start

- Computer with Google Chrome browser 🌐
- Smartphone suitable for VR. Most Android and iOS phones with screen sizes from 4 to 6 inches will work. For an Android phone, the phone’s version should be 4.1 or higher.

- Apps installed on smartphone
  - Google Carboard 🧠
  - Google Cardboard Camera 📸
  - Google Expeditions 🌍
  - Gmail 📧
- Gmail account
- (OPTIONAL) VR headset like Google Cardboard 🧠
Agenda

- 15-minute: Introduction Google tools
- 20-minute: Take VR pictures
- 10-min: BREAK
- 30-minute to create and share a Google Tour
- 30-minute share experiences and discuss challenges and opportunities
Virtual Reality is ...

- realistic and immersive.
- an experience generator.
- the sine qua non of presence ("the illusion of non-mediation").
- not a media experience, VR is the actual experience.

Image from https://helpx.adobe.com/captivate/using/virtual-reality-project.html

360° media

- less immersive than virtual reality and typically keeps the viewer in a fixed point surrounded by roughly 360 degree view
- allow a person to put a HMD and seamlessly look around a scene
- are amazing tools for quickly creating a highly realistic experience

360° Cameras (Omnidirectional cameras)

More at https://www.pcmag.com/roundup/354276/the-best-360-cameras
From left to right: Samsung Gear VR, Google Daydream View 2, Xiaomi Mi VR Play 2, Google Cardboard.

Images from https://www.aniwaa.com/guide/vr-ar/types-of-vr-headsets/
STANDALONE VR HEADSETS (all-in-one HMDs)

*From left to right: Lenovo Mirage Solo, HTC VIVE Focus, Pico Neo, Oculus Go.*
Inexpensive VR technology

A. Orellana, EdD orellana@nova.edu

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Google AR & VR
https://arvr.google.com/vr/

A. Orellana, EdD   orellana@nova.edu

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https://arvr.google.com/vr/
https://arvr.google.com/tourcreator/

VR Issues

- Technical
- Technological
- Pedagogical
Technical issues

1. Developer must learn of possible technical issues related to
   ► Media format and cameras
   ► Browsers
   ► Smartphones
   ► VR Headsets
   ► Apps needed to view the content from various providers and websites
   ► VR limitations: format of images, features available, issues with VR content not displaying well in all browsers

2. Overheating and battery drain of smartphone occur with prolonged use of VR
Technical issues

3. Quality of media and of the production highly affects the experience
4. Poor VR can result in a really bad experience (physiologically and emotionally)
5. Focusing on a screen a few inches in front for extended periods of time may cause eyestrain
6. Frustrating experiences can occur when setting VR with smartphone and headset
7. Safety must be stressed
Technological issues

1. Variety and different VR technologies
2. Difficult to keep up
   ▶ The technology keeps improving
   ▶ Cost of devices is quickly decreasing, but high-end VR is still expensive
   ▶ Options are increasing
3. Cost versus benefit are difficult to assess given the rapidly evolving technology

A. Orellana, EdD  orellana@nova.edu
Pedagogical issues

1. Content is key

2. As with any effective integration of technology, planning is important. Perhaps more with VR

3. Understand skills needed, purpose, quality, technology, and type of students before thinking of integrating VR

4. Using VR with students at a distance requires clear and detailed instructions and considerations

5. Accessibility can be an issue

6. Novelty effect may wear off quickly
Ask yourself: Does “this” need to be in VR

1. VR is perfect for things you “COULDN’T DO” but not for things you “WOULDN’T DO”

2. Don’t waste the medium on the “MUNDANE”, instead consider for
   ▶ Doing the impossible
   ▶ To safely experience dangerous behaviors
   ▶ Cost and availability

SAVE VR FOR SPECIAL MOMENTS!

It’s not so much the technology that we use but, more importantly, it’s understanding and being able to describe the reason(s) why we would use it. What is it, from an educational perspective, that we are hoping to gain?

1. Will it make it easier for a student to understand an important but complex theoretical concept?

2. Will it more quickly build their competence in following an important process or procedure?

3. Might it even enable them to combine both ideas by allowing them to demonstrate their understanding of key concepts in solving difficult challenges and problems—an approach more in keeping with the types of complex challenges that they’ll likely be expected to resolve in the workplace?


A. Orellana, EdD  orellana@nova.edu
Don’t make people sick

Good VR = Feels GREAT!
Bad VR = Simulator sickness, eyestrain

BE SAFE

Good VR causes people to forget they are in the physical world
Keep VR simulations SHORT = “Less is more.”

Conclusions

1. 360 media is excellent inexpensive media for realistic low-level immersive experiences

2. Google tools are free/inexpensive and easy to use tools to create, use, and share 360 VR

3. BYOD brings opportunities and challenges
Conclusions

1. VR is not a new or recent technology
2. Like any technology, is neither good or bad, it is a TOOL
3. Nobody knows what the future holds for VR
4. We must use VR responsibly, ethically, and be educated to try to understand
   - How it works
   - What it is capable of and understand how it affects the brain
   - How it can meet the needs and desires of humans
Conclusions

5. People will become consumers and producers of VR bounded only by imagination
6. VR can be dangerous to physical and mental health
7. VR should not be used with children under 12
8. The barrier is not hardware but content
Recommendations

- Consider quality: Inexpensive technology can get you started, but poor quality can be a turn off
- Be patient and curious
- When using Google tools, be mindful of copyrights and privacy
- Create/use a separate Gmail account to use for VR purposes
- Constantly update your apps
- Test with as many devices and browsers as you can

Educators need to experiment and learn more about VR
Recommendations

► Always think of those who might be “VR-blind”
► Technological improvements will occur sooner than we expect, so be ready
► Keep safety in mind always
► Be mindful that the recommended age for children under 13+
► Always ask yourself “Does this need to be in VR?”

Educators need to experiment and learn more about VR
Resources


Finding a Google Expedition
https://sites.google.com/tcsnc.org/tcs-g-expeditions/available-expeditions

Google Expeditions: Bringing the World to your Classroom in Virtual Reality!
https://sites.google.com/tcsnc.org/tcs-g-expeditions/home

Expeditions career tours can take kids to work, virtually
https://www.blog.google/outreach-initiatives/education/expeditions-career-tours-can-take-kids/

Future of Story Telling: Google Expeditions
https://futureofstorytelling.org/story/google-expeditions

Inspiring Students to Attend College With Google Expeditions

Expeditions Resources
https://support.google.com/edu/expeditions/answer/7034630?hl=en

Google Expeditions Kit for Education
https://arvrjourney.com/google-expeditions-kit-for-education-8dbf22db42b0
Istock

ThingLink Education Blog. Adding a New Dimension to Images, Videos, and 360s in the Classroom
http://thinglinkblog.com/
http://thinglinkblog.com/2018/04/18/immersive-learning-for-higher-education/

How Virtual Reality Will Change How We Learn and How We Teach

Virtual Reality Technology, Designed for the Classroom
http://www.classvr.com/school-virtual-reality/

Using Immersive Environments (Virtual Reality)
https://poorvucenter.yale.edu/UsingImmersiveEnvironments

Learn and Train With Virtual Reality https://unimersiv.com

VR and AR: Pioneering Technologies for 21st-Century Learning
- Oculus Go: Finally, VR for Everyone [https://www.androidcentral.com/oculus-go](https://www.androidcentral.com/oculus-go)
- 6 Best Places Online to Share Your VR 360° Content [https://veer.tv/blog/6-best-places-online-to-share-your-vr-360-content/](https://veer.tv/blog/6-best-places-online-to-share-your-vr-360-content/)