Creating and Sharing VR with Google

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Objectives

- Create 360° VR experiences using Google Cardboard Camera, Gmail, and Tour Creator.
- Share 360° VR tours using Google Cardboard, Gmail, and Expeditions.
Estimated time allotment

- 10 min: Introduction to 360° VR and Google tools
- 20 min: teamwork to work on idea of a tour related to the conference and take VR pictures
- 40 min: teamwork to create and share a Google Tour
- 20 min: Sharing experiences, discuss challenges and opportunities
Virtual reality with 360° media

Deliver virtual reality experiences with 360° media

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
- 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
Inexpensive VR technology

Google VR
Virtual reality for everyone
We’re on a mission to bring amazing experiences to the world.
https://vr.google.com/

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- Google Tour Creator [https://vr.google.com/tourcreator](https://vr.google.com/tourcreator)
- Google Earth VR [https://vr.google.com/earth/](https://vr.google.com/earth/)
- Tilt Brush [https://www.tiltbrush.com/](https://www.tiltbrush.com/)
- Build Virtual Worlds [https://developers.google.com/vr/](https://developers.google.com/vr/)
Bring your lessons to life with Expeditions

Introduce your students to a new way of learning with virtual reality (VR) and augmented reality (AR). Download the Expeditions app to get started.

https://edu.google.com/products/vr-ar/expeditions/

https://vr.google.com/tourcreator

Tour Creator

Create a virtual tour

Tour Creator makes it easy to build immersive, 360° tours right from your computer

GET STARTED
Issues

- Technical
- Technological
- Pedagogical
Technical issues

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

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

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

- Content is king!
- As with any effective integration of technology, planning is important. Perhaps more with VR
- Understanding skills needed, purpose, quality, technology, and type of students is important before thinking of integrating VR
- Using VR with students at a distance requires clear and detailed instructions and considerations
- Accessibility can be an issue
- Novelty effect may wear off quickly

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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?

Conclusions

- 360 media is excellent inexpensive media for realistic low-level immersive experiences
- Google tools are free/inexpensive and easy to use tools to create, use, and share 360 VR
- BYOD brings opportunities and challenges

Educators need to experiment and learn more about VR
Conclusions

- VR is not a new or recent technology
- Like any technology, is neither good or bad, it is a TOOL
- Nobody knows what the future holds for VR
- 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

Educators need to experiment and learn more about VR
Conclusions

- People will become consumers and producers of VR bounded only by imagination
- “Bad” VR can be dangerous to physical and mental health
- VR Should not be used with children under 12
- The barrier is not hardware but content

Educators need to experiment and learn more about VR

Recommendations

- Start small: Inexpensive technology can get you started, but poor quality can be a turn off
- Be patient and curious
- Test with as many devices and browsers as you can
- Always think of those who might be “VR-blind”
- Keep safety in mind always
- Be mindful that the recommended age for children under 13+
Technological improvements will occur sooner than we expect, so be ready.

Understand copyrights and about how your content can be used by others when using free tools like Google.
Ask yourself: Does “this” need to be in VR?

- VR is perfect for things you “COULDN’T DO” but not for things you “WOULDN’T DO”
- 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!


Google VR [https://vr.google.com/](https://vr.google.com/)
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- Google Earth VR [https://vr.google.com/earth/](https://vr.google.com/earth/)
- Build Virtual Worlds [https://developers.google.com/vr/](https://developers.google.com/vr/)
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]

Virtual Reality for Education [http://virtualrealityforeducation.com/]

The Best 360 Cameras for 2019 [https://www.pcmag.com/roundup/354276/the-best-360-cameras]

6 Best Places Online to Share Your VR 360° Content [https://veer.tv/blog/6-best-places-online-to-share-your-vr-360-content/]

40+ Reality Technology Industry Definitions, Industry Terminology, and Explanations [https://www.realitytechnologies.com/glossary/]

**TYPES OF VR HEADSETS: PC VR, STANDALONE VR, SMARTPHONE VR**
[https://www.aniwaa.com/guide/vr-ar/types-of-vr-headsets/]