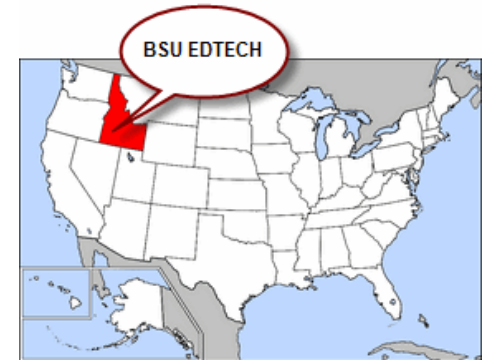


Learning through Virtual Reality and 360-Degree Videos on YouTube: Possibilities and Pitfalls

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What are 360-Degree Videos?

Omnidirectional

- Camera records front and back
- Videos are stitched together

Interactive

- Viewer can look all around
- Freedom to explore

Immersive

- Sense of being there



Image by paologhedini from Pixabay

Online 360 Video - Kind of a New Thing

2015

YouTube–March

Facebook – September

2017

Vimeo – March

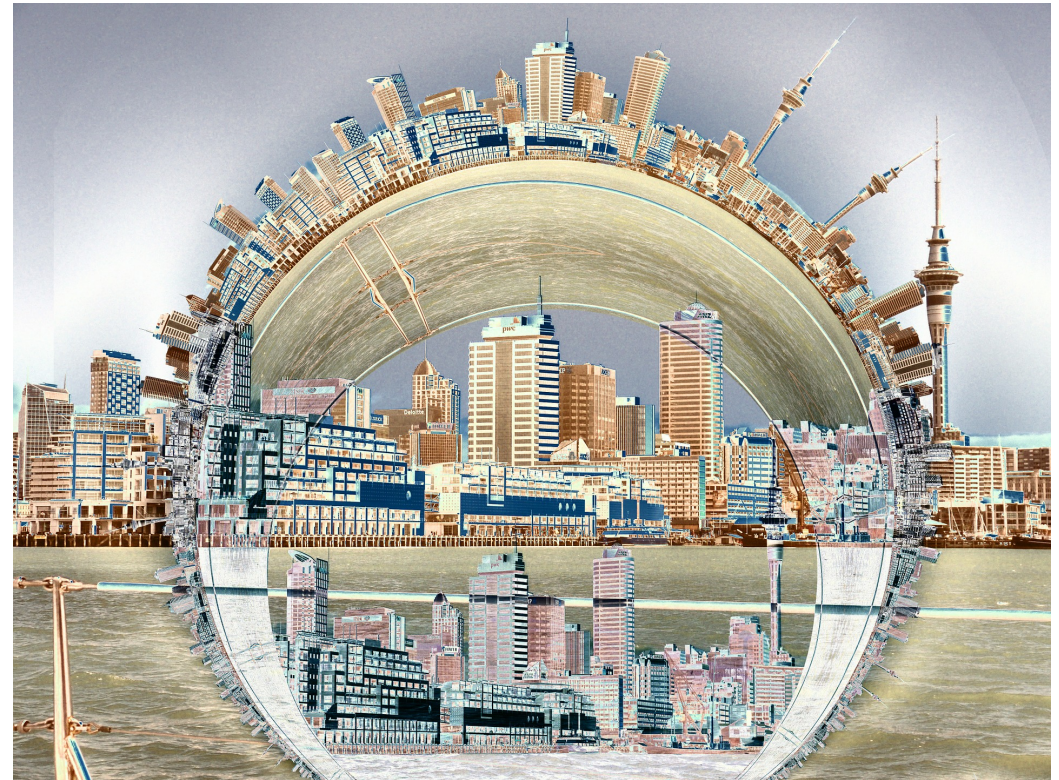
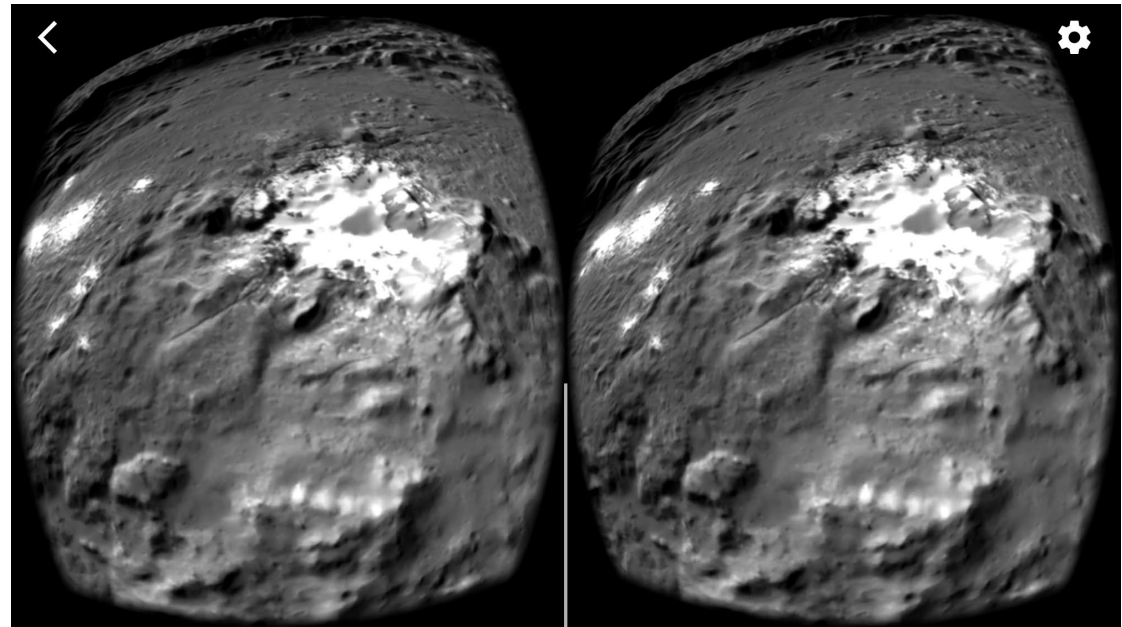


Image by Gerd Altmann from Pixabay

Low-Cost Virtual Reality



Smartphone + Cardboard + YouTube App



NASA Jet Propulsion Laboratory. (2017, July 28) NASA VR: Fly Over Ceres with the Dawn Spacecraft (360 video) [video file]. Retrieved from <https://youtu.be/-C4qHzmLT20>

Possibilities for Learning

Virtual Fieldtrips

- Events or tours – campus, museum
- Explore nature – national parks, space

Immersive Stories

- Journalism – news or documentary
- Animated – explore the story world

New Perspectives

- Simulation – observe something new
- Art or performance – see in a new way



Image by NASA-imagery from Pixabay



Virtual Fieldtrip Example

Glow Worm Caves of New Zealand in 360° | National Geographic



Immersive Story Example

The Displaced | 360 VR Video | The New York Times



New Perspective on Art Example

Dreams of Dali: 360° Video

Examples of 360 Video in the Literature

Chemistry Lab Presentations
(Ardisara & Fung, 2018)

Religious Studies
(Johnson, 2018)

Business Training
(Lee, Sergueeva, Catangui, & Kandaurova, 2017)

Teacher Education
(Walshe & Driver, 2019)

Medical Education
(Yoganathan, Finch, Parkin, & Pollard, 2018)



Image by Foundry from Pixabay

Pitfalls of 360 and VR

Motion sickness or discomfort

- Offer warnings and opt out options

Viewer gets lost in video

- Looking around can leave viewer lost
- Need to look for cues in text or speech

Accessibility challenges

- Captions will display on YouTube
- Audio descriptions are not supported

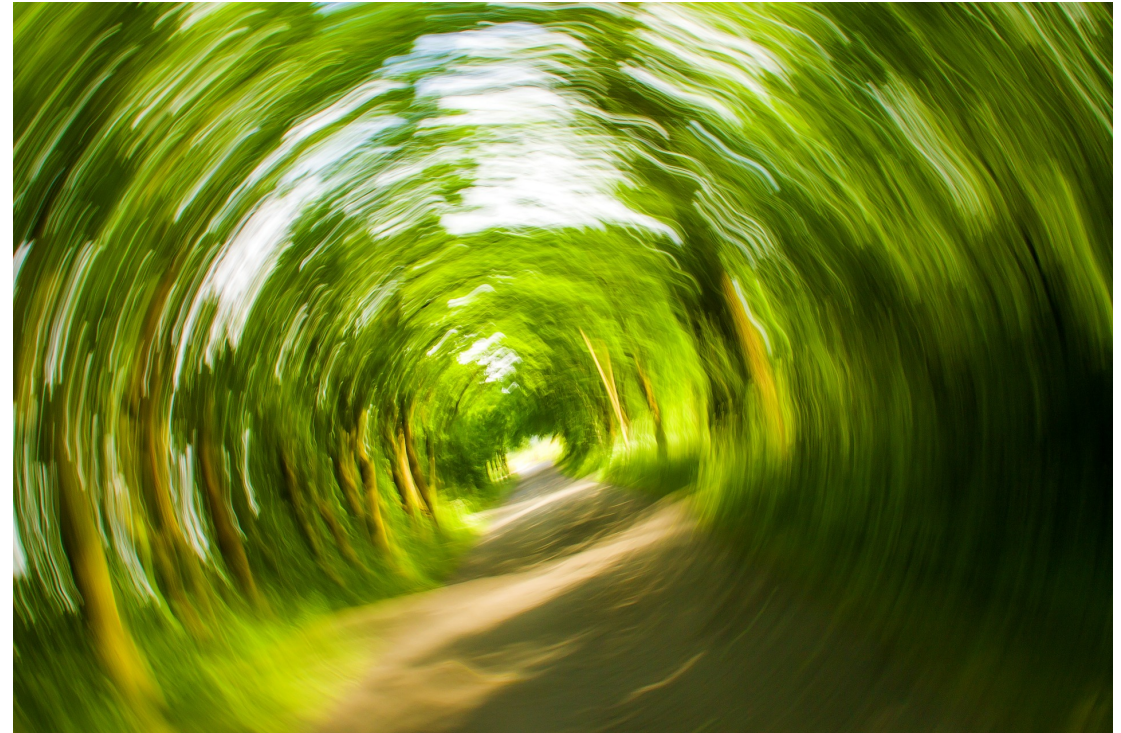


Image by Kalhh from Pixabay

360 Videos on YouTube



Virtual Reality

3,174,971 subscribers



National Geographic

10,784,113 subscribers



Discovery VR

32,397 subscribers



Google Spotlight Stories

242,931 subscribers



Steve Bambury AR VR

979 subscribers



The New York Times

1,813,751 subscribers

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Ardisara, A., & Fung, F. M. (2018). Integrating 360° Videos in an Undergraduate Chemistry Laboratory Course. *Journal of Chemical Education*, 95, 1881–1884.

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