

COMMENTARY

Pivoting to Virtual Reality, Fostering Holistic Perspectives: How to Create Anthropological 360° Video Exercises and Lectures

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Abstract

This paper addresses two challenges in higher education that increased with the shift to online learning due to COVID-19: translating experiential learning online and supporting student engagement. While virtual reality can be mobilized to address both of these challenges, finding or creating virtual reality that fits a course's learning objective is a common barrier. This paper illustrates how instructors can integrate anthropological readings with freely available 360° videos or Google Earth to create their own virtual reality-like experiences and class activities. Such immersive experiences can support students in applying anthropology to real-world issues from any location with a smart device and internet connection and lead to a more holistic understanding of social issues. They also present an alternative to narrated PowerPoints or videos in online and in-person learning that can foster student engagement with the content.

Keywords: *virtual reality; 360° videos; experiential learning; applied anthropology; COVID-19; online learning; holistic perspectives; student engagement; technology; discussion activities*

Introduction

The recent move to mostly online learning due to COVID-19 presented numerous challenges for higher education and students. One of these is translating experiential learning online. Another is related to helping students engage with instructor-delivered material. Virtual reality offers a modality for acquiring knowledge that presents advantages over lecture, reading, and even film. While not the same as actually "being there" and not without accessibility issues related to visual and auditory abilities, virtual reality¹ (VR) and related 360° videos offer a more immersive experience that, when structured appropriately with course content, can lead to more holistic understandings of social issues.

¹ VR differs from 360° videos in that VR is not limited to real-world videos, enables viewers' manipulation of virtual objects, and has more seamless navigation (Ward 2017).

Prior to the COVID-19 pandemic, scholars within anthropology were exploring VR as a way to enhance learning. Within the realm of archaeology, for example, Jeffrey Vadala has used VR to increase students' awareness of cultural-based assumptions in the interpretation of archaeological sites, and a VR lab developed by Laura Shackelford and David Huang's team at the University of Illinois, Urbana-Champaign, enables students to participate in a virtual archaeological excavation (Vadala 2017; Turner 2020; Yates 2018). Overall, VR offers an opportunity to bring archaeological sites to students in a way that was not possible before, especially for students with physical mobility restrictions (Turner 2020). In the case of biological anthropology, VR labs with 3D models of hominid skeletal remains and artifacts enable students to work with these items without having them physically in a lab (Jackson and Cofran 2019). While textures and the sense of touch in general play an important experiential role that cannot yet be completely replicated virtually, these options offer creative ways for student engagement.

In the case of cultural anthropology, VR has the potential to help students recognize their assumptions about particular communities. For example, Stanford University's Virtual Human Interaction Lab has tested two VR projects, "Becoming Homeless" and "1000 Cuts," to see how people's understandings of poverty and racism are impacted by immersive perspective taking (Stanford University, n.d.). Furthermore, cultural anthropologists are beginning to adopt VR in their classes. Emily Steinmetz and Raven Bishop created an assignment in which students use VR to accompany individuals in Los Angeles who are experiencing housing insecurity as they narrate and give a tour of their daily routines (Steinmetz and Bishop 2020). These are great examples of already-designed VR and accompanying course activities. But what if instructors cannot find a VR or VR activity that fits their course's learning goals or topic and do not have the equipment to create their own? Drawing on my experiences converting in-class discussion activities and lectures to online asynchronous and synchronous materials for a 100-level cultural anthropology course, I illustrate the process for creating VR-like activities and lectures using free, user-friendly software and existing 360° videos. I discuss two examples, one using a publicly available 360° video and another using Google Earth.

Option 1: Designing Class Discussions using Publicly Available 360° Videos

The first step in the process follows backward design (see Bowen 2017) and involves sketching out the answers to the following questions: What should students take away from this section of the course? What is the learning goal? What specific concepts do students commonly struggle with and how might VR help? Sometimes this step involves thinking about why a particular reading, discussion activity, or assignment was initially included. The next step involves identifying the form of assessment and finding a 360° video that fits the learning goal. As 360° cameras become more accessible to the general public, more 360° videos are available online. Combining the number "360" with topical keywords in YouTube searches can help locate these. There are also other sources for 360° videos, such as Google Arts and Culture and the Archaeology Institute of America, which lists VR tours.

For my introductory cultural anthropology course, a main learning goal involves application and problem-solving. I want to help students learn how to apply anthropology to address issues in their future careers. This goal involves using ethnographic data and thinking outside the box, with the box being their own cultural viewpoints and positionalities. For one section of the course, I was already using an ethnographic reading that describes the experiences and perspectives of a Nuer man as he resettles in the Midwestern U.S. (Shandy 2016). The reading discusses some misunderstandings that unfolded between the volunteers working with the resettlement NGO and the Nuer man. Since the reading focused on a post-resettlement experience, I wanted to provide students with a better understanding of pre-resettlement experiences, and I searched for a 360° YouTube video using the search terms “refugee camp Sudan 360.” The resulting 360° video was produced by Doctors Without Borders and involves a man who lives and works in the camp narrating a tour of the facilities (see <https://www.youtube.com/watch?v=sRTSJ1K-yn8>). However, unlike a traditional YouTube video, viewers can click within the 360° video and move the viewpoint up, down, right, and left, which makes it feel like they are there in person. As students watch the video, I ask them to stop and explore by moving the camera angles around. They are directed to pay close attention to the housing and bathrooms, medical facilities, any job/employment options, and the ways that food and supplies can be obtained. I also include a short lecture (~5-8 minutes) on the political-historical context that led to the conflicts in the area. This is all to provide students with enough background to successfully complete the discussion activity, which will enable me to assess how well students have achieved the learning objective.

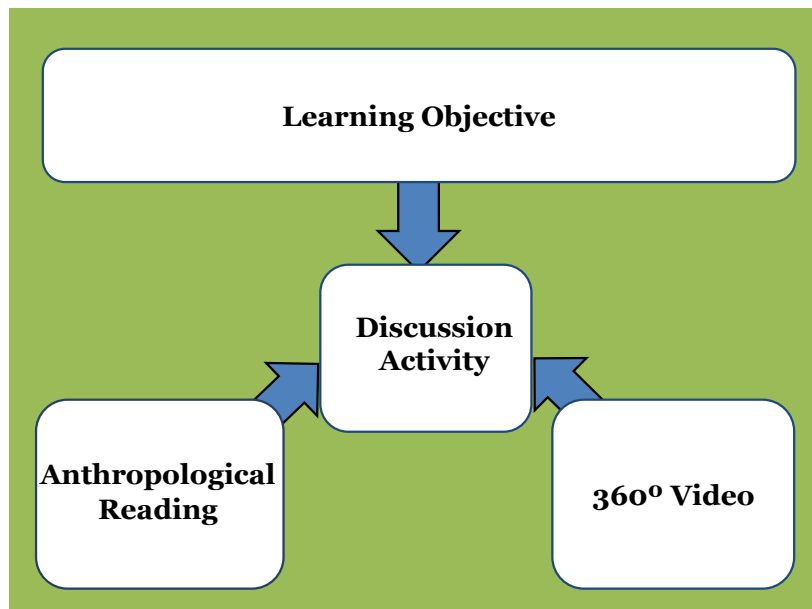


Figure 1. Conceptual Chart for Integrating 360° Videos

The discussion question is intended to help students integrate their 360° video experiences and the reading to obtain the learning objective of applying anthropology to problem-solve real-life issues (see Figure 1).

Discussion Question: You work for a refugee resettlement NGO that helps individuals resettle in Indianapolis and are training new volunteers to work with a group from South Sudan. What specific advice would you want your volunteers to share with the group?

To foster coverage of different aspects of life, students are divided into small groups that focus on one topic, such as orientation in the new apartment, shopping on a budget, and accessing healthcare. The goal of the 360° video integration is to help students better understand how difficult the whole resettlement process is and get them to reflect on taken-for-granted social norms and cultural capital that create additional barriers for refugee individuals who may already be dealing with physical and mental health challenges. Because each student may see something different based on where they turn within the 360° video, this activity aligns with Stroup, Ares, and Hurford's (2004) generative learning taxonomy, which involves multiple paths and endpoints to reach an end goal. In addition, Jarmon et al. (2009, 179) found that virtual experiences that promote "exploration" and a "sense of personal presence" facilitate learning.

Although one potential challenge with using publicly created 360° videos is that the narration may be minimal or may not fit the learning objective, there are a couple of ways to address this issue. To give students the missing background, consider pairing the VR-like experience with an accessible anthropological reading and/or short lecture that provides either the analytical lens and/or the background information that students would need to achieve the learning objective. Steinmetz and Bishop also point out that a reflection activity that talks about framing – that is, students' expectations of what they will see going in and what is actually featured – is helpful for students to recognize their assumptions (2020). The narration or lack thereof can also be turned into the basis for discussion.

Option 2: Creating 360° Lectures and Class Assignments Using Google Earth

Existing anthropological scholarship and instructors' research can also be mobilized to create VR-like assignments and lectures. I created a Google Earth tour as an alternative to a recorded PowerPoint lecture to add variation in learning modalities and encourage student engagement with the lecture material. I have also paired the tour with discussion posts and assignments, using the process described above. Google Earth (<https://www.google.com/earth/>) is a free and user-friendly platform for creating narrated experiences using 360° images without requiring the user to produce their own 360° video footage. Google Earth's search function allows the user to integrate any location Google is available and transition from a bird's-eye view to an immersive experience, which can be

captured as a starting point for each scene. In addition, text, audio narration, photos, and YouTube videos can be embedded into the tour.

For my introduction to cultural anthropology courses, the Google Earth tour focused on Yellowstone National Park and drew on past scholars' work about the exclusion of Native Americans from the park (i.e., Nabokov and Loendorf 2004). To help promote student engagement, I recommend telling a story or making an argument using Google Earth's street-view images. One strategy is to pose a question similar to one that would appear in a lecture. In the tour I created, there is a 360° experience of Hayden Valley in Yellowstone National Park, with lush green grass and water reflecting the images of trees in the background. I embed the question, "Have you ever wondered why names like Devil's Den and Hell's Half Acre were given to some of the sites in the park? What is the larger historical political significance? Let's go visit Hell's Half Acre to find out." This location is the next scene in the tour. Relatedly, embedding cues in the writing can help students know what to do next or how to engage. For example, cues might ask students to "Take a look around ... Look for x ... and then go to the next scene to see what happened."

The Google Earth tour functioned in place of a recorded PowerPoint lecture and was paired with an ethnographic reading about Guarani communities' interactions with their physical ecologies and the subsequent negative impacts of Western-based development approaches (Reed 2016). While the Google Earth tour features a case study from North America, the reading features a case study from South America. The Google Earth tour and reading were linked to a class debate about E.O. Wilson's idea to save the planet by reserving at least half of the earth as a series of nature parks or protected areas. Students were asked to explain whether they agree with Wilson's plan and to use data from the tour and reading to support their position. Both the reading and the Yellowstone tour provide key background on issues such as "colonial conservation" (Colchester 2004) and serve as a basis for recognizing similarities and differences across countries. The goal is to draw students into the issue and provide them with enough background to start to critically evaluate Wilson's plan and reflect on how Western ideas about human-environment relationships influence "sustainable" development. For synchronous or in-person meetings, the debate is done live, and for asynchronous debates, discussion posts are used.

I also integrated Google Earth-based course projects into my introductory and upper-division classes. Students literally connect socio-political contexts with geographical landscapes and share the end-product with their peers, which can easily be linked to their professional websites as a showcase of their work. Because it is public facing, Google Earth is a way to integrate teaching and public anthropology.

Final Reflections

Prior to COVID-19, I was pivoting to platforms like Google Tour Creator (replaced by Google Earth) as an alternative to student papers, and I was beginning to integrate 360°

videos into in-class discussions. During COVID-19, I started to realize the potential of VR-like experiences as an alternative to recorded lectures or case study readings as well as for flipped-classroom pedagogy. VR-like experiences offer an alternative means for students to engage with course material.

References

- Bowen, Ryan. 2017. "Understanding by Design." Vanderbilt University Center for Teaching. Accessed June 20, 2021. <https://cft.vanderbilt.edu/guides-subpages/understanding-by-design/>.
- Colchester, Marcus. 2004. "Conservation Policy and Indigenous Peoples." *Cultural Survival Quarterly* (March): 17-22.
- Jackson, Nyala, and Zachary Cofran. 2019. "Virtual (Reality) Anthropology." Ford Scholars, Vassar College. Accessed June 20, 2021. <https://ford.vassar.edu/projects/2019/anth-cofran.html>.
- Jarmon, L., T. Traphagan, M. Mayrath, and A. Trivedi. 2009. "Virtual World Teaching, Experiential Learning, and Assessment: An Interdisciplinary Communication Course in Second Life." *Computers & Education* 53 (1): 169-182. <https://doi.org/10.1016/j.compedu.2009.01.010>.
- Nabokov, Peter, and Lawrence Loendorf. 2004. *Restoring a Presence: American Indians and Yellowstone National Park*. Norman: University of Oklahoma Press.
- Reed, Richard. 2016. "Forest Development the Indian Way." In *Conformity and Conflict: Readings in Cultural Anthropology*, edited by David W. McCurdy, Dianna Shandy, and James Spradley, 96-105. Boston: Pearson.
- Shandy, Dianna. 2016. "Nuer Refugees in America." In *Conformity and Conflict: Readings in Cultural Anthropology*, edited by David W. McCurdy, Dianna Shandy, and James Spradley, 317-325. Boston: Pearson.
- Stanford University. n.d. "Projects-Empathy and Perspective Taking." Virtual Human Interaction Lab. Accessed July 6, 2021. <https://www.stanfordvr.com/projects/2020/empathy-and-perspective-taking/>.
- Steinmetz, Emily, and Raven Bishop. 2020. "Virtual Reality: A Tool to Challenge Stereotypes about Unhoused People." *Teaching and Learning Anthropology*, August 20, 2020. <https://teachinglearninganthro.org/?p=467>.
- Stroup, W.M., N.M. Ares, and A. Hurford. 2004. "A Taxonomy of Generative Activity Design Supported by Next-Generation Classroom Networks." In *Proceedings of the 26th Annual Conference of Psychology of Mathematics Education North America*, edited by D. E. McDougall and J. S. Ross, 837-846. Toronto: OISE/UT.

- Turner, John. 2020. "Classrooms take a New Route to Learning." LAS News, Spring, 2020. https://las.illinois.edu/system/files/inline-files/LASNews_Magazine_Spring2020_web.pdf.
- Vadala, Jeffrey. 2017. "Teaching a Digital Anthropology." *VR Past & Present: Anthropology, Archaeology, and Digital Humanities* (blog), January 3, 2017. <https://www.vrpastandpresent.com/single-post/2017/01/03/teaching-a-digital-anthropology>.
- Yates, Diana. 2018. "Excavating a Cave Without Leaving Campus." *Illinois News Bureau*, November 14, 2018. <https://news.illinois.edu/view/6367/717299>.
- Ward, Caleb. 2017. "Demystifying 360 vs. VR." *Vimeo* (blog), March 8, 2017. <https://vimeo.com/blog/post/virtual-reality-vs-360-degree-video/>.