

Relational Landscapes: Teaching Chaco Canyon with Immersive Technology

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This lesson employs a 360 image to encourage students to understand and experience Chaco Canyon (850-1150CE) and its monumental architecture as a relational landscape.

Session Specifics

This lesson plan is intended for a large class in a semester-long face-to-face Native North American art history or visual culture course with 80-minute sessions. Considering many programs do not have courses in Native North American art history, variations for general surveys of North American arts, Western European arts, or of global art histories are offered in the **Reflection** section. In addition, components of this approach could be adapted to a one-shot instruction session related to frameworks such as “Research with Primary Sources”, especially for first-year composition or general education courses.

Instructional Partners

While this lesson plan was conceived as a class taught solo by an art history professor, the approach lends itself to collaboration with digital technology librarians, Indigenous Studies and astronomy faculty, and planetarium staff.

Audience

First and second year college students from many majors.

Curricular Context

Overview

This lesson employs a 360 image to encourage students to understand and experience Chaco Canyon (850-1150CE) and its monumental architecture as a relational landscape. Chaco Canyon in northeastern New Mexico was a major southwestern center for ceremonials, trade, and other activities. Pueblo Indian peoples’ ancestors built its distinctive monumental architecture. The lesson took further advantage of Michigan State University’s Abrams Planetarium and its director to introduce students to the relations between the surrounding geography, the cosmological alignments, the architecture, and the sensations of Chaco Canyon. The associated assignment exposes students to the varied ways of seeing and experiencing Chaco Canyon architecture using a small selection of Indigenous and early non-Indigenous authored primary sources. They are encouraged to think about the way peoples’ cultures and worldviews influence how they see, exist, and build in the world. The lesson works well after an introductory lecture on ancestral Pueblo architecture and societies, as well as following a discussion of Santa Clara Pueblo architect and historian Rina Swentzell’s (1939-2015) essay on Puebloan cosmologies and related concepts of form and space (1990).

Rationale

(Why an immersive experience?)

Humans often design their environments to organize social relations and to teach or reinforce knowledge about their worlds; this is a felt, as well as visual, experience. According to Santa Clara Pueblo architect

and historian Rina Swentzell (1990), Pueblo stories, songs, and prayers present a house not as an inanimate object but as part of a cosmological world view that recognizes interconnectedness and cyclic temporality. In order to convey Swentzell's theory, an immersive visual experience of Chacoan structures offers a pedagogical advantage over conventional slides or other two-dimensional representations. It further advanced Indigenous perspectives over their cultural heritage.

(Why primary sources? Why compare viewpoints?)

The construction of history is a selective process. Some aspects of the past have been deliberately erased, dismantled, or negated. Primary sources are important in many areas of humanities research; they provide first-hand accounts from residents, cultural descendants, witnesses or recorders who experience(d) the place, the conditions, and/or have ongoing relationships with the space. Considering the on-going legacy of US and Canadian colonialism, and the long-standing practice of ignoring or eradicating Indigenous voices from academic, museum, and art worlds, students should be asked and taught how to question and rethink what they know about North American Indigenous peoples and their cultures.

Learning Outcomes

1. Students will identify the bodily (visible and non-visible) relationship to Pueblo Bonito's and Chaco Canyon's structural geometries through virtual immersion.
2. Students will evaluate Indigenous-authored and non-Indigenous-authored primary sources on the human and non-human relationships to Chaco Canyon.
3. Students will articulate cultural differences in ways of understanding the Chaco Canyon built and expressive environment, and the significance of these differences.

Preparation

Instructor

1. Create or obtain 360 images of Pueblo Bonito, or another one of the great houses at Chaco Canyon. Mine were taken with an Insta360Pro camera, but 360 images can be taken with cellphones too. Work with your technology librarians or planetarium staff (if you have access to one) to determine what kind of equipment is available to borrow and what image resolutions you'll need.
2. Identify and reserve the location or room where you'll be able to show 360 images.
3. Select primary source readings by Indigenous authors and by European visitors to the sight. See **Primary Source Resources** below for some suggestions.
4. Prepare an introductory lecture to ancestral Pueblo architecture and societies. See **References** below for some sources to consult. I also include a review of terms such as *worldview*. I ask students to consider the ways religious structures such as Gothic cathedrals are expressive of a Christian worldview before moving on to examining kivas.
5. Prepare discussion questions that focus on the relation of Pueblo cosmology and architectural elements as presented in the Swentzell reading. I break students up into small groups and have them examine specific paragraphs to develop a response.
6. Prepare presentation for the immersive experience. You might work in collaboration with a technology librarian or a planetarium staff member.

7. Do a practice session and decide what other viewing resources you might have available. I began the presentation with Google Earth to scan the entire region, slowly moving closer into Chaco Canyon, eventually switching over to the 360 photographs. In collaboration with the planetarium director, I was able to plot out the locations of nearby structures onto the photograph. We also simulated an equinox to demonstrate the alignment of Pueblo Bonito's southern wall with this celestial event.

Students

1. Read the Swentzell article and assigned pages on the Southwest from Janet Berlo and Ruth Phillips' *Native North American Art* (2015), for a general background on the region, the communities and their arts.
2. Complete the **Pre-Writing Exercise**.

Materials

- *Access to a room that will allow presentation of 360 images.
- *List of Selected Primary Sources by Puebloan and European Authors
- *360 photos of Pueblo Bonito at Chaco Canyon
- *Access to the internet, Google Earth

Session Outline

*As presented in the Abrams Planetarium at MSU.

1. Introduction

Google Earth – expansive view of San Juan River Basin moving in slowly to canyon, and Chaco Center, hold focus on central canyon above largest of great houses

Key details:

Geographical location: central portion of San Juan River Basin
Natural resources, plant life, precipitation, rivers, agricultural activities
Chacoan peoples' origins and migrations
The great houses

2. Central Chaco: the alignment and orientations of the four key great houses

Google Earth - 4 key central buildings and Great North Road

Key details:

Pueblo Bonito - alignments and orientations
Central Chaco, "Downtown Chaco": 4 key buildings organized in cardinal pattern
Pueblo Alto and Tsin Kletzin – n/s axis
Pueblo Bonito and Chetro Ketl – e/w axis
Great North Road_ extend n/s axis of Central Chaco (where largest structures are located), begins at Pueblo Alto
Southern gap (a gateway?)

3. Pueblo Bonito

Google Earth

Key details:

D-shape

Dimensions

Rooms and kivas

Plaza, symmetrical and complementary components

Core northern section

Lone pine tree

Platform mounds

Astronomical alignments- n/s center wall is meridian; noon point of day

Flat (spine) wall of D – e/w alignments with equinoxes

4. Pueblo Bonito – **360 photos and equinox simulation**

Students are asked to watch, and then stand and watch again. They are asked to pay attention to their own positions/perspectives/sensibilities within the structure while the simulation takes place, and then jot down some of their responses.

Key details:

D-line (and meridian (spine wall), sun rises and sets at each end of the wall during equinoxes

Identify placement of sites to east (Chetro Ketl), north (Pueblo Alto), south (Tsin Kletzin) in relation to Pueblo Bonito.

Plaza, viewed along the meridian, oldest core of structure of rooms is visible, as well as approximate location of lone pine tree

5. **Writing Assignment**, due later.

Instructions are reviewed.

Pre-Writing Assignment

Instructions: Prior to your immersive experience in the Abrams planetarium, you need to read Rina Swentzell's (Santa Clara Pueblo) text, "Pueblo Space, Form, and Mythology," In *Pueblo Style and Regional Architecture* (1990). The following questions should be answered and submitted for review:

1. If you had to use one word to describe the Native North American architecture that we've studied, what would it be and why?
2. Rina Swentzell indicates that, "...the Pueblo myths, stories, songs, and prayers describe a world in which a house is not an object....but is part of a cosmological world view that recognizes multiplicity, simultaneity, inclusiveness, and interconnectedness." (p. 29) Explain what she means by this using 2 examples from her article.
3. What kinds of human-built spaces make you think about your family, community, the environment, or non-human relationships?

4. What kinds of human-built spaces prevent you from connecting to family, friends, non-humans, or nature? (For example: windowless structures/rooms might prevent you from seeing the outdoors, or not attending the church or other specific religious building you are a member of might prevent you from connecting to your family/friends/non-humans. What about prisons? Medieval castles?)
5. In research, what is a primary source?

Writing Assignment

The immersive experience in the Abrams Planetarium introduced you to the relations between the geography, the cosmological alignments, the monumental architecture, and the felt experience of Chaco Canyon. According to Santa Clara Pueblo architect and historian Rina Swentzell (1990), Pueblo stories, songs, and prayers present a house not as an inanimate object but as part of a cosmological world view that recognizes interconnectedness and cyclic temporality. What can we find out about the relationships of Chacoans, of other Pueblo descendants, and of the earliest non-Indian visitors to this place (both the geography and the built environment) from primary sources? How might you explain any differences in perspectives on the environment, the makers of this place, and on the Chacoan structures?

Task 1: Find one non-Indigenous-authored historical primary text related to Chaco Canyon history from the list provided. **[See Chaco Primary Source Readings]** Describe who wrote it. When and where was it published?

Task 2: Using this same source, explain what it tells you of the Chacoan or Pueblo relationship to this place? What was the intent of the author(s)? What does it tell you that the Berlo and Phillips (secondary source) textbook didn't? Is there a bias in the source? Using details from the text to support your assertions, explain how you assess the author's perspective. Does the author(s) imagine or explore any kind of bodily relationship of the Chacoans to their built environment, cosmology, or natural world? Does the author explore any of their own relations/sensibilities to the place?

Task 3: Choose one of the Pueblo-authored primary sources. Describe who wrote it. When and where was it published? Using details from the text to support your ideas, explain how their work complements or challenges the non-Indigenous primary source you are working with?

Task 4: By way of conclusion, reflect on the ways the primary sources better inform or challenge your Chaco Canyon immersive experience. How might you explain any differences in perspectives on the environment, the makers of this place, and on the Chacoan structures? What further research might you need to do to try and confirm this?

Reflection

Lesson Variations: For my North American arts and Western European Arts surveys I have incorporated a shorter version of this lesson. Mainly I condense the introductory lecture on the cultural and historical background on Chacoans and Pueblo peoples. The Swentzell reading is still assigned for group/class discussion in the North American arts course, but not in the Western survey. In the latter, the lesson focused more on comparative worldviews as expressed in religious architecture. This is a class whose enrollment ranges from 90-130 students. Our planetarium easily accommodated such a class. It was a

great way to get a large outside the classroom at the same time. In addition to the Pueblo Bonito images, our planetarium visit also included 360 images both inside and outside St. Peter's Cathedral. The writing assignment then asks students to reflect on the impact one's viewing position within each structure and how that reinforces the relevant worldview. They also compared viewing experiences in various media such as Powerpoints and videos to the virtual immersive experience. The planetarium director led a discussion on equinoxes and solstices before I introduced Chaco Canyon. One year of this class's planetarium visit, I was honored to have our professor of Baroque arts co-lead a discussion on St. Peters.

“Research with Primary Sources”: The aspect of comparing “eyewitness” or cultural viewpoints or viewing experiences, as described above, could be translated into a lesson on primary sources. There could be a wider selection of primary sources presented, and more of an overview in the beginning on defining primary sources, the different types, and their use in research. With cellphones, students could create their own 360 guided tours of a local architectural site, drawing from several different perspective derived from primary sources. The student's own immersive experience would then be another primary source with which to compare to the others.

Chaco Primary Source Readings

Nineteenth-Century Euro-American Descriptions of Chaco

Newspapers

Colfax Chronicle [Colfax, Louisiana] November 4, 1893. “Interesting Exhibits: The Pueblos of the Aztecs in Miniature at the World's Fair.”

-review of Chaco Canyon exhibit at the World Columbian Exposition, Chicago, 1893

The Louisiana Democrat [Alexandria, Louisiana] March 9, 1887. “Nature in Ruins: An Unexplored Region in the Wonderland of the Far West.”

Jackson, William H.

1878 “Report on the Ancient Ruins Examined in 1875 and 1877,” in *Tenth Annual Report of the United States Geological and Geographical Survey of the Territories Embracing Colorado and Parts of Adjacent Territories, Being a Report on the Progress of the Exploration for the Year 1876*, by F. V. Hayden, Part III, pp. 431-451. U.S. Government Printing Office, Washington, D.C.

Morgan, Lewis H.

1869 The “Seven Cities of Cibola.” *North American Review* 108:457-498. Boston.

Simpson, James.

1874 *The Ruins to be Found in New Mexico and the Explorations of Francisco Vasquez de Coronado in Search of the Seven Cities of Cibola. Journal of the American Geographical Society* 5:194-216.

Puebloan Accounts of Chaco

Kuwanwisiwma, Leigh J.

2004 Yupköyvi. The Hopi Story of Chaco Canyon. In *In Search of Chaco. New Approaches to an Archaeological Enigma*, edited by David Grant Noble, pp. 41-47. School of American Research Press, Santa Fe.

Ortiz, Simon J.

1994 What We See: A Perspective on Chaco Canyon and Its Ancestry. In *Chaco Canyon: A Center and Its World*, by Mary Peck, Stephen H. Lekson, John R. Stein, and Simon J. Ortiz, pp. 65-72. Museum of New Mexico Press, Santa Fe.

Swentzell, Rina

1990 Pueblo Space, Form, and Mythology. In *Pueblo Style and Regional Architecture*, edited by N. C. Markovich, W. F. E. Preiser, and F. G. Sturm, pp. 23-30. Van Nostrand Reinhold, New York.

2004 A Pueblo Woman's Perspective on Chaco Canyon. In *In Search of Chaco. New Approaches to an Archaeological Enigma*, edited by David Grant Noble, pp. 49-53. School of American Research Press, Santa Fe.

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Chaco Canyon: A Center and Its World, by Mary Peck, Stephen H. Lekson, John R. Stein, and Simon J. Ortiz. Santa Fe, New Mexico: Museum of New Mexico Press, 1994.

Ferguson, T. J., and Chip Colwell-Chanthaphonh. *History is in the Land: Multivocal Tribal Traditions in Arizona's San Pedro Valley*. Tucson: The University of Arizona Press, 2006.

Neitzel, Jill E. *Pueblo Bonito: Center of the Chacoan World*. Washington, D.C.: Smithsonian Books, 2003.

Noble, David Grant, ed. *In Search of Chaco: New Approaches to an Archaeological Enigma*. Santa Fe, New Mexico: School of American Research Press, 2004.

Reed, Paul F. *The Puebloan Society of Chaco Canyon*. Westport, Connecticut and London: Greenwood Press, 2004.

Sofar, Anna, ed. *Chaco Astronomy: An Ancient American Cosmology*. Santa Fe, New Mexico: Ocean Tree Books, [2008] 2014.