Methods in Digital Archaeology and Cultural Heritage

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Increasingly over the last decade, anthropologists have looked to digital tools as a way to improve their interpretations, engage with the public and other professionals, collaborate with other disciplines, develop new technology to improve the discipline and more. Due to the increasing importance of digital, it is important that current students become equipped with the skills and confidence necessary to creatively and thoughtfully apply digital tools to cultural heritage questions. With that in mind, this course is not a lecture- it is an open discussion and development course where students will learn digital tools by using and making them. This course will provide students with an introduction to digital tools in archaeology, from using social media to engage with communities to developing their own online projects to preserve, protect, share and engage with cultural heritage and archaeology.

Course Goals:
1. Understand and articulate the benefits and challenges of digital methods within archaeology and cultural heritage management
2. Critically use digital methods to engage with the public and archaeological community online to promote cultural and archaeological heritage and preservation (ex. Blogging, Twitter, Digital Mapping, etc)
3. Leverage digital tools to create a digital project focused on archaeology or cultural heritage

Texts: All reading material for this course will be provided online, although students may need to request or find their own reading material related to a historic site for their final project.

**This syllabus was designed based on a course that I helped develop and teach over summer 2014, a Mobile Cultural Heritage Informatics class I assisted in during summer 2011, and my years as a Cultural Heritage Informatics Initiative fellow. I have added to the syllabus to demonstrate how I would adapt this course for a semester long class and add in a range of digital components. The class would be based around discussion and development; students will learn about tools, best practices, and then play with digital methods to create their own projects.

Assignments

Weekly Blog Post: Each week, students will write a blog post that is related to the work being done in the course, readings, activities, discussions, or related news or tools that they've discovered. These can include reviews of digital projects, new digital tools, debates in digital archaeology, reactions to using tools, etc. The posts will be short, around 500 words, and must contain citations and links to relevant sources.

Final Project: Students will use a digital tool from the course to produce new materials related to an archaeological project of their choosing. Students can work together or as individuals to create a digital project that uses archaeological data. In addition to the physical project, students will develop a white paper explaining the need for their project, background, technical details, audience, and future development.

Week 1: Why Digital Archaeology?
Introduction to cultural heritage: what are cultural resources, how do we define their significance and how does this change in a digital world?

Readings:
- Richardson, Lorna 2013. A Digital Public Archaeology? *In* Papers from the Institute of Archaeology.
  http://www.pia-journal.co.uk/articles/10.5334/pia.431/

Week 2: **Creating Your Digital Identity**
Introduction to social media and digital identities!

Readings:
- Morgan, C. and Eve, S. 2012, DIY and digital archaeology: what are you doing to participate? In World Archaeology, 44:4, 521-537.
  https://www.academia.edu/2365783/DIY_and_digital_archaeology_what_are_you_doing_to_participate

Activity:
- Digital identity: students will begin to shape their digital identity online through a variety of websites such as Wordpress, LinkedIn, Facebook, Twitter and more.

Week 3: Social Media and public engagement
Social media such as Twitter, Facebook, and blogs are becoming increasingly important for public engagement in archaeology.

Readings:
- Meyers Emery, Katy and Kristina Killgrove 2015. Bones, Bodies, and Blogs: Outreach and Engagement in Bioarchaeology. In Internet Archaeology 39.

Activity:
- Social Media: Students will come up with a way to participate online in archaeological conversations first by looking at discussions on various social media, then determining how they can add to these discussions by either producing video, podcasts, Twitter hash tags, Facebook groups or more.

Week 4: Social Media and public engagement
In the previous week, we discussed benefits of social media- this week, we critically discuss how this changes the discipline and our interactions with the public.

Readings:
- The Social Web and Archaeology's Restructuring: Impact, Exploitation, Disciplinary Change http://www.degruyter.com/view/j/opar.2014.1.issue-1/opar-2015-0009/opar-2015-0009.xml

Week 5: Databases and Digital Archaeology (Paperless)
As archaeology becomes more digital, we have increasing amounts of data that need to be shared, preserved and organized- we discuss methods of doing this and begin building our own.

Readings:
- Kansa, Eric (2012) Openness and archaeology's information ecosystem. World Archaeology 44(4): 498-520. (Open Access Preprint: http://escholarship.org/uc/item/9tq378jg)

Activity:
- Omeka.net: Students will learn how to create and structure an online database to store and display archaeological data. Omeka.net is web-publishing platform that allows users to create or collaborate on a website to display collections, build digital exhibits, map objects, gather stories, and more. It provides a way for students to get a grasp on the creation and display of collections.

Week 6: Crowdsourcing Archaeology
A benefit of doing digital archaeology, is that we can involve the public in archaeology and give them the opportunity to help us with our data.

Readings:
- Owens, T. (2013) Digital Cultural Heritage and the Crowd. Curator: The Museum Journal. Vol 56. Iss: 1
- Smith, ML 2014. Citizen Science. *In* American Antiquity 79(4). http://escholarship.org/uc/item/6sx7v55f

Activity:
- MicroPasts: students will use the MicroPasts project to see and use an archaeological crowdsourcing platform first hand. This tool shows them how archaeologists are involving the public in data production, digitization and funding.

Week 7: Open Web Mapping Introduction
Using digital tools for mapping can range from more intensive tools like ArcGIS to open, easy to use online tools like Mapbox. In this week, we look at how different projects are using maps and how data is presented.

Readings:
- None

Activity:
- We will look at a variety of exemplar maps online and discuss the benefits and challenges of these projects, including:
    - http://www.themappamundi.co.uk/
    - http://pleiades.stoa.org/
    - http://worldmap.harvard.edu/africamap/
    - http://digitalhumanities.umass.edu/pbmp/

Week 8: Mapping Workshop I
Students will have the opportunity to produce their own spatial data and customize it in order to answer specific questions.

Readings:
- None

Activity:
- Mapbox: Students will learn to create spatial data using Mapbox. Mapbox is an open online mapping program that allows students to easily create their own spatial data. This is a great first step to provide students with mapping skills, without requiring them to learn GIS, but also provides them with an understanding of spatial design that will be critical for those who want to continue learning to use more complex tools, such as ArcGIS.

Week 8: Mapping Workshop II
Students will have the opportunity to edit their own spatial data and do more robust customizations it in order to answer specific questions.

Readings:
- None

Activity:
- CartoDB: Students will learn to use CartoDB to create spatial data and use it for basic spatial visualizations. CartoDB is an open, online mapping platform where users can easily add data, transform it, and share it with other people. One of the benefits of this program is that you can easily visualize the data with the program's wizards or customize the data using CSS and Javascript. All maps can be shared easily or imported into other websites.

Week 9: Space and Digital Stories
Archaeology is well-suited to telling stories by using evidence and materials from the past to create a richer layer on the modern world- here we discuss some projects that are doing this.

Readings:
- Bonacini, E. 2013. Stories on Geographies: Geo-Social Tagging for Co-Creation of Cultural Value. International Journal of Heritage in the Digital Era 2(2).
- Street Museum http://www.museumoflondon.org.uk/Resources/app/you-are-here-app/home.html
- Msu.seum http://msu.seum.matrix.msu.edu/

Activity
- Twine: Students will create a narrative using Twine using an archaeological find or site. Twine is a simple story production platform that can produce simple multi-path stories or complex interactive ones depending on how much programming the user wants to do. It is a great way to learn to use HTML, CSS and Javascript, while also telling a story. The tool is especially well-suited for archaeology and history because the process of knowledge construction within the discipline works well with storytelling tools.

Week 10: Digital Preservation of Cultural Heritage Methods (3D)
Benefits and challenges of using digital tools to preserve and share cultural heritage.

Readings:
- Verdiani, Girogio. (2015) Bringing Impossible Places to the Public: Three Ideas for Rupestrian Churches in Goreme, Kapadokya Utilizing a Digital Survey, 3D Printing, and Augmented Reality Open Archaeology 1.1.
- Ancient Wonders in 3D http://www.ted.com/talks/ben_kacyra_ancient_wonders_captured_in_3d

Activity:
- 123Catch App vs. Illustration vs. Photography: The way that we present the past has an effect on our interpretations and how the public views objects. Students will produce 3D digital tools, photos and illustrations of artifacts, and will debate the benefits of each medium for presenting the past.

Week 11: Digital Preservation and Cultural Heritage Methods (Data)
All of the tools we are discussing are methods for preserving cultural heritage and data; here we look closer at combining these methods to produce online sites.

Readings:
- Can We Digitize History Before ISIS Destroys it? http://www.thedailybeast.com/articles/2015/09/02/can-we-digitize-history-before-isis-destroys-it.html

- Review digital cultural heritage projects, summarize their goals
  - Gorée Island Archaeological Digital Repository
    http://sites.matrix.msu.edu/dakar/
  - Porta Stabia http://classics.uc.edu/pompeii/
  - Chaco Canyon Archive http://www.chacoarchive.org/cra/

Week 12: **Cultural Heritage and Games**
How do games shape our perceptions of cultural heritage and can we use this to our benefit?

Readings:
- Mortara, Michela and Catalano, Chiara Eva and Bellotti, Francesco and Fiucci, Giusy and Houry-Panchetti, Minica and Petridis, Panagiotis Learning cultural heritage by serious games. (2014) Journal of Cultural Heritage, 15(3): 318-325.
- Meyers Emery, Kathryn and Andrew Reinhard 2015 (Forthcoming). Trading Shovels for Controllers: A Brief Exploration of the Portrayal of Archaeology in Video Games. Public Archaeology 14(2).

Activity:
- Students will play some of the online archaeological games that use archaeology, and will critically assess the benefits and downsides of them.
  - Dig Down: http://www.virtualmuseum.ca/sgc-cms/expositions-exhibitions/esprits-spirits/English/Dig/digdown.html
  - Dig it up- Romans: http://www.bbc.co.uk/schools/primaryhistory/romans/
  - Tomb Raider- The Prophecy: http://game-oldies.com/play-online/lara-croft-tomb-raider-the-prophecy-nintendo-game-boy-advance# or http://www.playr.org/play/tomb_raider/1608#play

Week 13: **Debates and Challenges**
What are the advantages and disadvantages of taking a digital approach to archaeology, for engagement, preservation and more?

Readings:
- Brock, T 2012. http://terrypbrock.com/2012/09/ethics-and-digital-archaeology-considering-your-audience/
  - Also view his website, We All Walked Together
- Brown, D. and G. Nicholas 2012. Protecting indigenous cultural property in the age of digital democracy: Institutional and communal responses to Canadian First Nations and Māori heritage concerns. J. of Material Culture 17(3) 307-324

Week 14: Final Projects
Presentations of final projects