

Abstract

Archaeology often justifies its existence by invoking the trope that we must learn about the past in order to create a better future. The COVID-19 pandemic is itself an event that will enter the historical record. Thus, the universality of this public health crisis is a unique opportunity to assess the relevance of university-level archaeology curricula to our present historical moment. We studied an upper division general education course on the archaeology of complex societies at a public liberal arts college in California. The instrument of data collection was a questionnaire administered at the end of the Fall 2020, Spring 2021, and Spring 2022 semesters. Students read an article about archaeological approaches to pandemics, then reflected on how it connected to course content and to their own experiences during the COVID-19 pandemic. Content analysis of student responses suggests that course themes of complex societies, the environment, archaeological evidence, the future, and social hierarchy resonated most with students on both intellectual and personal levels. We also identified emergent concerns with diseases (COVID-19 and others) and cultural responses to them, employment status, and psychological effects, suggesting that these themes are increasingly relevant to archaeology students during and beyond the COVID-19 pandemic.

Introduction and Background

Institutions of higher learning aim to ensure the timeliness and relevance of their curricula as they shape students into global citizens who can think critically and are positioned for fulfilling careers. At the same time, archaeology, history, and other disciplines that study the past often justify their existence by invoking the trope that we must learn about the past in order to create a better future. The COVID-19 pandemic is itself an event that will enter the historical record and has left no student untouched. The universality of this public health crisis has provided a unique opportunity to put the relevance of archaeology curricula in higher education to the test. Our qualitative study, which was conducted in an upper division general education archaeology course, set out to address three research questions: (1) Which course concepts are students best able to connect to the COVID-19 pandemic and to their own personal experiences during it? (2) What other concerns are emerging as relevant to students' lives during the COVID-19 pandemic, which might be incorporated into archaeology curricula going forward? (3) How did students' engagement with course concepts and their other emerging concerns change over time?

The study took place at our home institution, Sonoma State University, a public liberal arts and Hispanic-serving university in suburban northern California during

three semesters (Fall 2020, Spring 2021, and Spring 2022). During these semesters, the university's headcount averaged 7190 students, of whom an average of 27.6% were first-generation college students, 41% belonged to underrepresented ethnic groups, 63.5% were female, and 98.5% were California residents. The study was conducted in a course taught by one of the authors (Boutin) called Anthropology 341: Emergence of Civilizations (hereafter ANTH 341), an upper-division general education course that explores the emergence of urban, state-based societies and variation in social institutions (such as class systems, trade and exchange, and colonialism) over time and around the globe. Crucially, students are also asked to consider how these same social institutions function in our own twenty-first century American state-based society. Therefore, ANTH 341 was an ideal course in which to evaluate the relevance of archaeology curriculum to our present historical moment. In this article, we review the scholarly literature that provides a context for our study; explain the design, materials, and methods of data collection and analysis that we employed; and present the results of our study and discuss their implications for archaeology curricula as the world of higher education moves through, and hopefully beyond, the COVID-19 pandemic.

Literature Review

Building on the prescient work of scholars such as DeWitte (2016), archaeologists began reflecting on the COVID-19 pandemic's implications for disciplinary praxis, and on the ways in which archaeological knowledge could inform contemporary social responses, shortly after it commenced. For example, in a special section of *African Archaeological Review* (Ogundiran 2020a), archaeologists reflect on how COVID-19 has exacerbated the effects of colonialism and racism in Africa (Chirikure 2020; Thiaw 2020). At the same time, archaeologists engaging in community-based praxis offer models of resilience and collaboration (Douglass 2020), and examples of social support and effective public health practices from past African societies demonstrate the relevance of archaeological knowledge to coping with modern pandemics (Ogundiran 2020b; Thiaw 2020).

Other archaeologists have focused on the material culture generated by the COVID-19 pandemic, exploring both how its patterned distribution can reflect the relationships between government action and public response (Magnani et al. 2022) and the way that its sheer volume should inform government policy on environmental pollution (Schofield et al. 2021). Archaeologists and bioarchaeologists also have collaborated to provide diachronic perspectives on human responses to epidemic disease, which have had especially devastating demographic and cultural impacts on colonized Indigenous populations (Feinman and Drake 2021; Gamble et al. 2021; Gutiérrez and Cameron 2021). They argue that the structural conditions of colonialism and racism that persist in many parts of the world have heightened the vulnerability

of BIPOC populations to COVID-19. On the other hand, d'Alpoim Guedes and colleagues (2021) point out that the pandemic and related social movements have served as a turning point for many archaeologists, prompting them to confront how “the interconnections between systems of global capitalism, racism, settler colonialism, and heteronormative patriarchy” (2021:910) have pervaded the discipline and need to be dismantled. In these ways, archaeologists have powerfully demonstrated how knowledge about the past can address social problems that concern modern populations: these include students in higher education, during and beyond the COVID-19 pandemic.

The COVID-19 pandemic has severely impacted college students worldwide. The negative effects on students' mental health, academic success, and financial status due to campus closures and the rapid shift to online learning are well documented for American students. Psychological distress among college students in the U.S.—including fear, anxiety, depression, and stress—have resulted from factors such as loss of loved ones to COVID-19 and financial hardship (ElTohamy et al. 2022) and caused them to report a decline in learning quality (Hu et al. 2022). Students of color have been disproportionately impacted in all of these regards (Reyes-Portillo et al. 2022).

However, publications on the effects of the COVID-19 pandemic on archaeology curricula in higher education are limited. A special issue of the *Journal of Archaeology and Education* presented articles that discuss the advantages and disadvantages of teaching archaeology and anthropology online in higher education, which the rapid onset of the COVID-19 pandemic brought into sharp focus (Pacifico and Robertson 2021). Feuser and colleagues (2022) describe how a Massive Open Online Course (MOOC) about the archaeology of ancient Greek and Roman cities provided a way for university students to learn successfully during COVID-19 lockdowns. Cobb and Croucher (2022) recommend ways to enhance student mental health and wellbeing when teaching archaeology, while acknowledging the major challenges posed by COVID-19 in this respect. However, to our knowledge, there has been no empirical research conducted on how the content of higher education archaeology courses can productively be updated in response to COVID-19 pandemic. Our study aims to fill this gap.

Materials and Methods

Data were collected during the last week of classes in the Fall 2020, Spring 2021, and Spring 2022 semesters of ANTH 341. The Fall 2020 and Spring 2021 offerings were delivered online bisynchronously (in a mixture of synchronous and asynchronous components) and the Spring 2022 offering was in person. Our instrument of data collection was a graded assignment, in which students read an informed consent form, then chose whether or not to have their responses used for research purposes. The

assignment itself is available as [Appendix 1](#). For purposes of data analysis, student responses were anonymized.

A total of 110 students chose to participate in the study. As a general education course that fulfills a graduation requirement, students from a variety of majors enroll in ANTH 341. The largest number of study participants came from majors in the School of Social Sciences, as depicted in Table 1. This is consistent with the percentage of students in Social Sciences majors during the 2020-21 and 2021-22 academic years (constituting 27.3% of all Sonoma State majors in this timeframe). Comparing study participants to majors in other schools, Arts and Humanities majors were somewhat underrepresented in ANTH 341 compared to the university (where they represented 17.9% of all Sonoma State majors in this timeframe), while Business and Economics majors were overrepresented in ANTH 341 (constituting 16.5% of all Sonoma State majors in this timeframe). As an upper-division course, ANTH 341 enrolls students of junior or senior standing, so most students are between 20-25 years of age.

Table 1. Number of Student Participants by School of Major.

School	Number of Participants	Percentage of Participants	Major Most Frequently Represented among Participants
Arts and Humanities	14	12.7%	English
Business and Economics	27	24.5%	Business Administration
Education	3	2.7%	Early Childhood Studies
Social Sciences	31	28.2%	Anthropology
Science and Technology	30	27.3%	Electrical Engineering
Special or double major	5	4.5%	N/A
Total	110	100%	N/A

Students were asked to read one of four articles that focus on the COVID-19 pandemic from archaeological, bioarchaeological, and/or historical perspectives (Geller 2020; Harper 2020; Roberts et al. 2020; Weitzel 2020). These articles were published between March and October of 2020. They were chosen for the relevance of their authors' expertise and article subject matter to course content. The articles collectively covered a variety of topics, and students were free to select the article that appealed to them most. Students then responded to two questions, each response in the form of a paragraph. For Paragraph 1, students were asked to connect the concepts in the article to course content. For Paragraph 2, students were asked to connect the concepts in the article and in course content with their personal experiences during the COVID-19

pandemic. The numbers of students who chose to participate in this research project and the articles they read are presented by semester in Table 2.

Table 2. Number of Students Who Read Each Article.

	Students (n,%) Who Read Each Article			
Article author and year of publication	Fall 2020	Spring 2021	Spring 2022	Total
Geller 2020	5 (17.2%)	14 (35.9%)	21 (50%)	40 (36.4%)
Harper 2020	7 (24.1%)	4 (10.3%)	5 (11.9%)	16 (14.5%)
Roberts et al. 2020	11 (37.9%)	9 (23.1%)	8 (19%)	28 (25.4%)
Weitzel 2020	6 (20.7%)	12 (30.8%)	8 (19%)	26 (23.6%)
Total student participants by semester	29	39	42	110

Two of this article's authors (Longo and Calvin) analyzed student responses using content analysis, a method that groups data into categories, which are broken down into codes in order to interpret themes (Julien 2008). The content analysis process involved memoing and an iterative process of coding, employing both deductive and inductive approaches (Bernard 2011; Corbin and Strauss 2008:117–41). The deductive approach led us to create an initial codebook of 18 codes drawn from the course's ten student-learning objectives (Figure 1). We also used an inductive approach via our iterative analysis of the student responses to find emerging themes, which were then added to the codebook (n=9), for a total of 27 codes. We acquired consensus by analyzing twenty responses per question together, then we each analyzed half of the sample independently. The mean number of codes used per response was 5.9 for Fall 2020, 6.5 for Spring 2021, and 6.3 for Spring 2022, demonstrating the consistent results of these efforts. To analyze the results of the coding, we used Count formulas in Google sheets to quantify the codes by semester and by response paragraph. To assess changes in the themes that appeared in student responses over time, we calculated the frequency with which each code was used by semester, then identified the mean frequencies across all semesters. We then determined the standard deviation from the mean for each code as a proxy for change over time. This approach mitigated the effects of the different sample sizes for each semester.

1. Evaluate how archaeologists develop research questions, the methods they use to collect and analyze data in order to address them, and the ethical principles by which they must abide
2. Describe anthropological concepts of culture, civilization, and social complexity
3. Explain the changes in subsistence practices associated with the Holocene Transition, as well as archaeological evidence for the social and biological impacts of these changes
4. Obtain temporal and geographic literacy by learning about early complex societies in North America, South America, Europe, Asia, and Africa
5. Identify the evidence used in paleoenvironmental reconstruction, in order to understand how ancient environments influenced ancient complex societies and vice versa
6. Explain the links between emerging social hierarchy, changing political organization, and the organization of labor to extract surplus in early complex societies, as suggested by archaeological evidence
7. Understand the scale and scope of, and archaeological evidence for, trade and exchange in the economies of early complex societies
8. Identify archaeological evidence for colonialism in the past, and apply this understanding to anti-colonialist practices in archaeology today
9. Describe the connections between belief systems, ideology, and political organization in early complex societies, as suggested by archaeological evidence
10. Apply information and concepts learned in the course to enhance your understanding of your own life experiences, the society you live in today, and where you see it going in the future

Figure 1. ANTH 341 list of student learning objectives from which 18 initial codes were drawn.

Results

For Paragraph 1 in the assignment, students were asked to reflect on how the ideas in the article they read related to what they had learned that semester, specifically in terms of what archaeology reveals about ancient complex societies. In other words, students were connecting the concepts in the article they read with course content, thus demonstrating intellectual engagement with these concepts. Table 3 presents the codes, organized by frequency of use in student responses to Paragraph 1, across all three semesters. For Paragraph 2, students were asked to reflect on how the ideas in the article they read and what they had learned that semester in ANTH 341 related to their own personal experiences during the COVID-19 pandemic. Thus, their answers reflected personal engagement with course concepts. Table 4 presents the codes, organized by frequency of use in student responses to Paragraph 2, across all three semesters. These data shed light on our first two research questions: 1) Which course concepts are students best able to connect to the COVID-19 pandemic and to their own personal experiences during it? and 2) What other concerns are emerging as relevant to students' lives during the COVID-19 pandemic, which might be incorporated into archaeology curricula going forward?

Table 3. Codes in Paragraph 1 Responses.

Code	Appearances in Student Responses to Paragraph 1
1. Complex society	63
2. Environmental impacts	59
2. Archaeological evidence	59
4. Disease: COVID-19*	56
5. General disease*	52
6. Cultural response to disease*	45
7. Future	40
8. Social hierarchy	39
9. Subsistence	37
10. Disease: non-COVID-19*	32
11. Trade and exchange	30
12. Geographic literacy	28
13. Methodology	24
14. Paleoenvironmental reconstruction	19
15. Belief systems	17
16. Colonialism	16
17. Organization of labor	15
17. Culture	15
19. Political organization	14
19. Migration and mobility*	14
19. Ideology	14
22. Economy	9
23. Medical response to disease*	8
24. Globalization*	7
25. Employment*	6
26. Psychological effects*	2
26. Ethics	2

Note: Ordered by frequency of use. Data have been pooled for Fall 2020, Spring 2021, and Spring 2022 semesters. Emerging themes are indicated by an asterisk (*).

Table 4. Codes in Paragraph 2 Responses.

Code	Appearances in Student Responses to Paragraph 2
1. Disease: COVID-19*	99
2. Cultural response to disease*	80
3. Environmental impacts	52
4. Future	46
5. Complex society	40
6. General disease*	37
7. Employment*	33
8. Archaeological evidence	29
9. Psychological effects*	28
10. Political organization	24
11. Social hierarchy	23
12. Medical response to disease*	21
13. Ideology	18
14. Disease: non-COVID-19*	17
15. Migration and mobility*	14
15. Economy	14
17. Trade and exchange	13
18. Culture	12
19. Geographic literacy	10
19. Belief systems	10
21. Subsistence	9
21. Organization of labor	9
23. Globalization*	6
24. Methodology	5
25. Colonialism	4
26. Paleoenvironmental reconstruction	3
27. Ethics	2

Note: Ordered by frequency of use. Data have been pooled for Fall 2020, Spring 2021, and Spring 2022 semesters. Emerging themes are indicated by an asterisk (*).

In terms of our first research question, our deductive approach to content analysis led us to determine that the course concepts of “complex society,” “environmental impacts,” “archaeological evidence,” “future,” and “social hierarchy” appeared frequently in both Paragraph 1 and Paragraph 2 responses. These concepts seem to have resonated with students on both intellectual and personal levels as they worked to make sense of the COVID-19 pandemic. For example, many students speculated about the types of archaeological evidence that might be left behind by the COVID-19 pandemic. Among the types of material culture they discussed were objects (e.g., masks), settlement patterns (e.g., shifts due to changes in employment and school modalities), texts (e.g., public health signage), and burial practices (e.g., mass graves). The following Paragraph 2 response by a Spring 2022 student addressed the themes of “archaeological evidence,” “future,” and “environmental impacts”:

“Single use masks are something I tried to avoid at the beginning of the pandemic, but as mask policies subsided and returned, it became harder not to keep disposable masks on hand. I hope that with the technology we have today our choices in the pandemic that will effect [sic] the environment can be counteracted. Yet I wonder how much damage has already been done, and how this pandemic, and the lack of environmental awareness during it, will be discussed by future archaeologists. Will we be given some leeway like ancient societies whom we know had no other choice for survival, or will we be remembered as a society that lacked the foresight to protect both its citizens and its planet?” (Student Response F28)

Students also discussed human impacts on the environment in terms of how some members of ancient complex societies leveraged access to natural resources to withstand environmental degradation. In this vein, one Spring 2021 student’s Paragraph 1 response highlighted the themes of “environmental impact” and “social hierarchy”:

“We saw in Egypt and Mesopotamia that there was a huge disparity in the equal opportunity for resources. These issues tie into how during the pandemic, people of a certain wealth were able to stay safer during the pandemic by having their groceries delivered for example, so they didn’t have to go into...grocery stores. This is very much in the same spirit of people who lived higher up river so they had more access to clean and safe water.” (Student Response C15)

A different Spring 2021 student’s response for Paragraph 2 connected past and present, highlighting the common themes of “complex society,” “employment,” and “social hierarchy” in reflecting on how complex societies respond to epidemic disease:

“During the Black Plague, wealthy individuals also fought to profit from crisis with lack of regard for anyone else. This is similar to what is seen today. Although essential workers like delivery drivers were the first to risk their lives, many of them were not eligible for vaccinations until much further down the line. While the pandemic disproportionately effected [sic] minorities, they were often also given less opportunities

to actually get vaccinated. It is very interesting how most of these issues are seen throughout various civilizations. The elite always find a way to capitalize on crisis regardless of who they hurt.” (Student Response D28)

With regard to our second research question, the inductive approach to content analysis identified the consistent appearance of several themes in the students’ responses that were beyond the course’s learning objectives. These emerging themes, as we dubbed them, might be productively incorporated into general education archaeology curricula going forward, as a way to engage with student concerns. Disease of all types (“COVID-19,” “non-COVID-19,” and “general disease”) and the “cultural response to disease” theme typified many responses to both Paragraphs 1 and 2. It is not surprising that these concepts resonated both intellectually and personally with the students, given their timeliness (and the assignment prompt). A Spring 2022 student’s response to Paragraph 2 invoked several of these common emerging themes, including “general disease,” “COVID-19,” and “cultural response to disease” (e.g., lockdown, social distancing, masks), along with the less frequently observed emerging theme “medical response to disease” (e.g., vaccines, scientific research pertaining to disease):

“Indeed, disease is also one of the normalcy [sic] in natural evolution, and it will never be the last. And the important thing is the human response to the epidemic, We [sic] have been practicing social distancing for more than a year, wearing masks is mandatory for more than 2 years, schools and businesses are closed for a long time. These things cause great difficulties in living and economic losses to individuals and society. However, with adequate vaccination, and the development of science and technology, it will help to repel the pandemic and bring life back to normal.” (Student Response F6)

One Fall 2020 student’s Paragraph 1 response invoked the common emerging themes of “general disease,” “COVID-19,” and “non-COVID-19 disease” as they compared past and present epidemics and pandemics of infectious disease—as well as the role that “globalization” (a less commonly used emerging theme) played in their spread.

“With the rise of agriculture humans began to grow their own food and this led to the population to rise. Around the same time humans started collecting livestock such as cattle; this led to humans being in close contact with their animals which can harbor disease and infections. In order for diseases such as Covid-19 to spread, humans must have close contact with each other and exchange droplets from lung to lung. This means that because of the large human population and increased interconnectedness of people of peoples [sic] and countries that make us the perfect host for this viral disease. For example when Europeans came from Europe to North America they brought over diseases that Native American did not have immunity to, such as smallpox,

and led to many deaths and the decline of the Native American population.” (Student Response A29)

Many of the Paragraph 2 responses (in which students reflected on their personal experiences during the COVID-19 pandemic) contained the emerging themes of “employment” and “psychological effects.” Students often discussed their own employment experiences and invoked psychological effects in the process, especially what it was like to be an “essential worker,” and the stress, fear, and resentment this caused. These psychological effects and employment experiences seemed especially difficult to balance with being a college student. A Fall 2020 student’s response to Paragraph 2 exemplifies these trends:

“At a personal level, my husband and I were both unemployed for the majority of the Shelter In Place period...Even the term used for people who are forced to continue to work throughout this epidemic (often due to being of lower socioeconomic status, and not having the opportunity or ability to work from home)- 'essential', is incredibly paradoxical in that we deem them to be essential to the functioning of our society, yet we do not deem their safety (access to healthcare insurance, sick days, livable wages) as essential...I personally am very disillusioned currently due to the data I have been reading, in addition to the psychological and social ramifications of this pandemic. It has been extremely challenging to adjust to school being fully online, while also adjusting to inconsistent income, feelings of isolation, and losing many important relational aspects of my family and community.” (Student Response A21)

Our third research question asked how students’ engagement with course concepts and other emerging concerns changed between Fall 2020, Spring 2021, and Spring 2022. Table 5 and Figure 2 show the ten codes with the largest change in frequency of use over time. Changes in theme frequency between semesters remind us that, like the SARS-COV-2 virus and its variants, student concerns are ever-evolving. Four of the ten themes represented here are emerging, and three of these relate to disease: “cultural response to disease,” “general disease,” and “non-COVID-19 disease.” Disease was discussed extremely frequently, but the way that students talked about disease changed across the three semesters. The “COVID-19” theme was a common and consistent focus of student response paragraphs (70.69% In Fall 2020, 73.08% in Spring 2021, and 67.86% in Spring 2022). By contrast, the appearance of both the “general disease” and “non-COVID-19 disease” themes declined over time. Perhaps students’ increasing familiarity with COVID-19 led them to focus more on this disease than other specific ones or on disease in general. A progressive decline in the appearance of the emerging “migration and mobility” theme can also be observed. Several students in Fall 2020 had discussed how international travel had contributed to the spread of COVID-19 around the world. Yet lockdowns and persisting travel restrictions characterized Spring 2021 and 2022, perhaps leading the movement of modern people and populations to become less prevalent in student responses.

Table 5. Codes With the Largest Standard Deviation from the Mean.

Code	Frequency of Use (Fall 2020)	Frequency of Use (Spring 2021)	Frequency of Use (Spring 2022)	Mean Frequency of Use	Standard Deviation
1. Archaeological evidence	24.14%	35.90%	54.76%	38.27%	15.45%
2. Environmental impacts	32.76%	57.69%	55.95%	48.8%	13.92%
3. Cultural response to disease*	43.10%	57.69%	65.48%	55.42%	11.36%
4. General disease*	53.45%	41.03%	30.95%	41.81%	11.27%
5. Future	29.31%	37.18%	47.62%	38.04%	9.18%
6. Migration and mobility*	22.41%	11.54%	7.14%	13.70%	7.86%
7. Social hierarchy	22.41%	35.90%	25.00%	27.77%	7.16%
8. Disease: non-COVID-19*	29.31%	24.36%	15.48%	23.05%	7.01%
9. Geographic literacy	25.86%	15.38%	13.10%	18.11%	6.81%
10. Complex society	53.45%	42.31%	46.43%	47.39%	5.63%

Note: Data have been pooled for Paragraph 1 and Paragraph 2 responses by semester. Emerging themes are indicated by an asterisk (*).

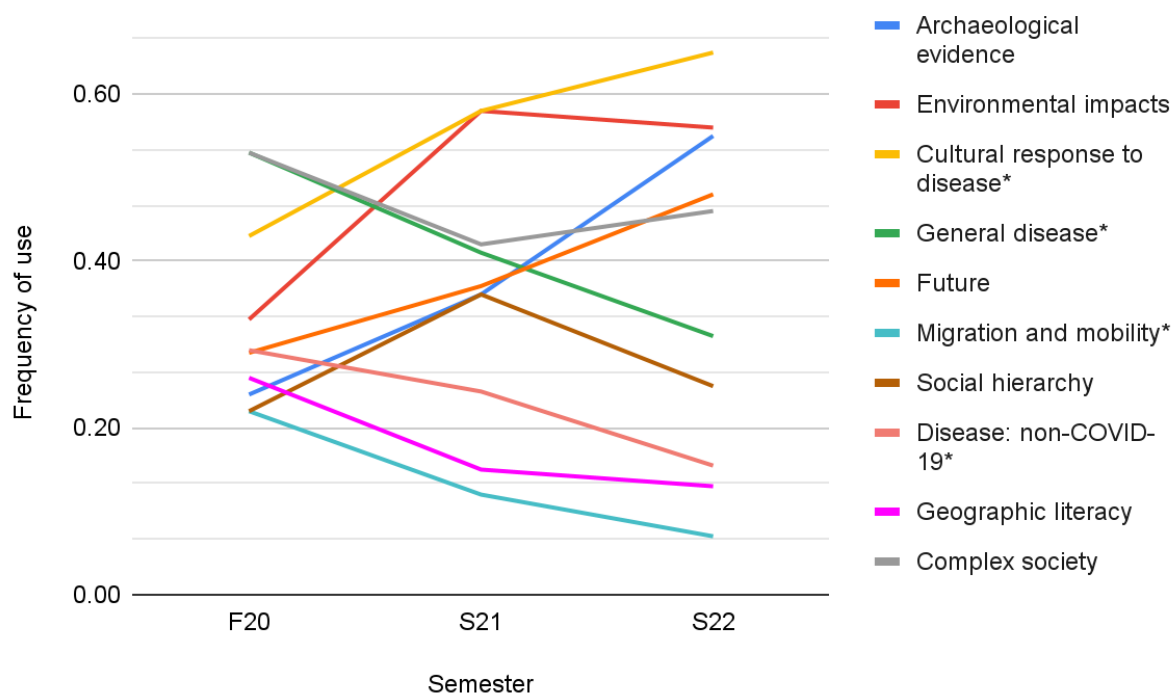


Figure 2. Changes in frequency of use across Fall 2020 (F20), Spring 2021 (S21), and Spring 2022 (S22) semesters for the ten codes with the largest standard deviations from the mean. Emerging themes are indicated by an asterisk (*).

The “cultural response to disease” theme appeared with increasing frequency across semesters. By Spring 2022, mask-wearing and the lockdowns that typified the early COVID-19 pandemic had become more politically divisive topics, which seems to have generated more discussion among students. At the same time, by that semester, two years had passed since the pandemic’s onset, allowing for increased introspection about the array of cultural responses to disease that had appeared (e.g., masks and lockdowns, but also quarantine, social distancing, and takeout meal service). Indeed, Spring 2022 represented the first in-person offering of ANTH 341 since the pandemic began. Sonoma State was enforcing a mask mandate in all classrooms, and students were required to show an “all clear” wellness check on their phones before entering class. Therefore, these cultural responses to COVID-19 may have been at the top of students’ minds as they reflected on their semester.

Similarly, the “archaeological evidence” and “future” themes (and to a lesser extent the “environmental impacts” theme) increasingly typified student responses over time. Material culture associated with the COVID-19 pandemic was more varied and prolific in Spring 2022 than in Fall 2020, making students more aware of the signatures it may create in the future archaeological record (as well as the environmental impacts this accumulation of pandemic-related material culture may have). Yet the occasional note of optimism for the future was also sounded, such as from this Spring 2022 student in their Paragraph 2 response:

“I know future [sic] will never be the same as the past, but I hope the scientific experiences and data help governments to get better decisions to preserve the environment and people co-operate for a better future.” (Student Response F27)

Discussion

Our study’s findings suggest that certain concepts in upper-division general education archaeology curricula have helped college students make sense of the COVID-19 pandemic. In ANTH 341, the course concepts of “complex society,” “environmental impacts,” “archaeological evidence,” “future,” and “social hierarchy” engaged students on both intellectual and personal levels. Students were clearly attuned to some of the same issues about which archaeologists have recently published (e.g., d’Alpoim Guedes et al. 2021; Gamble et al. 2021; Ogundiran 2020a; Schofield et al. 2021) based on the way their response paragraphs discuss pressing social problems like systemic inequities (“complex society” and “social hierarchy” themes) and climate change (“environmental impacts” theme) in the context of the COVID-19 pandemic.

Themes such as “COVID-19,” “non-COVID-19 disease,” “general disease,” and “cultural response to disease,” which were not part of the course’s student learning objectives, emerged frequently in response paragraphs that measured students’ intellectual and personal engagement. A heightened emphasis on how

ancient complex societies responded to epidemic and pandemic disease, especially in terms of cultural practices, has excellent potential to help students learn about the archaeology of complex societies in future semesters. Additionally, the frequency with which students discussed “psychological effects” such as stress and fear supports Cobb and Croucher’s (2022) observation that COVID-19 has heightened students’ need for archaeology to be taught in a way that supports their wellbeing. One way this might be done is by featuring experiential approaches to the past that emphasize sensation, emotion, and/or embodiment. These approaches can challenge loneliness by generating empathy and feelings of shared humanity with people from distant times and places (e.g., Boutin and Callahan 2019; Fleisher and Norman 2016; Hamilakis 2013).

While instructors of courses like ANTH 341 should consider introducing or emphasizing these and other additional themes to enhance our discipline’s relevance to students’ lives further, they must also bear in mind that student concerns and engagement with course concepts will likely continue to evolve as the pandemic continues and, hopefully, ends. The way that students discussed disease changed across the three semesters, with their focus increasingly directed toward COVID-19, and cultural responses to it, over time. The “archaeological evidence” and “future” themes also were more commonly discussed over time, perhaps as students looked toward a post-pandemic future and the ways that archaeologists of that era might interpret our own. Should another pandemic strike our own complex society at some point in the future, this study’s findings may equip those who teach about the past to respond in a way that best supports student learning.

On a more local level, this method of assessing the extent to which student learning objectives are being met reveals where improvements can be made in the instruction of ANTH 341. For example, at the time of writing (January 2023), Boutin is strengthening and making more explicit the role of archaeological ethics in the current semester’s course content in an effort to improve students’ intellectual engagement with this concept. In addition, she has added a new student learning objective: “Compare evidence for past epidemics and pandemics of infectious diseases to the COVID-19 pandemic in our own complex society.” Boutin is continuing to offer a version of the assignment on which this study is based, albeit with updates to reflect the ending of the pandemic emergency and with more recently-published article options (including one with a Spanish-language translation). While the student responses will no longer be part of a formal research study, she can use them for internal assessment of student achievement and wellbeing, as well as to assess the efficacy of the new student learning objective.

The findings of our study are limited in several ways. Data on students’ intellectual and personal engagement with course concepts in ANTH 341 were not collected in a systematic way prior to the COVID-19 pandemic, so this study was not able to directly compare how student responses changed due to the pandemic’s

onset. Students at universities with demographics different from Sonoma State may have different interests, concerns, and experiences related to the COVID-19 pandemic. Instructors wishing to adapt this assignment to their own course might elicit demographic information from study participants so that their responses can be analyzed to identify differential outcomes by gender, ethnicity, etc. Only students of junior and senior standing participated in this study, so younger students earlier in their collegiate careers were not represented. Eighty percent of respondents in this study are majoring in subjects within Business and Economics, Social Sciences, and Science and Technology; students from other majors and universities with other academic programs might have different responses. The student responses also were shaped, to some extent, by the article they chose to read; an alternative set of prompt articles in this assignment could elicit responses distinct from those of Sonoma State students. Future studies might ask students to explain how they chose which article to read, as this choice could have shaped the themes that emerged from their responses.

Conclusion

Courses similar to ANTH 341 are offered in most Anthropology departments, at both lower- and upper-division levels, so we hope that the findings of our study will be widely applicable. As a general education course at Sonoma State, the goal of ANTH 341 is to explore the similarities and differences between complex societies from the past in order to see what insights from this analysis students might apply to their own academic and personal experiences as humans living in yet another phase of complex social organization. To this end, one of ANTH 341's student learning objectives—addressed in every module of course content—is for students to apply the information and concepts they learn to enhance their understanding of their own lives, the complex society they live in today, and where they see this society going in the future.

The COVID-19 pandemic unexpectedly provided an ideal opportunity to test the relevance of general education archaeology curricula to university students' lives. Learning about how social hierarchies arose and operated in past complex societies, and the relationships between these societies and their environments, resonated with ANTH 341 students on personal and intellectual levels, as demonstrated by their ability to connect these concepts to challenges their own society was experiencing during the COVID-19 pandemic. Consequently, these concepts should continue to be emphasized in general education archaeology courses. ANTH 341 students also conveyed significant interest in how past complex societies responded to widespread infectious disease, especially in terms of cultural practices. Many students also discussed emotions such as stress and fear during the COVID-19 pandemic, often in relation to their employment status. Therefore, courses similar to ANTH 341 should explore social responses to, and psychological effects of, epidemic and pandemic disease, ideally

in a way that humanizes past people and their experiences to help students draw connections between past complex societies and the one they live in today.

Our study has demonstrated how instructors of general education archaeology courses can adapt curricula to maintain relevance to university students on both intellectual and personal levels, even in the most challenging of global circumstances. By learning about the past in this way, students can make the post-pandemic future of their own complex societies a better one.

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Appendix

Connecting the COVID-19 Pandemic to the Archaeology of Complex Societies

The goal of General Education courses is to expose you to disciplines outside of your major and teach you concepts and skills that will serve you well after graduation “in the real world” (e.g., global citizenship, critical thinking, information literacy, etc.). But for all of us, “the real world” - in the form of the coronavirus and the associated COVID-19 pandemic - has intruded on recent semesters at Sonoma State, forcing us to learn remotely and take on tasks that are new and, often, more urgent (e.g., changing residence, additional employment, childcare).

With this assignment, I'd like you to connect what we've learned this semester in ANTH 341 and relate it both to the COVID-19 pandemic and to your own personal experiences during it. It's really important that what I teach in this course be relevant to what you're learning at SSU but also to your daily lives. Your responses will help me improve the effectiveness and relevance of the concepts taught in this course, and the way they're taught.

In addition, I've created a small study that will use your responses anonymously and collectively (and only if you give consent) for the purposes of research on curriculum in upper division, general education archaeology courses. I would potentially share the results with my Anthropology colleagues in research presentations and publications, so that all of us can make sure what we're teaching is relevant to you, our students. I've received permission from Sonoma State's Institutional Review Board to run this study, and there's a long Informed Consent form that you'll see once you start the assignment. But I want to explain it in clearer language here. Here's the key info:

- Your responses will not be used in the research study without your explicit permission. You can let me know whether or not you consent before you start the assignment.
- Not consenting to have your response included in the study will not impact your grade on this assignment. No points will be lost for not giving your consent.
- If you consent to have your responses included, I will download them and remove any identifying information (like your name) so they become anonymous.
- Then, I will summarize any patterns that I see between responses, and I may choose certain quotes that illustrate these themes. The results may be used as part of research presentations and publications aimed at fellow Anthropology professors.

The current pandemic is unprecedented in the digital age, so this presents a unique opportunity to see how you can relate archaeological concepts you've learned in this course to current events, as you learn remotely. I hope that this assignment gives you the opportunity to engage in some reflection about your personal and academic lives and, if you choose, contribute these reflections anonymously for the cause of research.

Instructions, Submission, and Feedback

For this assignment, you will read one online article (four choices are provided) and write two response paragraphs. It is due on Thursday, May 12 by 11:59 pm. It is worth 4% of your course grade. It is graded out of 10 points, and you have to write two 5 sentence-minimum paragraphs. If the minimum lengths are not met, one point will be deducted for each sentence that is missing.

Question 1

Informed Consent Form for Social Science Research

Sonoma State University

Title of the Project: Connecting the COVID-19 Pandemic to the Archaeology of Complex Societies (IRB#3119)

Principal Investigator: Alexis Boutin, Department of Anthropology, 2054D Stevenson Building, Email: boutin@sonoma.edu

Institutional Review Board: Email: irb@sonoma.edu, Phone: 707-664-2066

You are invited to participate in a research study on connecting the COVID-19 pandemic to the archaeology of complex societies, conducted by Dr. Alexis Boutin of Sonoma State University. If you decide to participate in this research project, I will download your Pandemic Reflection assignment. Credit for this assignment is independent of whether you participate. For the assignment, you will read one online article about COVID-19. Next, you will write one paragraph reflecting on how the ideas in the article relate to course content. Last, you will write one paragraph reflecting on how the ideas in the article, as well as course content, relate to your own personal experiences during the COVID-19 pandemic. This assignment is expected to take approximately 30-60 minutes to complete. You are selected because you are a student in ANTH 341: Emergence of Civilizations in the Spring 2022 semester. Your participation in this research project is completely voluntary.

1. Purpose of Study: The purpose of this study is to assess the extent to which students in an upper division general education archaeology course can connect course concepts to the COVID-19 pandemic and their own personal experiences during it. You may choose whether or not you would like your responses to be included as part of this study, with no impact on your assignment grade. All responses used in the study will be anonymous. Themes from the responses will be summarized and illustrative quotes may be used as part of research presentations and publications. The findings of this study will be used to evaluate the efficacy and relevance of upper division general education archaeology concepts and curricula in undergraduate students' lives, with the COVID-19 pandemic as a case study.
2. Procedures to be followed: After indicating your level of consent, you will be asked what your major is. Next, you will read one of four online articles about the COVID-19. You will then write one paragraph reflecting on how the ideas in the article relate to course content. Finally, you will write one paragraph reflecting on how the ideas in the article, as well as course content, relate to your own personal experiences during the COVID-19 pandemic. If you are under age 18, or do not give your consent, you can still complete the assignment with no penalty to your grade. However, your answers will not be included in the research study.
3. Discomforts and Risks: It is possible that that reflecting on your own personal experiences during the COVID-19 pandemic may cause mild emotional distress. However, no substantial risks from participating in this study are anticipated. You may choose to withdraw your participation from the study at any time.
4. Benefits: You will have the opportunity to learn more about current events and connect them to the course content. Your participation will also benefit society by assisting with research that will improve how the archaeology of complex societies is taught and enhance its relevance to undergraduate students. This semester is a unique opportunity to investigate how course content can be relevant to current events.
5. Duration: The assignment will take approximately 30-60 minutes to complete.
6. Statement of Confidentiality: All responses will be anonymous and will be kept completely confidential. All data will be scrubbed of any digital footprint (no IP addresses will be collected) and information will be reported in aggregated form in the resulting papers and presentations about the study. The data collected will be stored indefinitely in password-protected digital accounts and computers. Only Dr. Alexis Boutin and authorized student research assistants will have access to the data collected. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be

disclosed only with your permission or as required by law.

7. Compensation: You will earn credit for the assignment even if you choose not to participate in the study.

Please indicate your level of consent for participating in the study below, before proceeding to assignment. Please note that choosing not to participate in the study will not jeopardize your grade on this assignment in any way. You may withdraw your consent to participate in the study at any time without jeopardizing your grade on this assignment.

Your decision whether or not to participate will not prejudice your current or future relations with Sonoma State University. If you decide to participate, you are free to withdraw your consent, skip a question and to discontinue participation at any time without prejudice.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE. IF YOU CHOOSE TO PROCEED, IT MEANS THAT YOU AGREE TO PARTICIPATE HAVING READ, UNDERSTOOD, AND AGREED TO THE INFORMATION PROVIDED ABOVE AND FREELY CONSENT TO PARTICIPATE IN THIS STUDY. PLEASE SELECT THE LEVEL OF CONSENT YOU WISH TO PARTICIPATE IN.

I am not 18 years of age.

I am at least 18 years of age, and I do not consent for my response to be used for research purposes.

I am at least 18 years of age, and I consent for my response to be used for research purposes. I understand that my response will be anonymous.

Question 2

What is your major at SSU? If you are a double-major, you may select both.

American Multicultural Studies

Anthropology

Applied Statistics

Art History

Art Studio

Biochemistry

Biology

Business Administration

Chemistry

Communications

Computer Science

Chicano and Latino Studies
Criminology and Criminal Justice Studies
Early Childhood Studies
Earth Science
Economics
Electrical Engineering
English
Environmental Studies, Geography, and Planning
French
Environmental Science, Geography, and Management
Geology
Global Studies
History
Human Development
Kinesiology
Liberal Studies - Hutchins
Mathematics
Music
Nursing
Philosophy
Physics
Political Science
Pre-Business Administration
Pre-Human Development
Pre-Nursing
Psychology
Sociology
Spanish
Special Major
Statistics
Theater Arts
Undeclared
Women's and Gender Studies

Read **one** of the four articles listed below. The articles are:

What makes viruses like COVID-19 such a risk for human beings? The answer goes back thousands of years

- Why the flourishing of infectious diseases at an epidemic scale can be linked to the emergence of complex societies, by History professor Kyle Harper

The Archaeology of the Disposable Mask

- How future archaeologists will be able to identify “the Pandemic Period” in the archaeological record, by Anthropology professor Dr. Pamela Geller

What the archaeological record reveals about epidemics throughout history - and the human response to them

- How bioarchaeological research on past pandemics can help us respond to them today, by Archaeology and Anthropology Professor Drs. Charlotte Roberts, Gabriel Wrobel, and Michael Westaway.

Are Pandemics Good for the Environment?

- Elic Weitzel, a PhD student in human ecology and archaeology, looks at past disease outbreaks to consider whether the COVID-19 pandemic may benefit our environment

Question 3

Which article did you read?

The Archaeology of the Disposable Mask

What the archaeological record reveals about epidemics throughout history - and the human response to them

Are Pandemics Good for the Environment?

What makes viruses like COVID-19 such a risk for human beings? The answer goes back thousands of years

Question 4

Write two paragraphs in response to the article you read.

Paragraph 1:

Reflect on how the ideas in this article relate to what we learned this semester in ANTH 341, in terms of what archaeology reveals about ancient complex societies. You might refer to concepts like paleoenvironmental reconstruction, social hierarchies based on class, long-distance trade and exchange, colonialism, and/or belief systems. Feel free to refer back to your assigned readings, lecture slides, lecture notes, and assignments. In-text citations and References lists are not required for this assignment, but if you use someone else's words, you must place them in quotation marks. Your answer must be at least five sentences long.

Paragraph 2:

Reflect on how the ideas in this article and what we learned this semester in ANTH 341 relates to your own personal experiences during the COVID-19 pandemic. Consider both your day-to-day and week-to-week experiences since March 2020, but also look toward your future over the coming months and even years. Again, feel free to refer back to your assigned readings, lecture slides, lecture notes, and assignments. In-text citations and References lists are not required for this assignment, but if you use someone else's words, you must place them in quotation marks. Your answer must be at least five sentences long.