Digital Heritage as Collaborative Process: Fostering Partnerships, Engagement and Inclusivity in Museums

KATHERINE COOK, Université de Montréal, Canada
GENEVIEVE HILL, Royal BC Museum, Canada

This paper examines the process of collaboration and community engagement in developing and applying digital heritage resources. Drawing on experiences building partnerships between a university's anthropology undergraduate program and a provincial museum to teach community-engaged applied digital heritage, the authors present this case study to evaluate models, barriers and benefits of collaboration today. The process of co-creating digital applications in heritage environments were transformative for not only students but also professional archaeologists and communities, highlighting the meaningful engagement and understandings that are developed through collaborative making. However, it also highlighted the challenges facing these types of collaborations, including academic and heritage structures, digital preservation/management, and ethics and inclusivity in digitization projects.

Key words:
Digital Heritage, Museums, Higher Education, Public Archaeology, Community Engagement.

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1. INTRODUCTION

> "What institutions *do*, rather than what they say, what they own, or the nature of their physical edifice reflects who they are and, therefore, whether they are of consequence." Abram [2005: 19; emphasis added]

> "…an isolated entity, elitist, disconnected from the place in which it is situated and from practical matters of the 'real' world." Klein et al. [2011: 425].

Museums and universities, two of the primary institutions in which archaeology operates, have undergone parallel critiques of relevancy in recent years. The sense of detachment and disillusionment evident in the above quotes, the former discussing museums and the latter describing the ivory tower of academia, has increasingly eroded investment (emotional, financial,

Author's address: Katherine Cook, Department of Anthropology, University of Montreal, Lionel-Groulx Pavilion, 3150 Jean-Brillant Street Suite C-3075, Montreal, QC, Canada, H3T 1N8; email: katherine.cook@umontreal.ca; Genevieve Hill, First Nations and Repatriation Department, Royal BC Museum, 675 Belleville Street, BC, V8W 9W2; email: ghill@royalbcmuseum.bc.ca.
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etc.) in these spaces as valuable, engaging or contributing elements of our society. Changing economic, political and social conditions and broader demands for decolonization, equity and inclusivity have certainly contributed to triggering a crisis of faith, for both heritage practitioners and the public(s) they (in theory) serve. (Re)discovering relevancy for museums and universities has been an ongoing process of assessing and reshaping our interactions to be more participatory, engaged, and diverse. Nina Simon [2010], for instance, in her vision for relevancy, centers artifacts and experiences in museums as 'social objects': "the engines of socially networked experiences, the content around which conversation happens", through which we connect to people. Simon is building on Jyri Engestrom's [2005] "object-centered sociality" which argues that objects (physical or otherwise) form the center of successful social networks by providing nodes of discussion, interaction, focus and shared experience that binds together individuals who create, critique and consume these objects. Both highlight the social and active components of meaning-making in museums to support memorable but also valuable and powerful experiences of engagement with culture and the past.

The language of these discussions in museum and heritage studies in many ways mirrors the discourse of engaged archaeological practice today, which seeks to fundamentally transform the politics of control, access and inclusivity of traditional/colonial archaeology. Framed within a network of concepts, including community archaeology [Marshall 2002: 213], collaborative archaeology [Moser 2002], and 'archaeology from below' [Faulkner 2000: 21], these methodologies have gained increasing traction and momentum with the establishment of public archaeology publication platforms, awards and funding streams, and the proliferation of digital communication and media platforms. Indigenous archaeologies and decolonization practices, in particular, have contributed critical discourse and methodologies, emphasizing the active processes through which knowledge of the past is constructed and shared when bringing together diverse communities and ways of knowing (see for instance "knowledge braiding" in Atalay 2012: 206-207, 2016: 55). Nevertheless, concerns with the impact (or lack thereof) of community-engaged archaeology continue to be voiced, particularly in light of the relentless attrition of the position and valuing of archaeology, punctuated by more direct attacks on legislation, protections, and funding evident globally. Most recently, Klein et al.'s [2018: 1] critique of archaeology underlined the failure of educational and informational programs by archaeologists (characteristic of first wave public archaeology) to truly develop the strong support networks, connections and allies, without which we can 'kiss our research goodbye!' The deliberately provocative call to arms emphasizes the urgent need for methodologies that build collective sense of place, collaborative and political practices to target relevant histories, and demonstrations of the contemporary value of archaeology. Current formulations of community-engaged archaeology that prioritize active and thoughtful collaborative processes, rather than passive and unidirectional approaches, add long-term value through the meaningful and memorable ways in which knowledge, understanding, emotion and spirituality are interwoven into shared experiences of the past.

Together, these contemporary heritage and archaeological perspectives emphasize a) the importance of active engagement through doing, participating, creating; and b) that this process must be collaborative, collective and inclusive in spirit, bringing together diverse groups and perspectives in new and dynamic ways. We would like to expand this to consider the ways in which

the experience of creating specifically digital or hybrid[1] heritage projects through collaborative practice and extended community engagement mobilizes existing collections and enhances heritage experiences to provide further nodes through which we can build meaningful understanding of the past – where the *process* is as significant as the digital or hybrid products themselves. Technological innovation is already deeply embedded in heritage practice, thanks in part to its proliferation through reduced costs of entry and increased personal devices, widening public consumption and indeed reliance [Bonacchi 2017, McDavid 2002]. However, in digital archaeology and digital heritage, the emphasis is often placed on the tools, technologies and products (outputs, media), rather than the experience of doing, creating, and making and the value that those experiences bring to our understandings of the past. This paper will instead explore a case study in collaborative applied digital heritage and the experiences that it provided for the diverse participants, including students and professors, museum and archaeology professionals, descendant communities, and the public.[2] Museums, have of course long acted as places of learning, but this article will specifically explore the ways in which the process of developing digital applications enhances modes of traditional knowledge production and dissemination in university- and museum-based archaeology by creating space to collaborate, co-create, experiment, and learn for participants from diverse backgrounds. As such, this article represents a multitude of voices and experiences, including those of students and museum visitors. But, in particular, it brings together the reflections of a digital archaeologist/professor, and an archaeologist/museum collections manager to recognize the benefits and barriers to building collaborative digital heritage programs for education. Refocusing public archaeology and heritage on process rather than product transforms education and community-based research but it also demands that we address colonial legacies, unethical and inequitable disciplinary structures, and new opportunities for teaching and learning.

2. BRIDGING VICTORIA: PROJECT BACKGROUND

This digital heritage project was stimulated and shaped by the intersecting and complementary interests of a university, a provincial museum, and diverse descendant communities and publics. On the one hand, Cook, an archaeologist and instructor seeking solutions to the challenge of 'recreating' the complexities of heritage practice in traditional classrooms, was committed to fostering community-engaged classrooms conducive to examining the complexities of ethics, inequities and power dynamics in heritage practice, including digital applications. This fit within a broader departmental and institutional emphasis on experiential and community-engaged learning and scholarship as an important pedagogical tool [Bandy 2015, Heffernan 2001, Kuh 2008, Young et al. 2017] but also to create better connections between institution and community. On the other hand, Hill, an archaeologist and museum collections manager, was looking for a way to make collections that would otherwise be in long-term storage accessible to the public while giving students the experience of working with archaeological collections in a repository context and a museum setting to provide professional development and training opportunities. This also aligned with the museum's

[1] A combination of digital and non-digital/analog tools, platforms, and objects.

[2] We distinguish between descendant community and general public engagement, as these groups typically have divergent stakes, knowledge, goals, and even different histories of access or control of the past and therefore interact and engage with archaeological projects in different ways (see also Marshall 2002: 215-216, Moser 2002: 222-223).

goals for community engagement, hands-on learning, and university partnerships. The result was a series of experiments in threading together museum and university teaching and learning practices with community heritage programming. Following previous successes with a course-based heritage project that sought to explore what historical archaeology would look like if driven by community engagement, resulting in the museum's first archaeological pop-up exhibition *Excavating Royal Jubilee*, the authors saw the opportunity to expand student, community and professional collaboration through the development and integration of hybrid digital and analogue applications, leading to the *Bridging Victoria* heritage project.

2.1 Methodology for Collaborative Digital Heritage

In the fall of 2017, roughly thirty students from two courses (public archaeology and digital archaeology) from the University of Victoria (UVic), taught by Cook, collaborated with Royal BC Museum (RBCM) staff and volunteers to produce community-engaged, local archaeological research and interpretation on the one hand and digital heritage resources and event on the other. Students were provided with a basic framework to produce a free one-day, pop-up exhibit (Fig. 1) integrated with long-term open access, web-based resources (Fig. 2), but the methods and products themselves were open ended. The goals of the project were initially framed by public archaeology students in collaboration with museum staff (and the descendant communities by extension, through advisory boards, existing policy, etc.):

a) to provide access to archaeological collections local to Victoria, which are otherwise rarely exhibited;

b) strategically add layers to existing permanent exhibits (dated/in process of redevelopment);

c) create a more inclusive and dynamic history of this place that recognizes colonial legacies, conflicts, etc.

With those goals in mind, UVic digital archaeology students were responsible for imagining and creating digital and/or electronic components that would facilitate public engagement and education while taking into account existing digitization and access policies.

Three collections were selected, focusing on objects and narratives that had never been exhibited before, despite some having been collected nearly thirty years ago. Each collection was recovered by local cultural resource management companies or volunteers ahead of urban development. All of the collections are comprised of objects that date from the late 19th century to the mid-20th century. The first collection was recovered during service upgrades near the harbor in Victoria, and represents early life in Canada's first Chinatown. The second collection was recovered during salvage excavations on the Old Songhees Village, across the harbor from Victoria, and contains waterlogged wooden and leather objects, reflecting culture, trade and commerce in the nascent city of Victoria. The third collection is comprised of material recovered during an ongoing project to dredge a local harbor, much of which related to the military history of Esquimalt. These collections represented intersections of diverse communities past and present, and were tied to a range of descendant communities and stakeholder groups. This presented a massive challenge for collaborative archaeology in the complexity of these relationships but also an opportunity for archaeologists,

students and communities alike to engage with and confront tense and complicated histories. In order to address these complexities, students identified important themes, and then divided responsibilities and explored different media and means for facilitating meaningful engagement with often very emotional, contradictory and difficult narratives.

Figure 1. Advertisement for Bridging Victoria: Stories from the Archaeological Past pop-up exhibit.

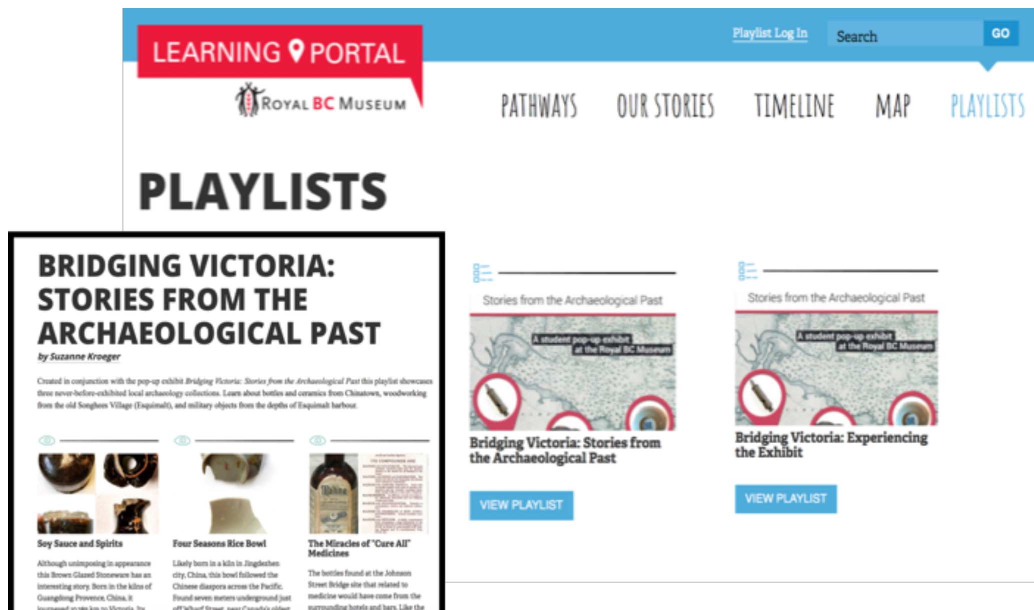

Figure 2. Detail from one of the online resources produced through the project.

The resulting workflow (Fig. 3) reproduced common experiences in museums, where archaeologists/curators/researchers often collaborate with 'digital experts' in a specialized department or even outsourced to an external company or digital freelancer(s). In this context, they experienced the challenges of project management, communication, and accountability that go along with bridging those professional divides, in addition to being responsible for connecting with diverse communities. Students also had museum staff and community members to communicate with and answer to -- increasing the intensity of accountability and maturity beyond what is normally expected or required for success in undergraduate courses. The climactic event of the process was the final pop-up exhibit, at which the creators of the applied heritage projects were on hand to assist visitors engaging with new technologies. Perhaps most importantly, this often became a node for discussing the role of technology in heritage and how the collaborative process had unfolded, in addition to providing feedback opportunities to evaluate visitor experience and attitudes. Finally, following the event and just ahead of the final deadlines associated with the refinement and presentation of digital, web-based resources, a series of debriefing sessions provided opportunities to critically reflect and self-assess the outcomes of these projects. These reflections were intended to feed into the final stages of refinement of projects, but also into reports, publications, and further engagements that emerged out of the process. Overall, this professionalization and applied training is often lacking from higher education today, particularly where training programs remain disconnected and isolated from society, reducing the relevancy of higher education and maintaining the ivory tower effect of universities. Student experiences and growth, therefore, were measured and assessed throughout the process to examine the impact of collaborative processes on archaeology and heritage training programs.

Figure 3. Visualization of primary workflow for Bridging Victoria.

2.2 Reflections on/as Results

The project created a breadth of learning opportunities for everyone involved, including students, instructors, museum professionals, descendant communities and the public. These lessons can be largely be captured in three distinct yet interconnected categories:

1) teaching and learning professionalism, ethics, research and digital literacy (pedagogy);
2) collaboration and co-creation as process not product (digital applications and technology);
3) institutional frameworks of time, budget, and career structures (logistics, feasibility).

Reflections on the strengths of these approaches and their contributions to archaeology and heritage practice, in connection to ongoing challenges/barriers, will be presented here to guide and address issues in developing ethical, respectful and constructive collaborations and education opportunities in community-engaged practice in future. New and emerging technology, from social media to augmented and virtual realities to 3D modeling and printing, is increasingly being integrated into heritage and museum practice, as a means of communicating, engaging, protecting and promoting. However, the pressure to apply it with speed, innovation, and impact often challenge ethical, thoughtful and respectful applications that address current challenges and barriers in education, heritage and the tech industries (including inclusivity and equity). Collaborative applied digital heritage, such as the model outlined above, presents an opportunity to introduce a system of checks and balances while stimulating creativity, professional development, increased digital literacy, and meaningful social engagement.

3. TEACHING & LEARNING

One of the most direct and measurable outcomes of the project was that teaching collaborative applied digital heritage provided the opportunity to better prepare archaeologists-in-training for future learning and work through progressive, applied engagement. Based on the huge range of skillsets needed for the development of applications and platforms for diverse audiences (in person event vs. online, etc.) but also the complexity of understanding when, how and why to implement digital heritage applications, this course was extremely demanding. The learning curve was steep and depended on students' engagement, accountability, and commitment to responsible and ethical anthropological practices. Their progress and experiences were critical to the success of the heritage programming, but also their personal success in the course, so regular check-ins, surveys and mentoring sessions were structured to assess their experiences, learning, and development throughout the process.

Survey data[3] collected from students at the beginning and the end of the course was used to measure student progress and understand their perspectives, but also to contrast with a previous version of this course that did not include applied and community-engaged work. Without the applied heritage

[3] Student feedback and self-assessments were collected through optional online surveys, through which they selected their level of anonymity and consented to the use of survey data for research and potential publications. Further feedback was collected through voluntary involvement in debriefing and reflection sessions. Both formats included closed- and open-ended questions to provide a range responses and analytical opportunities.

work, roughly 25% of students (n=17) noted job readiness as an outcome of the course. In contrast, those with the applied digital heritage project as a final assignment all flagged the museum and community collaboration experience as most important to learning digital archaeology, and 90% (n=14) referred specifically to job readiness as one of the outcomes of the course, including transferrable skills like working with diverse groups, leadership, problem solving, budgeting, etc. but also personal confidence and professionalization. This was in part achieved through the mentorship provided by professional archaeologists, but more importantly by the accountability of creating real projects for use in public settings, and the pressures to be successful, ethical, and inclusive in creating those projects, and was a major motivation for students to take these projects seriously, in comparison to more insular assignments and exams. Furthermore, students, in a self-assessment of their own skillsets entering and exiting the course, identified the relevance of applied digital heritage assignments in improving creative thinking, project management, communication, but also time management, critical thinking, problem solving and team work – critical skills for a range of jobs within and beyond heritage professions (Fig. 4).

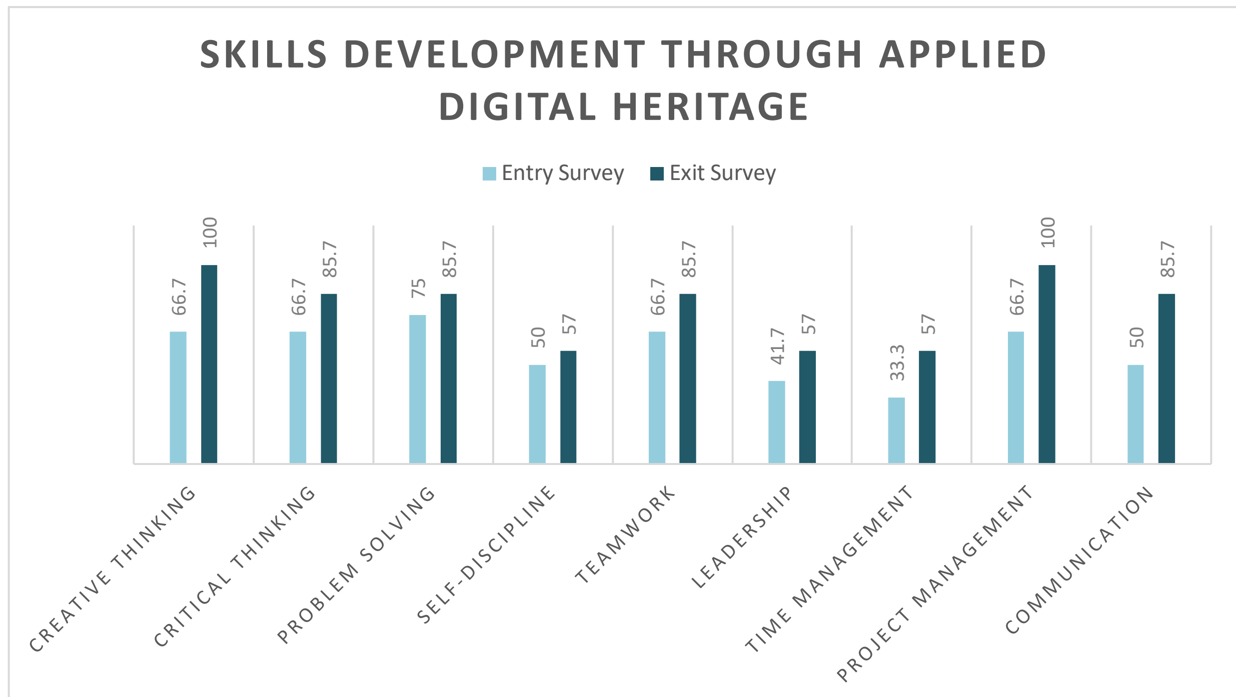

Figure 4. Percentage of students identifying with skills at the time of entry to and exit from the course.

The impact of higher education structures and experiences should not be underestimated; these are critical opportunities for shaping future approaches to archaeology and heritage in our communities and beyond. Many archaeology and heritage professionals start in university classrooms, and the approaches, tools, and skills that they develop during this time feeds into their attitudes and methods in future employments. And while not all university students in an archaeology course will go on to work in this field, they will nevertheless be part of the public, who are responsible for funding, supporting and advocating for heritage work. University classrooms, then, are a critical context in

which to explore and consider the complexities of museum practice and digital technology, especially when we find ways to connect those dialogues with communities and engaged work.

4. COLLABORATION & CO-CREATION

Together, the students and the partner museum collectively identified an interest in exploring the ways in which collaborative digital heritage makes space for multivocality, equity and inclusivity in universities, museums and communities. The strategic use of technologies (including augmented reality, interactivity, etc.) that allow for layering of multiple stories in the same space, same collection, same objects to interconnect diverse narratives reflecting the very diverse descendant communities associated with the history of British Columbia reflected the goals of this project. This also took the shape of students exploring their own background in relation to archaeological research and developing their unique voices as anthropologists (not only indigenous students, but also settler students), in turn becoming more confident and empowered in those identities, roles and voices.

Digital and web-based platforms were also used strategically to increase accessibility, for instance, providing a range of ways to interact with the information (including visual, auditory, and physical objects that could be touched). However, this was done with a consideration of the ethics and practice of digitization, with descendant communities having ultimate control over digitization (what is digitized, how, access to files, etc.) by following the policies and regulations already established at the museum regarding collections access and digitization. Part of this process became confronting assumptions and problematizing the normalization of technology. To this end, we worked heavily with an additional mentor, Beth Compton, currently a Ph.D. student at Western University, who is in many ways redefining the ways that we think about collaboration and digitization with and for indigenous communities [Compton 2017, Compton et al. 2017: 51-52; see also Cook and Compton 2018]. This all formed part of a fluid and flexible process of seeking guidance and knowledge from professional and local communities as and when new ideas, problems or opportunities emerged. Furthermore, because of the breadth and complexity of digital technologies today, this additional mentorship provided greater support and recognition of the specialization and refinement of knowledge necessary to skillfully and thoughtfully apply digital tools.

As students gradually became technological specialists themselves, they too became mentors and digital facilitators, using their heritage projects as an entry point for contributing to digital literacy to the public as needed; visitors not only had the chance to try technologies that they had never utilized before, but learn how it worked and the process of designing applications. We often hesitate to include complexities of archaeological methods in public archaeology, focusing on the things, the history, and the narratives we form, but this experience demonstrated that communities were as interested in the process of digital heritage as they were about the heritage being captured. Moreover, the accessibility of and interest in tangible artifacts and local history acted as comfortable entry points without the anxiety and confusion that advanced technological concepts and applications have a tendency to induce. Through these discussions of process came digital literacy, experience, and advanced understanding. Because digital literacy is critical to making informed decisions about how, what and when we digitize the past, questions that communities and the public are ultimately stakeholders in, events like these with opportunities to engage with creators, digital tech, and

collections in a casual and friendly format help foster these discussions and allow everyone to learn and experiment with technology.

4.1 Products versus Processes

Of course, the timeline of long-term making poses a final challenge of how to conceive of and treat the products of these collaborative experiences and processes of meaning making. Is there an endpoint and at what point are the products relevant? How do we preserve them? At its core, digital preservation of long-term collaborative processes should aim to record and share as much of the process as possible (or as is appropriate), whether through documenting the various stages of the project or making available different versions so that the development over time is evident. In this case, we shared a digital playlist of content documenting the pop-up exhibit for those who could not attend the event [Kroeger 2017a] in addition to a broader playlist of content representing the historical narratives and archaeological knowledge created through this research process [Kroeger 2017b]. These act as central nodes of a much wider digital network that includes other digital products, including audio guides and soundscapes [Fletcher et al. 2017], and an augmented reality platform, as well as a wider web of social media posts (Twitter, Facebook, Instagram) that record and present both the research process, prototyping, and the products. A final layer of digital documentation was created at the close of the project, where students reflected on their experiences through open blog and Medium posts as well as later through open access publications [Heckadon et al. 2017, Thiessen 2017]. This network of digital products, facilitated through web-based platforms, poses both an opportunity for long-term engagement with the project but also the significant challenge of maintaining a range of file types that are housed on different sites, platforms, servers. On the one hand, this digital threading together of diverse media, resources, and platforms perfectly represents the collaborative process of weaving together knowledge, collections and communities. However, most of these threads are no longer collaborative in nature, beyond comments sections or the ability to share via social media platforms to continue the dialogue. Following the close of the project and pop-up exhibit event, many of the elements themselves became more static and cannot be further developed without the original students' involvement – ultimately ending the collaboration process. In the future, we would like to experiment with web-based platforms that allow for long-term collaboration to diffuse the impact of semesters on developing ongoing relationships, interpretations, and engagements. However, this would still pose a challenge to the career structures, institutional timelines and funding schemes outlined above. Addressing these structures, then, are critical to being able to create long-term collaborations (both digital and analog).

The scope for preservation of digital products in archaeology is more broadly a considerable concern, including the security of "born digital" field or research notes and digital information management [Beagrie 2006, Richards 2002]. This is further complicated in community-based digital heritage projects, due to the politics of locations of but also access to servers, data, and products beyond the usual complexities of heritage preservation. Long-term collaborative processes need long-term digital plans and support, which should be (as much as possible) planned in advance and may require ongoing digital literacy training for both archaeologists and communities – but this too can become an opportunity for meaningful dialogue and growth. Working through designing a digital product and navigating the roadblocks of format support, long-term storage and functionality, hardware and

software, budgets, etc. is important for assessing the reality and applicability of future projects whether they be in/by/with communities or lay people/general public. The more the public, descendant communities, and heritage professionals are involved in and understand the process, the better communication and planning will be in the future, as we come to know what to ask for and how to set up for it. This is a critical opportunity for capacity building in shifting towards communities having more authority and control over their own heritage, including digital heritage and data.

5. INSTITUTIONAL FRAMEWORKS OF TIME & SPACE FOR LONG-TERM MAKING

A further outcome of this project was increasing recognition that fostering creativity and experimentation is as important as, and can be deeply embedded in, theoretically-driven research -- and this can take many shapes. Making space for a range of outputs (digital and analog and everything in between) underlines that there is a choice: we have to evaluate where digital is the best approach and where it is not (avoiding the expectation that technology is always the best solution) (Fig. 5).

Figure 5. Example of an analog piece narrating the story of a rice bowl from the RBCM collection (Emily Thiessen).

Prototyping and physical manipulation can be integral to the process, particularly when engaging different types of learners but also in seeking collaboration and feedback from communities and making the digital seem more accessible. Debriefing sessions, which occurred in the weeks following the exhibit, were critical to fully unpacking and making sense of the experiences, particularly given the extremely rapid and intense development and application process. This provided opportunities for exploring where digital and non-digital solutions had worked and where they had not, and thinking about the implications for future design and production. Ideally, this type of making, feedback, and debriefing cycle should be repeated a number of times to refine and advance applications and include diverse participants, however this can be very difficult to structure in terms of location (recognizing the isolation or even political nature of accessing museum or campus environments) and course schedules and timelines, which are extremely tight and inflexible.

5.1 Institutional and Community Time

Collaborative co-making and experimentation, including descendant communities, mentors, and professional guidance, as a very dynamic and flexible "classroom" in many ways created the perfect environment for comfortably unstructured dialogue, experience and unexpected knowledge production and mobilization. For instance, an interactive map created using physical computing components (MakeyMakey, Scratch), audio and 3D prints incorporated mentorship from Beth Compton, of the DH Maker Bus [Compton et al. 2017] and reflections on the digitization policies (created through consultation with descendant communities) [Heckadon et al. 2017] (Fig. 6). However, one of the unexpected contributions was in the richness and breadth of dialogues and interactions it created with museum visitors, where local residents learned about computational processes while also providing feedback about not only the histories but the experiences of using the digital products. This allowed the students to reflect on digital heritage practice, their projects and the impacts the technology had in shaping understandings of the past.

a) b)

Figure 6. Example of an interactive map comprised of a) physical computing elements; b) 3D prints, and audio (by Anna Heckadon, Kaylynne Sparks, Kayla Hartemink, Yip van Muijlwijk, Maddy Chater, and Tamara Nicole).

In future, we hope to further embrace the long-term public and collaborative process to enhance this opportunity for co-making and dynamic dialogue over applications. Imagine, for instance, visiting a museum where individuals are crafting applied digital heritage projects in open and dynamic settings, where the public can learn and contribute over months or even years, rather than a single day, picking up new skills and knowledge along the way but also exploring the ways in which technology itself is changing over time (a real-world MicroPasts) [Bonacchi et al. 2014]. There are seemingly infinite opportunities for extending and building on these types of engagement to transform collaborative digital heritage in future.

However, there is a significant barrier to this type of extended engagement. Despite the clear benefits to teaching and engaging in collaborative applied digital heritage, institutional and career structures, including the lack of recognition for this work (and how labor intensive it really is), remains a huge barrier to encouraging and fostering this type of work long-term. It should be recognized that this project was facilitated by two early career researchers (one on short contract) where responsibilities for projects engaging a wide range of collaborators and audiences is far beyond regular workload or job description. Collaborative or public archaeology/heritage projects are in fact rarely part of regular roles, and therefore are not recognized or compensated for but are still an expectation from employers, colleagues, and disciplinary sense of best practice. This current structure takes advantage of commitment to the discipline or communities but also desperation considering the current job market, transiency and lack of job security. This is a further concern for communities in public archaeology and heritage practice; because this is extra and above and beyond, this is also where balls get dropped or projects end up incomplete, and where communities are lost in the shuffle. This is further complicated by increasing prevalence of short contracts in heritage and academia, at the same time as growing pressure for researchers to engage the public, making it largely impossible to commit to and manage long-term projects, critical to building stable relationships and carrying out responsibilities to communities. Because students are necessarily transient and can only be expected to commit to short blocks of time (typically a semester or term of 6 to 12 weeks), it is critical that instructors, museum professionals and mentors are able to maintain the stability of projects and community relationships. Particularly given the complexity of long-term preservation and maintenance of technology and media, the impact of precarious employment is ultimately shortened lifespans for digital projects because there is not consistency in individuals interested or responsible for their long-term stewardship. The transformation in museum and university structures (recognizing that there is already a lack of time and money associated with heritage) is therefore critical to support building collaborative applied heritage projects and classrooms in a fair and inclusive manner.

Another barrier to extended engagement comes in the form of institutional timelines. Both universities and museums are bound by fixed and often inflexible annual and seasonal timelines. Given that university professors and museum collections staff create annual budgets and timelines independently, it is often challenging to carve out time and space for collaborative projects of this scale more than a term in advance, and it is consistently challenging to fund them adequately. The traditional exhibit planning process within museums requires a significant amount of pre-planning and paperwork, but the usual channels do not easily accommodate short-term collaborations of this sort. In this case of Bridging Victoria, the students and collection staff worked with the Learning

Department, who focus on developing public programs, in order to facilitate the pop-up exhibit. The Learning staff helped other museum staff alongside the students to navigate obstacles such as scheduling the exhibit (best time, peak traffic, etc.), setting up and positioning within the galleries, and advertising through museum channels. Further challenges, such as scheduling community collaboration, and the university term dates, student classes, exams, and jobs limit the participants' ability to schedule access to the collection, as well as the pop-up exhibit itself. The nature of the project discussed necessitated that the students spend time with the collection prior to project design, and required them to spend more time with the objects they selected for the final exhibit as the project progressed. Given the abnormal off campus time requirements, it was essential to facilitate this process without creating inequities for students with external responsibilities (caregiving, part- or fulltime employment, etc.) or health conditions, who are often marginalized in education and archaeology [Phillips et al. 2007]. The need to coordinate repeated access for multiple individuals was challenging and created extra burdens for instructional and museum staff, but it was important for students to see how the collections are cared for and to navigate the real-world challenges (such as time limits in the collection, small workspaces, working alongside other researchers). The realities of these timelines and institutional structures play critical roles in the ways in which community-engaged classrooms and collaborative heritage projects and yet are often overlooked in conception and planning processes, but also recognition and compensation for the individuals who facilitate them.

6. DISCUSSION

When digital archaeology or heritage is conceptualized as less about the 'things' that get digitized, and more as the active and ongoing process or practice of making the narratives of the past, we transform what engagement and education look like, and necessarily we also transform careers, funding and disciplinary structures. It challenges us to set goals and measure achievements from a different vantage point, as works in a never-ending process, but it also opens us up to other ways of knowing and making the past. It is no coincidence that the themes of shared experience, diverse interactions and active meaning-making are repeated across contemporary discourses in heritage practice and museum studies, public and indigenous archaeologies, and higher education pedagogy. When we weave together the layers through which the public learn, communities learn, higher education students learn, and professionals learn, there are shared nodes that bind us together and create opportunities to strengthen heritage practice and connected communities. Applied digital heritage stands to gain a great deal in borrowing the growing emphasis placed on long-term collaborative processes in networked research, teaching and learning. These values should be integrated at every level, including training, platform development, and application.

However, challenges remain. At it's core, the complexity of supporting long-term engagement remains the greatest issue due to the range of related obstacles, including the conflicting timelines of universities, museums and communities, the high level of transiency in early career professionals, students and even communities, but also the need for focused and consistent curation of digital products and platforms for engagement. Some of these issues can certainly be addressed through careful planning in advance of launching projects and advanced digital literacy training, though other problems will require more structural charges to institutions, careers and funding streams

necessitating activism, advocacy and vigilance to disrupt further erosion of job security, compensation, and recognition of this type of work.

It is ultimately our responsibility to demonstrate the value of this work [Klein et al. 2018]. Nevertheless, we can leverage the renewed commitment to relevancy and community engagement of many academic and cultural institutions to make space and advocate for the necessary resources to support innovative hybrid heritage practices. We can also mobilize the values of openness and the power of experimentation and learning-by-doing to engage wider audiences in collaborative processes and stewardship of the past. For diverse publics, students, archaeologists, and heritage professionals alike, it is this process that is empowering, engaging, and transformative, and it is through embracing and supporting those processes that we will make heritage practice more inclusive, equitable, and meaningful.

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