

Stitching the Fragmented: Feminist Maker Pedagogy and Immersive Technologies for Cultural Learning

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Abstract

To immerse and engage her learners in the particularly difficult topic of WWII Paris, a French instructor, with assistance from the university libraries and digital humanities lab, embarked upon distinct yet iterative digital projects that allowed students to connect with course material through critical making. Starting with digital mapping and moving to 360° virtual reality video projects, instructor, librarians, and students stitched together fragments of the past to further their collective experience of this historical period via immersive technology. Students' work was founded upon feminist maker pedagogy and an ethic of care that allowed them to step into others' perspectives and preserve a cultural memory that future students will build upon.

What connections can 21st-century students at an American university have to people in Paris during World War II? In fact, how can both the instructor and her students from an American university understand a past that none of them lived in and that happened far away? To teach a course on WWII Paris confronts the educator with challenging epistemological and pedagogical questions. Referring to the six facets of understanding by [Wiggins and McTighe 2011], how can students feel empathy for and gain perspective and self-knowledge from subjects so far removed — linguistically, geographically, temporally, psychologically — from themselves? How can one find the words to talk about the ineffable Shoah? Finally, how can one expect them to imagine the German occupation of a city to which some of them have never been? 1

To address these questions, the instructor, librarians, and students collaboratively developed a series of digital projects to archive and spatially locate the fragmented stories of Paris-based Shoah survivors. The instructor, Mélanie Péron, shared strong friendships and working relationships with several living survivors, to whom she introduced her students. In turn, her students became acquainted with these individuals from the fall of 2019 into the spring of 2020 as they worked on their respective narratives. The course culminated in a week-long stay in Paris, during which students met these individuals in person. Librarians, Vickie Karasic and Meaghan Moody, partnered with Mélanie and her students through their development of digital projects founded on critical making and feminist pedagogy. Using mapping and immersive technologies, students created social artifacts intended to live on well after the course. More importantly, they fostered collective experiences that overcame the differences of place and time to understand themselves, others, and cultural issues. 2

Theoretical Frameworks

We draw upon our interpretation of *critical making* in part as [Ratto 2011a] articulates in his foundational article on the subject, defining it as “a mode of materially productive engagement that is intended to bridge the gap between creative physical and conceptual exploration” [Ratto 2011a, 252]. Critical making overlaps and shares practices with art and design, including critical design [Dunne 2005], but departs in its focus on the process over the product. [Ratto 2011a] further highlights that critical making entails the thoughtful and engaged communication between makers, the destabilization of power differentials, and the creation of connections between theory and practice. Perhaps above all, 3

[Ratto 2011a] articulates as key to critical making the investment of self and care in the process to bear a responsibility in the project's enduring existence: "Ultimately, critical making is about turning the relationship between technology and society from a 'matter of fact' into a 'matter of concern.' I see this as requiring personal investment, a 'caring for' that is not typically part of either technical or social scholarly education" [Ratto 2011a, 259]. For our purposes, then, critical making entails both the collaborative production of digital cultural artifacts and, more importantly, the fostering of human connections that are brought about by, and live through, these technological objects beyond this project. Our focus on authentic concern, interconnection, and personal investment also aligns with tenets of the feminist ethics of care.

Because of the intensely personal and poignant nature of the course, it was critical to embrace the feminist strategy of an ethics of care as its cornerstone. As [hooks 1994] has argued, "To teach in a manner that respects and cares for the souls of our students is essential if we are to provide the necessary conditions where learning can most deeply and intimately begin" [hooks 1994, 13]. As spots were limited in the course, first-round students had to answer essay questions followed by an interview for the second round. Through this process, Mélanie and the students got to know one another, and she learned about their motivations for participating in the course. She gave priority to first-generation and/or low-income students for whom the trip was covered by financial aid and the opportunity to travel abroad was the first one and might be the last. On the first day of class, an important convention was introduced to the class. The students and the instructor were to address each other on a first-name basis. The linguistic familiarity translated into the creation of a genuine, fostering, and co-constructive community. Students were also given weekly, extensive personalized feedback and support throughout the course, as they engaged both with this complex and tragic period of history and in direct communication with survivors.

Credited as the originator of the ethics of care theory, [Gilligan 1982] describes the ethics of care as a "psychological logic of relationships" [Gilligan 1982, 73] that denotes a "connection between self and others which is articulated by the concept of responsibility" [Gilligan 1982, 74]. Students were invited as collaborators into the class, and they were tasked with creating digital projects that preserved survivors' histories. We asked students to exercise care and empathy for these individuals and worked to cultivate this capacity through discussion, activities, and feedback. Elaborating on [hooks 1994] and [Macedo and Freire 2018], [Accardi 2010] writes, "And what makes care feminist is that it sees students as whole human beings, not vessels to be filled with information and knowledge. It sees learners as people with thoughts and feelings that they bring to the classroom, and which, in turn, affect how they learn" [Accardi 2010, 44]. Students were not merely absorbing this history and translating it into digital projects but rather were in dialogue with survivors and the instructor while aligning their own understanding and experiences to those of the survivors — requiring vulnerability, awareness, and emotional work. For example, a creative writing project involved two parts over the course of the semester: first, students wrote, weekly, a chapter of a fictional character's memoirs living in Paris during the German Occupation, the testimony of which aimed at showing a human facet of history; after this, students wrote under imposed constraints inspired by post-memory writers, in particular Georges Perec. The list of constraints included writing a text about a chosen number, writing a list of memories starting each sentence by "I remember," and picking a letter from the alphabet and writing a text made of words excluding that letter. The objective here was for students to experience the difficulties faced by the survivors to tell their stories and to give shape to the voids and the silences left by history. At the end of the semester, students were asked to compile their pieces in any order; the ultimate constraint involved embedding one final page — a new creation of their choosing — in the very middle of the collected work. This new page acted as the cylindrical mirror in an anamorphic construction through which scattered and disparate fragments regain a shape and therefore a meaning invisible until then. In every single case, the anamorphic page revealed to the students that, unbeknownst to them, the story of their fictional character was a portal through which they discovered a piece of themselves or rediscovered a piece of their own narrative. In other words, the creative writing project mirrored what the historical digital projects were meant to achieve.

We aimed for students to feel connected to these individuals and a shared responsibility for their legacies. Building upon the ethics of care, [Caswell and Cifor 2016]'s work describes archivists as "caregivers, bound to records, creators, subjects, users, and communities through a web of mutual affective responsibility" [Caswell and Cifor 2016, 24]. The digital projects would be created through the connections students developed with their survivors, the instructor, librarians, and with one another. In the classroom, students from varied backgrounds bonded over the course

discussions and projects, and these bonds continued to strengthen while in Paris. The well-traveled students kindly and unassumingly helped their classmates ease into the exotic experience. They also problem-solved, griped, shared joy and sorrow, and made things together, while contributing to the growing body of Shoah archiving taken on by the instructor.

At the intersection of theory and practice, feminist maker pedagogy extends feminist pedagogical modes of inquiry and critique into practice. [Cipolla 2019] writes, “Introducing ‘making’ as a pedagogical tool into a feminist classroom highlights the importance of moving beyond the critique. Feminist makers critique, but they also *engage*, *speculate*, and *generate*” [Cipolla 2019, 262]. Feminist makers contextualize, identify with, and reflect on their projects. Making informed by feminist pedagogy encompasses making that is rooted explicitly in care and connection: “it pays attention to the politics of care and vulnerability; and it touches at all points, on the embodied and interconnected experience of beings in living systems” [Cipolla 2019, 262]. Through feminist maker pedagogy, students learn not only how to use tools but also to ask deeper questions about those tools and how they are using them. In turn, making prompts students to ask new questions and explore a concept through a different modality. Students also grow to appreciate troubleshooting, viewing it as a necessary step to better understanding and new ideas.

Feminist maker pedagogy pushes back against prevailing conceptions both of being a *Maker* and of participation in the *Maker Movement*, which are often associated with white, cisnet, able-bodied, upper-middle-class men and centered on capitalist values and high-technology (e.g., robotics and coding) projects [Vossoughi et al. 2016] [Chachra 2017]. Our project embraced this outlook in particular with our reliance on the feminist strategy of intuition, which [Accardi 2010] describes as “valu[ing] the inner voice, that quiet way of knowing, that is contrary to the stereotypical, empirical, androcentric way of knowing” [Accardi 2010, 17]. Accordingly, the project and the way Mélanie engages with her students stem from serendipity, intuition, and instinct — all of which defy simple definition and analysis. We must also recognize and acknowledge our positions of privilege here, having the affordances of access to technology and resources that have made our project, the tools, and travel it has entailed entirely possible.

Virtual Reality as a Pedagogical Tool

With our theoretical groundwork laid, we can further expand on the choice of technologies for our project; namely, immersive technologies. While the instructor has experimented with a variety of digital tools and methods in her courses, this article focuses primarily on the creation of 360° recordings that were embedded into a digital map and experienced on a virtual reality (VR) head-mounted display (HMD). We selected VR as our medium for this project for several reasons. First, VR often provides for more engaging learning objects: “Virtual reconstructions [...] help students understand cultures, histories, and artifacts that are physically, temporally, or culturally distant. While it may be difficult for American students to visit Notre Dame, extended realities can help them experience it in a way that more traditional media cannot” [O’Callaghan and Harbin 2020]. While in the HMD, the user is immersed in a 360° simulation in which they can look in any direction and visit distant places and times. Not all Mélanie’s classes are able to visit Paris, but through VR, they can stand in a park in Paris, view people walking around them, become aware of the spatial distance between the various elements surrounding them, and listen to fragments of their conversations. VR brings the user closer to the real experience than simply reading about it, hearing a description, or viewing a video clip. It may not only combine all these modalities but also includes a focused environment and a first-person perspective. This capability feels especially invaluable in light of the still unfolding COVID-19 pandemic and the uncertainty of safe travel. VR also makes private spaces more accessible. Anyone can visit a public park but perhaps not a personal residence or a fragile environment. Further, VR and 360° recording technology, in particular, can serve as archiving tools to preserve a place at a point in time. Imagine being able to revisit your childhood bedroom or your grandparent’s house exactly as they looked when you were a child. This was the effect we wanted our students to experience.

With VR technologies, we can also integrate additional data and engagement opportunities. For example, [Lueck and Panich 2020] describe an XR (extended reality) project to illustrate Native Ohlone history at Santa Clara University: “Further, the technology provided an additional representational layer allowing students not only to analyze what is present in the commemorative landscape but also to reveal the histories that have been effectively erased from our campus, such as unmarked mission cemeteries” para. 19 . In this case, students digitally annotated 360° recordings

with critical interpretations of their campus's history, which aren't represented on the current physical sites. In this way, VR technologies enable users to create multimodal learning experiences with layered, immersive stories. There is also growing evidence to suggest that VR can impact visioning and transcultural understanding. For example, [Mills et al. 2020] created *La République*, an educational VR experience that shares the lives of four Parisians living in the same quarter. The experience follows these individuals throughout their days at work and at home and in public and private contexts. They found that the project "led to a clear shift in students' understanding of Parisian culture" [Mills et al. 2020, 756]. Of note, they saw that after the VR experiences, students who had not previously been to Paris scored similarly to students who had been to Paris before in being able to "imagine their potential role as active participants in Parisian life" [Mills et al. 2020, 757]. The project attempts to enable students to experience feelings of presence, which [de la Peña et al. 2010] describe as "the sense of being in a place" [de la Peña et al. 2010, 294] and argue allow users to understand another's perspective and thereby empathize with them.

VR and Empathy

Visual artist Chris Milk famously described VR as the "ultimate empathy machine" during a 2015 TED Talk. Milk created the VR film, *Clouds Over Sidra*, about a young girl's experience in a Syrian refugee camp in Jordan. [Milk 2015] claims the medium enables the viewer to "feel her humanity in a deeper way" and to "empathize with her in a deeper way." Immersive technologies have become a very popular creation tool for consciousness raising and social justice work. For example, many projects center issues of race [Hyphen-Labs. n.d.] [Smith n.d.] [Hostile Terrain n.d.], sexual and gender identity [Ayala n.d.] [Helsa 2021] [Ado Ato Pictures 2021], and other topics. While research has found that VR can promote empathy [Ahn 2013] [Yee 2006], this concept is also understandably receiving criticism. Acknowledging that empathy awareness raising projects are often well intentioned, [Nakamura 2020] argues that VR "is identity tourism for the 21st century, but with a difference. This time, the kinds of bodies that are on offer are not just exotic, racialized and gendered avatars that users can take on recreationally and temporarily" [Nakamura 2020, 54] and that VR "reproduce[s] racial violence in the name of reducing it" [Nakamura 2020, 51]. The temporary "owning" of another's body and experiences is problematic in that you cannot automate real and genuine connection with another human being. One cannot really understand what it is to live in a refugee camp by wearing a VR HMD for a few minutes. [Nakamura 2019] suggests, "If you want to decolonize VR, I think we need to look at how to give resources to communities to produce VR that don't have it now." This could also involve, at a very minimum, collaboration with the communities centered by the project. [Lueck and Panich 2020] recommend that the collaborative process should make room for "consultation in an iterative process of design and feedback" para. 32. [Caspar 2021] argues that working with communities "and in some cases co-writing and co-filming [leads] to better storytelling" [Caspar 2021, 137].

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Our project could not have happened without the relationships and trust Mélanie shared with the survivors, which she spent years cultivating. The survivors also provided guidance throughout the process. In one case, the 360° recording was created in the presence of a survivor, Rachel Jedinak, who guided us around key locations. In her written memoir, Jedinak echoes what we hope VR can provide the viewers. She explains that when she finally found the strength to go back to the neighborhood of her childhood, in 1997, "[she] reconstructed the places, the streets, the routes, and the map now has its shape and lines, wrapped around Duris Street. [Her] past regains its geography."^[1] In another case, a survivor's memoir informed how students filmed locations described in the text. The recordings were also presented to the survivors, who offered feedback and answered students' questions. This input was then integrated into the final product and proved invaluable because students learned from these interactions and subsequently adapted their approaches. Our project sought to explore VR's potential for empathy fostering and perspective sharing. Nevertheless, we neither claim that the tool is a replacement for real connections nor that it can really make the user understand the violence of life under Occupation or the tragedy of the Shoah. We also do not see this project as a means to an end but rather as another creative strategy to preserve this history and reach and engage with new audiences.

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VR and Making

From a making perspective, VR also affords humanities students with unique opportunities for critical inquiry, interpretation, and reflection. Neville et al. (2020) write:

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The research required for developing culturally sensitive, ethical, and historically accurate immersive digital content is both demanding and comprehensive. Compared to research methodologies privileging linear subject matter presentations, such as a term paper or a video, research for VR projects compels students to consider how elements of their chosen topic function together as an interconnected, object-oriented activity system (para. 4).

Our students engaged with primary and secondary sources to understand what life was like for survivors under the Occupation. They used these resources to interpret the ways survivors saw, understood, and felt about key locations around Paris and make decisions about what information to highlight. They considered how others would engage with their 360° recording and needed to think about point of view and where and how to position the camera. [Caspar 2021] writes: "...the most important decision is where to position the camera within the environment, in order to provide the viewer with a realistic and clear point of view. This point of view is decidedly humanist and comes from an understanding of person and place" [Caspar 2021, 139]. This aligned with the goals for the course and the need to see and articulate these spaces in new ways with the survivors' memories and point of view at the center.

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[Neville et al. 2020] continue, "Student roles shift from being passive recipients of knowledge to co-creators in the learning experience. These shifts allow team members to learn from each other as they integrate their own discipline knowledge and methods into the project" para. 4. We encouraged students to take ownership of and invest personally in the project. These histories and memories required care, and the survivors and the instructor trusted the students as collaborators. Their contributions were then integrated into the instructor's digital maps locating the survivors' childhood geographies; the map is used as an open educational tool for future classes as well as the general public. Throughout this creation process, students were also able to see knowledge production at work: "Just as the creator of the virtual representation must make choices about how 'real' to make their visualization (what to include and exclude), so the historian makes choices regarding what data to include and how that data is represented" [O'Callaghan and Harbin 2020]. Students came to understand that their recordings were subject to their own bias and interpretation and that their directorial decisions really mattered and impacted the way others would experience this history. This became especially apparent after they shared several meetings with survivors and received feedback on their work. [Lueck and Panich 2020] write, "XR positions students as analysts as well as creators of commemorative landscapes, alert to the relations of power and influence that shape these constructions, both virtual and physical" para. 29. Our team's preparation in the classroom, both with immersive technologies and historical and cultural coursework, allowed us to embark on what would be a life-changing journey for instructor, librarians, students, and survivors alike.

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Methods

Course Context

Each year, this course is offered as an advanced French History and Culture course through the French and Francophone Studies program. Yet, in fall 2019, a second section was opened to non-French speaking students and an eight-day trip to Paris was conducted after the end of the semester. The course description reads:

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In this course, we will explore the dark years of the Vichy Regime's collaboration with Nazi Germany. Thus, we will be exploring a past that none of us has experienced directly. And not just any past: a past which was repressed, covered, disguised. A past full of shadows. A past only spoken of in whispers. A past recalled by memories with gaping holes. In short, the myth of the *Résistance* only fascinates briefly before the reality of the camps sets in, and one becomes too petrified with fear to continue looking back.

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How *can* one talk about what happened? What words *can* one use to tell the story of the missing? These were some of the challenges faced by the post-Auschwitz society. This is the challenge of the course [...]

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"I do not *hear* what she says." The lexical confusion of a student whose mother tongue is Spanish was the crucial moment. Translating *entender* (to understand) by the French *entendre* (to hear) to explain that she did not understand what the author said in her diary written in 1942 made sense. The apparent mistake conjured up a series of fundamental questions: How to understand a story if you do not hear the voice that tells it? How to make sense of words

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pronounced by voices without context? How to envisage Paris under the German Occupation without knowing its space?

Mending|Minding Holes with Digital Technology

Digital Map of WWII Paris 1.

To better answer these questions, Mélanie, in collaboration with the Penn Libraries and the Price Lab for the Digital Humanities, first made an interactive digital map of WWII Paris. First, they purchased a vintage 1940 paper map on eBay for 5 euros and both scanned and georectified it. Then, they created an Omeka^[2] site to host the digital map and its ancillary documents. Finally, using Neatline,^[3] Mélanie and her student Kyra Schulman geolocated 240 key historical places and identified with a description of the place pre-war, during the war, and post-war. Each pin comes with a picture and, when possible, excerpts from selected memoirs, contemporary press articles, and videos from the French national archives.

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This stitched-together spatial visualization of history aimed to reduce the historical and psychological distance which separates us from then/them. For instance, one could tell students in lecture that 13,000 Jews, most of whom lived in East Paris, were rounded up on July 16, 1942, and taken to a velodrome located in West Paris before being sent to concentration camps. It would not trigger the same understanding of history as showing them on the map where the velodrome stood. Once they see how close it was to the Eiffel Tower, held as a symbol of modernity and culture, they understand how unfathomable the event was at the time and still is. It also enables them to wonder how Parisians could say they did not know when many of them must have witnessed the day-long procession of buses. These were questions post-war France had to face, too.

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While famous Parisian locations are already known to most students, the map acts as an X-ray of the city summoning the untold narratives hidden behind these places. As Patrick Modiano, who received the Nobel prize for “the art of memory with which he has evoked the most ungraspable human destinies and uncovered the life-world of the Occupation,” [Nobel Media AB 2014a], explained in his Oslo speech:

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[...] in my youth, to help me write, I tried to find the old Parisian telephone directories, especially the ones that listed names by street with building numbers. I had the feeling as I turned the pages that I was looking at an X ray of the city – a submerged city like Atlantis – and breathing in the scent of time. [Nobel Media Ab 2014b]

Neatline makes the ontological connections between the temporal layers literally visible, further supporting Modiano’s palimpsest metaphor. As a matter of fact, upon logging into the map, for a few seconds, one can witness different layers overlap, the WWII map coming together and eventually laying over the current map of Paris. In this specific instance, digital technology reminds the user to read between the lines and look beyond the surface, which are elemental inquisitive principles leading to understanding. The visualization of the underlying imbricating process also illustrates the inherent preservation capacity of digital technology, fixing our artifacts in a social collective memory, as opposed to the idea of deletion and obsolescence often associated with digital platforms. Finally, by placing the map on the open web, not restricted by copyright and hidden behind paywalls, it allows for serendipitous discovery. It provides access to a wider audience, not just to those who have access to institutional resources or are otherwise connected to scholarly endeavors.

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Immersive Voices from the Past 2.

The course material includes the testimonies of Arlette Testyler, Francine Christophe, and Rachel Jedinak left with the USC Shoah Foundation Visual History Archive (VHA). The three survivors lived in Paris before and during part of the war before being interned, deported, or hidden. In July 2019, Rachel took the instructor to her childhood neighborhood and walked her through the terrible day of July 16, 1942, when the French police arrested her with her mother and sister. Unlike their mother, the two young girls were fortunate to escape from the Bellevilloise, where Jews were held before being bused to the Vélodrome d’Hiver. Using a 360° camera, Rachel was filmed walking from where her house

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stood to the Bellevilloise while telling the story of the neighborhood and her family along the way. The makeshift ethnographic clips were then added to a digital map dedicated to Rachel. This original experience with VR technology enabled the digital cartographic translation to don a humanity that speaks to us in a way that we can *hear* today. It further inspired the following student-curated digital projects.

From Learners to Makers

The digital projects were not introduced as assignments, but rather as lasting contributions students were going to make to the course, to the Shoah studies and, more importantly, to the people whose stories we were going to transcribe. From the first day of class, students knew they were not going to receive concrete grades based on prescriptive rubrics. Instead, they had a timeline to help them manage their workflow and received personal detailed emails to guide them on their respective works. After returning from Paris, they had two weeks to finalize their projects. The final grade system was binary: A if the work was completed; B if it was not. The class dynamic was built on the honor pledge everyone involved in the projects made to each other and themselves — we were going to work and do our best for *them*, the people whose stories we wanted to be heard and preserved in a social collective memory.

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Mapping Memory 1.

On campus, the students were asked to curate a webpage for a survivor from the Shoah Foundation VHA. The webpage had to include a biography, pictures, the transcription of the testimony and a digital map locating the key places mentioned. In groups of four to five, the students from the French section were entrusted with the stories of Arlette, Francine, and Rachel. The students from the English section, in pairs, had to find VHA testimonies made in English from survivors who, at the time of the war, lived in Paris. Two pairs were able to get in touch with their subject — via phone conversations for one group and in person for the other group — after conducting research on their own. All students received training on how to use Omeka and Neatline (Appendix A). The purpose was for their pages to be added to the Omeka course site and to subsequently become part of future course material. Students were asked to reflect on their roles in shaping these digital histories and to be thoughtful with the design aspects of their survivors' pages and maps. Finally, they learned how to populate a map on Neatline using the items they had archived on Omeka.

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One class meeting was also dedicated to teaching students how to use the Parisian public transportation system from the hotel they would be staying at to the various places connected to their survivor's story. It was important to create a *déjà-vu* feeling once they arrived in Paris. While in Paris, students were asked to "go back" to all the places they already knew since they had mapped them and gathered corollary documentation to be added to their webpage. The group who met their survivor in the U.S. was in daily contact with him. They regularly sent him pictures of his former geography to which he never failed to respond providing more historical details:

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I started to cry looking at the photos. Our apartment was on the left 3rd floor on the right side of the stairs. Outside the gate on the left there was a restaurant where my mother used to get food and on the right was a store that sold office supplies. The gate is different and in the court there was [sic] no plants or anything. I am still crying. Please send me the photos that you took of the apartments. (N. Spiewak, personal communication, January 6, 2020)

Thanks to in-person Q&As scheduled with Francine alone and then with Arlette and Rachel together, the whole class engaged in an intimate dialogue with history through their personal storytelling. The three ladies were amazed and grateful to hear how much their young public already knew about their places of memory.

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The mapping project allowed students to physically retrace the steps they had remotely taken on the digital platform. Above all, it enabled them to literally walk in the survivors' steps. Despite the changes the streets underwent through time, the students were anachronistic reminders of the stories that took place under today's facades and are forgotten by many. They became archiving connectors between then and now, peeling off the superimposed layers covering what was once the reality of their survivors.

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Recording Memory Landscape 2.

In the second half of the semester, the class read *Sur la Scène Intérieure (On the Inner Stage)* by Marcel Cohen (2013). It tells the story of his family members who never came back from deportation. Through his memories as a five-year-old boy and the objects that belonged to his loved ones, he takes the reader to the Parisian places and personal realms which delineated his childhood. After the text was discussed in class, students were divided into four cross-section groups. Each chose one particular place described in the book that they wanted to film with a 360° camera in Paris. 30

We chose 360° as our medium in part because the consumer-grade cameras (Appendix B) proved to be very accessible for new users. Most immersive technologies have a steep learning curve and require lengthy periods of time for the creation process. We had only a week in Paris and a full program, of which the 360° project was just one part. [Lueck and Panich 2020] recommend “modest contributions” and a more “incremental process” that enable “more care, more caution, and, ultimately, a more collaborative framework going forward” (para. 5). Our project benefited from this approach as well as it allowed the students enough time to grasp the technology, to make and fix mistakes, to get feedback, and to edit their projects. 31

On campus, students received training using Insta360 One X cameras (Appendix B) and then editing the recordings (Appendix C). Once in Paris, over the course of four days, students filmed and edited a raw version of their videos. Through the creation of the documentaries, students were in dialogue with Cohen’s text, interpreting and capturing the space through his words. The use of 360° cameras enabled students to reconstruct these spaces — albeit transformed by time — more authentically for viewers, providing them with an impression of how these spaces impacted the author. This created a dynamic triad of author, students, and viewer in which all have agency. On the one hand, the author’s narration accompanied the 360° video and determined filming locations; on the other, students interpreted his words through the filming and editing of 360° experiences while the viewer in a VR headset chooses how to engage these experiences — unhindered by framing boundaries to a degree. 32

At the end of each filming day, students edited their footage. They were asked to select clips to show the author later that week. The group that filmed the itinerary that Marcel Cohen took to visit his mother awaiting deportation in the Rothschild Hospital wanted to be creative. They originally shot a clip, in which one of them posed as his mother. However, due to its potentially triggering nature, we asked them not to demo this clip. When we met the author at his home, he asked Mélanie to read aloud excerpts he had selected from his book and other personal documents, explaining he was passing his voice onto her. At that moment, Cohen directly invited *us* into *his* story and willingly became an active participant in *our* project — coming full circle. He then generously answered our questions and agreed to put on the Oculus VR headset and watched the first video, filmed in the Parc Monceau, one of the places to which he seldom goes back. After an initial reaction of wonder, the little-boy-turned-old-man was visibly moved, removed the headset, and thanked us. He did not want to see more. This moment was a reminder that our use of immersive tools comes with ethical responsibilities. As much as this virtual spatial translation can lead to a deeper understanding of the text by the reader, one must bear in mind it can also trigger anxiety in the subject/author of the text. Following this encounter, the “creative group” agreed on their own “it would not be right” to keep their acting scene. This decision-making was an example of how the students gained perspective and empathy and grew through the heuristic process. 33

Critical making evokes a shared sense of responsibility for work that exists beyond itself and its impetus for creation, existing in an interconnected web of relationships. This realization became clearer after the poignant meeting with the author, in which the group was immersed in his home, his hospitality, and his feedback. Once again, students became active collaborators of the course since the recordings were eventually embedded on the digital map dedicated to the author’s life during the war and will be used as course material in the future as an alternative reading method of Cohen’s text. 34

Outcome

Transitioning from users to makers helps students understand the deeper issues. [Cipolla 2019, 261]

Technology Effectiveness

As [Cipolla 2019] emphasizes, the transition from user to maker is essential for students to find meaning through their digital projects. Before learning the making technologies utilized in the course — Omeka/Neatline and 360° cameras and software — students were asked to assess their own experiences learning technology in the classroom, applying technology to their projects and, finally, the overall utility or effectiveness of the technology to their project objectives (Appendix D). A survey on Google Forms was administered by the instructor to students via email in the fall 2019 semester as digital projects were underway. Students were informed that survey responses would remain anonymous and would in no way impact their individual or project grades. Of the 22 students in the class, 18 students responded to the questions in the Technology Effectiveness Survey, Part I (Appendix E).

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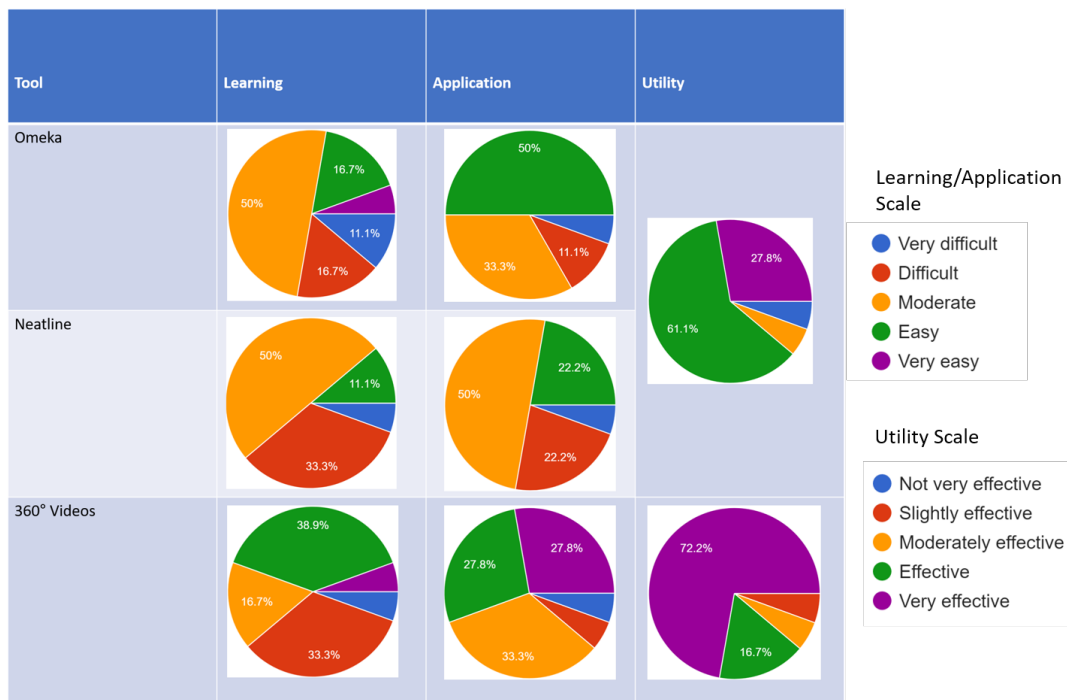


Figure 1. Results of Technology Effectiveness Survey, Part I

As Figure 1 demonstrates, most students found it easier to create and apply digital content to their own projects after having learned the material in a hands-on workshop. Unsurprisingly, Neatline proved to be the most challenging of the technologies, as students had to navigate both layers — modern-day and 1940s-Paris — of the digital map. Most students found Omeka and Neatline effective for telling their survivor’s story.

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Surprisingly, many students found making VR recordings even easier than when they were learning about them in the workshop. Overwhelmingly, students rated making these videos “very effective” for conveying Marcel Cohen’s story. One student wrote in the survey comments, “When you put on the VR goggles, it feels as though you are being placed in the middle of his story and walking with him through the places of his childhood,” harkening back to the core principle of empathy that the instructor intended as a pedagogical goal in using this technology to create and then preserve the collective memory of this project.

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Although students perceived the technology as effective in carrying out their project goals, inevitable and various technical obstacles triggered obvious frustration upon use. Upon returning from Paris, students were asked to complete a second survey, Technology Effectiveness Survey, Part II, to evaluate the utility of the technologies in completing their final projects (Appendix F). The instructor emailed the Google Forms survey to the students; they were again informed that results would be kept anonymous and that their responses would in no way affect their grades. This survey's free-form responses emphasized that problem-solving processes served as pathways of learning, reminding us all how unclarity, unfairness, unanswerable questions are part of life and how recognizing it is the first step to "build it better" [Cipolla 2019], as one student responded:

The experience of shooting 360° videos allowed me to gain a deeper understanding of the places with which Marcel Cohen interacted as a child. While filming the videos was not a simple task, and we encountered several challenges along the way, I nonetheless learned so much from the entire experience.

Because the trip to Paris happened during winter break and ended two days before spring semester resumed, students had two weeks to complete their assignments upon returning. With their authorization, the instructor proofread and edited the survivors' webpages and maps. The 360° videos were also finalized by the instructor before being embedded into a map dedicated to Marcel Cohen. The author declined to record the videos' voice-over once more entrusting the instructor to be his voice. All the student-curated works will be passed on to the next class as course material. One core agreement is that the students will permanently keep their administrative status on Omeka so they may remain contributors to the memorial palimpsest we stitched together for as long as they choose to.

Co-Constructivist Dialogue

Through these making projects, students experienced first-hand what the instructor had experienced through her own projects of the original digital map and Rachel Jedinak's memory walk in 360° in July 2019. The conventional teacher / student binary disappeared to give place to a co-constructivist dialogue.

Students also attained a level of understanding of the texts, and consequently history, difficult to achieve had they not been asked to tinker with the matter with their own hands. For instance, when they located the main places of their survivors' childhood, they realized how close-knit Arlette's family was, how Francine Christophe and Marcel Cohen must have crossed paths in the Parc Monceau, and how the mothers of Rachel Jedinak and Georges Perec (whose work *W or the childhood memory* (1975) is studied in class) might have known each other by sight. In response to questions in Part II of the survey (Appendix F), one student wrote, "Creating the [survivor] testimony and page and map was undoubtedly a meaningful experience, and definitely brought me closer to my [survivor]'s story and course content. Creating the page and mapp [sic] allowed us to delve deeper into our [survivor]'s story and bring to life an aspect of our [survivor]'s childhood/story in a creative manner."

Filming Marcel Cohen's memories made them read the text differently. They were, in fact, put in situations which led them to read between and behind the lines, as another student's survey response shows:

Walking through the hustle and bustle of Paris from his home to the Cabaret, to the brasserie, to the park was physically exhausting, which I feel made me reflect on what it might have been like to be a child walking this route. Questions popped into my mind like, 'Was he tired or energetic to get to the park?' It was only something I would have thought of if I didn't get the experience to shoot the video.

Literally walking in the little boy's shoes triggered a level of empathy, and therefore understanding, that would have eluded most ways of reading, as another student elaborated in survey comments:

This experience allowed me to a [sic] have a more three-dimensional image/perspective of the specific memories Marcel Cohen recounts in his book. While reading the stories in the book in itself is a touching/moving experience, tracing Marcel's footsteps in person really helped me to bring to life the passages from the book. Reading the stories is one type of experience, but actually seeing the places

mentioned in the book and visually processing the stories is [a] whole other experience.

The students' comments to Part II of the survey underline the importance of making an abstraction relatable by making one care and that the technology was essential to see themselves as part of the narrative.

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Epistolary and Lasting Exchanges

One unforeseen, and yet so poetically apropos, outcome of the projects is the epistolary exchanges that ensued after our trip to Paris. Upon our return, five students resorted to a practice so long forgotten by most of them to express their gratitude to the older people we met. Three students also hand-wrote letters to the instructor. This gesture recalled [Ratto 2011b]'s "creation of novel understandings by the makers themselves" para. 3 and idea of matter of fact vs. matter of concern:

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I had been to Paris a few times before, and it had always been the romantic Paris. A city of love, light, intelligence, art, history, and culture. But I now see a new Paris. The love and the light are not gone though. They are intermingled with a sort of darkness. I had never before noticed any of the plaques on the schools or buildings when walking around Paris. I surely have walked past them before, but I was never looking for them. And so I never saw them. Now, I have something to look for. I am equipped with this knowledge to be able to see both the light and the dark. And it's not just in Paris. I'm sure there is light and dark everywhere in the world. It just takes a little extra effort to uncover some of the hidden truths. I hope, as someone who is tasked with passing down the stories of the individuals we met, I do a great job at helping others to see such things as well. Not only did I discover a new Paris, but it was as though I almost discovered a new me. Maybe not a new me, but I was able to see things about myself I hadn't seen before. (S. Davis, personal communication, January 15, 2020)

I knew [the course] would be magical but I knew not the extent to which I would be forever changed by its teachings. While still processing last week's trip, I am aware of a new sense of gratitude and compassion within me. That's what this class and journey was: opening my eyes to the abundance of humanity that is always and everywhere. (A. Malinovich, personal communication, January 15, 2020)

The gratitude felt by the students was reciprocated by the survivors we met. Within a few days after our return, we received emails and letters from each of them. Francine Christophe's husband's handwritten note, in English, was especially touching: "Sad not to see you again. If one (or two) of you flies to Paris bear in mind that they have friends on the spot [phone number]" (J.-J. Lorch, personal communication, February 3, 2020). The ninety-year-old man recognized the care students put in the projects they made and therefore acknowledged them as friends to whom he entrusted his most precious possession: his legacy. The learners-turned-makers knocked down walls between generations, reduced distances, and built unexpected friendships. The author Marcel Cohen echoed Mr. Lorch's words in a handwritten card he sent in response to a student's letter:

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Your visit to Paris, your work, your curiosity are extremely precious if one thinks about the future and I don't doubt you have the ability to make it less dark than the past was. Believe in all my gratitude and my deep friendship. (M. Cohen, personal communication, February 6, 2020)

[4]

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The goal of the projects does not end with the course. Not only do all the participants involved in the projects feel a duty to make sure our new old *friends'* voices can continue to be heard, but they are also aware that their common experience provides them with reading keys they will be able to apply to future situations.

Further Applications

Even though the project was first conceived for a foreign language course, it was easily adapted to a humanities course taught in English. Since students received technical training, it was also listed as an elective toward the institution's minor in digital humanities. While this article describes an iteration of the course with a physical trip to Paris, the

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subsequent iteration did not. Even though it cannot replace the in-situ tangible atmospheric feel, the preexisting digital map of WWII Paris combined with the embedded 360° videos and Google Map offered a reliable alternative. In the classroom, the successive students were able to follow itineraries and walk in the streets as the former students had a few months prior. They could also move the slider on the Google Map Street View and select a thumbnail to see that same place through time until 2008. This is how the mapping project can fulfill its role as a portal through space and time from within the classroom.

One mission of the project is to preserve the fleeting materiality of human stories. We have been fortunate to be able to literally record the voices and physically meet face-to-face with some of the survivors whose stories we digitally translated. A time will come when it won't be possible anymore. Yet, the materiality of an existence and recording voices can take other forms, as Serge Klarsfeld, the author of the now searchable *Memorial to the Jews Deported from France, 1942-1944* (<https://www.stevemorse.org/france/>), explains in the preface he wrote to the publication of Louise Jacobson's letters:

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But what is a voice? It can be a particularly poignant letter, written before or after the arrest, which reveals a personality or the strength of a destiny. It can be a look in a photograph that catches your eye and that you will never forget. It can be a simple name of a child in a list of deported adults who leaves, alone, isolated, without his or her parents, and which you must keep in your memory because you cannot abandon him or her too. It can be a drawing that expresses hopes or betrays anguish and sorrow [Jacobson and Kaluski-Jacobson 1997, 8]

[Auslander 2005] also reminds us that “most people for most of human history have not used written language as their major form of expression. They have created meaning, represented the world, and expressed their emotions through textiles, wood, metal, dance, and music. Material culture is simply another vital source of historical knowledge, supplemental to words for those who have had little access to them” [Auslander 2005, 1018]. The pedagogic capacity of material culture reassures us that our project not only will be able to keep its relevance even after the survivors are not here anymore but also it shows that the principle of the project can be adapted to topics without living participants.

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One may also think of Princeton's Shakespeare and Company project (<https://shakespeareandco.princeton.edu/>), which catalogs the library cards of Sylvia Beach's Parisian library. On these rectangular sepia cards, the ink, the handwriting, the list of books conjure up, in a relatable way, a time long gone and one's vanished existence. Within the same semiotic realm, translating onto a digital platform textiles, graffiti, annotations, letters, to list a few examples of traces left behind by a human being, can open the same interstice between now and then. When no witness is left or when one believes the physical landscape is not legible to us due to substantial changes, one should remember Georges Didi-Huberman's (2018) injunction in his book about a visit to Auschwitz-Birkenau:

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We can therefore never say, “There's nothing to see, there's no more to see.” To be able to doubt what we see, we must know how to keep looking, how to see in spite of everything. Despite the destruction, the erasure, of all things. We must know how to look the way an archaeologist looks. And it's by way of such a gaze – such an interrogation – directed toward what we see that things begin to look at us from their concealed spaces and bygone time. (...) The destruction of beings does not mean they are departed. They're here, they are indeed here: here in the flowers of the fields, here in the birches' sap, here in this tiny pond where lie the ashes of thousands dead [Didi-Huberman 2018, 37–38]

Nature, materials left behind can still connect *us* to *them* while digital humanities can anchor their existence back in time and space, with immersive technology recreating the stories of objects and their human voices.

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Conclusion

The digital humanities projects presented in this article opened an interstice into the fabric of time and space which enables the participants and anyone accessing their products to connect with a distant past and a faraway place. Like Medusa, the Shoah petrifies and like Perseus, one needs a shield to confront it. The projects became the shields the instructor and the students forged in order to approach a frightening part of history and draw personal lessons from it.

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The back-and-forth movement between past and present, historical narratives and individual testimonies, national and personal, reading and making encouraged them to not only *consider* the time period but also to *be considerate* towards those who lived it. It enabled them to feel empathy towards people and a time they could not *hear* at first. Their endeavors put on the map the unheard stories of invisible strangers, stitched together scattered narratives, and weaved an infinite constellation connecting that past to our current present. They learned to take into consideration the humanity of others, to recognize themselves in others and others in themselves. A philanthropic knowledge they can further apply to other invisible, voiceless individuals from other places who live around us today.

As a conclusion, the authors would like to argue that the students who, with nothing but care, tinkered with the stories of strangers were all at once curators, cartographers, printmakers, videographers and, most importantly, *critical makers*, who benevolently participated in Klarsfeld's collecting of voices. As [Ratto 2011a] emphasizes that "there is an important need for critical makers that can reintegrate technical and social work and thereby innovate both" [Ratto 2011a, 258], we hope that enabling students as makers in this course, which is one of praxis, bridging the theory and the practice, has prepared them to take such a sociocultural and innovative approach to their own future endeavors.

Appendix

Appendix A: Omeka and Neatline Workshop Outline

1. Omeka site introduction
 1. Set up student Omeka accounts
2. Student roles - *Shaping Digital Histories*
 1. In small groups (3-4 students), students will create a survivor page that consists of the following:
 1. Biography
 2. Archived collection of items
 3. Map of places mentioned by the survivor
3. Omeka basics
 1. Platform landscape
 2. Fundamentals
 1. Items, collections, and exhibits
 2. Metadata creation
 1. Class activity - Describing images with Dublin Core
 3. Options for exhibit customization
 1. Font, color, map icons
4. Neatline basics
 1. Add an item to a map
5. Copyright best practices

Appendix B: 360° Camera Workshop Outline

1. Hardware overview
 1. Insta360 One X*
 1. Lightweight, consumer camera that is beginner-friendly
 2. Camera syncs easily with an app available on iOS and Android that serves as a remote for the camera.
 3. The FlowState stabilization feature steadies the camera when recording and will help minimize motion sickness.

4. Costs:

1. *Insta360 One X2 now available: \$429.00

2. Related equipment

1. USB cord, lens cap, carrier pouch, quick-start guide, lens cleaning cloth, two batteries, one 64 GB SD card, camera tripod

2. Extendable selfie stick

3. Costs*:

1. Extra battery: \$29.00
2. Lens caps: \$5.00
3. SD Card: \$15.00
4. Camera tripod: \$150.00

1. Note: Buy a weighted tripod from a third-party company like Bushman. It's more expensive than the Insta360 tripod, but it's much sturdier and less likely to be knocked over.

5. Extendable selfie stick (3m): \$69.00

6. *USB cord, carrier pouch, quick-start guide, lens cloth, one battery come with the camera.

3. Camera usage

1. Pair camera to smartphone
2. Walk through taking photos and videos

2. Filming best practices

1. Explore film locations via Google Maps
2. Experiment with the camera

1. Example 1 - What's the best way to record exiting the metro?
2. Example 2 - Is it possible to film from the perspective of a child?

3. Filming living subjects

1. Explain to the individual how the camera works
2. Position the camera 4-5 feet away from the individual
3. Try to keep the camera at eye-level

3. Class activity

1. Shoot two short videos (<30 seconds)
 1. Practice shooting from a distance, hidden from the camera
 2. Interview a group member

4. Editing basics

1. Upload files to Insta360° Studio (free software that only works with Insta360 files)

5. Upload exported .mp4 files to Box

1. Establish a common file-naming convention and organization system

6. Practice

1. Use the cameras over the course of the semester to not only learn how to operate the cameras and anticipate any questions or problems but to also understand what it is like to capture contexts familiar and personal.

Appendix C: Editing and Uploading 360° Videos in Paris Outline

1. Advanced editing options

1. The Insta360° software does not allow for advanced editing (e.g., multiple clips, add video or audio effects)
2. As an alternative, Adobe Premiere Pro allows for advanced editing but may be challenging to use and is not freely available. Students may consider registering for a 7-day trial.
 1. Northwestern University's Knight Lab's "How to Edit 360° Video in Adobe Premiere Pro CC" tutorial (Chiu, n.d.).

2. Upload original camera files, edited files, and/or editing instructions to Box after each filming day.

Appendix D: Project Learning Objectives

The following learning objectives for the two course digital projects were used as the basis of the survey questions to assess student learning.

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Project 1: Digital Map (Omeka/Neatline)

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Through completing this project, students will be able to:

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- create a page on Omeka for a VHA Shoah Foundation survivor, using techniques learned and demonstrated in class and through tutorials.
- effectively communicate the survivor's story through both written (French and English) and audio/visual formats.
- create map entries on Neatline for places linked to the survivor's testimony, using techniques learned and demonstrated in class and through tutorials.

Project 2: VR Videos (360° Cameras/Software)

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Through completing this project, students will be able to:

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- plan out a 360° experience to translate Marcel Cohen's memoir, including storyboarding; blocking; lighting; sound; group roles; camera equipment and settings; and video editing.
- produce a 360° video with an Insta360 One X camera and related accessories and software that will explore and document the physical locations described in Marcel Cohen's memoir.
- situate their 360° video within the growing body of work that already exists on the Neatline map and project website, contributing new modes of scholarship to the ongoing scholarly conversations.

Appendix E: Technology Effectiveness Survey, Part I (administered fall 2019)

Before departing to Paris, students were asked to rate their perceptions of learning the digital mapping and 360° video technology after learning them in the classroom workshops and then during the application of these technologies as they completed their projects. Then, students were asked to rate the utility, or effectiveness, of the technologies in carrying out the objectives of their projects.

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French 225: Technology Effectiveness Survey, Part I

The questions below will be used to inform the effectiveness of technology on the various projects in this course. This information may also be used for a potential future publication by your instructor and librarian. We would appreciate your honest and thorough feedback and/or any comments you may have on the questions below. All feedback will be kept anonymous and is not intended to measure your individual progress in this course.

Next

The screenshot shows a Google Forms survey instrument titled "Digital Mapping Project: Omeka and Timeline". The survey contains five questions, each with a set of radio button options. The questions are:

- How easy/difficult did you perceive creating content on Omeka when you learned these skills in class?
 Very difficult
 Difficult
 Moderate
 Easy
 Very easy
- How easy/difficult did you find it to create audio/visual content on Omeka on your own after learning these skills in class?
 Very difficult
 Difficult
 Moderate
 Easy
 Very easy
- How easy/difficult did you perceive creating content on Timeline when you learned these skills in class?
 Very difficult
 Difficult
 Moderate
 Easy
 Very easy
- How easy/difficult did you find it to create audio/visual content on Timeline on your own after learning these skills in class?
 Very difficult
 Difficult
 Moderate
 Easy
 Very Easy
- How effective was Omeka and Timeline for telling your witness's testimony?
 Not very effective
 Slightly effective
 Moderately effective
 Effective
 Very effective

At the bottom of the form, there are "Back" and "Next" buttons, and a small note: "Never submit passwords through Google Forms."

Figure 2. Technology Effectiveness Survey, Part I: Google Forms Survey Instrument

Appendix F: Technology Effectiveness Survey, Part II (administered spring 2020)

Upon returning from Paris, students were asked to complete a short survey about their experiences working with the technologies used throughout the course and how they did/did not inform their understanding of course material. Because of the short timeline to complete this survey, in addition to delayed IRB approval (March 2020) and the evacuation of campus due to the coronavirus pandemic, we did not receive as many responses as we would have liked.

Virtual Reality Project: 360° Videos in Paris

The questions in this part of the survey address your use of virtual reality technology to take a 360° film of a place in Paris following Marcel Cohert's footsteps as a child.

How easy/difficult did you perceive creating a 360° video when you learned these skills in class?

Very difficult
 Difficult
 Moderate
 Easy
 Very easy

How easy/difficult did you find it to create a 360° video on your own after learning these skills?

Very difficult
 Difficult
 Moderate
 Easy
 Very easy

How effective do you anticipate 360° filming will be to construct witnesses' histories?

Not at all effective
 Slightly effective
 Moderately effective
 Effective
 Very effective

Optional Comments

Please use the space below if you would like to share further thoughts on any of the above questions.

Your answer

Figure 3. Technology Effectiveness Survey, Part II: Google Forms Survey Instrument

Notes

[1] “Childhoods have their spaces. They stretch out on maps that for a long time seem as big as entire cities. As you grow up, you realize that it was only four or five streets, a dozen places and the school in the center. My childhood was spread out over several maps. I had to find the little girl from the Bellevilloise to go back to the one of my early years. The most intimate, probably because it was the happiest. All my memories were trapped, like those Christmas ornaments where you can, through the glass, watch the snow fall indefinitely. Together we reconstructed the places, the streets, the routes, and the map now has its shape and lines, wrapped around Duris Street. My past regains its geography” [Jedinak 2018, 23–24].

[2] Omeka, a free, flexible, open-source web-publishing platform is often a popular choice in library- or museum-related projects for displaying digital collections and exhibitions. In our case, Omeka provided a platform that would let us interlink images, descriptions, and videos while also incorporating the digital map as a main feature of the site.

[3] Neatline, an add-on or “plugin” to Omeka, developed by Scholar’s Lab at UVA, allows scholars to tell stories with maps, images, and timelines. After testing several digital mapping platforms, Neatline allowed for the customization and integrations we wanted our map to display and enabled us to have multiple participants working on a project at a given time.

[4] Translated from French by M. Péron

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