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Omeka and Other Digital Platforms for Undergraduate Research Projects on the Middle Ages

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This article discusses how digital projects can be employed to encourage undergraduates to think across disciplinary divides, to integrate field and online research, and to confront methodological issues in a more direct way. One of these projects draws on an open-source, web-publishing platform called Omeka and was designed for an interdisciplinary course on the archaeology and history of medieval London offered at Fordham University's London Centre. The project aimed to give students first-hand experience with the material culture of a medieval city and consisted of two parts. The first, an Object Report, required each student to research and write a short essay on a single medieval object on display at the Museum of London, highlighting the significance of the object within the context of civic, religious, and domestic life in medieval London. In addition, students uploaded images and found illustrations of their objects in medieval manuscripts. The second part, a Site Report, required a visit to a medieval London location– a church, a monastery, or cemetery, for example– to research its significance in the middle ages. Students also uploaded images of their site, which they photographed themselves, and identified the site's location on a (preferably medieval) map of London. Another similar project was designed using the Weebly web-editing platform for students taking Western Tradition I at Marymount California University, which does not have access to Omeka. Both the Omeka and Weebly projects allowed students to grapple with larger questions about integrating material objects into pre-modern history, but they were especially valuable for teaching students about the importance of being a responsible researcher since students contributed to a digital humanities project that made their research available to a wide public.

Keywords: omeka; pedagogy; london; undergraduate research; archaeology; weebly

Introduction

Many institutions of higher learning are increasingly sponsoring and promoting undergraduate research, although their beneficiaries are largely the STEM fields. Digital projects, however, can offer new and creative opportunities to promote undergraduate research in the humanities, particularly given their collaborative focus, development of technical skills, self-conscious use of methodology, and interdisciplinarity. This essay outlines a successful classroom project for a course taught by Maryanne Kowaleski and Esther Liberman Cuenca, centered on the use of an open-access digital platform called Omeka, which was especially effective in encouraging interdisciplinary research and engagement with methodological issues (Cuenca and Kowaleski 2015). This particular project—an online student exhibition of medieval objects and medieval sites for a course on the archaeology and history of medieval London at Fordham University (**Figure 1**)—was also distinguished in two other ways: it emphasized the value of material evidence, and it occurred within the context of a study-abroad course that allowed Cuenca and Kowaleski to integrate field trips and online research.

The results of this student project, as well as a similar project with Cuenca as an instructor at Marymount California University (MCU) that used Weebly (Cuenca 2015), indicate that digital projects allow students to take a different—and public—type of ownership and responsibility for their research than that which occurs with more conventional "off-line" student projects, because of the nature of the data footprint they generate and the potentially large audience for these projects on the web.

Medieval London on Omeka

Omeka is an open-source, web-publishing platform that was developed at George Mason University a decade ago for the display of scholarly collections and exhibits (Roy Rosenweig Center for History and New Media 2017; information about Omeka's metadata can be found at "Working with Dublin Core" [Omeka 2018]). A free, but limited version, is available on Omeka.net, but many institutions, including Fordham University, subscribe to the version on Omeka.org, which includes a variety of features
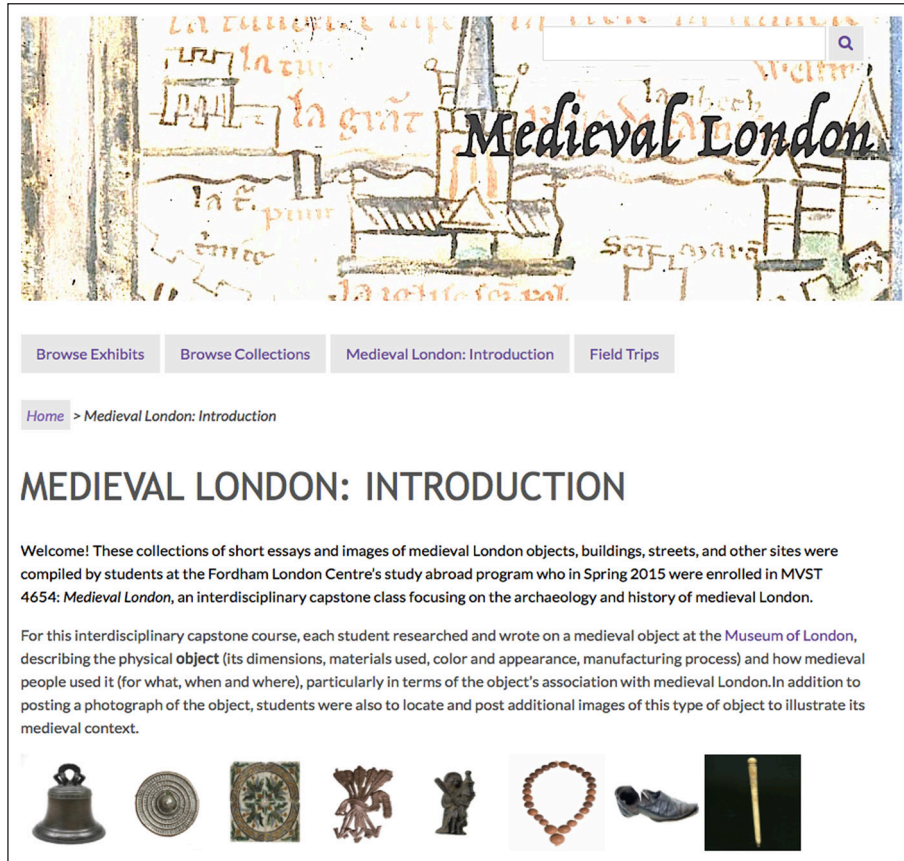
Figure 1: Partial screenshot of homepage for the Omeka projects for the Medieval London course at Fordham University's London Centre (2015), http://medievallondon.ace.fordham.edu.

that enhance the learning and viewing experience, such as plug-ins that let users annotate images, share data and map locations, and create timelines. We decided to employ Omeka because it had been successfully used for several digital projects at Fordham (Center for Medieval Studies 2018) and because Omeka is inexpensive, easy to use, and well-suited for projects that mix text and image (Kucsma, Reiss, and Sidman 2010).

Kowaleski designed two assignments for the medieval London course that aimed to give students first-hand experience with the material culture of a medieval city and to introduce them to the use of digital tools for humanities research. These

assignments coincided with lectures on archaeological methods and several field trips, including a guided tour of the medieval collection at the Museum of London and a guided tour of the Museum's collection warehouse and conservation facilities in Hackney (Museum of London 2017b). The first project, an Object Report, required each student to choose a single medieval object found in the collection of the Museum of London. We compiled a list of medieval objects using the searchable database of the Museum of London's collections, which can be accessed online (Museum of London 2017a).

After claiming a medieval object on a sign-up sheet placed on the course's Google Drive (which is how we shared all materials with students during the course), each student had to research and write a short report of about 500 to 750 words in length, find at least two images, and mount both text and images on the Omeka-made website while also filling in the required metadata. The course syllabus and instructions for the assignment are available at Fordham Library's Digital Depository (Kowaleski 2017).

Since the class focused on the history and archaeology of the city and the methods employed by archaeologists in the recovery, preservation, and display of medieval material culture, the Object reports encouraged students to explore the cultural and historical contexts in which their objects were manufactured, sold, and used. In so doing, the students grappled with, and reflected on, larger historical questions that were raised in the work of Arjun Appadurai in *The Social Life of Things* (1986) about the agency of things, by considering how objects have simultaneously been shaped by, but have also influenced, human activities. The Object Report required students to think about the utility, composition, and social life of their objects, while also reflecting how archaeologists (and historians interested in material culture writ large) approach and interpret objects for insights into past societies. This exercise, which was supported in lectures and student presentations (Kowaleski 2017) and readings (particularly McIntosh 1999 and Schofield 2011) encouraged students not only to focus on historically situating the object but also to reflect on the very process of historicizing the artifact (**Figure 2**), and understanding the tools, interpretations, and influence of digital archaeology (Richter 2014; Watrall 2016).

MEDIEVAL LONDON OBJECTS:

Alembic   Anchor   Baselard   Battle-Axe   Carved Shield of the Arms of England and France   Cauldron   Chain Mail

Chalice   Chrismatory   Church Bell   Coin: Penny   Comb   Cooking Pot   Crucible   Disc Brooch   Drinking Horn

Flesh Hook   Floor Tile   Game Piece   Grave Slab   Headdress Frame   Ice Skates   Knife   Livery Badge   Mace

Money Box   Pilgrim Badge   Pipkin   Rosary   Scabbard   Seax   Shoe   Spectacles   Stained Glass Window   Stylus

Sword   Urinal

CHURCH BELL

Bells have been used since the Middle Ages for religious and secular reasons. The word "bell" is derived from the Latin word *balare*, meaning "the cry of animals," which emphasizes how the word is connected to the sounds bells elicit. While the specific history of bells has been difficult to trace, words such as *campana* and *nola* suggest that the town of Nola in Campania, Italy played a major role in the development of the bell. Today, the study of bells is known as "campanology."

The history of bells is traced through archaeological excavations. Bells are often dated by engraved dedications. Most bells excavated in England are engraved with thick, double-lined Roman or Saxon lettering that marks both the date of manufacture and the dedication of the bell to a particular person or parish. Additionally, some contain messages that determine the bell's purpose, such as the sending off of the dead. It is presumed that early Christians did not use bells because parishes were small enough to share messages without ringing bells. But when Christian missionaries began to expand their congregations, they used hand bells to gather their followers. Larger bells first appeared during the late Saxon period. Bells were made using quadrilateral sheets of iron, then bent and riveted into a wedge and curve. After the shaping of the metal, bells were dipped into molten copper in order to coat them so that they may toll with a more musical tone. Hand bells were the earliest bells, followed by larger mallet-dependent bells, then by bells that use the familiar internal clapper. Unfortunately, some medieval church bells did not survive the Great Fire, so archaeological remains of church bells are limited.

Figure 2: Partial screenshot of student Suzanne Forlenza's Object Report on a church bell (2015), http://medievallondon.ace.fordham.edu/exhibits/show/medieval-london-objects/churchbell.

The second virtual exhibit, the Site Report, required students to focus on the preservation, evolution, and impact of a London site, which students again chose from a list compiled by the instructors. The list of these sites included medieval buildings (ranging from London's Guildhall to medieval parish churches), streets, wider landscapes (including cemeteries), and rivers, some of which are no longer visible but run beneath contemporary London (for example, Tan 2015; De Silva 2015; McCallum 2015). Depending on the type of site, students had to write a short report addressing a series of questions that encouraged them to think about topography as well as the development, material forms, and functions of different kinds of urban spaces, issues treated in the lectures and course readings, especially Caroline

M. Barron's (2004) history of late medieval London and John Schofield (2011) on the archaeology of medieval London. The Site Report had to be accompanied by at least two images. One was a photograph of the site as it currently exists, which required students to visit the site in person and to consider the medieval in contemporary London. The second had to be a map on which they located their site. Kowaleski discussed how to employ maps and old engravings as primary source evidence in a lecture, and Cuenca provided students with images of maps of medieval and early Tudor London that they could modify and edit to show the location of their sites (Grandiose 2012).[1] We made clear the advantages of including more pictures in their exhibits, and many students did put effort into finding old engravings of their sites that they could discuss in their reports (**Figure 3**). This assignment thus prompted students to recognize a wider complement of primary sources available for reconstructing the material and physical world of medieval London.

One of the more valuable components of both assignments was the requirement to add metadata about the text and images used. Omeka employs Dublin Core standards for the metadata categories (Roy Rosenweig Center for History and New Media 2017). The instructors created a detailed guide for students about what they should consider entering for various metadata fields, but limited the number of metadata fields to nine, which were: "Title," "Subject," "Description," "Source," "Publisher," "Date," "Contributor," "Rights," and "Type" (**Figure 4**).

The "Title" field is for the name of the object or site. For the "Subject" field, students had to choose from a list of categories that the instructors compiled. For "Date," students had to choose one of three periods (early, high, or late medieval) if the exact dates or date range for their objects or sites were unknown, and for "Contributor" they entered their first and last names.

In addition to using these categories as keywords in searches, students had to enter additional keywords, or tags, for users searching their online exhibits.

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[1] This vectorized map is based on the medieval London map found in William R. Shepherd's *Historical Atlas.* (1911, 75).

In 1546, sections of the friary church were sold off to investors when the Crown granted that the building serve as the center of a new parish. Another section of the former friary was given over to the City of London to serve as a new secular orphanage and school (Christ's Hospital) in 1552. After it was burned in the Great Fire of 1666, the church suffered major damage once again during the Blitz in World War II when, on 29 December 1940, a firebomb struck through the roof and into the nave of the church. Only the tower and four main walls remained, smoke-scarred and unstable. The church was never rebuilt even after sustaining a great amount of wartime damage. Today, rose garden beds sit alongside ten wooden towers where the original medieval pews once stood. The avenue of wooden towers, representative of the original thirteenth-century church towers, marks the locations of the former nave.

- Marina Elgawly
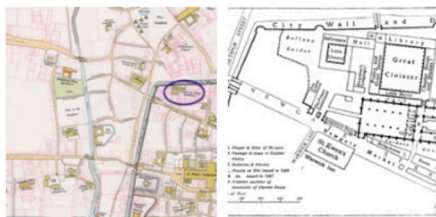
The Greyfriars Christ Church is located opposite St. Paul's Cathedral, on Newgate Street. It is also called the Christ Church on Newgate Street Parish.

This plan was drawn in 1617, apparently from material dated seventy years older. In architectural detail, it depicts the gardens in the northeast corner, as well as the plan of the Newgate and Shambles market.

Figure 3: Partial screenshot of student Marina Elgawly's Site Report on Greyfriars (2015), http://medievallondon.ace.fordham.edu/exhibits/show/medieval-london-sites/greyfriars.

Coming up with their own tags made the students consider how their objects or sites might fall into particular categories rooted in specific historical moments. While students usually excelled at choosing appropriate tags for their objects and sites, some of their keywords were not pertinent to their projects, and many needed to be modified. We used this particular problem to emphasize the extent to which web searches are bound to keyword choices made by web developers and other users.

We continually stressed the importance of entering the metadata correctly because that process, much like compiling a bibliography of secondary sources, is crucial to presenting research online in a responsible manner. Into the "Description" field the students copied and pasted their object or site reports, which Cuenca
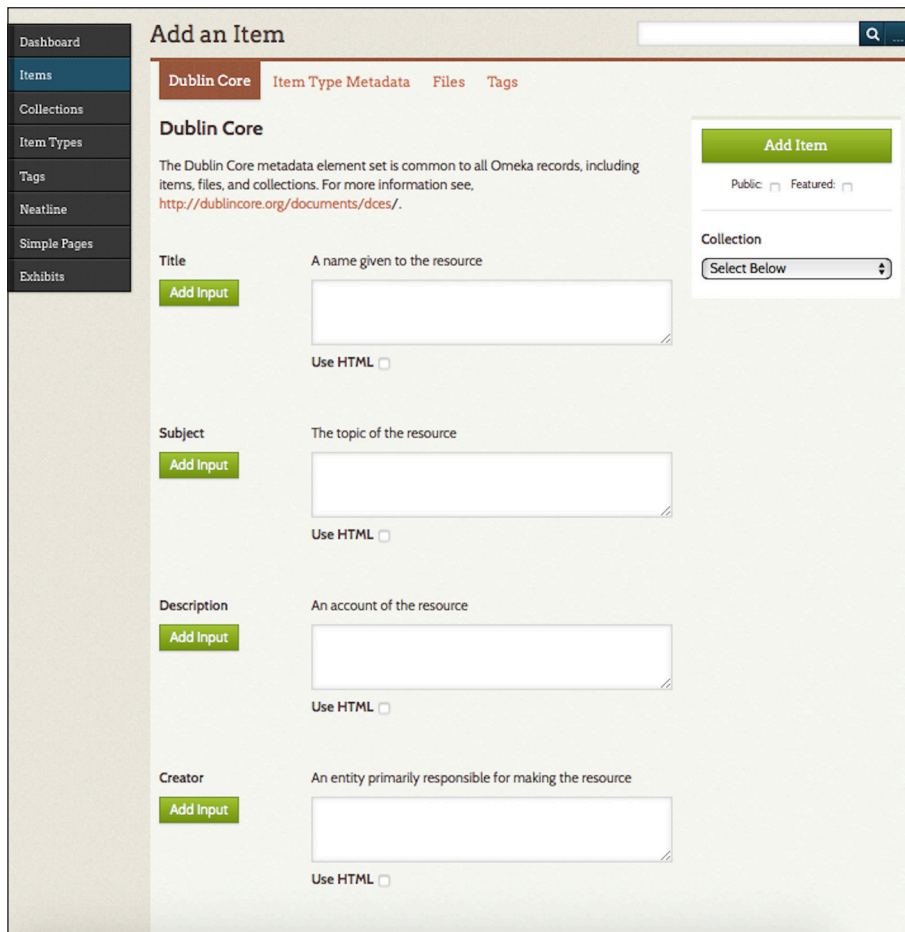
Figure 4: Partial screenshot of the Dublin Core metadata fields available on Omeka (2015), http://omeka.org [no direct link is available].

copy-edited for clarity and grammar. Kowaleski spent considerable time talking about how to identify suitable bibliographic sources, including part of a class lecture devoted to identifying what made for a scholarly and, therefore, citable web resource (see also Kelly 2013). She compiled an extensive bibliography to guide students to the best sources (Kowaleski 2017) and made many of them available as PDFs on the course Google Drive. Drawing from these and other resources, the students found appropriate sources to cite in their own bibliographies. Despite instructions to format bibliographic entries in the "Source" field according to scholarly formatting laid out in the Chicago Manual of Style, many students failed to follow the

formatting rules, which then occasioned a discussion of why academic research needs standardized formatting.

Because many of the images found in these reports came from external resources, such as museum websites and scholarly books, it was imperative that the distribution and copyrights were not only clearly available to the website's visitors, but that students also appreciated how historical images become available for public use. The links they used to obtain the images of their sites and objects, if they did not personally photograph them, were entered into the "Publisher" field. Additionally, under "Rights," they provided the URL links to pages on museum or academic websites that detail the sharing or distribution rights of their images. Finally, for "Type," students entered the type of media (which was usually "still image") that they had uploaded to their exhibits. Overall, the instructors found that making a guide (Kowaleski 2017) on how to enter the metadata for these projects was critical to the students' success in completing these reports, as only a few students had experience with data entry or even familiarity with the concept of metadata.

The instructions compiled for the students included references and links to resources that would help them write their reports, as well as information on how to search for appropriate supplementary images for their projects (Kowaleski 2017). The object and site images were not the only media that students curated for their online exhibits, as they also had to provide their viewers with geographic, artistic, and manuscript contexts for their objects and sites. For their Object Reports, they uploaded, at minimum, one other image from a manuscript source or piece of art that depicted their object. The image did not necessarily have to represent London life or material culture from that city, but it did have to date from the medieval period. For example, a student who wrote his report on a pilgrim's badge recovered in London included, in his exhibit, a manuscript illumination from a fifteenth-century Belgian book in the Pierpont Morgan Library, showing a pilgrim who visited the shrine of Santiago de Compostela in Spain and depicted with several badges in the shape of seashells fastened to his hat (Milohnić 2015). Another student, who wrote her report on a set of rosary beads, not only showed examples of rosary beads depicted in two religious paintings, but also provided another image from the Metropolitan Museum

of Art in New York of an early sixteenth-century German rosary made from ivory (Elgawly 2015).

Several of the Site Reports incorporated old engravings to illustrate a now-destroyed building or street, while others cleverly integrated map material from other sources (for example, Lobel 1989).[2] Some of the students chose to upload a section of the Agas map of London, named after the mid-sixteenth-century surveyor who was attributed with its cartography, because it illustrates, in incredible detail, a bird's-eye view of London's buildings and streets (Jenstad n.d.). In so doing, the students had to think about the social, economic, and political forces that helped shape (between the medieval and early modern periods) the topography and buildings of London over time.

In the Fall 2017 term, Kowaleski taught a version of this course at Fordham's home campus without the field excursions of the original study-abroad course in London. She omitted the Site Report, but lengthened the Object Report to require 750 to 1000 words, three to four images, and a minimum of four to six secondary sources (Kowaleski 2017). The assignment worked just as well, but in the future, this experience will encourage her to require parenthetical references in the online essay in order to accommodate the longer text and greater number of secondary and primary sources; such a requirement will also help students be more conscious about their use (and overuse) of particular sources. She also now has a greater appreciation of the labor costs involved in digital pedagogy projects like this since she did not have access to the significant help provided by Cuenca during the London course in terms of technical instruction, editing, and building the actual Omeka exhibit (students only have Contributor privileges in Omeka and thus are not able to combine their Collections into an Exhibit). Another change will be to require specific readings on the implications of digital scholarship itself. Although she devoted an

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[2] This source is downloadable as PDFs in eight map sections from Mary D. Lobel's Historic Towns Trust, "Map of London in 1520," British Historic Towns Atlas (1989). http://www.historictownsatlas.org.uk/atlas/volume-iii/city-london-prehistoric-times-c1520-volume-iii/view-text-gazetteer-and-maps-early. Some students also used the black-and-white version of this map (printed across 35 pages and thus done to a very large scale) in Caroline Barron's *London in the Later Middle Ages* (2004).

entire lecture to using Omeka and the digital humanities, and frequently referred
to developments in digital archaeology, it is clear that students would benefit from
more exposure to the theoretical underpinnings of, and relevant debates in, digital
humanities (Gold ed. 2012; Gold and Klein eds. 2016), particularly in terms of digital
history (for example, Cohen and Rosenzweig 2005).

Other Medieval and Pre-Modern Projects

Drawing on the experience with the London course, Cuenca designed a similar
project for her students at MCU, where she taught a survey course on the Western
tradition from antiquity to the early modern period. She adapted the instructions
for the medieval London Object Report to emphasize a more comparative approach
to analyzing the material culture of the pre-modern period and to accommodate
the web-building platform Weebly (http://weebly.com), which Cuenca had used for
other student projects in previous classes. Weebly is also less expensive and easier to
use than Omeka.

For this project, Cuenca took her students on a field trip to the Los Angeles
County Museum of Art (http://www.lacma.org), or LACMA, where the students were
required to photograph and then write about an object made prior to *circa* 1750
housed in the European collection of the museum. They uploaded their reports
and images to individual, blank webpages that Cuenca set up for them on the class
website (**Figure 5**).

The students wrote four short reports. One explored the provenance, materials,
manufacturers, and purpose of their pre-modern object at LACMA, a second focused
on modern objects they may use today that are similar to the LACMA pre-modern
object, the third was an analysis that compared their LACMA object to similar pre-
modern ones, from roughly the same period or earlier, found in other museums,
and the fourth was a biographical portrait of an individual—an artist, patron, or even
a mythical or biblical figure—who was associated in some way with their LACMA
object. For example, one student chose to write on a seventeenth-century Venetian
glass ewer at LACMA. She then compared this ewer to pitchers advertised for sale
on Wayfair and Etsy, and to a Roman ewer at Brooklyn Museum in New York City

Figure 5: Partial screenshot of homepage for The Western Tradition at the Los Angeles County Museum of Arts projects at Marymount California University (2015), http://mcuhistory.weebly.com/his-100-fall-2015.html.

(Shoaf 2015). She completed the webpage with a report on Angelo Barovier, a famous fifteenth-century glassmaker who lived on the Venetian island of Murano, where the highest quality glass was made. Students were also required to post a bibliography of works they used in assembling these reports (**Figure 6**).

Angelo Barovier (1400-1460)

Angelo Barovier was a Muranese glassmaker who descended from a family of glassmakers, who lived on the island of Murano. Like his brothers, Barovier was a skilled glassmaker and is famously known for his invention of "Cristallo" around 1450 (Mentasti, *Grove Art Online*). Cristallo is a term to describe the transparent appearance of the glass Angelo created. By the seventeenth century, descendants of the Barovier family had traveled beyond Murano to different parts of Europe (Mentasti, *Grove Art Online*). Knowing this, it is highly possible that the glassmaker of the ewer at LACMA could have crossed paths with one of the Baroviers in Venice or lived on the island with them. Also many of the Venetian glassmakers lived on Murano in a very closely connected community, where ideas and techniques were most likely shared with one another. It is here where the maker of the Retorti ewer may have been influenced. Barovier was most likely born in Murano circa 1400 where he took up his family's profession of glassmaking. Barovier also received some form of education and studied under the philosopher Paolo de Pergola. Because of his knowledge and understanding of science, moreover, he was able to gain an in-depth understanding of glassmaking, which allowed him to create clear glass (Mentasti, *Grove Art Online*). Lattimo glass was also widely used during the seventeenth century, which is glass that is decorated with milky white vertical streaks that courses along the body of the glass object (Goy, *Grove Art Online*). Although it is suggested that Angelo Barovier also invented this technique it is highly unlikely since there is evidence that the technique was pioneered centuries before, but it is possible that Barovier's use of this technique could have made it popular during the fifteenth century, and this technique influenced the maker of the Retorti ewer to use that design technique two centuries later.

Calice di angelo barovier is one of Barovier's famous pieces.

Coupe de Angelo Barovier is another famous piece by Barovier.

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Figure 6: Partial screenshot of the biographical profile of the glassmaker Angelo Barovier and Works Cited of the report by Ariana Shoaf (2015), http://mcuhistory. weebly.com/shoaf-ariana.html.

These virtual exhibits required students, at minimum, to curate images of their LACMA objects, the modern object to which they compared their LACMA object, a comparable pre-modern object from a different museum, and an illustration of their biographical figure (or an object associated with this person). Ultimately, these exhibits encouraged students to reflect on continuity and change between past and present, and across different artistic and material cultures.

Since Weebly is a simple drag-and-drop website builder, there are no metadata fields to fill out; instead, Cuenca instructed the students to provide full captions underneath their images, as well as a complete works cited page with URL links at the bottom of their exhibits. Weebly is free to use, though it requires a paid "Pro" account, which can be purchased in packages ranging from one month to two years, for the privilege of inviting users to contribute and edit webpages. There are other digital platforms, however, which are completely free to use and allow instructors to invite students to build exhibits and also edit their work. These free platforms are primarily used for blogging purposes, but can be deployed for online projects such as these, provided that instructors make the necessary modifications to accommodate the project to the limitations or strengths of a particular platform. The popular Tumblr (http://tumblr.com) and WordPress (http://wordpress.com) platforms, for example, not only permit instructors to build websites or blogs and invite their students to contribute their own content or webpages, but also to set certain administrative controls and levels of editorial access over the entire website and individual pages.

In the Spring 2018 term, Cuenca drew again on the Omeka platform in designing a course at Fordham University called *Medieval Hollywood*. Some students in the course took advantage of a video plug-in to upload relevant film clips as part of their Collections on a "medieval" film (Cuenca 2018). This Film Project had to include at least two images and one primary source text that helped contextualize the historical setting of the film, along with an essay of 750 to 1000 words analyzing the film's representation of women or gender, ethnicity, or social status. The pedagogical goals of the project were twofold: first, to allow students to engage with the primary sources—literary, artistic, and material—that have informed filmmakers who adapt medieval stories to the screen; second, to encourage students to examine the implications of the artistic

(and often political) choices made by these filmmakers. In addition to the Film Project, students signed up to give an in-class presentation on another film (provided to them from a list of over 30 options) and write a short blog post (called a "capsule review" on the website) of 500 to 750 words summarizing their presentations. The presentations examined a film's popular and critical reception, its historical influences, and how historical events (as portrayed in particular primary sources) were portrayed onscreen. Students filled in the metadata (including bibliographic information) for their items (video clips, images, and text), but Cuenca, as editor, categorized the various Film Projects and capsule reviews into thematic groups, such as the Crusades, Joan of Arc, Religious Orders, and Vikings. While this Omeka project prompted students to think about the relationship between medieval history (the primary sources) and medievalism in popular culture (the film), it also serves as a digital repository of searchable scholarly resources for the representation of the middle ages in cinema.

Conclusions

It is not enough that students move their research online, as having students simply transfer their work from the "real" world of research papers to a "digital" world of websites or blogs does little on its own to generate any particular skills or new insights. The *design* of the assignment must encourage them to consider an historical object or site not as static points of inquiry but as dynamic ones. The exercises involved in identifying a variety of contemporary and historical images, searching museum websites, finding comparable objects, working with online maps, and filling in metadata or captions for their websites enabled students to transcend a more linear method of learning history. These digital humanities projects allow students to engage in multi-dimensional investigations that go beyond traditional research projects confined to producing text on paper, and to create microhistories of objects and sites that could lead viewers into several possible non-linear tangents. In so doing, the students have written their own historical narratives using text and images but have also opened up possibilities for further investigation.

The exercise of "curating" exhibits, in which students are asked to embed their chosen objects within a particular place at a specific time like medieval

London, or relate it to a historical figure and similar objects found in other museums, offers undergraduates the opportunity to use digital scholarship not only to recover the past but also to reflect on the act of this recovery and how their choices can affect the historical narratives that scholars tend to privilege. There was thus a dynamic element in these projects that might have been less effective on paper (or likely impossible to implement in that medium). An especially valuable aspect of students' foray into digital scholarship is the methodological issues they had to confront, whether in the requirement to enter metadata in Omeka; consideration of the credibility and authority of different types of online, print, and visual sources; the value in adopting a comparative perspective; how to document the images they included in their exhibit; or bringing together documentary and online visual sources like manuscript illuminations, engravings, and maps to construct the textual narratives associated with their exhibits.

Finally, both the Omeka- and Weebly-based projects underscored an obvious, but often overlooked, premise of digital humanities projects, especially as it relates to the middle ages: the visual representation of objects and sites—aided appropriately by supplementary texts, maps, and images chosen and identified by the student—can transform seemingly inert objects from the pre-modern era into a kind of language with which they can reconstitute the past into stories. These websites, properly curated and constructed, can then become wholly self-contained microhistories of objects with their own assumptions, logic, and interpretations. These projects not only offer students the opportunity to present their research within the context of undergraduate conferences, poster sessions, or journals targeted at undergraduate research, but also make student research available to a wider public while also holding students accountable for *how* they present their research online (indeed, some students were shocked when they discovered that their authored report would crop up in a Google search on their name). Digital projects such as these open up digital spaces for students to engage with visual, archaeological, and cartographic sources that take them beyond the textual histories they normally learn in the classroom.

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Competing Interests

The authors have no competing interests to declare.

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