clunky, outmoded, and limited. The same can be said of the glossary. The typed approximations of handwritten abbreviations seem out of place and hard to negotiate in the age of the ubiquitous screenshot. An image of an abbreviation from a handwritten source, for example, could replicate what is found in actual manuscripts far more accurately than any type-face font, and would facilitate the user’s ability to identify abbreviations in the manuscript environment.

Whether Thélème is still actively maintained and updated at this time is unclear; the last notice of revision is dated October 2017, and many of the bibliographies include entries from the early 2010s. Several of the embedded links are no longer active, and some of the images, transcriptions, and translations on the document interface do not load properly when clicked.² None of these glitches is a surprise to those who work with digital media. However, given the high quality of content and its value as a teaching tool, my hope as a reviewer is that the site’s creator might consider archiving the current version of Thélème as a first edition of the project. Such a precaution would guard against the site’s further degradation or loss, as has been the fate of so many good projects created in the fragile digital world in which we work. A second edition of Thélème, which would draw upon the work of the project’s first iteration and incorporate technological and organizational updates, would be an extremely valuable resource for students of history and paleography alike.

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Hernández, Ramona, project dir.
Spanish Paleography Digital Teaching and Learning Tool.
spanishpaleographytool.org.

Like many other disciplines studying the past through textual heritage, paleography has been impacted by the digital turn at different levels. In some

². See, for example, the following broken link on the “Théâtre” section of the bibliography: CESAR (Calendrier électronique des spectacles sous l’Ancien Régime et la Révolution).
cases, scholars perform a “computer-aided paleography,” using technology as an aid for performing traditional tasks faster (e.g., transcription and editing platforms, manipulation of digital image processing tools, etc.); in other cases, a “digital paleography” approach adopts more complex digital methods, based on the production of quantitative data by developing and utilizing specialized software for the analysis of scripts, to describe, identify, or compare styles through time and space. Many breakthrough projects surfaced in recent years, but even more encouraging is the wealth of digital pedagogical resources now available online. Still, most of these resources deal with Latin, English, and French, and only a few are devoted to Spanish and related languages. This is one reason why the project Spanish Paleography Digital Teaching and Learning Tool sparkles.

Scarce indeed are the initiatives devoted to teaching Spanish paleography or using documents from Spain and Latin America. Examples include the Littera Visigothica project (2013; litteravisigothica.com/about) which collects a great variety of materials for the study of the Visigothic script, the first writing system used in the Iberian Peninsula. Since 2015, The Spanish Script Tutorial has been gathering documents written in Spanish from 1500 to 1800, providing different exercises based on handwriting styles (cortesana, procesal, humanística) as well as lists of abbreviations and useful glossaries. Also, Scriptorium (ub.edu/contrataedium/scrptorium.htm), a project created at the University of Barcelona, proposes different activities to learn both medieval Latin and Catalan.

4. The Spanish Script Tutorial project is hosted by the Center for Family History and Genealogy at Brigham Young University: script.byu.edu/Pages/the-spanish-documents-pages/the-spanish-documents(english).
The Spanish Paleographical Tool project is an initiative of the City College of New York Dominican Studies Institute (CUNY DSI), directed by Ramona Hernández and composed of a large team of scholars, IT and metadata professionals, pedagogy experts, and a cohort of undergraduate and graduate students. Some of the scholars are experts in the fields of medieval Spanish literature and book history, such as executive and technical director John O’Neill, the curator of manuscripts and rare books at the Hispanic Society of America.

This web tool is conceived as a virtual learning space for the study of archival documents produced by or related to the Spanish colony of La Española (nowadays Dominican Republic) ranging from the late-fifteenth to the seventeenth century. Some of the records belong to the Dominican Colonial Documents Digital Collection (CUNY DSI), serving as a way to explore and disseminate their own holdings. Other records have been provided by other institutions, such as the Archivo General de Indias, chosen for its valuable holdings in Dominican history.

There is a vast amount of archival documentation in Spain and the Americas available only in archives and libraries, most of which exists in single copies as old manuscripts and books, thus remaining unstudied by specialists and unknown to the public. These documents are relevant to us because they are connected to the contemporary Spanish-speaking world and can help us understand and learn about the past. However, they are written in an early modern Spanish handwriting which differs from current practices in the shape of the letters, the use of words, and even in phraseology. To access these archival documents, one must learn how to decipher the ancient handwriting in which those documents were written. The discipline of paleography offers access to the skills necessary to understand old writing systems such as these, as well as the processes of book production and the relevant historical and cultural contexts. With the Spanish Paleographical Tool, the CUNY DSI responds to its goals of disseminating and producing knowledge about Dominicans and their cultures. Likewise, with their representative archival sample, they help to disseminate knowledge of handwritten Spanish documentation of this kind.

period in general, since script styles used during the sixteenth and seventeenth centuries are shared across the Spanish empire.

This project’s intended audience is broad, ranging from early modern scholars to university and high school students with an interest in Spanish historical and cultural studies. The project designers also recommend that users have a minimum reading-level knowledge of Spanish and a familiarity with the type of language used in this kind of documentary production, such as idioms and expressions or social and institutional vocabulary.

In the summer of 2011, the National Endowment for the Humanities awarded the CUNY DSI a Digital Initiatives Start-Up Grant (Level 2). This funding allowed the directors to hire a digital development firm to create the website, remunerate three archivist-paleographers to generate a set of transcriptions of selected documents, and employ a crew of senior undergraduates and graduate students who worked towards the coding and mapping of images with their transcriptions. The project was publicly launched in March 2013.

The site is clearly structured by four main access points: the first (“About the Paleography Tool”) offers a presentation and general information; the second provides direct access to the early modern documents; the third is the users’ guide (“How to Use the Tool”); and the fourth contains other teaching resources on Spanish paleography.

The best part of this site is the easy and fast access to documents. The site compiles approximately 122 digital images of manuscripts from La Española from the sixteenth and seventeenth centuries. A drop-down menu sorts all documents named and classified by the different handwriting styles (cortesana, procesal, encadenada, and humanística), and the user can rapidly access each one of them. By clicking on a document from the drop-down menu, the tool offers a drop-down section (“Manuscript Description”) containing a brief description of the document detailing script style, date and place, content, author, and source of provenance. In fact, the tool presents a dual system to access the documents: a digital facsimile and a transcription with a facing image. The digital facsimile of the document is annotated by isolating the single letters: when hovering the cursor over any word, a tooltip shows the transcribed word. Additionally, each word can be clicked and a new window with more details emerges: a set of related words, handwriting style, alphabet, ligatures, abbreviations, numerals, translation/glossary, and historical context.
Alternately, by accessing the upper “Manuscript Description” ribbon, users can access a PDF with a line-by-line transcription facing the digital image of the document. In this same section, users have access to a sample alphabet, featuring each of the letters and the shapes of that script and manuscript.

The learning approach adopted by this paleographical tool—clearly outlined in the “Recommended Strategy and Sequence in Using the Spanish Paleography Tool” section—is traditional at its core: users are recommended to select a manuscript and read its transcription beforehand to have a sense of its content and contexts. After this initial contextualization, users learn to recognize each letter and word, taking full advantage of the digital image and the integrated tooltips, and to conduct a more thoughtful close reading through the split-screen view in PDF version, downloadable from the “Manuscript Description” section; the PDF allows users to access a side-by-side view of the manuscript and its entire transcription. Finally, users can access other materials with the same type of handwriting.

The Spanish Paleographical Tool contextualizes the archival documentation; however, it keeps to a rather superficial layer. More details on the content and production, recalling the “what was written, by whom, when, and where,” would especially help engage younger students with primary sources and show why a particular document is still relevant. Another useful additional feature could be the ability to filter documents by topic, furthering the pedagogical potential for in-class discussions (on topics such as lawsuits, commerce and ship cargos, transatlantic travelling, etc.). Looking through other paleography-related websites, one can get a sense of other kinds of historical introductions: Medieval Writing, for example, provided both introductory essays on paleography and a contextualization for each document; English Handwriting Online 1500–1700 provides a historical introduction detailing document types and hands of transcription, as well as additional information about each document; Theleme, in its “Dossiers Documentaires” section, presents detailed metadata, texts with a translation, a paleographical and

7. Stokes, 1.
8. Medieval Writing: History, Heritage and Data Source, dir. Dianne Tillotson. Now discontinued, the original URL was medievalwriting.50megs.com.
historical commentary, and interactive facsimile images. With these examples in mind, two additional features seem to be appropriate for this type of resource: a translation to increase outreach (e.g., the BYU Spanish Script Tutorial\textsuperscript{11} also offers an English translation) and a set of basic conventions for transcription.

While the Spanish Paleography Tool has many valuable features, offering facsimile and transcription in a PDF is not the most digitally innovative approach. Traditional print manuals have always provided both, as well as sample alphabets, abbreviations, other kinds of lists, transcription norms, or hints to facilitate readings.\textsuperscript{12} Therefore, the tool could have benefited from a more interactive component to diversify the learning experience of reading early modern handwriting styles. Many digital tools offer this kind of interactivity. At a basic level, tools such as those used in Scriptorium\textsuperscript{13} and based on the trial and error system offer the possibility of creating fill-in-the-blank exercises with automatic and immediate correction. At a higher level, other potential interactive features could allow the user to drag and drop the correct transcription of a single image word or to practise the alphabet by using an old typewriter and visualizing the letter shapes from a sample alphabet (Latin Paleography\textsuperscript{14}). Activities might involve transcribing line by line, immediate corrections, and the option of asking for hints (Paleography, nationalarchives.gov.uk/palaeography). When the Spanish Paleography Tool was designed, there were already software and tools conceived to implement this kind of interaction between image and text, such as the Image Markup Tool,\textsuperscript{15} which was used by the Interactive Album of Mediaeval Palaeography (paleographie.huma-num.fr) and the Comptes des Chatellenies Savoyardes (paleographie.castellanie.net). Games (e.g., Paleography or the Littera Visigothica App\textsuperscript{16}) have also been applied to paleography learning. Currently, there are other projects

\textsuperscript{11} Spanish Script Tutorial: script.byu.edu/Pages/the-spanish-documents-pages/sp-marriageinvestigations2(english)-1.
\textsuperscript{12} Zozaya, “Cursos online de paleografía.”
\textsuperscript{13} This project, like many others, used the Hot Potatoes software: hotpot.uvic.ca.
\textsuperscript{14} The National Archives’ page dedicated to Latin Paleography: nationalarchives.gov.uk/latinpalaeography/default.htm.
\textsuperscript{15} Image Markup Tool: hcmc.uvic.ca/\~mholmes/image_markup/paleography.php.
\textsuperscript{16} Paleography offers a particular game called “The Ducking Stool Game”: nationalarchives.gov.uk/palaeography/game/default.htm. Littera Visigothica has also recently launched a game app: app.litteravisigothica.com.
that build upon previous experiences and integrate higher levels of interactivity and great design. Latin Paleography: From Antiquity to the Renaissance, led by Ambrogio Piazzoni (spotlight.vatlib.it/latin-paleography), takes advantage of the Vatican Library holdings, and vHMML School (vhmmlschool.org/latin) at the Hill Museum and Manuscript Library offers lessons and many different exercises with high-resolution images.

Other platforms conceived the learning process in a more tiered way, increasing in difficulty, such as Scriptorium (Universitat de Barcelona) or Scottish Handwriting (scottishhandwriting.com.), where a first reading is done through a “fill the gap” with easy words, subsequently upgrading the difficulty on the words transcribed. The Spanish Paleography Tool offers only one access point, without room for difficulty levels.

The Spanish Paleography Tool presents some minor issues related to interface and usability. A potential improvement could be to present the annotated facsimile and the transcription line by line. Indeed, the website recommends opening separately the facsimile image and the side-by-side transcription PDF in separate windows, resizing them both in the screen to have three different views. The team could have experimented to find design solutions and give the facsimile an interactive space for transcribing and an additional space for information. The lack of a zoom or a magnifying glass is a drawback that led the team to suggest that users zoom in and out manually (Ctrl + (+) to zoom in or Ctrl + (–) to zoom out). This solution is not optimal for usability, and certainly better digital surrogates of the original documents would have improved the potential to explore them in more detail.

The website seems to be a finished initiative. However, it still has potential for research and collaborations. The great quantity of Spanish materials worldwide and the already-established collaborations promoted by the Spanish Paleographical Tool make me wonder how many improvements and additions could be performed if it was still a work-in-progress and a collaborative platform with the possibility to include other documentary materials. Collaborations with the Archivo General de Indias, for instance, or with other archival documentation portals, such as PARES (Portal de Archivos Españoles, pares.culturaydeporte.gob.es/inicio.html), would provide invaluable Dominican documental records to be transcribed online and used with this tool. Existing software and applications offer utility for collaborative transcription, such as
T-Pen (t-pen.org/TPEN), Transkribus (transkribus.eu/r/learn), or From The Page (fromthepage.com).

The project is labelled as open source, but “open” might be more suitable since the source code is not available. Although not mentioned, the tool seems to be built in the popular CMS WordPress, constructed on a relational database; the site does not mention other specific standard technologies or software employed. It would be useful to know in which formats the transcriptions were encoded and how the students worked when manually isolating letters and segments within the images. Metadata from each document seems not to have been reused, and the documents are not exportable. Perhaps hiring an external programming and production firm to take charge of “the more technical digital designing and constructing of the Tool’s internal electronic structure and functioning as well as its interface” somehow reduced the possibilities of engaging scholars and students in the technical implementation of the project.

Nonetheless, the project is well-documented on two main fronts: details on the project, such as team information, funding, and history, and instructions on how to use the tool to maximize the resource’s potential.

To conclude, the Spanish Paleographical Tool remains one-of-a-kind on the international panorama of Spanish paleography. It offers multiple learning opportunities through digital resources: the interactive facsimile, transcription tool tips, and access to resources anytime and anywhere. The annotated digital images also give users the opportunity to work directly with primary sources and to learn from original documents. Yet, some functionalities could have been included, such as scalability of material, maintenance of the site, a more prolific section on historical and paleographical contextualization, or increased interactivity. Nonetheless, the Spanish Paleographical Tool offers great value—both pedagogically and in the quality of its materials and the context provided by experts.

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17. Students documented their work in a Flickr gallery: flickr.com/photos/cunydsi/albums/721576328295303333/.

18. There are no further details about the digital platform used or the production firm: spanishpaleographytool.org/development-and-production-staff.