

Adapting a Research Tool for Teaching in a Post-Pandemic World: Textual Communities and Critical Digital Pedagogy in the Context of a Comprehensive Liberal Arts Research University

Barbara Bordalejo <barbara_dot_bordalejo_at_uleth_dot_ca>, University of Lethbridge  <https://orcid.org/0000-0001-8255-0265>

Davide Pafumi <davide_dot_pafumi_at_uleth_dot_ca>, University of Lethbridge  <https://orcid.org/0000-0002-1113-187X>

Morgan S. Pearce <morgan_dot_pearce_at_uleth_dot_ca>, University of Lethbridge  <https://orcid.org/0000-0003-1768-4501>

Daniel Paul O'Donnell <daniel_dot_odonnell_at_uleth_dot_ca>, University of Lethbridge  <https://orcid.org/0000-0002-0127-4893>

Abstract

This article examines the pedagogical adaptation of Textual Communities, a digital tool originally developed for collaborative research in textual scholarship, to teach paleography at the undergraduate level within a liberal arts context. Prompted by the exigencies of remote learning during the COVID-19 pandemic and the broader framework of critical digital pedagogy, the course-design reimagined the tool's primary research-focused function — edition-making — as a dynamic teaching and learning environment emphasizing transcription, engagement, and student autonomy. The article presents a specific example of the use of a digital tool in teaching paleography, detailing its purpose and impact on student learning and engagement. The article offers a concrete case study of hybrid- and flexible-by-design pedagogy, showing the value of using scholarly digital tools in undergraduate settings.

Introduction

The changes experienced by the higher education community following the outbreak of COVID-19 remain unprecedented in light of its impact on different spheres of collective life. Paraphrasing Marcel Mauss, the pandemic can be viewed as a “total social fact” [Mauss 1966, 76–77], playing a pivotal role in social change due to its significant “implications throughout society” [Edgar and Sedgwick 1999, 64]. Against this backdrop, this paper addresses the spheres of teaching digital humanities, specifically in the aftermath of the pandemic.

In 2023, the departments of English and History at the University of Lethbridge approved an undergraduate advanced course, under the leadership of Barbara Bordalejo, for English and History students on paleography of the British Isles covering texts in Latin, Old French, Old and Middle English produced between 800 and 1500. When designing the course, the authors of this paper implemented Textual Communities [Bordalejo and Robinson 2024], a collaborative online research system that allows participants to work asynchronously, which we adapted for pedagogical purposes. Because of Bordalejo's experience during the Fall of 2021, when a surge of the COVID Delta variant forced all academic staff to pivot to online teaching, Textual Communities was as much about its pedagogical promise as its potential use as a distance learning tool. In this paper, we draw from our practical experience with the platform and extrapolate a systematic discussion of the implications of the adaptation and use of a research tool for pedagogical purposes. One of these implications is undoubtedly how the lockdown forced academics and teachers to repurpose existing tools developed for different ends, such as Textual Communities, with the aim of easily switching from in-person to remote if and when required. The students would have the opportunity to work from home or anywhere else while

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continuing to receive constant feedback on their work from the instructors. But implication of allowing students access to research tools — and allowing them some of the flexibility we enjoy as researchers ourselves — is a form of critical pedagogy.

In the wake of COVID, a considerable amount of literature emerged on implementing digital technology in higher educational contexts [Akbar 2016] [Lai 2011]. These studies centred around the consequences of the pandemic on teaching and learning at different levels, highlighting the drawbacks and opportunities of remote teaching and learning in this context (e.g. [Murphy 2020]; [Hofer et al. 2021]); they also theorized ways in which to normalize e-Learning Pedagogies for the near (post-pandemic) future [Barrett-Fox et al. 2020] [Careaga-Butter et al. 2020]. In this paper, we propose a third topic: looking at the implications these techniques and tools have for our understanding of what we ask our students to do. This study presents our experiences adapting Textual Communities to become a pedagogical aid in the paleography classroom. Our work serves as a practical example of addressing the aftermath of the pandemic. It provides us with both a sound teaching environment and an effective way to transition to online teaching quickly, should the circumstances require it. By using tools in this flexible manner, we ensure that our students are safeguarded should extreme circumstances arise, whether personal or affecting the entire community. We share this experience as a generalizable example and a reproducible strategy for teaching paleography and the history of handwriting. Moreover, the current work presents different perspectives (those of the instructors, the teaching assistants, and the students) and experiences to assess the importance of this course, considering its significance in the post-COVID-19 era. The paper presents an overview of the existing scholarship on emergency e-learning, provided along with the most recent developments of the discourse surrounding digital pedagogy and specifically its particular inflection, i.e., critical digital pedagogy [Kim 2018] [Stommel et al. 2020a], whose principles have served as a methodology for this work.

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Methods of teaching paleography

Paleography is the study of historical handwriting, traditionally focused on the medieval period. At institutions with strong material resources, such as a rare books library with manuscript collections, this class can be taught in conjunction with other aspects of manuscript culture. Students might be asked to identify scripts or read directly from manuscript materials under the direction of a professor or teaching assistant. Tests might include reading or copying from original manuscript materials. The breadth of the course is, to a degree in such cases, determined by available materials. Institutions with extensive collections of manuscripts or that are located near repositories with large holdings can introduce students to a wide range of scripts, languages, texts, and codicological forms.

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Newer institutions and institutions with more limited funding or holdings can offer a simulacrum of such a course using the increasingly large number of high-quality facsimiles available from manuscript libraries and other cultural institutions. Access to freely available digital images enables a pedagogical model in which students read from these images during class, while the instructor clarifies particularly challenging sections. This approach reflects a practice that has served many generations of paleographers well. Whether a university has access to the original artifacts or facsimiles, however, smaller classes have traditionally been a *sine qua non* of successful instruction. While lectures are common in such courses, a very important part remains hands-on work with the artifacts or facsimiles themselves, including plenty of one-on-one feedback from the instructor.

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Our approach switches the focus from reading aloud to reading and recording. We asked the students to transcribe the manuscript pages in class and on their own time and to include a very light encoding so the transcription could, in theory, be processed by computers. This encoding component is an innovation in reference to more traditional approaches to paleography. This approach enables students to engage with texts as dynamic semiotic systems, recognizing transcription not as a mere substitution but as an act of translation — from the semiotic system of the manuscript to that of the digital transcription [Robinson and Solopova 1993]. As Robinson and Solopova (1993) emphasize, transcriptions are inherently interpretative and incomplete, akin to all translational acts, as they navigate between distinct semiotic frameworks (e.g., the primary source and the digital medium). Moreover, in the context of the semiotic shift, students often initiate their own reflexive process regarding *why* and *how* texts should be interpreted and transcribed.

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Institutional context

In 2023, Barbara Bordalejo had a class on paleography of the British Isles approved in the departments of English and History at the University of Lethbridge with manuscript selections covering texts in Latin, Old French, Old and Middle English produced between 700 and 1500. Although her paleographic training in the late 1990s included some access to digital photography (which was of very low quality at the time), she primarily worked with analog materials, including printed photographs, photocopies, and a few manuscripts. However, after joining the Canterbury Tales Project, Bordalejo shifted her paleography work to computer environments, where she worked with digital images taken from old microfilm and transcribed texts encoded in SGML using a custom font called “Canterbury.” The new course’s design builds on and integrates these text encoding skills, which are useful for text processing using computers, and commonly implemented in digital humanities.

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The University of Lethbridge is a comprehensive academic research university (CARU) with a liberal arts focus that serves a primarily undergraduate student body. As such, unlike larger institutions, the University of Lethbridge has a limited collection of original materials that might be used for teaching a general paleography class. Historically, the English Department was well-staffed, but budgeting constraints weakened the breadth of the program, reducing its faculty complement by as much as 50%. Bordalejo arrived in the Fall of 2021 to teach medieval literature, digital humanities, and humanities data courses. She proposed three courses that were approved as new offerings: Digital Textuality (English), Humanities Data (Interdisciplinary), and Paleography (English and History). Paleography is offered as a third-year course in both English and History. There were no prerequisites, but knowledge of Old or Middle English or History of the Book was recommended for those taking the class. The official course syllabus (see [Bordalejo 2024]) listed the following objectives:

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1. Identify different scripts
2. Use correct terminology while referring to different scripts
3. Understand the historical context of the studied works
4. Read and transcribe scripts of the British Isles
5. Formulate research questions regarding paleographic studies

Most students had already taken a course focused on medieval history or medieval literature. About half of the class had training in either Old English, Middle English, or the history of the English language. However, there were also students without any knowledge of these or similar subjects, including a few from the natural sciences who had very little background in the humanities at all. A common characteristic the vast majority of the students shared was their lack of familiarity with aspects of technology such as encoding. Although we are unable to document this, the sense among the more experienced members of our team is that, at the turn of the century, it was more common for individuals to have at least some knowledge of HTML acquired through practices such as blogging and developing websites in the days before WYSIWYG (What You See Is What You Get) web applications and the rise of social media. While there has been an increase in the access of technology in students’ day-to-day lives this does not necessarily mean there has been a corresponding increase in their understanding of what goes on on the back-end:

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While many young people use technology daily, this does not necessarily mean that they possess high-order technical skills that will allow them to excel beyond their superficial use of tech gadgets. [Thomas and Blackwood 2010, 8]

In fact, while programming languages, such as HTML, remain popular among users — as illustrated in a recent survey by [Stack Overflow 2024] — this does not represent a general literacy, as we discovered when we asked students to practice making a small webpage to help them understand on a base level how information must be structured in order to allow the machine to process it. Amongst both offerings of the course, we found that students struggled to grasp the fundamental logic of computer languages even before attempting to encode the manuscripts.

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Literature review

The emergence of academic literature on the pandemic’s impact on pedagogy has led to two contradictory attitudes.

One approach focuses more on the short-term implications and views classroom adjustments as a temporary response to the pandemic. The other is geared towards predicting the potential long-term impact on pedagogy by continuing to implement the new strategies developed during the pandemic. On the one hand, the first attitude highlights the “risks” associated with an increased dependency and deployment of digital tools and online learning in an educational setting; on the other hand, the second attitude suggests that teaching practices should be informed by the COVID experience to enhance them in the future rather than discarding them once the pandemic is “over”.

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Murphy’s work is situated within the first approach. Murphy focuses on the consequences of what is defined as “emergency eLearning” [Murphy 2020, 1] criticizing the fact that the pandemic has led to a general “securitization” of higher education’s rising reliance on surveillance technologies and the adoption of one-size-fits-all solutions. They also emphasize the “danger of normalizing emergency eLearning” without falling into the rhetoric of “condemning all forms of online learning,” but still argue for an “emancipation” from the securitization associated with eLearning [Murphy 2020, 10]. In this sense, Murphy is one of the most critical voices in the scholarly discussion on the pandemic turn. Still, they focus mainly on the risks — neglecting to address other issues, such as the degree to which technology is helpful in post-pandemic pedagogies and the circumstances from which these changes have come to be.

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Hofer, Nistor, and Scheibenzuber have discussed the need to re-examine the pandemic experience in terms of its benefits to teaching practices. Consistent with the second stance discussed previously — looking at the lessons learned from the pandemic as a positive — they engage with the emergency aspects taken for granted by Murphy [Hofer et al. 2021]. In their contribution, the authors begin with the idea that normally transformative processes may not develop in a gradual, cumulative manner, such as the implementation of digital tools in teaching [Hofer et al. 2021, 2]. They argue that changes “can be suddenly triggered by unexpected and compelling incidents or accidents that make up crisis situations,” such as in the case of the pandemic [Hofer et al. 2021, 2]. According to their view, this happens mainly because “[c]risis situations emphasize the strengths, uncover the weaknesses, and lead to progress” [Hofer et al. 2021, 2].

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In the same vein, Barrett-Fox et al. positively assess this “shift for teaching” in terms of the acceleration of “the use of digital technology,” whose potential may be regarded as important “for online learning to bring about new pedagogical approaches” [Barrett-Fox et al. 2020, 154] in the post-pandemic. Barrett-Fox et al. emphasize the importance of transitioning from a “restoration” to an all-encompassing “transformation” of teaching practices. This awareness of new approaches and methods to engaging students comes from the realization that during the lockdown, “it became painfully obvious that we could not just do the same thing. Some assignments were no longer possible. Some expectations were no longer reasonable. Some objectives were no longer valuable” [Barrett-Fox et al. 2020, 161–162]. Thus, they not only discuss the potential benefits of online learning to foster new pedagogical approaches [Barrett-Fox et al. 2020, 183–184] but also how such a shift allows increased access to educational resources and opportunities for students to engage in deeper learning. At the same time, they highlight potential drawbacks, such as the risk that digital technology may exacerbate existing inequalities and the need for teachers to acquire new digital skills [Barrett-Fox et al. 2020, 185–186]. Their contribution joins those who call for further research into the implications of the pandemic and foresee a positive outcome from the wider adoption of online learning and new pedagogies connected to it.

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For their part, Lohr et al. carried out qualitative research to “address the lack of systematic research on digitally supported learning activities and the institutional and personal factors associated with their occurrence in higher education” [Lohr et al. 2021, 2]. Their broader aim was to assess the degree of familiarity of teachers with technology in higher educational environments, and this allowed the identification of three distinct teacher roles: “powerpointers”, “clickers”, and “digital pros” — each of which was shown to be more or less comfortable in the use of digital technologies for teaching purposes. This differentiation also suggests that implementation is not a one-to-one relation and does not necessarily lead to digital pedagogy, even when there is space for digital pedagogical innovation. [Careaga-Butter et al. 2020] considered the degree to which digital tools and resources that contributed to online education during the pandemic can continue in the post-pandemic future. This is possible only if teachers are willing to adopt and integrate them into their teaching practices and are prepared to offer students the guidance and support necessary to ensure their success in their studies. Together with the need “to collaborate in the construction of [...] a new mixed educational paradigm that can face the post-pandemic context and meet the new demands and

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requirements of the 21st century,” a good-faith effort to integrate digital technologies into the classroom is the only way to achieve a “true online education” in the terms they define [Careaga-Butter et al. 2020, 29].

COVID-19 was not the sole prompt for using digital tools to teach and learn. For instance, Torsello, Ackerley, and Castello [Torsello et al. 2008] and Forti [Forti 2023] have already proved the usefulness of integrating corpus management programs designed for linguistic analysis into teaching linguistics and translation. Social media platforms such as X (formerly known as Twitter) have also proven to be beneficial both for teaching and learning purposes [Gleason and Manca 2020] [Rinaldo et al. 2011]. Notably, the cases mentioned above are the only examples we found where advanced tools not primarily intended for pedagogical purposes have been repurposed for educational use. Addressing this gap presents an opportunity to expand the array of available resources for educators, potentially enhancing the quality of the teaching and learning process; in our case, it involved the unconventional implementation of Textual Communities in the university classroom environment.

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What is Textual Communities?

Textual Communities is an online application designed for the needs of textual scholars working with texts, mainly found in manuscripts, in multiple versions. It was first established as a project at the University of Saskatchewan with funding from the Canadian Foundation for Innovation (CFI) and support from the U of S’s Digital Research Centre. Its purpose, as described by Robinson, Nelson, and Klaassen is to “provide the infrastructure and tools to allow anyone, anywhere interested in a text to contribute to its study, and thus to become part of a community working together” [Robinson et al. 2012]. As such, it integrates tools for the transcription, collation, regularization, and publication of scholarly editions using a social-network-like model. Since Textual Communities is available online, the system has been ideal for large collaborative projects where participants work asynchronously and (potentially) at a physical distance. It has a component that provides version control by recording the source, time, and responsibility for changes — although, unlike Google Docs, Textual Communities is not optimized to allow real-time simultaneous editing of a single document (making it more similar to GitHub). Instead, the system keeps track of different versions of transcriptions and records times, duration, and responsibility. In addition, the data created within the communities is made available for “unrestricted commercial as well as non-commercial use” [Robinson et al. 2012].

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What sets Textual Communities apart are two features: its integrated participant- and document-management systems, and its mapping of the fundamental structure connecting documents and texts. These reflect two core principles: that assembling large corpora is best achieved through well-managed communities of contributors, both academic and non-academic; and that the usefulness of the corpus depends on clearly articulating the relationships between materials. Textual Communities is designed to organize multiple participants around shared editorial projects. It supports relational structures ranging from tightly controlled editorial teams to loosely organized crowdsourced communities — making it ideal for both classroom use and long-term research. The name “Textual Communities” therefore highlights the importance of community aspects in textual editing and scholarship, which is one reason why the system is easily adaptable for classroom environments. Since the system’s inception in the 2010s, various projects have welcomed collaborators from around the globe. For long-term enterprises like the Canterbury Tales Project, more than one hundred and twenty participants have joined Textual Communities since the implementation of its latest version in 2014. These collaborators are mostly transcribers who have been trained in TEI-XML as well as in paleography and Middle English. The system has been tested, and up to forty participants have been logged into a single project simultaneously, but there is no reason to believe that higher numbers would not work either.

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How did we adapt Textual Communities to the classroom?

Although the goal of a paleography course, traditionally and primarily, has been to train students in the interpretation of hand-written documents, there has always been an element of research apprenticeship involved. Medieval and literary manuscripts are not objects most individuals encounter outside of a research context (i.e., by requesting access for research purposes from academic libraries, museums, and private collectors), and the conventions used to track student observations — such as the Leiden transcription conventions — are those used by researchers (e.g. [Wilcken 1932]).

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Today, digital transcription is the standard for projects interested in text comparison and analysis, whether their outputs are released in print or digitally. Although the study of paleography requires reading handwritten materials and identifying scripts and scribes, paleographers increasingly find themselves working within digital environments that need their own subset of specialized knowledge. In adapting Textual Communities to the paleography classroom, we continue this tradition. At the same time, the more complex needs of a digital environment — which require coding consistency and controlled markup — necessitated that we also teach our students some basic information about computer markup and encoding systems, with particular emphasis on TEI-XML as the standard used for digital projects. These classes were led by Daniel Paul O'Donnell, a former Chair of the TEI consortium. Beyond this basic computational instruction, a series of additional decisions were required in order to implement Textual Communities — which was not designed as a pedagogical tool — into the classroom.

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For this particular class, for example, the transcriptions did not need to be further processed or published, and their long-term preservation was not required (indeed privacy regulations at the University require records of student work to be destroyed at set deadlines after the end of a class unless additional permissions have been granted). We thought, therefore, that Textual Communities Sandbox offered an appropriate environment for the students' work (indeed, this is the version we recommend for anyone testing the software or working on short-term mini-projects). This has most of the same functionalities as the production version: There are no limitations on creating communities by any interested parties, but it does not provide archiving and publication facilities. Although it would have been possible to use the production version with the same effect, we chose to create the course within the experimental space. After all, the primary purpose of its use was beyond the regular implementations of Textual Communities but still required a centralized system that would keep track of work being done and completed by students, as well as of the hours worked and every change implemented in the texts. Because of its versioning capabilities, Textual Communities allowed us to track in real-time the work being done by the students, either in the classroom or outside of it. As of March 2025, the sandbox environment referenced in this study has been retired. All functionality described in this article is now available through the platform formerly known as the *Textual Communities Production* version. The primary site is <https://textualcommunities.com>; the address <https://textualcommunities.org> now redirects to this site

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Class structure

Lessons were structured in three-hour blocks with a short break. The first part of each lesson was dedicated to the history of a particular script, its characteristic features, and the changes in writing technologies during that period. The course began with Old English manuscripts but also included Latin, Old French, Old and Middle English texts. To accommodate each script, we discussed the evolution and use of specific characters in each period, as well as contemporary abbreviations and their meanings. Generally, each lecture concluded by showing particularities present in sample pages which students would then transcribe, including ambiguous signs and extra-textual features (e.g. damage to the manuscript, scribal corrections, etc.) that might cause difficulty.

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The rest of the class was dedicated to practical transcription, during which time each student worked on their individual transcriptions. The setup of Textual Communities focuses on understanding the text as an instance of a work preserved in individual folia within a manuscript (Work/Manuscript/Folio; see Figure 1), but this is not practical when one expects students to work mostly independently of each other.

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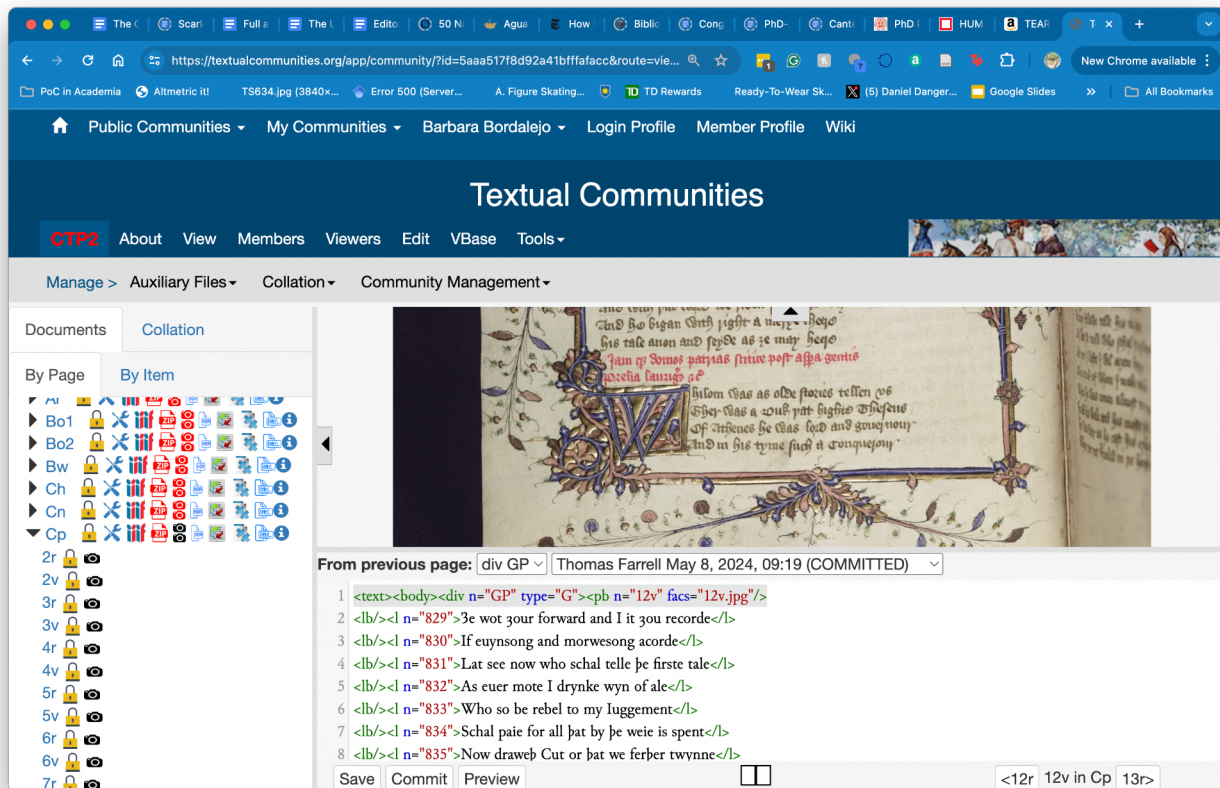
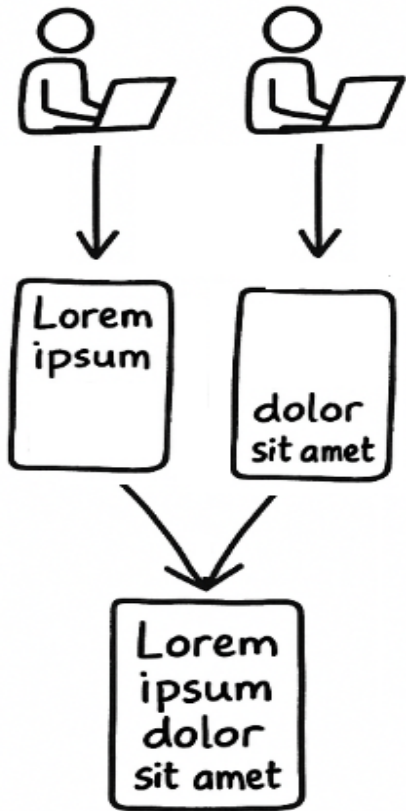


Figure 1. Textual Communities screen capture showing the ontological structure “work/manuscript/folio.”

In production environments, the point of collaboration within Textual Communities is that different participants work on different manuscript passages or, if they work on the same, that they work on different parts of the workflow (e.g., transcribing, checking, etc.; see Figure 2). It is also assumed, in most cases, that contributors will use their technology (i.e., computers, operating systems, etc.), albeit with minimal technological requirements. In a classroom environment, however, neither of these assumptions is true. First, the students are all learning the same skills from the same manuscripts, meaning that the community works in parallel rather than serial in a production environment. Second, accommodation and equity concerns necessitate that the system be adapted to allow students to use their own technology or utilize university-provided equipment.

Production



Classroom

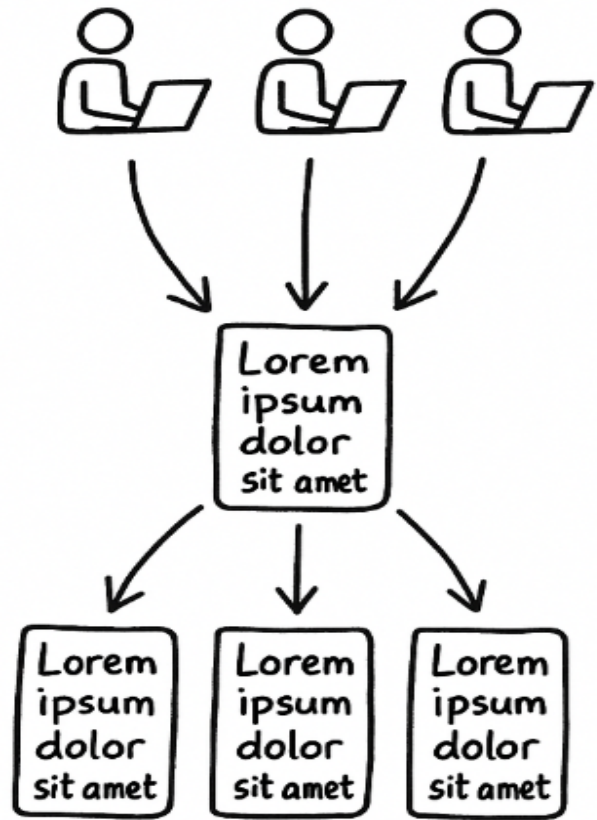


Figure 2. Illustration of the different workflows for production (where multiple people work on different parts of a document) and classroom (where each student transcribes and is evaluated on the same parts of the same document).

Our classes were scheduled in a lab equipped with Apple computers to ensure that students had access to sufficient computer power, regardless of their personal means. But in many cases (indeed most) students preferred to work on their laptops or tablets — in some cases, using special adaptations required for various accommodations. Before the beginning of the semester, we registered individual students with Textual Communities and added them to a community called “Paleography2023.” This allowed us to upload manuscript images from various sources and place them in separate folders, each corresponding to a particular student. The images were selected to correspond with the topics and chronology being followed in class (a list of the texts used for our lessons can be found in [Bordalejo 2024]). Instead of separating the pages according to manuscripts as would have been done in a production environment, we created individual folders for each student and populated them with images of the different manuscript pages assigned to the class (see Figures 3 and 4, and cf. Figures 1 and 2).

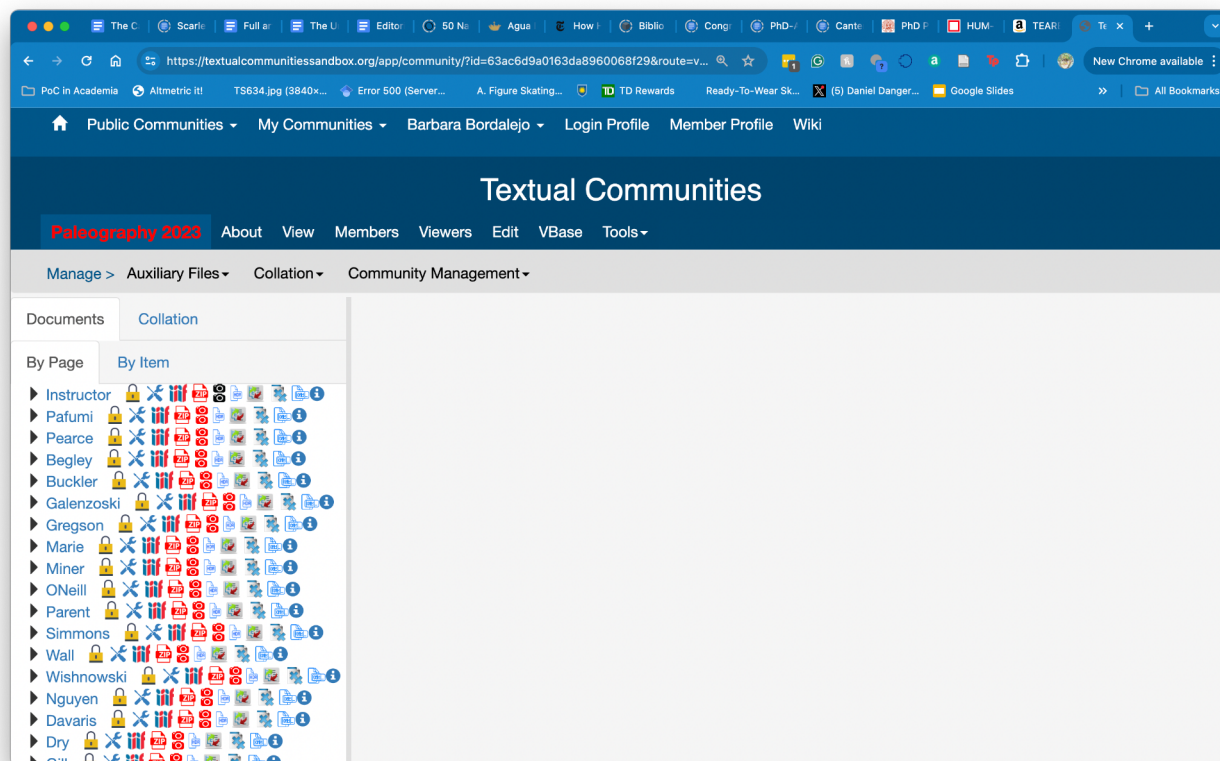


Figure 3. Textual Communities screen capture showing the modified structure, “course/person.”

During the practical portion of the class, we walked around the classroom, ensuring that students could make sense of the text and answer questions. Frequently, questions led to conversations about interpretation and misinterpretation, opinions, and more advanced discussions about the implications of different transcription choices. Students often shared their perspectives on the text and its interpretation collaboratively. Each student was working on the assigned pages for the day but was encouraged to work at their own pace. Although, as an instructor, one might prefer to keep students working at a similar pace, one of the significant advantages of working within Textual Communities is that students can take ownership of their time and choose when and how to work. This is particularly noticeable towards the end of the semester, as students have gained confidence and are less hesitant to make their own decisions.

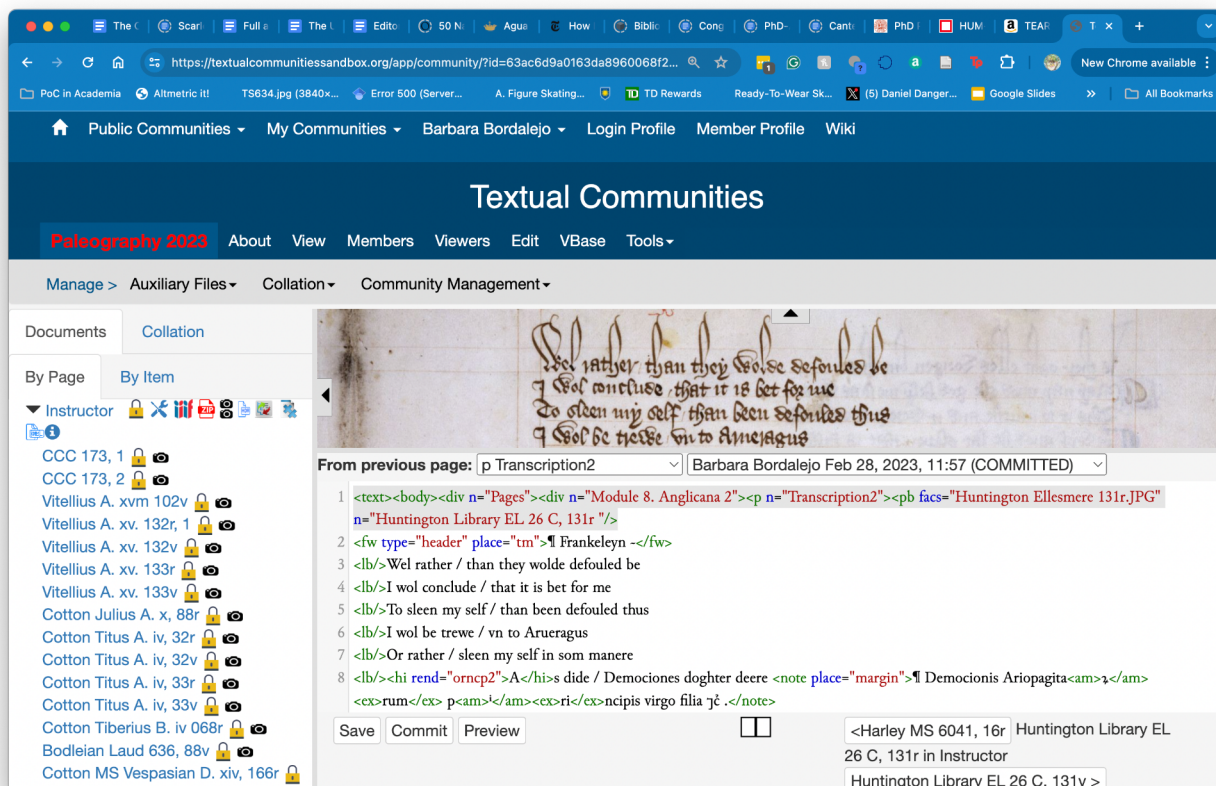


Figure 4. Textual Communities screen capture showing the modified structure, “course/person/folio.”

If particular manuscripts turned out to be challenging, the class swapped completed transcriptions for peer correction as the class as a whole read the text together. A few students wanted to pair up outside of class for peer correction. If this was requested, the professor or teaching assistants could assign their peers’ transcriptions to them for review within Textual Communities. A record of the changes made to the student’s original transcription would be visible, as Textual Communities has a version control system that allows users to revert to previous versions so that changes made are visible.

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Checking student work

Although it might appear that a system allowing the transcription of primary sources would be intrinsically geared to paleography class, there are no mechanisms within Textual Communities to evaluate the accuracy of the transcription of individual characters. This required that checking and evaluation be done independently of the system by the instructor(s) and teaching assistant(s).

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From an instructor’s perspective, the biggest drawback of Textual Communities is that it does not have a feature to correct the submitted transcriptions automatically. Although we do not dismiss the desirability for pedagogical purposes of implementing a correction module within the system, this is not a requirement for classroom use, as correcting individual transcriptions is not a particularly onerous task. Ultimately, we employed three methods of correction: instructor correction, peer correction, and self-correction. After all students had submitted their transcriptions, the instructor read the manuscripts aloud. This enabled students to self-assess, correct their work, and explore various transcription options. We also tried transcription exchange, during which students gave each other access to transcriptions to evaluate each other’s accuracy.

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During the semester, as students became more proficient, they were encouraged to revise their transcriptions to ensure they were as accurate as possible. At the same time, they were given different choices: to retain all abbreviations, to

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expand them, or to use encoding to reflect both states. We discussed the advantages and disadvantages of each approach and why they might choose one over the other. These techniques not only maintain students' engagement but also offer an opportunity to test acquired skills in self-guided work. We acknowledge that we follow in the footsteps of proponents of critical digital pedagogy, as discussed below. So, we aim to emphasize students' roles in their educational journey. In this light, we strive to foster students' independent thinking and self-determined work. Although the initial aim of implementing Textual Communities was to ensure that the class could easily continue online if required, we soon realized its enormous potential to exercise student self-regulation, independence, and confidence-building. The practical format of the class, combined with supervised independent work, was well received because it differed from most classes in our department, which typically focus on analysis and close reading.

Teaching assistant's perspective

To support the instructor in the process of providing constructive feedback and help students improve their skills, the role of the teaching assistant (TA) in this set-up is of great importance. First of all, TAs have to be aware of the course design and ideally contribute to it by working alongside the instructor. This collaboration can yield many benefits not only to their overall professional development as prospective educators but also to enhance course delivery. Being liminal figures between students and instructors, they can leverage a privileged observation point, which enables TAs to provide insights from both perspectives — the instructor's and the students'. TAs must actively participate in class activities, almost as if they were enrolled students, to assess progress and identify issues effectively. This involves transcribing texts before the start of each class, which allows the TAs to understand the challenges posed by each transcription. Since each scribe's work is unique, being familiar with potential problems in a text enhances their ability to respond quickly and effectively. This proactive approach ensures that TAs are well-prepared to support students and address any difficulties during the course. While the TAs' presence enriches the learning experience for both students and the TAs themselves, it is essential to avoid the drawback of students becoming overly dependent on them.

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Another of the domains where TAs can prove very beneficial to the course is the evaluation of the difficulty of each task as well as the weekly workload. As the course progresses, the TA importance does not diminish but instead changes according to different factors. When the students begin the course, their unfamiliarity with both the tools (XML-TEI encoding and the peculiarities of the Textual Communities Sandbox, above all) and the scripts (insular minuscule, caroline, gothic, etc.) makes the TAs fundamental in providing the early personalized and timely feedback that is essential for the development of these skills. The students may also struggle with the discontinuities that characterize each period. For instance, once the students are well acquainted with the variations of *gothica textualis* they will then have to readjust themselves to the knowledge of a fairly distinct hand such as *anglicana*. This struggle, together with the fatigue of the semester, usually referred to as “exhaustion” or “burnout” in the literature [Galbraith and Merrill 2012] [Law 2007], often requires diversified types of additional support to students, especially considering their different learning styles and eventual needs.

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This means that generally TAs serve as mentors for students. Having been involved in transcription projects and having first-hand experience of the issues the students may encounter, they provide hands-on guidance, troubleshoot technical problems, and encourage students to explore the tools autonomously. This last part is fundamental since the pedagogical role should always be that of offering ongoing support while avoiding the risk of creating a situation for which the students solely depend on the TA. In line with the self-centred learning strategy adopted by the course, TAs focused on empowering students to develop their problem-solving skills and independence rather than providing solutions too readily. This balance ensured that students benefited from the support of TAs without compromising their learning and growth, considering that students' learning autonomy should always be at the core of their activities, helping students develop self-confidence and the necessary skills to navigate the challenges of digital transcriptions autonomously. This relates to fundamental metacognitive skills — the awareness of one's own learning processes — and TAs must let students develop these skills in their own ways. For example, bridging the gap between theoretical knowledge of a handwriting's characteristics and the practical application of that knowledge to understand the idiosyncrasies of a given manuscript via the student's own transcription decisions.

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Student's Perspective

In both instances of the course offered (Spring 2023 and 2024), the introductory class was centred around explaining what transcription is and its different types (diplomatic, etc.). Textual Communities was not introduced to students immediately. Instead, they were presented with an image of a page of “Alice’s Adventures in Wonderland” in Lewis Carroll’s handwriting, with the text meandering and curving across the page. They were asked to transcribe the page onto paper by hand. This was an initial challenge to see what students perceived as essential aspects of transcribing. Would they keep the shape of the words on the page? Would they copy the page numbers on the original image’s corners? Would they include the virgules and dashes used? This practice enabled students to understand how transcribing is an act of interpretation carried out with regard to a larger purpose and how multiple transcriptions can exist for a single text. Indeed we use this method in teaching other computational skills to students at the University of Lethbridge: by beginning with an illustration of the problem a system (such as TEI markup) is intended to address (such as recording an interpretation of a document) and then asking students to come with their own approach before teaching them about existing methods. We believe that this allows students to understand the canonical systems better by illustrating the problem they were developed to address.

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With the problem in mind, students were then introduced to the Textual Communities platform. While the instructor and TAs initially guided the students on how to use the website’s basic features — how to access their assigned pages, save their work, etc. — the students were left to decide how their transcriptions would look. They had to decide what they wanted to include in their work. For example, if a line was crossed out and new text was written above the deleted text, they had to decide whether to include both parts, one or the other, or indicate the deleted text. Student transcriptions often differed significantly from one another due to the decisions that had to be made throughout their work. The instructor and TAs emphasized that making different choices about what to include or not include was not necessarily right or wrong; it was just a matter of interpretation. Perhaps the best statement about the student perspective in our course comes from one of our students herself, Victoria Simmons, quoted here with permission:

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As the Rural Diary Archive [a project the student was looking at] suggests, crowdsourcing of transcription can be accomplished not only on a global or national scale but also on a smaller, local scale by using a classroom setting. A similar type of collaborative experience was created in our classroom when we focused on discussing certain parts of manuscripts that were comparatively complex to transcribe. When there was a particular section of our assigned manuscript that was more difficult — due to multiple adjacent characters written in minimum for example — the class would be encouraged to individually express to the class how they had interpreted the characters when they were transcribing. In most circumstances, this resulted in many unique interpretations expressed by classmates as to how they visually followed the connection of ligatures into what they believed may have been the scribe’s intended characters. By listening to multiple people voice their reasoning behind transcribing the writing in the way that they had chosen, the entire class was invited to look at a variety of possible interpretations for each transcription. The most important result of this experience is that each individual is challenged to question their own method of transcription. This technique is beneficial to the field of paleography because it prevents transcribers from settling on a single, definitive – and potentially incorrect or incomplete — perspective of the transcription. The benefit of this experience is amplified when it comes to global crowdsourcing projects, such as those mentioned above, which allow both beginners and experts to provide a greater variety of original viewpoint. (Simmons, student paper, 2023)

As Simmons notes, “many unique interpretations [were] expressed by classmates ... By listening to multiple people voice their reasoning behind transcribing the writing in the way that they had chosen, the entire class was invited to look at various possible interpretations for each transcription. The most important result of this experience is that each individual is challenged to question their own method of transcription” (Simmons, student paper, 2023). Viewing other students’ pages and their work on Textual Communities also allowed those who were not present in class to still be a part of this experience of seeing other people’s interpretations of the text.

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Students were also encouraged to work together on transcriptions and to frequently ask questions as the instructor and TAs were in the room for the working period. As described by Simmons, a “collaborative experience was created in our classroom” (2023). This, combined with the previously established attitude of transcription as interpretation, established

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that the classwork was not focused on being “right” or “wrong.” Instead, the priority was to learn important characteristics and traits of the various hands taught and try their best to complete the assigned pages. Some students initially seemed apprehensive about the lack of a “grade” they would receive for their transcriptions. As a result, many of the early transcriptions took students a long time to complete. To alleviate this concern, the beginning of later classes was devoted to identifying common errors among multiple students. In both course iterations (Spring 2023 and Spring 2024), the instructor and TAs adjusted the amount of correcting done to transcriptions depending on how much the students requested feedback for their work. Textual Communities enables instructors categorized on the platform to access student pages and edit or add comments to their transcriptions, allowing students to view comments about their work outside of class time.

Accessing Textual Communities outside of class time from any computer is one of the significant benefits of the platform, allowing students to work outside of the set class-time working periods. They could sign in to their account from any computer. This, combined with the rule in the course that the pages only had to be done by the end of the semester, allowed students the flexibility and freedom to complete coursework at their own pace. This student-centred approach was enabled by the flexibility offered by the Textual Communities platform. The collaborative and accessible platform allowed students to work together with classmates and consider the many possible interpretations that transcription might involve. It also allowed students to access their work and view corrections or comments made about it on their own time, which might contribute to easing students’ worries about periods in the semester that required more of their attention — they could work on their pages at any point, as long as all of them were completed by the end of the semester. In short, using Textual Communities as a platform encouraged students to collaborate, consider the interpretative process of transcriptions, not focus too hard on mistakes they might have considered themselves to have made, and gave them the freedom to work on assigned pages at times that worked best for their personalized schedules.

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Discussion

The core innovation in using Textual Communities for teaching is that students make their own research decisions about what to transcribe and why, with instructors supporting them in implementing these decisions. As [O'Donnell et al. 2016b] argue, the traditional division between “research” — i.e., what the professor engages in and is protected by academic freedom — and “teaching” — i.e., when students are told what to do and how to do it — misrepresents the nature of Humanities scholarship and limits student learning by preventing meaningful engagement in research in a meaningful way. This practice also reflects what we call the “First Law of Humanities Computing,” which refers to the fact that any application of computation to a humanities problem seems to require a fundamental examination of the purposes behind the original activity [O'Donnell et al. 2016a]. Asking students to consider why they want to transcribe these manuscripts, what they hope to achieve by doing so, and how they can match their methods to their goals, is a way of asking them to engage in critical reflection on their own learning — both within the course itself and, of course, more broadly within their programs. Unlike non-digital work, where intuition and analogy often can serve as guides, digital work demands conscious design and algorithmic thinking. By allowing students to exercise judgment and pursue their own questions, Textual Communities collapses this gap. It invites students to engage in the same intellectual freedoms that define research itself.

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As we described earlier, this meant that there were numerous active discussions on the implications of specific choices during the transcription process. While the lecturing and grading resembled more traditional class structure and dynamics, which relates to the intrinsic nature of any paleography class, the use of Textual Communities provided students with tools and methods — high-resolution, digital facsimiles, peer dialogue, collaboration, and meaningful input into the methods they used to transcribe (scribal corrections, unclear textual segments, a change in scribal “hands,” and letter forms) — that allowed them to set their own research questions, exercise their viewpoints and interpretations, and pursue them according to their own critical judgments.

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The version control system helps students to track their own variants of the text and can reconstruct their train of thought regarding their transcription work (for instance, where the student might interpret a mark modification from a scribe or ignore it). In contrast to traditional approaches to paleography, Textual Communities prompts students to

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reflect on their actions as they are taking place in an even more profound manner. The reason for this is that it compels the students to face the logic of the machine and its one-sidedness, which forces fixed choices where human interpretation would allow ambiguity, requiring students to decide definitively between possibilities that a manuscript might leave open. For instance, the XML-TEI markup language allows for hundreds of ways to encode features within a single page, with variations such as different forms of damage to the page (such as water damage, erasure, fire, animal, scraping, etc.). This level of critical engagement with the problem — the problem-solving itself — creates a beneficial dialogue, which involves all the members, from the experts (teachers and TAs) to the students' peers. Some of the students within the classroom already have an intuitive understanding of what is going on, and they have an opportunity to share this with the class. This peer collaboration throughout the course allows students to see how others are interpreting and solving the problems they see on the pages. For instance, students were asked to attempt to recognize the material of the page on which the text appeared (whether parchment or paper). As a result, interpretative uncertainty in the document can be rendered into different solutions. One student might interpret a letter form completely differently from another — for example, reading *pride* instead of *brid* (a variant spelling of “third”) based on the common confusion between thorn and p — or assume a sense of intentionality from the scribe regarding what another might view as an error.

In the foreword of the collection *Critical Digital Pedagogy* edited by Stommel, Friend, and Morris during the pandemic [Stommel et al. 2020a], Benjamin argues that such experience functions as a “portal, a gateway between one world and the next” [Benjamin 2020] leading to a greater integration of digital tools not initially developed for teaching purposes in education — as in the case of Textual Communities. In the introduction to the same collection, the authors also state that “[n]othing in edtech was built for humans. Thus far, our edtech machines were taught only to speak to other machines” [Stommel et al. 2020b]. An example of this is represented by video conferencing tools like Zoom that “were not built to meet the moral challenge of a present moment like this one” [Stommel et al. 2020b]. They have allowed, however, for synchronous collaborative learning experiences and virtual classroom discussions without replacing the classroom, which is and remains “unique” and distinct from “the architecture of the Web” [Stommel et al. 2020b]

This concept of the uniqueness of the classroom, “with all its limitations” [hooks 1994, 207], makes it a “location of possibility,” that allows for both the empowerment of social actors and the disruption of traditional forms of teaching. In hooks’ view, education should be a space for freedom and ultimately a transformative process. She advocates for engaged pedagogy, which understands classrooms as a site for self-guided exploration and mutual participation. While she extends this approach beyond a traditional academic setting, our practice of using Textual Communities has been an attempt to integrate these suggestions meaningfully. We have kept hooks’ perspective in mind in constructing this environment for our paleography class. One of our main objectives was to try and “responsibilize” students in the way defined by [Keralis 2018, 291]. For Keralis, renegotiating the “social contract” between professor and student within the classroom is one of them. Keralis introduces this concept at the outset of the article, highlighting the limited roles each party can ethically operate [Keralis 2018, 287]. According to this contract, the relationship between the professor, responsible for the course content and grading criteria, and the student, seeking to acquire skills to advance their future career prospects, resembles in its fundamental features a customer-provider neoliberal transaction. For Keralis, precisely this transactional dynamic is utterly problematic since it creates a power imbalance, where the professor supervises, and the student works at the pace dictated by the employer, potentially for the professor’s benefit [Keralis 2018, 287–288]. Moreover, this power imbalance makes it difficult for students to raise objections, and thus a need to acknowledge and constructively engage with this issue for the benefit of both students and professors [Keralis 2018, 288–289]. [Fellmayer 2020] stresses the significance of reflexivity in coping with this asymmetry by acknowledging one’s privilege and agency in benefiting from an inequitable society, which impedes meaningful disruption. Therefore, our focal point was to create a transformative educational experience for their students through digital tools in the framework established in the field of critical digital pedagogy during the pandemic.

Critical digital pedagogy is characterized by a deep engagement with the use of tools and technologies, while encouraging students to question and reflect on those same tools and methods [Stommel et al. 2020b]. This approach represents an expansion of the work of Paulo Freire, a Brazilian educator who criticized educational institutions for their tendency to silence or marginalize dissenting voices in his seminal work *Pedagogy of the Oppressed* [Freire 2000] and

was exiled for his views, being deeply committed to rethinking education and advocating for more inclusive and equitable learning environments. Critical digital pedagogy seeks to dismantle impediments to learning. It argues that it is especially fruitful to probe the ground and identify the gap between theory and practice, but of course, it does not suggest that there are easy answers to the challenges of remote learning. While it can be helpful, it must be employed thoughtfully to be effective. Stommel, Friend, and Morris state that:

The word “pedagogy,” as we use it, defines the work of education at the intersection of theory and practice — the act of teaching that derives from reflection and which inspires reflection again. Pedagogy is both where “critical” and “digital” terminate, and also the whole terrain of teaching. [Stommel et al. 2020b]

The triad “critical,” “digital,” and “pedagogical” must be kept without privileging “digital” at the expense of “critical” or of “pedagogy.” Suppose one only emphasizes the critical aspect of teaching. In that case, there is a risk of reducing it to a mere instrument, relegating the task of reflecting on teaching to the humanities and separating critical thinking from STEM fields, for instance. This narrow approach not only limits the potential impact of critical work, but also underestimates the vast array of teaching and learning activities that require criticality and a commitment to dismantling institutional or societal obstacles to learning [Stommel et al. 2020b]. However, the ideal process of dismantling barriers to learning has been further complicated by the challenges that have arisen during the pandemic period, which have added new layers of complexity to a pre-existing multifaceted landscape to let students take ownership of their learning and promote freedom in the classroom.

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Effecting this is not necessarily easy, as Maha Bali argues in the same collection [Bali 2020], suggesting it is too easy to focus on theory and not enough on praxis. As she claims of her teaching context at the American University of Cairo: “[C]ritical pedagogy [...] is not about knowing how to do everything right or getting it right the first time, or every time. It is about putting faith in our learners to take control of their learning and teach us, each other, and themselves in the process” [Bali 2020]. Essentially, this learning approach is based on the fact that she does not “make everything *explicit* on the first day,” stating the importance of “learning from each other” and having “flexible and negotiable” syllabi, as well as “the importance of dialogue and talk about respectful disagreement and the importance of class participation” to continuing to “explore the dungeon” in an autonomous manner ([Bali 2020] emphasis in the original) Moving by these premises, we think that digital technologies are an ideal means to promote student autonomy, as they provide a toolkit for students to navigate the learning process independently. This idea is further echoed by Cathy N. Davidson’s suggestion to structure a “student-centered class” that utilizes technology to the extent desired by the instructor, which allows the instructor to maintain control while also empowering students to take an active role in service of their pedagogical needs at the same time fostering a dynamic and rewarding learning environment that is flexible and effective [Davidson 2020].

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Pete Rorabaugh (2020) draws from the idea that teaching is a moral act with significant implications for educators, including the ethical dimension, to argue that a critical approach to pedagogy is consistent with the goals of a digitally-infused curriculum because digital culture offers that digital tools have the potential to empower students in the digital sphere by providing them with new opportunities for human connectivity and enabling them to refocus on how power works in the classroom:

Digital tools offer the opportunity to refocus how power works in the classroom. In its evolution from passive consumption to critical production — from the cult of the expert to a culture of collaboration — the critical and digital classroom emerges as a site of intellectual and moral agency. [Rorabaugh 2020]

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In Rorabaugh’s view, critical digital pedagogies aim to disrupt the conventional hierarchical structure of the classroom, allowing students to take charge of their learning and play an active role in their education. There is a moral obligation to engage learners in a democratic discovery of their own empowerment. By utilizing digital tools, students are given the opportunity to interact and collaborate with co-learners across various platforms on the internet. However, this kind of learning environment requires a critical pedagogue who is knowledgeable and skilled in selecting appropriate tools and

activities and can blend them with an interactive learning community.

For us, the pandemic served as a catalyst for exploring new approaches to teaching and learning that prioritize critical thinking, student-centredness, and the thoughtful use of digital tools. Through the practical application of these principles, we have been able to create a new kind of classroom environment that is responsive to the post-pandemic needs and realities of our students, and that fosters engagement, collaboration, and meaningful learning experiences. As we continue to navigate the ongoing challenges presented by the pandemic and beyond, these principles will continue to guide our work as educators and serve as a foundation for innovative and effective pedagogical practices.

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Conclusion

The implementation of Textual Communities as an environment to teach paleography proved to be advantageous from various perspectives. It is true that if we were ever to face a situation similar to that of March 2020 again, we would be able to move into online teaching almost effortlessly. However, using an online environment as a teaching resource has other advantages. Mainly, this environment enables students to find their own work rhythm.

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Because paleography is a skill that improves with practice, it is not uncommon for beginners to experience significant difficulty and advance at what might seem a slow pace. As students practice, they are likely to work more efficiently and accurately. By using Textual Communities, our students can manage their time in a way that suits their personal circumstances. For example, someone might start a transcription during the allocated class period but not be able to finish it. At home, they can access the system and work at convenient times with each change recorded in the versioning component. As the students became familiar with Textual Communities, they were able to make arrangements for collaboration with others and create a system of peer evaluation and support to help each other become more accurate and achieve better results. Fostering this cooperative spirit led to the growth of the parties involved, not only in the study of paleography but also in their development as researchers and individuals.

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It is certainly the case that the pandemic induced an acceleration in the usage of digital technologies in teaching and learning. While their initial adoption during the pandemic may have been driven by necessity, the tools' effectiveness in enhancing the learning experience can still be effective in the post-pandemic period, as we have demonstrated in our paper. The potential for innovation and renovation implicit in many arguments regarding the digital turn during the pandemic permeates initiatives such as ours. In seeing the pandemic as an opportunity to encourage educators to creatively utilize available resources, we transformed the challenge into an occasion for reorganizing the classroom space into a hybrid environment. The uncertainties of a post-pandemic world have compelled us to be more imaginative and resourceful, prompting us in ways we might not have considered before. We have been reminded that we can adapt successfully and find new ways to engage our students with our subject while giving them a sense of independence and freedom.

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