DIGITAL CLASSICS ONLINE

EpiDoc and Epigraphic Training in the Era of Remote and Hybrid Teaching

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Abstract: The need to move – entirely or partly – online most of the academic activities due to the COVID-19 pandemic forced the epigraphic community to come up with new ways of delivering EpiDoc and epigraphic training remotely or in hybrid forms. Experiments over the past two years have resulted in a variety of teaching approaches, ranging from fully synchronous to fully asynchronous training events. The paper's aim is to illustrate such approaches and to explore their ramifications, also describing the various tools and methods that have been used over the past two years. The paper also addresses the lessons learned from the different experiences and from the feedback provided by the students, and it offers some thoughts on some sustainability issues related to remote and hybrid teaching.

Introduction/Background

The move to various forms of online working we have all made in the last years due to the COVID-19 pandemic has taught us new practices that we hope not to lose in our academic work going forward, and in particular where they regard teaching and training.[1]

For the purpose of this paper we shall discuss our experiences teaching digital epigraphic methods, in particular the use of the EpiDoc Guidelines and related tools, in international workshops. In addition to the maintenance of Guidelines, Schema, Stylesheets, the EFES publication tool and fora including mailing lists, the EpiDoc community has for the best part of the last two decades provided training, and recently a growing repository of free and open training resources in the use of text encoding for editions of ancient inscribed objects.[2]

A core assumption of most EpiDoc training programmes has been that students and other participants bring the basic knowledge of their epigraphic or papyrological disciplines, including the ancient languages, Leiden System or other conventions, publication traditions and scholarly tools.[3] This expectation of course relies on the pre-existence of epigraphic teaching or professional experience, and therefore training has generally been targeted at postgraduate students and postdoctoral scholars. EpiDoc therefore has mainly been taught in masters-level postgraduate courses, summer schools and project workshops, and pre-conference training days, and has attracted participants of all levels from students to professors.

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[2] All EpiDoc resources available from Elliott et al. (2006–21), https://epidoc.stoa.org (Last access 16.09.2022).

[3] Bodard / Stoyanova (2016).

Some training events however have also introduced archaeological methods, including sessions on photography, illustration, squeeze-making (the production of paper impressions of inscribed surfaces), photogrammetry, RTI or other 3D imaging methods, GIS and geographic annotation. Such workshops may also introduce epigraphic or papyrological skills, assuming a more novice student or non-specialist participant. Only a few graduate or undergraduate university classes in epigraphy have included training in EpiDoc as an integral part of the epigrapher's toolkit.[4] The impact of remote, hybrid or blended teaching practices on each of these kinds of training will differ, and be impacted by additional factors including funding model, availability of trainers and target audience.

The experiences and recommendations described in this paper have been influenced heavily by the preeminent *prodromos* – at least in the classics domain – of remote and flipped teaching resources, the Sunoikisis Digital Classics programme run out of Leipzig and London.[5] As well as featuring several online seminars on EpiDoc and related subjects in most years' syllabi, the resources, tools, and pedagogical methods of such remote, massively collaborative teaching provided a massive head-start to the online EpiDoc programmes we present here.

Approaches to remote teaching

In this section we consider a few different approaches to teaching remotely, ranging from fully synchronous, through hybrid or blended events, flipped classrooms with asynchronous components, to free-standing training materials available for use in self-directed teaching with little or no intervention from instructors.

Synchronous but online

A synchronous but online approach implies the transposition to the remote medium of the usual in-person activities, mainly without substantial changes in teaching methodology. Both teaching and exercises are carried out via video calls which are attended in real time by the trainers and trainees. Extra support is not necessarily provided outside of the scheduled video calls, nor are additional exercises required (although they might be recommended).[6] An example of this approach is the ENCODE Digital Greek and Latin Epigraphy Workshop, held online in Bologna in January 2021, which aimed to reproduce as closely as possible an in-person workshop.[7]

Largely asynchronous

A teaching model that tries to take advantage of the benefits of asynchronous (or "flipped classroom") teaching, while retaining the engagement and direct interaction of in-person teaching through real-time (present or video-conferencing), the largely asynchronous workshop covers an area in which most EpiDoc training we were involved with in 2021–2 fell. In this approach students are expected to make use of online teaching resources, whether videos, tutorials, drills, documentation, data-driven exercises, or other materials, in their own time. These are often supplemented by a range of real-time or asynchronous support sessions, whether through email, forums, or video-conference meetings, which both give guidance on the shape of the workshop and the programme to be followed, and provide responsive support to problems that arise, answer questions, drive discussion around practical and theoretical is-

4 Berti (2010); Sosin et al. (2015).

5 Vitale et al. (forthcoming).

6 On the limits of this approach see Monella (2020), 52–56.

7 Erasmus+ Strategic partnership for higher education *Bridging the <gap> in ancient writing cultures. ENhance COmpetences in the Digital Era*: https://site.unibo.it/encode/en (Last access 16.09.2022); 2021 workshop: https://site.unibo.it/encode/en/agenda/epidoc-workshop (Last access 16.09.2022).

sues including encoding, digital publishing and project management. The London-Bologna EpiDoc training workshop in April 2021 followed a model within this range,[8] and other training events in digital humanities at the University of London explored slightly different permutations of the largely asynchronous model.[9]

Completely asynchronous

Real-time with forum/email support

A completely asynchronous approach can imply the delivery of teaching via online teaching materials (including videos, slideshows and handouts) prepared in advance, to be watched or read by participants during the training event. Not only the teaching, but also the exercises are carried out independently. Support is provided in real time by the trainers via forums (such as a GitHub issue tracker, or YouTube live chat) or via email, ideally in dedicated mailing lists (such as the Markup List, or specific Google Groups or other mailing lists created ad hoc for the training events). Examples of this approach are the sessions of SunoikisisDC devoted to markup and digital epigraphy (see recently the Fall 2020 programme of Sunoikisis Digital Classics 2020–2021, especially sessions 2–3).[10]

Self-directed/MOOC

At the other extreme of asynchronous training is the completely self-directed programme of videos, tutorials, exercises, and other training materials, which participants are expected to follow in their own time, with no (or very loose) restrictions or deadlines. This model involves very little direct intervention from tutors, no real-time training, support or discussion sessions, and can face considerable issues of motivation leading to a high drop-off rate among students. This last is an issue that MOOCs, a highly organised example of self-directed, asynchronous training programme, try to offset with user forums, gamification, accreditation and other "rewards" for progress and completion. As far as we know there has been no attempt to teach EpiDoc in a completely self-directed programme, and (to our knowledge) there are no current plans to do so.

Hybrid i (classroom with online materials)

A hybrid approach (sometimes more technically termed "blended") implies the delivery of the bulk of the teaching via in-person lessons in class, which can be integrated with online teaching materials (videos, slideshows, handouts as downloadable PDF) that have been prepared in advance and that the trainees can watch or read outside of the lesson hours. Some guided exercises are carried out together in the class, followed by individual or group exercises to be completed outside the lesson hours. Additional support may be provided via dedicated forums or mailing lists, and the problems that arise during the exercises are discussed together in class.

Hybrid ii (some attendees remote)

The other axis on which a partly asynchronous and remote training programme is considered hybrid is where a mix of in-presence and remote participants follow the same material. Some instructors may also participate remotely in an otherwise in-presence workshop or semester, through being projected into a classroom via video-conferencing, supporting students through forum discussion or email lists, or design and delivery of asynchronous materials, exercises, project data and so forth. In practice, many hybrid and blended events may combine remote with in-person activities along both of these

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8 London and Bologna Online EpiDoc Workshop, April 12–16, 2021 https://github.com/EpiDoc/Tutorials/wiki/London-Bologna-April-2021 (Last access 16.09.2022).

9 Blaney et al. (2020).

10 SunoikisisDC 2020–2021: https://github.com/SunoikisisDC/SunoikisisDC-2020-2021(Last access 16.09.2022) .

axes. Examples of this approach are the second part of the Greek Epigraphy Master course and the Digital Lab for Classical Sources Master course held at the University of Bologna in October 2020 and in February/March 2022 respectively.[11]

Ramifications of moving a training event online

Moving a training event online almost certainly means making at least part of the learning activity asynchronous, and in our experience, it was most effective to move a large part out of real-time conversation. In particular, unidirectional teaching activities such as lecturing and demonstrating can efficiently be delivered via recorded videos or shared slideshows, which viewers can not only watch in their own time, but also pause, replay, and of course re-use for future events with minimal duplication of effort. It should not be ignored that there are also drawbacks to fully asynchronous teaching materials of this kind: the interactive features of even a lecture-format are lost – students cannot ask questions, do not experience the same immediacy of contact with the tutor, and perhaps most importantly cannot give real-time feedback that helps the presenter understand how well the audience is following and moderate their pace or content accordingly. As with all things, a trade-off in terms of benefits and losses will result from any decision to move materials online.

The asynchronous parts of the EpiDoc and other XML training held in the last two years have been delivered in the form of short video tutorials hosted by commercial and cloud services such as YouTube,[12] and open-access slideshows or decks hosted in a public Google Drive or PDF documents in a Git repository, for example.[13] The production of a large body of accessible materials was facilitated by the reuse of slides and tutorials from over fifteen years of EpiDoc training workshops and the openly licensed materials shared by dozens of authors from all of these events. These older materials often had to be revised or brought up to date, both because of the evolution of EpiDoc guidance over time, and to focus on the content chosen for the training event under development at the time of production.

The resistance from some scholars in other disciplines to make teaching material, publications and research data openly available[14] is less of a concern in digital epigraphy and related disciplines.[15] Nonetheless, a few questions inevitably arise relating to the intellectual property and usage rights of these videos and slideshows; some of these are more a question of consistency than new legal issues.

1. Whose names belong on the title slide of each presentation, and the related but not necessarily identical question of who owns the copyright to the slides. Our principle has been that anyone who was an author of however small a part of the slideshow, or of a slideshow that was partly repurposed in its creation, should be a co-author of the composite presentation. This (sometimes extensive) multiple authorship, along with the use of open licenses, has the added benefit of discouraging any contributor's employer from claiming the materials as "work for hire" and trying to claim institutional copyright restrictions over them.

2. What version of Creative Commons "some rights reserved" license should be applied to the presentations? On the principle that subclauses such as Noncommercial, ShareAlike or NoDerivatives each

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[11] Bencivenni, "Greek Epigraphy (1) (LM)," https://www.unibo.it/en/teaching/course-unit-catalogue/course-unit/2020/392137 (Last access 16.09.2022); Bencivenni, "Laboratorio digitale per le fonti classiche (1) (LM)," https://www.unibo.it/en/teaching/course-unit-catalogue/course-unit/2021/475437 (Last access 16.09.2022).

[12] EpiDoc Training Youtube channel: https://www.youtube.com/channel/UCHo7GnS0M1y7HG4NxnVFb2w (Last access 16.09.2022).

[13] EpiDoc Training Google Drive: https://drive.google.com/drive/folders/1HtRlMgbQ23RG8zHAb_IQF_IJigWMJDd6 (Last access 16.09.2022).

[14] The "Gollum effect", Monella (2020), 33, 59–60.

[15] Liuzzo (2019), 233–238.

place restrictions on the reuse of these materials that we want to be as widely and freely available as possible, we have argued that unless there are pressing reasons to restrict reuse in one of these ways, a basic Attribution license should be the default, and is used on EpiDoc presentations with very few exceptions.[16]

3. How should one handle versioning and transparency issues around presentations that are modified over time? This is a long-standing and ongoing problem, with several previous slide decks existing in multiple versions in different people's private Google Drive accounts, often forked so that competing improvements have been made to more than one version of the original file. The current tactic to mitigate this problem is to ensure that the title slide contains both (a) the names of all authors and contributors to the presentation, and (b) a "last edited" date acting as a timestamp to make it clear when the content was most recently updated. It is also important that any changes that would lead the presentation to become unrecognisable or incompatible with the archived version of a previous workshop that links to it, be instead forked into a document with a new URL, to preserve the integrity of links in old programmes.

As compared to live presentations at an in-person, real-time training event, pre-recorded asynchronous video tutorials can usefully be broken into relatively short, free-standing parts. Videos can then be offered in a sequence, that students or other viewers can choose to watch in their own time, sometimes in a different order or even skipping some segments altogether. Videos of around ten to twenty minutes are perhaps the best suited to this, while a single non-stop presentation of 35 minutes or more should be a rather rare exception. It is much more convenient for a viewer to note that they have reached the seventh video, and pick up from there at the next opportunity, than to pause a video 23:05 minutes through, and trust the browser to continue from the right point upon their return. Even more significantly, when returning to rewatch a tutorial or practice walk-through for reference or recap, individually titled and captioned videos are easier to navigate than long videos that contain multiple sections or topics.

Another aspect that moving online has had an impact on is the size of workshops. The elimination of the need to travel to the workshop location and the consequent absence of travel and lodging expenses have made participation both easier to organise and more affordable for a greater number of people, widening the geographic area of provenance of the applicants. Moreover, it results in greater inclusiveness, enabling the participation also of students who otherwise would not have been able to attend in-person workshops for various personal reasons, among which finances, access to travel visa, health and caring requirements that make travelling hard or even impossible.

Moving online, participation becomes possible at an almost worldwide level, with the most significant limitation posed by the different time zones of trainers and attendees, which have an impact on all events that are not entirely asynchronous. From the trainers' perspective, this can encourage the organisation of joint workshops co-hosted by institutions based in different countries (having compatible time zones), as it has been in the cases of the London-Bologna and Köln-Sofia EpiDoc workshops, held online in April 2021 and September 2021 respectively. From the attendees' perspective, an effective nearly worldwide participation can be made possible by scheduling the synchronous sessions in time slots that fit the time zones of at least four continents (Europe and Africa plus North and South America, or Europe and Africa plus Asia and Oceania, or North and South America plus Asia and Oceania). This could be obtained by concentrating the synchronous activities in the most convenient half of the day, or by scheduling more identical sessions at different times of the day potentially to accommodate all time zones. Such scheduling of the synchronous sessions could be either fixed in advance or adapted based on the needs of the participants.

[16] Creative Commons Attribution 4.0 International license: https://creativecommons.org/licenses/by/4.0/ (Last access 16.09.2022).

Beside time zones, another crucial factor impacting the accessibility of workshops is participants' access to a good internet connection,[17] which should not be taken for granted, or at least not for everyone, and which can be a source of inequalities, since it depends on individual or institutional socio-economic conditions, not to mention sometimes geography and politics.

Given that online events allow for a large number of participants (potentially unlimited in the case of MOOCs), the impact of class size on pedagogical outcomes needs to be considered. Even if the limits of a physical classroom are absent, workshops that are not entirely asynchronous will need to balance class size with the number of trainers and their time availability and workload, in order to ensure sufficient quality of support for the practical training. One approach that we have attempted to cater to larger cohorts, has been to divide them into several manageable groups and meet them separately, either simultaneously (if there is an adequate number of trainers) or at different times, the latter having a significant impact on instructor time commitment.

The time commitment for tutors on a remote or hybrid workshop is certainly no less than for an entirely in-person training event, especially once we factor in the creation of asynchronous training materials, monitoring of support forums, and other remote-specific activities. Notwithstanding this fact, however, it is often the case that people expect to pay less for a remote or asynchronous training event than for in-person teaching (and we have a certain sympathy for this position, of course, since they are not receiving the same service on many levels, as we have acknowledged above),[18] although the cost-savings in other areas such as travel, accommodation, eating out, etc. may be enough to mitigate this for many participants in the kinds of workshops we are discussing here. Fees may also be reduced a small amount by the savings on the part of the organisers not needing to pay for room bookings, equipment, lunches and entertaining, and similar local costs, although these are a small part of the overall cost of running a workshop, and indeed a very small, even negligible, saving in terms of time-commitment on the tutors as well.

A further disadvantage of remote events is that both tutors and participants miss out on networking opportunities, forming social connections, and similar less tangible benefits of attending a training workshop, especially in an interdisciplinary, digital humanities area. This impedes some aspects of the learning environment, as discussed above, and a loss of what can be an important professional benefit, especially for early-career scholars or those entering the digital field from other disciplines. Contacts made at intensive training events of this kind can lead to future collaborations, both immediate and long-term support networks, and the exchange of ideas peripheral or tangential to the topic of the workshop itself. One can attempt to mitigate this loss or even replicate some of the extra-curricular activities with online social activities, group work, and multiple vectors of communication, but on the whole this is the component of live events that has been least satisfactorily replaced.

Moving training activities online, as one might expect, also changes the communication dynamic between trainers and trainees, with regard not only to ways of delivering lectures/tutorials but also, for trainees, of asking for clarification and support and, for trainers, of responding to them. In order to manage this two-way communication in the question and answer process in asynchronous events, the adoption of new approaches is crucial. Alternative forms of communication might include direct email or dedicated mailing lists, chats, forums or issue trackers, or a more 'traditional' direct support during live exercise or specific Q&A sessions. All of these require the development of additional targeted skills, such as screen-sharing, providing screenshots and, in general, learning to identify and describe one's problems effectively.

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[17] Monella (2020), 89–90.

[18] This question was of course also widely debated for university students as a whole; Morrison (2020); Ion (2021); Palfreyman / Farringdon (2020); NUS (2021).

Concrete tools and approaches used

Presentations

The asynchronous video tutorials and encoding demonstrations produced for the EpiDoc training sessions in particular were recorded via the medium of streaming the presentations to the YouTube platform using Streamyard, an in-browser video production tool with a free version that allows up to six presenters on-screen at one time.[19] We had previously used Streamyard for the live broadcast of both research seminars and pedagogical sessions, even before the recent rise of remote working.[20] Our principle in using this live streaming tool, rather than recording and editing videos, screencasts and slideshows more methodically or professionally manner, was to replicate the experience of a live presentation as far as possible. At least two tutors were present in the video in each session, which might include discussion and even disagreement, as well as unidirectional delivery of information. The students of course did not usually watch these sessions live, unlike the research seminars mentioned above, but more often followed them asynchronously weeks or even months after the recording.

When slideshows or similar presentations were part of the video tutorial sessions, making the slides separately available (which was a practice we had retained from before we were recording videos in this way at all) proved valuable additional material for students. They were able, for example, to glance at the slides as a preview of the content of a video, deciding in a few seconds whether they needed to take the time to watch the whole video – or, conversely, they could use the slideshow as a revision of the tutorial, reminding themselves of the rules or markup examples without needing the full explanation. By the same token, students often commented that it would be useful to include a "cheat sheet," summary or glossary of each tutorial, perhaps in the form of a one-page PDF, summarising the main skills taught in that session. As an interesting aside (which we shall discuss in more detail below under *Lessons learned and feedback*), we also learned that some students saved time by watching tutorials on YouTube at accelerated speed, depending on their preference – an option not available to them if we had been lecturing live, whether in a classroom or via videoconference!

EFES

Another tool that proved useful in remote EpiDoc teaching is EFES, the EpiDoc Front-End Services publication platform.[21] EFES was already introduced in some previous in-person workshops for providing an HTML transformation of the EpiDoc XML files more easily than via Oxygen transformation scenarios, which was the most common pedagogical tool for this task before the advent of EFES. In asynchronous teaching, the use of EFES became even more advantageous, since, in addition to being a tool for visualising files, it also turned out to have an increased value as a self-feedback tool, making it easier for its users to spot errors. This is particularly valuable in cases where practical exercises are conducted asynchronously, without the supervision of a trainer.

Online support

For some of the asynchronous workshops, we have experimented with the use of online forums (either a mailing list/discussion group or GitHub's issue tracker) as a medium for technical questions and support, to replace the classroom support that is so essential at in-person events.[22] The issue tracker proved to be a good balance of functionality and usability, with markdown editing and an interface that

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[19] EpiDoc Training Youtube channel: https://www.youtube.com/channel/UCHo7GnS0M1y7HG4NxnVFb2w (Last access 16.09.2022).

[20] E.g. Digital Classicist Seminar London: https://www.digitalclassicist.org/wip/index.html (Last access 16.09.2022); Sunoikisis Digital Classics programme: https://github.com/sunoikisisdc/SunoikisisDC-2020-2021/wiki (Last access 16.09.2022).

[21] EFES User Guide: https://github.com/EpiDoc/EFES/wiki (Last access 16.09.2022).

encouraged students to answer one another's questions rather than leaving everything for the instructors. There were minor issues such as not being able to change the default sort to display the index of threads by newest comments (as opposed to the creation of the ticket), and the lack of a "conversation view" visualising which comment within a thread is being replied to, but these would surely be addressed in another forum platform. While some students enthusiastically participated in the forum discussions, and both benefited from help and gave support in turn, an unfortunately large number were less willing to engage in this medium, and would have preferred email, in the absence of real-time support as in a classroom.

In addition to forums, mailing lists can be used to manage internal communication, potentially even involving a broader community. The Markup list, in particular, used to be introduced in EpiDoc training, but commonly as a resource that could be used *after* the workshops for future questions, to be addressed to the whole EpiDoc community.[23] In asynchronous training, in contrast, it was introduced as a resource to be used actively during the workshop itself, specifically for asking questions of broader scope and interest. The introduction of different communication channels dedicated to specific types and ranges of question, moreover, encouraged the participants to think more carefully about the nature and scope of their questions and doubts, and consider the best channel through which to report them (for example, internal forums for troubleshooting related to specific exercises; the Markup list for broader theoretical doubts or questions and requests about gaps in the Guidelines). In practice very few questions were asked on-list during our workshops, but those that were addressed quickly and effectively by the list.

Real-time plenary sessions

Even in largely asynchronous workshops, we generally try to schedule some live, real-time sessions in video-conferencing or similar tools. We used three different platforms in slightly different contexts:

1. For large sessions – welcomes, introductions, instructions, check-ins and live presentations (including keynote lectures and similar) we used institutional subscriptions to Zoom or Microsoft Teams or other stable, feature-rich video conferencing platforms, on which we were able to control access, give large numbers of people access, and potentially record or stream content.

2. For small-group work, such as multiple Q&A or one-on-one sessions, some of which may have been run by different instructors simultaneously – as discussed below – we used a free platform such as Jitsi Meet, which enables simple creation of multiple session URLs, is low-demand, and can run multiple sessions concurrently (at which an institutional Zoom account might baulk).

3. For the workshop "reception" or social event, we have on several occasions used a conferencing platform such as Wonder.me (which at the time of writing still has a free trial version), so that a large number of participants can mill around, gather in small, conversational groups, drop in and out at will, in a fun, game-like interface.

None of these platforms provides a replacement for all the benefits of an in-person workshop (we can neither look over a student's shoulder at their screen as they work, nor can we have a drink together in front of a conference poster session), but each served the functions of some of these workshop activities as well as could be expected.

Exercises and support

In order to allow for a large number of participants while trying to ensure adequate supervision, some workshops have offered small group, live Q&A sessions for remote participants. Held via Zoom or

[22] GitHub issue tracker for EpiDoc Tutorials: https://github.com/EpiDoc/Tutorials/issues (Last access 16.09.2022); removing the "is:open" facet will reveal all past threads and comments in this forum.

[23] Markup list, University of Kentucky. Available: https://lsv.uky.edu/archives/markup.html (Last access 16.09.2022).

Microsoft Teams breakout rooms or on Jit.si Meet, their aim was to allow direct two-way communication between trainers and trainees, especially to solve practical problems that arose during independent exercises. Dividing the participants into smaller groups allowed enough time for everyone to report their problems or doubts, mostly through screen-sharing, which somewhat recreated the trainers in the classroom looking for raised hands or looking directly at participants' computers. These smaller Q&A sessions took place either at the same time in different virtual rooms (with one trainer in each room), or at different times (with one or more trainers per room) in order to meet as far as possible the various international participants' timezone needs.

The types of exercises assigned in remote workshops did not vary too much from those assigned in in-person events, and include several progressive steps towards the creation of complete EpiDoc editions of inscriptions or papyri, starting either from previous printed editions/transcriptions or from viewing photographic reproductions or photos of squeezes. In some cases students were assigned sample inscriptions or papyri by the trainers, taking into account the different levels of difficulty that were most appropriate to the different stages of the workshop. In other cases, participants were able to choose a selection of texts on which to work, either from their own projects or from a variety of online resources (including Papyri.info, PHI, EDH, IOSPE, RIB, CGRN, USEP),[24] depending on their interests.

Other tools and digital methods

It has been common over the years to include in an EpiDoc workshop introduction to other tools or digital methods that are related in some way, but different from the text encoding focus of EpiDoc per se. In a more general digital humanities or digital classics workshop, EpiDoc may be combined with archaeological approaches such as photography and 3D imaging, squeeze-making and geographical information systems, or philological tools such as translation alignment or morphosyntactic treebanking, providing a more rounded training in digital methods. Even in a very EpiDoc-focussed workshop, however, we might include detailed introductions to and training in the use of tools such as the editing interface of Papyri.info, enabling the encoding of EpiDoc without typing XML tags; or Perseids, embedding image alignment or other features in an EpiDoc file; or the Recogito linked data annotation tool, adding named entity annotations to either XML, raw text, or even image files.

In principle, most of these topics could equally be included in a remote EpiDoc training event, but given the need to focus in the more challenging online environment, we have less often included these in recent events, with the exception of the Papyrological Editor, which is perhaps the most EpiDoc-core such topic. (Rather, for example, students might be advised to attend separate events such as an EpiDoc workshop, a 3D imaging summer school, or a treebanking online course.) Where we have included both practical and digital epigraphic skills (photogrammetry, illustration, squeeze-making, alongside EpiDoc) at a hybrid and partly-asynchronous training event, the remote participants have in practice found it more difficult to engage with the more hands-on activities, even when an online trainer was available to support them.[25] The complexity of supporting such very different technical activities at the same time as distinct and sometimes disjointed communication media perhaps compound the difficulties with both.

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[24] Papyri.info: https://papyri.info/ (Last access 16.09.2022); PHI Greek Epigraphy: https://inscriptions.packhum.org/ (Last access 16.09.2022), Epigraphic Database Heidelberg: https://edh-www.adw.uni-heidelberg.de/ (Last access 16.09.2022); Ancient Inscriptions of the Northern Black Sea (IOSPE): https://iospe.kcl.ac.uk/ (Last access 16.09.2022); Roman Inscriptions of Britain: https://romaninscriptionsofbritain.org/ (Last access 16.09.2022); Collection of Greek Ritual Norms: http://cgrn.ulg.ac.be/ (Last access 16.09.2022); US Epigraphy Project: https://usepigraphy.brown.edu/ (Last access 16.09.2022); our focus has been on resources built on EpiDoc publications, but there are of course many other online corpora and collections that could be drawn on for this purpose.

[25] E.g. at the workshops run by Simone Oppen (Dartmouth College) in March and Katherine McDonald (London, Durham and Bologna) in April 2022.

Lessons learned and feedback

The experience of teaching asynchronous and flipped workshops in 2021–22, and both structured and informal feedback received from participants, has given some useful suggestions for improvement of future events.[26] In the recording of video tutorials in particular, the strategies for timing and emphasis should differ significantly from the planning of live, in-person presentations, where students on the one hand can interrupt and ask questions, giving live feedback, but on the other are a captive audience. The instructor should spend less time repeating and reinforcing concepts, pausing to allow reflection, and the like, since viewers can pause the video, or indeed rewind and watch a section again, any time they need more time. Students also had the potential to watch videos at faster or slower speeds (1.5x to 0.75x), depending on their linguistic ability and patience with slow speakers. Certainly we should bear in mind when recording video tutorials of this kind that there is no need to leave meaningful silences, or wait for students to confirm they have followed, as students have control over pause, rewind, and other features, and pauses become tedious rather than accommodating.

The provision of slideshows in addition to the online videos, while arguably redundant, was appreciated by students, and demonstrably useful in allowing quick preview of tutorial contents, helping viewers to decide if a video was what they needed at this moment, and also serving as a reminder or synopsis of content, and even a note of code and examples for copying into an XML editor for testing. Indeed several students further requested a summary sheet, or "cheat sheet" listing or glossing EpiDoc and TEI elements, attributes and values covered by each tutorial, perhaps as a printable PDF alongside the existing EpiDoc Quick Reference sheets.[27]

In both online and synchronous/in-person events, students find practice sessions and exercises one of the most useful factors in learning EpiDoc and other epigraphic skills. Students of remote events especially indicated that they might have benefitted from being provided with specific texts to practice on, rather than being left to select texts, either from their own projects or more or less randomly from online corpora. A selection of texts by the instructors would help to ensure the texts are of a level of complexity appropriate to the different stages of the workshop. Remote participants also appreciated the asynchronous nature of these practice sessions: trying to run a real-time practice session over several hours – as at in-person workshops – resulted in screen fatigue and exhaustion for both participants and instructors.

There was inevitably a wide variation between participants in how effective and enjoyable they found different approaches: some found asynchronous exercise sessions isolating, since they were left alone with no real-time support or company during practice. The online forums and issue trackers made available for online question and answer provision were not widely used by all participants, by any means; and follow-up question-and-answer sessions or discussions, while more familiar communication for many, were sometimes too late if a student was completely stuck during practice, and in any case were not able to involve everyone at once. A variety of approaches might therefore help support the different needs, expectations and learning styles of students, while not overburdening instructors with constant, real-time supervision. Offering remote students a choice of self-directed learning, online forums, occasional Q&A sessions with experts, peer support in real-time exercise sessions, and follow-up discussions could be as close as we hope to get to pleasing all of the people all of the time.

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[26] Feedback was collected through Google Forms anonymous questionnaires submitted to participants after the end of the following training events: University of Bologna, Greek Epigraphy Master course Part II (October 2020), ENCODE Digital Greek and Latin Epigraphy Workshop (January 2021), London-Bologna EpiDoc training workshop (April 2021), Durham-London-Bologna Digital and Practical Epigraphy (April 2022).

[27] Shorter Leiden & EpiDoc Quick Reference https://svn.code.sf.net/p/epidoc/code/trunk/guidelines/msword/quickref.pdf, Leiden/Leiden & EpiDoc Quick Reference https://svn.code.sf.net/p/epidoc/code/trunk/guidelines/msword/cheatsheet.pdf and EpiDoc Edition Structure Quick Reference https://svn.code.sf.net/p/epidoc/code/trunk/guidelines/msword/structure-cheatsheet.pdf (Last access 16.09.2022).

Sustainability

Long-term maintenance of training materials

During the creation and adaptation of training materials, we had to consider issues of sustainability, availability and access. For video tutorials and slideshows, the existing practice of the EpiDoc community had been to use cloud platforms to distribute these materials, in particular Google Drive, YouTube, GitHub wikis (as discussed above under *Concrete tools and approaches used*), with a recent move from using GoogleDocs to host workshop programmes toward pages in the EpiDoc Tutorials GitHub wiki.[28] All these platforms – Google Drive, YouTube, GitHub – share the advantages of being widely adopted and easy to use, and therefore provide visibility and a broad potential audience for the distributed contents. They are all, however, proprietary platforms, which leaves some concern for the future sustainability of training materials. In principle all third-party hosted materials could disappear without notice, outside of the control of the creators – although in practice even when such large storage providers cease operations, a period of at least some months warning is usually given. In any case, the popularity and commercial wealth of these platforms makes it more likely that uploaded resources will have a relatively long lifespan. There are alternatives to big tech services, such as PeerTube,[29] but their lower diffusion, and lack of proven longevity remains a barrier to adoption.

One step that can prevent unexpected disappearance, forking, or corruption of training materials is the distribution of the resources via specific collective or community accounts instead of personal/individual accounts, as has been our practice since 2021 with the creation of the EpiDoc Training Google account and the transfer of previous materials from various private Google Drive folders to a shared account.[30] This transfer in many cases facilitated the updating of older materials by directly editing the originals, limiting the multiplication of copies of the same files in different, more or less updated versions (although, in some circumstances, the multiplicity of copies might help to ensure a longer life for the resources). Another advantage of this transfer was also the improvement in terms of findability of the materials, especially the slideshows, which now appear in a single folder listing.

In addition to updating and versioning of training materials, the citability of slideshows and related resources is addressed by the inclusion on the title slide or page of title, author·s, license (most often Creative Commons Attribution), and the date of latest update. Where updates involve substantial content changes, original versions may be left unchanged and a new copy created in the EpiDoc training folder,[31] ensuring that any existing citations of previous versions are safeguarded and the evolving history of the resource remains transparent. One might also consider depositing tagged versions of training materials on repositories such as Zenodo or FigShare, to further facilitate their citability, with stable URIs or even DOIs, full bibliographic reference, and the option of packaging a whole course's

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28 Tutorial slides the EpiDoc Training Google Drive account http://drive.google.com/drive/folders/1HtRlMgbQ23RG8zHAb_IQF_IJigWMJDd6 (Last access 16.09.2022); GitHub wiki pages for SunoikisisDC 2020–2021 https://github.com/SunoikisisDC/SunoikisisDC-2020-2021 (Last access 16.09.2022) and London-Bologna 2021 EpiDoc Workshop https://github.com/EpiDoc/Tutorials/wiki/London-Bologna-April-2021 (Last access 16.09.2022).

29 https://joinpeertube.org/ (Last access 16.09.2022). See e.g. the DH Pills channel created on PeerTube by Paolo Monella: https://peertube.uno/video-channels/dhpills/videos (Last access 16.09.2022).

30 https://drive.google.com/drive/folders/1HtRlMgbQ23RG8zHAb_IQF_IJigWMJDd6 (Last access 16.09.2022). The same Google account has been used for the creation of the EpiDoc Training YouTube channel: https://www.youtube.com/channel/UCHo7GnS0M1y7HG4NxnVFb2w (Last access 16.09.2022).

31 An example of this is the *Semantic tagging* slideshow, originally created by Tom Elliott in June 2008. https://docs.google.com/presentation/d/1IYkFaJJHhetjZ-ODJ52-LdcFqKi3Z4zDC3eCyjcGb5g (Last access 16.09.2022), which was updated several times up to the 2021 version https://docs.google.com/presentation/d/1di8UJ0b8Iy1GFKI7vqKGLD6wgI9JwR3P0Irnfq1DEjc (Last access 16.09.2022) to reflect some substantial changes in the markup of bibliographic references that had occurred in the meantime.

worth of slideshows and handouts for download, separate from the cloud-stored and constantly changing dynamic version.[32]

It is worth thinking, even if only by way of a brief thought experiment, what an entirely asynchronous, self-directed EpiDoc training programme might look like. We have to date no plans to create a "Massive open online course" (MOOC) or other completely independent training programme of the kind one might find on Coursera, OpenLearn or Programming Historian.[33] It is a little hard to imagine teaching some of the more advanced features of text encoding and EpiDoc editing without the possibility of offering personalised feedback and discussion, although we should note that many individuals have self-taught EpiDoc and even EFES skills using online training materials and guidelines alone. Of course, writing a successful MOOC involves more than simply putting one's existing classroom or asynchronous presentations online and leaving people to work through them; some redesign and pedagogical theory need to be applied to the course materials.

Accreditation

Many participants in EpiDoc workshops request an attendance certificate in the form of a letter from the organisers confirming their attendance. The EpiDoc community and individual trainers are not in a position to provide formal academic accreditation for an EpiDoc workshop per se. It is conceivable that one or more universities might run a specific EpiDoc programme as part of their research training offering, and have the course content and assessment approved by their respective academic councils, in order to give credit to their own students for completion of the course, or portable credit to students of other institutions. We do not know of any institutions that have done so with an EpiDoc programme, but there are examples of other classics and digital humanities short courses and summer schools that offer credit on this principle.[34] Unless an individual member of the regular EpiDoc training team were to run such a programme at their home institution, however, this credit would be effectively out of our hands.

The other vector through which more formal certification or accreditation of EpiDoc training might be offered would be through considering it as delivery of professional competence, for example by issuing Open Badge certificates that provide a detailed list of competences acquired and practised during the training event. The not-so-straightforward definition of competences for such purposes, would ideally align with the terminology used by broader competence frameworks such as the European Digital Competence Framework or the CALOHEE framework for the History subject area.[35] This possibility is currently being explored in the context of the ENCODE project.[36]

Demand and audience

On the subject of sustainability of the EpiDoc training programme, a key factor is demand for such training in digital editing and publication of epigraphy and related philological fields, both in the immediate term and more distant future as both the academic fields of epigraphy and digital humanities progress. Currently there is no sign of demand for EpiDoc training drying up; two major funded pro-

[32] Zenodo: https://zenodo.org/ (Last access 16.09.2022); FigShare: https://figshare.com/ (Last access 16.09.2022).

[33] Coursera https://www.coursera.org/ (Last access 16.09.2022); OpenLearn https://www.open.edu/openlearn/ (Last access 16.09.2022); Programming Historian https://programminghistorian.org/ (Last access 16.09.2022).

[34] E.g. the 3D Imaging and Modelling for Classics and Cultural Heritage summer school at the Institute of Classical Studies, University of London (https://ics.sas.ac.uk/events/3d-imaging-and-modelling-classics-and-cultural-heritage [Last access 16.09.2022]) may be taken for 20 points of MA degree credit for a small additional fee and upon the successful completion of a piece of assessed work.

[35] DigComp 2.1: https://publications.jrc.ec.europa.eu/repository/handle/JRC106281(Last access 16.09.2022); CALOHEE (Measuring and Comparing Achievements of Learning Outcomes in Higher Education in Europe): https://www.calohee.eu/ (Last access 16.09.2022).

[36] On which see above footnote 7.

jects (ENCODE and CARMEN) are funding multiple workshops per year, with a strong EpiDoc component, and other projects write EpiDoc training into their funding applications. Four new, external partners arranged EpiDoc and related training workshops for the first half of 2022 alone. For the past decade, EpiDoc workshops offered in London have been oversubscribed by at least a factor of two, and even when the April 2021 London/Bologna workshop was offered, online only, at a cost of £100 (c. €120) per head, there were over 50 paying participants.[37]

In the longer term, we might ask ourselves whether the integration of EpiDoc or TEI training into classical philology formation for students and early career researchers is likely to embed knowledge of this area in the field, thus reducing the demand for specific training outside of these contexts. Although there are some promising developments in his area,[38] it seems unlikely that any significant proportion of traditional epigraphists in the field of classics will be so well-versed in XML text encoding and publication tools that EpiDoc training will become unnecessary any time in the next decade (or even two). The need for reference materials, including guidelines, publication tools, example code and scripts, walk-throughs and similar materials would of course outlive even any such utopian development.

Another axis along which EpiDoc and epigraphic skills might come to be taught in tandem is in the context of training events such as the "Practical and Digital Epigraphy" workshop run by the Universities of London and Durham (2019 and 2022).[39] In these courses offered to early-career researchers, the emphasis is on presenting a range of epigraphic skills, including reading the text; understanding the Leiden System for transcribing physical and philological features of an edition; drawing, photographing, 3D scanning, and "squeezing" (making durable impressions with wet paper) the monument and its inscribed surface·s; text encoding and publication, including indexing and linking to external vocabularies. As well as offering the high-demand training in EpiDoc and digital publication, these workshops fill a gap in practical training in epigraphy for postgraduates at many classics departments, and so help to promote the expectation that the two skills can be offered together.

A final question that underpins all discussions of the design, format, sustainability and academic positioning of EpiDoc training is that of the target audience. Who do we expect to be interested in EpiDoc training? Who do we want to attract to these workshops or online materials? In whose interest is it to promote or financially support such training? The large EpiDoc workshops that have run regularly over the past two decades have attracted a range of participants including full professors, early-career scholars, postdoctoral researchers (including "alternative academic" researchers employed by specific, finite projects), graduate and even undergraduate students, heritage professionals and librarians, independent scholars, and others. Workshop announcements have often stated that "knowledge of Greek or Latin and the Leiden System is expected," but many researchers working in parallel fields such as Mayan or South Asian epigraphy have also attended and benefitted from the training. When offering EpiDoc alongside an introduction to epigraphy, language and disciplinary prerequisites may of course be inappropriate and counter-productive. Each workshop therefore needs to be designed with at least some idea of target audiences in mind, considering stage of career, academic discipline, and technical needs we want to address in the training materials.

Conclusions

We have argued that the various flavours and combinations of remote, asynchronous, blended and hybrid approaches to teaching digital epigraphic methods have several advantages, including flexibility,

[37] The hybrid "Introduction to Digital Humanities" workshop at the University of Cyprus in May 2022, which had a heavy emphasis on EpiDoc, received nearly 150 applications, 75% of which were to attend remotely.

[38] Bodard / Stoyanova (2016), 61–62.

[39] See McDonald, Bodard & Vagionakis, https://github.com/EpiDoc/Tutorials/wiki/Digital-and-Practical-Epigraphy-(London-Durham-Bologna)-2022 (Last access 16.09.2022).

meeting a range of learning needs and timing or speed; empowering and encouraging self-reliance in students; reducing space and other limitations to the number of participants. The other edge of the sword, however, is the fact that such teaching strategies require a certain amount of self-direction and motivation from students. You get out of it what you invest in it: this risks less effective results for participants who are less motivated, persistent, or confident, including those who benefit from more direct and directed learning environments.

The experiences and lessons explored here, although coming from an epigraphic teaching context, could be largely applied to other programmes in the classics and humanities fields generally, and the Digital Humanities in particular. The authors also draw on their experiences teaching workshops in codicology and literary subjects, for example.[40] The asynchronous or flipped approaches, in particular, apply equally to student teaching in a variety of different disciplines, in the domain of Digital Humanities and beyond. Research training benefits from the application of hybrid and blended approaches, which are especially fruitful when practical elements are involved; training in the context of individual research projects may make use of existing online resources that were originally produced for other contexts, rather than creating or outsourcing the production of new training programmes.

It remains to be seen whether the EpiDoc community itself will continue to be proactive in producing training materials, or if it becomes more efficient to be reactive in offering tutorials for different epigraphic teaching contexts – as was largely the practice in years leading up to 2020. Indeed training resources produced by the wider community in response to specific needs, events or workshops, formed the basis for the large body of free, open and repurposable documentation, examples, slides, videos, and other materials that are available now.

As we stated in the opening to this paper, we strongly believe that some combination of online, asynchronous, flipped, blended and hybrid forms of training will continue to benefit our teaching practice well beyond the current special circumstances of the Pandemic Age (however never-ending it may seem even now). Most of the methods we have spent the last two to three years learning are not new, of course: as well as Sunoikisis Digital Classics, free and commercial MOOCs, and other digitally enhanced teaching methods, there is a long history of remote learning at all levels, and professionals in Distance Education departments have been invaluable (and under-acknowledged) in this period. What is new in these experiences is that many more academics have become familiar with a range of such approaches, that we know what our students will and will not tolerate – and indeed how comfortable we are with different teaching, presentation and interaction methods and media. There are those among our colleagues who cannot wait to take all of their teaching back into a classroom and forget that video, conferencing tools, and asynchronous methods ever existed. We hope that most scholars and educators will learn both from the triumphs and the shortcomings of a wide variety of teaching methods, and use each to the best of their advantage depending on audiences, topics, outcomes, and availability of time, resources, and the need constantly to refresh content. We have seen so many things that work better in an online environment, for instructors, learners, or both, that it would be folly to discard.

[40] See e.g. the online workshop on Sanskrit manuscripts held in 2021 in Bologna: https://corsi.unibo.it/magistrale/ScienzeStoricheOrientalistiche/bacheca/workshop-edizioni-digitali-di-testi-sanscriti-introduzione-a-xml-e-tei (Last access 16.09.2022), or the courses on TEI for scholarly texts held in 2021 and 2022 in London: https://github.com/SASDigitalHumanitiesTraining/TextEncoding/wiki/Intro-to-TEI-Feb-2022 (Last access 16.09.2022).

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