Teaching with digital archives to improve pedagogy

Teaching digital history techniques to undergraduates at Loughborough University

Summary
Good teaching in a digital world requires that students learn the digital skills they need both for their studies and their future careers. With imagination and willingness to experiment, university teachers can use digital tools to help students develop better skills of reflection, analysis and evaluation. However, experience in history at Loughborough University shows that, with imaginative use of digital archival collections, it is possible to go further, enabling students to work directly with primary sources in ways not previously feasible.

This is providing a number of benefits:

- Encouraging critical reflection on how knowledge is constructed
- Building students’ confidence in developing and supporting their own ideas
- Teaching techniques of digital analysis to undergraduates
- Learning how to use generic as well as specialist academic digital tools

Student reaction has been overwhelmingly positive, even with more advanced tasks, with demand for more of such opportunities to be provided. In some cases, the use of digital tools has proven to attract students to specific modules. The result is a significant boost to both learning and employability outcomes.

Digital archives as a pedagogical opportunity
The huge expansion in the digitisation of archival collections and their accessibility online has evidently been a great boon to researchers in history and historically-informed disciplines. Undergraduates taking their first step in self-directed research, perhaps in final year dissertations, can be taught to work with particular collections. However, the availability of a range of archival materials provides an opportunity for undergraduate students from first year onwards to engage with primary sources to an extent not previously feasible.

One exponent of exploring these opportunities is Melodee Beals, Lecturer in digital history at Loughborough University and an historian of migration and media. Working with colleagues, she teaches the history of North America and the comparative history of the Atlantic world of Europe, Africa and the Americas.

In these modules, Dr Beals and her colleagues explore the scope for teaching undergraduate students in new ways using digital archives, the techniques needed to explore them in depth, and digital tools more broadly. The aim is to discover ways in which students from the start of their university education can be enabled to:

- Think critically about how historical knowledge is constructed
- Move away from reliance on tertiary sources such as textbooks or a narrow range of secondary sources
• Become confident in developing their own ideas while understanding the standards of evidence and argumentation on which their ideas need to be based

**Learning to learn with digital archives**

While students need to learn to work with single archives to research particular topics, the broader aim is to develop good independent academic skills among undergraduates. The focus at this stage needs to be on developing learning skills and less on specific topic knowledge for its own sake. This requires working with archives more broadly, and not being driven by the rationale governing the construction of an individual archive. Indeed, one skill being developed is how to avoid relying on a single source of knowledge, whether a textbook or a particular database, and to develop understanding of:

• What is a resource
• The range of ways resources can be located
• How to evaluate them and identify resources needed for specific purposes, such as providing corroboratory or counter evidence for a specific hypothesis

A variety of methods can help achieve these aims. At the level of course design, taking a flipped classroom approach allows for classroom time to be provided for workshops teaching the skills to work with primary sources, as well as seminars which provide more reflective time based around secondary sources. When it comes to primary sources, methods need to be tailored according to the level of study. So, a range of methods for first and second years can encourage students to look closely at primary sources and make sense of them.

In one example, game-based learning involving role play helps students understand the motivations of historical actors and the situations in which they find themselves (e.g., in the American slave trade). Or students can be asked to do some specific research in the archives and give short presentations to their peers on their findings, contributing to a group understanding of a piece of history such as battles in the American Civil War.

By the time students reach their third year of undergraduate study they can be introduced to advanced techniques of working with and across archives, such as creating a corpus of texts, topic modelling, sentiment analysis, geo-visualisation and discourse analysis. Such techniques can be taught to students using worksheets that step them through the processes.

This approach introduces students progressively to the techniques of digital history at a basic level, without requiring the full mastery that would be appropriate for postgraduate studies. It provides students at every level with the chance to reach successful outcomes. In this way, they can appreciate very readily the power of the techniques to interrogate primary sources and to reach original conclusions, as well as how to present their methodology and findings in properly referenced ways. They readily go beyond shallow encounters with primary sources such as newspapers and narrative accounts and learn to read them for what can be learnt implicitly, as well as the power of digital techniques to reveal patterns that were previously concealed.

When it comes to reflection on learning and evaluating secondary sources, digital tools can be applied to enable students to engage in practices that are formative for their learning even if not formally assessed. Tools such as student blogs (which can have their readership restricted if desired), or the use of a productivity tool such as Trello, can provide frameworks which encourage students to document and reflect in writing on their reading in the subject.
Tutors can use the same tools to provide feedback at a stage that is preparatory to essay writing but importantly formative for it.

“**This has been one of the most helpful modules of the entire degree. Both the methodologies and level of feedback have surpassed any other module. I feel if the module, or similar in terms of the techniques learnt on this module, was undertook at an earlier period of the course (perhaps in 1st/2nd year) then it would have been a great benefit to the rest of my degree. I did feel it has more than prepared me for further study.”**

**Student skills and experience**

Most students today come to university fully engaged in the digital world, but this does not translate into either comfort or expertise with the digital skills needed for study. Often students have little or no knowledge, for example, of how to work with spreadsheets or databases, and these skills need to be taught, as well as the more advanced techniques specific to academic disciplines. Yet, when these techniques are taught, they are very often transferable across disciplines and to future careers outside academia. Teaching students how to capture and evidence the skills they have developed for future employers is an important aspect of the task.

Student feedback on many of these techniques has been enthusiastic. Game and problem-based learning is very popular and the prospect of engaging in it attracts students to specific modules. Even on the more advanced techniques of digital analysis, students engage enthusiastically in the tasks, as the workbook approach provides them with a scaffold to work at their own pace and enables them to see results quickly. Student feedback indicates a hunger for more, and in more depth:

- “[More] time on some of the harder methods”
- “[Provide] heavier focus on more effective methods”
- “[Wanted more] emphasis that the methodologies require standard historiographical research in order to support them”
- “Gained so many new skills through this module. Really enjoyed applying history in other ways using these skills”

On the reflective reading tools, students engage to varying extents, but the majority do engage, and being able to read the work of others helps students improve their own reading and critical evaluation skills. When asked, all students agreed these techniques should be retained in future years, and around two-thirds thought they should be a mandatory requirement. Being able to receive a wider range of feedback than just from the tutor alone was thought particularly helpful.

**Staff experience and institutional support**

These digital techniques do not stand alone. They take place in the context of good teaching overall, but in a digital world they become an essential part of the mix for both staff and students alike. While there is continuity of purpose – students are still being taught to make good, sound use of resources – there is also a learning curve for staff, as new techniques need to be learnt that not all staff may be using in their own research. Moreover, there is a pedagogical as well as a technical learning curve, in which a willingness to experiment and to engage in new approaches to teaching and learning is essential. For staff, and for the institution more generally, this means a willingness to take risks. It also requires a constant attention to reflection and evaluation by teachers of what in their practice works and what doesn't, and what needs further tweaking. Thus, a commitment to pedagogical improvement, rather than reliance on traditional teaching methods, is essential. The prize, however, is students better equipped to be...
independent learners and engaged co-researchers. Students become better prepared for careers beyond university, in a world where skills of independent thought and critical analysis of resources, as well as technical skills, are increasingly necessary.

One consequence for the institution is that support needs to be given to teaching innovation in various ways. There needs to be support for pedagogical innovation and staff willing to experiment. There needs to be the rich technical infrastructure that can enable application of digital tools in learning. And there needs to be the willingness to invest in more archives and digital collections so that students have access to a wide range of content. Only then is teaching enabled across many topics and not artificially restricted to a narrow range of well-curated material, which would restrict the transferability of the skills students learn.

Lessons learnt and wider impact
One lesson from the work being done at Loughborough (and earlier teaching by Dr Beals) is that it is possible to teach undergraduates to work directly with primary sources and to lead them to using advanced digital techniques, with the proper preparation and support. It does not always require specialised digital tools, as sometimes software that is to hand or widely available for non-academic purposes can be put to good use for learning and teaching.

However, it is essential not to see this as an isolated endeavour, in two senses. The context should always be good teaching overall, and digital tools and techniques become part of the mix of approaches that merge seamlessly into practices that are not intrinsically digital. It also important that academics developing digital pedagogy are not isolated individuals, but members of communities of practice in their departments, in their institution, and in wider networks, whether geographically or discipline based. Sharing of ideas and peer-to-peer learning among academics are important both for ensuring sound pedagogy and also for the spreading of good practice in specific disciplines – in this case history – as well as more generally.

Overall there needs to be a willingness to take risks, on the part of both the institution and the individual academic, but always risk in the context of continuous reflection and improvement on what constitutes good teaching in the digital world. As the Loughborough example shows, this approach can enable students to gain hugely valuable skills in working with primary sources and institutions to reap greater benefit from their investment in archival collections.

Find out more
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Education consultancy Sero HE was commissioned by Jisc to interview Melodee Beals - lecturer in history about developments in learning and teaching in a digital age at Loughborough University. The studies focus in particular on the impact of such developments on the student experience.