

Understanding the Use of Digital Collections in Undergraduate Humanities and Social Science Education: Status Report, Preliminary Analyses, and Next Steps

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INTRODUCTION AND BACKGROUND

The Center for Studies in Higher Education (CSHE), in partnership with the Center for Information Technology Research in the Interest of Society (CITRIS) and the California Digital Library (CDL), has been awarded a generous grant from the Andrew W. Mellon and Hewlett Foundations to investigate how unrestricted digital collections are being used, or not used, by undergraduate educators in the humanities and social sciences. The outcome of the project will inform both Foundations and others about how best to provide easy access to such materials. Information about the project can be found at: <http://digitalresourcesstudy.berkeley.edu/>

The focal point of this two-year investigation is extensive discussion with a range of faculty drawn from the University of California, California community colleges and liberal arts colleges. We will be working with faculty members from a variety of disciplines comprising history, anthropology, literature, languages, writing and composition, visual arts, architecture, classics, geography, and political science. The project will include research about how collection providers assess and value user experiences, a test of transaction log analyses (TLA), and on-line surveys as practical methods for assessing use of collections economically.

The following report is a preliminary analysis of faculty discussion groups conducted between August 2003 and December 2003. Although the report is not intended to be definitive, it provides a framework for our research and suggests trends and patterns that we will test over the coming year.

Much of Fall 2003 has been devoted to refining research plans and methodologies, securing Human Subjects approvals, running discussion groups, analyzing subsequent results, informally interviewing faculty and staff, and developing our survey for launch in Spring 2004. The results of those efforts are documented in the following report, with an emphasis on the discussion group findings. In addition, the groundwork has been laid for testing transaction log analyses and on-line surveys on three local digital collections. Spring 2004 will be devoted to analyzing the other side of the collection-use equation: that is, surveying and talking to collection providers and owners, including librarians.

METHODS

We are studying the use of digital collections by conducting surveys and discussion groups with various faculty and student populations (these populations include: UC Berkeley, other UC campuses, liberal arts colleges, and community colleges). In addition, there is the possibility of asking a small sample of CSU faculty, and faculty who participate in an international Humanities and Computing listserv, to take part in the survey. Following data collection, the aim is to develop a useful description of specific factors (e.g., the nature of the collections, disciplines, and the teaching/learning environments, etc.) that affect use or non-use of collections in undergraduate teaching.

Four discussion group sessions were held between October and November 2003 with thirty-one humanities/social science faculty members and graduate students drawn from U.C. Berkeley, Mills College, and DeAnza Community College. The sample was limited in the range of disciplines represented (e.g., few or no geographers and political scientists and only one faculty member from architecture) and in the self-selected nature of the participants. The latter may result in the over-representation of enthusiastic users and non-users with strong opinions.

MAJOR THEMES AND FINDINGS FROM DISCUSSION GROUPS

The discussion group sessions raised a number of important themes, namely, that disciplinary focus, pedagogical goals, and the academic setting in which faculty members teach often combine to drive digital collection usage.

Digital Collections Vary in Type, Purpose, and Perceived Value

A complicated picture was drawn in relation to the definition of digital collections, the use of collections in teaching, and the perceived pedagogical value of collections. The results indicated that no two collections were alike, especially given the relevance and value individual faculty members apply to a particular digital collection and its potential use in the classroom.

Consequently, our original description of digital collections, as it pertains to undergraduate teaching, needs revision. In fact, we found that faculty use a diverse array of on-line resources in their teaching. Discussion participants generally agreed that there were many useful on-line resources available, but issues surrounding how one finds, manages, maintains, and reuses on-line resources in new contexts frequently arose. Resources mentioned include the ubiquitous Google search, student-created “collections,” archived news and other media sources, digital library collections, subject portals that link to other sites and resources, archived student discussions, blogs, and so on. Furthermore, among different disciplines and institutions sampled, there were differences in the types of collections used and the purposes. Community college faculty arguably exercised the most creativity in the choice and use of heterogeneous resources.

Four preliminary, and sometimes overlapping, categories of digital collections used by faculty will be explored. They are: (1) unrestricted (publicly available) collections, (2) restricted collections, (3) “homegrown” collections, and (4) collaborative collections. There are other potential ways to sort the types of collections reportedly used, including type of media, scope, and discipline.

Unrestricted (publicly available web collections): Many faculty turned to existing unrestricted digital collections found on the web, having been referred by colleagues and/or professional discussion lists. These comprised museum, library, and individual scholar’s collections and examples included Perseus, Stanford’s Dime Novel and Story Paper Collection, the Martin Luther King Collection, the Library of Congress’ Photo Collection, Arts & Letters Daily, and Lanic.

Restricted collections: It was also not uncommon for faculty to download materials (e.g., articles, images) from restricted or fee-based sites (e.g., JSTOR, Saskia) to support their teaching activities. Notably, a few participants using restricted collections made a distinction between unrestricted (open access) and restricted resources (for a fee). Combining both unrestricted and restricted resources into one collection for class use was not uncommon. In the survey, we will attempt to tease out the degree to which faculty use of materials is influenced by the restricted/unrestricted dichotomy. This may vary by type of institution and relative “wealth”. For example, some community college faculty were confused about whether they were permitted access to UC collections.

“Homegrown” digital collections: A number of faculty reported building their own digital collections, often from their own research and personal collections (which may or may not be in a digital format). Digitizing and uploading slides, film clips, sound bytes, images and/or text, from their own personal supply and/or mixing with outside on-line resources was described. Examples of personal collections varied widely by topic and purpose. Though often arduous to assemble and maintain over time, these personal collections had an acknowledged added value for faculty, especially in their teaching activities, ongoing scholarly research, and exchanges with colleagues. In some cases, publicly available “homegrown” collections and course websites were used as a pre-registration marketing tool, since students have the opportunity to preview a course in advance.

Collaborative collections: Some faculty members created their own web anthologies as part of a course characterized by instructor and student contributions. These collections were often a byproduct of an on-line course. While course materials and on-line discussions naturally occurred as part of on-line classes, it was reported that these types of collaborative collections helped create a sense of community for the on-line classroom as well as creating a checks and balance system to ensure students completed assignments. Some faculty who taught on-line courses spoke of organically grown collaborative collections, encouraging students to join in and post their writing, research examples, portfolios, and ideas, so that the rest of the class could learn from the shared work.

Different Disciplines, Different Needs?

Some intriguing differences were found among disciplines with regard to choice of, and concerns about, the digital resources utilized. In disciplines characterized by an extensive use of texts,

faculty tended to depend on different kinds of sources for different pedagogical goals than those in disciplines characterized by a heavy reliance on images. For example, medievalists, and others who study ancient texts, were particularly concerned about the quality of translations, the ability to excerpt from specific passages, and accurate facsimiles of manuscripts. More than once, faculty stated that they wanted students to experience books—to hold and study them. As such, these faculty felt that the on-line display of texts might undermine this fundamental pedagogical necessity. Similarly, history and literature members of faculty mentioned the value of teaching students to imagine their own images from words printed on a page, instead of solely relying on images posted on the web.

Those instructors (including graduate student instructors) who used text in writing and composition courses sometimes turned to on-line texts as examples of good or bad writing and/or as exercises to teach students basic information literacy. Additionally, it was not uncommon for composition instructors to provide links to secondary digital resources that would enable students to hone their writing styles (e.g., Strunk and White's *Elements of Style, First Edition*).

Some faculty teaching in fields dependent on visual analyses and/or current events (e.g., cultural studies, new media, art history, and anthropology) were heavy users of digital collections. Certain collections, especially those rich with images, streaming video, and news, provided enhancements to books and articles, which were not only perceived as fast becoming outdated, but were unable to convey the dynamics and complexity possible with a visual image, a news story, or a video clip. Those faculty who taught subjects that required three-dimensional visualization and/or historical reconstruction utilized various pedagogies requiring students to explore and evaluate sites and associated evidence both in time and space. These pedagogies used a significant “problem-based inquiry” approach and often integrated distributed on-line resources and/or those hand-worked by the instructors.

Other faculty talked about the unfulfilled desire for omnipotence. They wanted to be able to pull in the relevant resource, anytime and anywhere, and to make the technical tools transparent in order that students might reuse and author various media into entirely new and creative products.

Faculty in the community college, having a different student demographic to teach compared to research universities, sometimes used obscure and “pop” multi-media on-line resources as a way to engage students in a topic (e.g., BigBadChineseMama.com, <http://www.bigbadchinesemama.com>, was used in a class for discussing gender and race).

Faculty Variation in Enthusiasm and Involvement

As an outgrowth of the discussion sessions, we have developed a preliminary typology that describes four different types of digital resource user. The degree to which personal teaching style and philosophy serve to influence use cannot be overestimated. (It should be noted that student users too may fall into various categories that range from the Luddite to exceptionally sophisticated technophile).

Nonusers: The reasons for non-use by faculty included a lack knowledge and/or interest in digital collections, how they are accessed, and how they can be integrated in undergraduate teaching. Even faculty who perceived value in using already available on-line materials may not think the technical tools are good enough to date to warrant an investment of their time. Technical shortcomings included simple ranked searches, reuse

and recombination of various media and resources, and the management, storage, and preservation of resources.

Based on a few informants, there is probably a subset of faculty who see the technologies as actually undermining their teaching goals because of the perceived poor quality of on-line materials and/or potential student “abuse” of the many non-credible resources on the web. Some faculty simply do not have the time or interest to either assess the credibility of resources themselves or to guide their students in that assessment. In addition, there are participants with excellent teaching records who did not want the added expense, time, and confusion of using digital resources.

Light Supplemental Users: These faculty members have integrated digital resources into their normal teaching, but only to a limited degree. They may occasionally use digital images in lectures, and encourage their students to do internet research for an assignment, or they may post relevant URLs on a syllabus. They described attempts at using new approaches to teaching, such as providing .pdf course packs to decrease textbook costs for students or adding rich links to course web pages. But they lamented the seemingly simple technical roadblocks that persist, such as students needing high-speed connections for easy downloads of .pdf files or the limitations of available Learning Management Systems to accommodate multiple links.

Heavy Supplemental Users: These faculty members have integrated a mix of digital resources into their teaching and, in many cases, have rethought their teaching to take advantage of these new resources. Digital collections may be integrated into on-line course readers. Collections may be homegrown and include restricted and unrestricted digital resources. As part of the course, students were encouraged to conduct web research and were taught the basics of web literacy, including how to evaluate quality, credibility, and currency of a digital source.

Fundamental Users: For this type of user, digital collections were an integral part of undergraduate teaching. These faculty members taught on-line courses or hybrid courses that focused on integrating internet research and/or multimedia projects. The courses revolved around on-line materials and all, if not most, of their teaching—lectures, discussions, evaluation of assignments—have a heavy on-line component. As part of their courses, these users sometimes create what we call collaborative digital collections, which showcases the work of a given class in an archive that may live long after the class disbands. Many of the fundamental users who participated in the discussion groups were located at the far end of our user continuum. They explored the possibilities of using digital collections to create unique teaching environments and learning tools and perceived their role as evolving from traditional instructors into “facilitators”, who guide students and aid learning. Many fundamental users may qualify as “techno-geeks”, who embraced the educational opportunities that new technologies support.

Tasks that Faculty Need To Accomplish

The tasks that faculty report having to accomplish include:

- ? Locate/search for digital resources
- ? Assess the technical quality of digital resources

- ? Assess the credibility of digital resources
- ? Evaluate copyright and fair use
- ? Evaluate appropriateness of resources for their teaching goals
- ? Create their own websites
- ? Learn how to use learning management systems such as Web-CT
- ? Import resources into course website or database
- ? Digitize and post resources to webpage or database
- ? Assemble and build collections
- ? Curate and/or index the digital resources
- ? Preserve digital collections and keep them relevant
- ? Find short- and long-term storage for collections
- ? Guide students in how to find and evaluate digital resources
- ? Secure resources such as servers and smart classrooms, which are often scarce

Reported Obstacles to Using Digital Collections

While digital collections were perceived by some to present untapped learning opportunities, faculty of all stripes—from the nonusers to the fundamental users—identified many obstacles to using digital collections for teaching. These obstacles were in the technical, institutional, economic, social, and pedagogical realms.

Technical: Many faculty, having grown their own resources (or having tried) ran into technical limitations much sooner than expected or planned. Servers, if found, soon filled up and software packages for developing in-house digital learning tools offered limited capabilities (e.g., UCB’s CourseWeb, for instance, allows a field for inputting only four URLs for referring students to web resources). Other concerns frequently mentioned in the discussion sessions were the lack of intuitive interfaces running on campus servers and systems, unresponsive IT staff and/or librarians to faculty needs, and lack of financial and technical support.

The web itself also posed its own problems as a new teaching medium. Resources on the web were often limited in their applicability to teaching—film clips may not work, links may not lead anywhere, databases (both image and numeric) may provide inadequate search results, and images may have poor resolution. In addition, many faculty were jaded about keeping up with the “new new” thing. They were apprehensive about investing time in learning how to use new tools (i.e., they did not want to be beta testers) and valuable time was wasted on technical development projects that had limited functionality and usability. In summary, technical limitations included:

Hardware: Obsolete computers, limited access to adequate servers including those for audio and video storage, lack of high-speed connections for both faculty and students, the high cost to students of printing digitized coursepacks, and inadequately equipped classrooms.

Software: Lack of functional indexing software, limited functionality and flexibility of learning management systems, cross-platform difficulties between server and system software packages, and unavailability of software products to meet needs.

Usability: Unreliable search engines with inexact results, lack of design consistency across sites, poor resolution of images and video, excessive download times, poor sound quality of audio files, broken links, longevity of sites posted on the web, and the primitive state of existing software for editing, managing, and reusing audio and video files.

Content: The reliability of the digital content was a source of frequent concern raised in the discussion sessions. Among participants there was a growing pressure to teach “web literacy” to undergraduates in order that students could better evaluate the credibility of digital resources. In addition to digital collections use, some faculty members had specific concerns about how students used search engines for course-related research. Many suggested that web searching, in particular, ran the possibility of eroding “good” learning (e.g., search engine results decontextualize information by retrieving an orphaned page that lacks the context of the originating site). Additionally, faculty complained that search engines regularly spewed out faulty results based on frequency of access, rather than value and credibility. Moreover, there was the added issue of the right content simply being unavailable in digital form, a point raised by faculty wanting to make primary sources used in their own research available to students.

Skills: Both students and faculty may often lack the necessary skills in terms of digital collections usage. During the discussion group sessions, many faculty members, despite their level of involvement with digital resources, recognized undergraduates’ limitations in relation to effectively using the web as a learning tool. As mentioned above, conditions that kept students and faculty from leveraging the full potential of digital collections were: (1) knowledge about how to effectively search the web and find valuable and credible resources that could be used in support of class curricula, (2) the inability to easily reuse those resources that were available, and (3) the constant need to learn how to use new software.

Time and feasibility: For some faculty, a significant barrier to using digital collections for teaching was a simple lack of time. This was true across all institutions and irrespective of whether faculty were based in research or teaching institutions. For some participants in the discussion sessions, there were few rewards to be reaped from employing digital resources (in the form of job security, promotions and/or status in their field). In other cases, faculty members, who had developed digital collections, were now frustrated by the demands of required collection maintenance and preservation. Often the resources (e.g., student assistance, funding, technical support staff) initially relied upon to build and maintain the collections had vanished when they were needed most.

Institutional and financial support: It comes as no surprise that faculty cited lack of funds and institutional support as significant barriers to their use of digital resources. As mentioned above, these included lack of appropriate classroom technology, inadequate institutional and commercial software packages, no support for curation and preservation of collections, lack of persistence in support (be it grants or students), and no assistance with copyright questions.

This may vary by institution and departments within given institutions. For example, faculty members in literature and history departments may have fewer expectations and fewer resources available to them than those in disciplines such as architecture or anthropology that have a tradition of integrating media into teaching (and more of an infrastructure to support it). For

example, one graduate student described a labyrinthine process for obtaining support; despite the existence of useful technology located in a room in her department, its existence, or how to access it, was not advertised.

Even among disciplines in a research university, the level of support and expertise available to a faculty member was variable. For instance, support may be dependent on the reference librarian assigned to a specific field. In community colleges, the relative rank of a faculty member may be important. For instance, it was reported that part-time faculty were given low priority for using resources such as wired classrooms. In addition, perceptions of who was responsible for training, curatorial help, software and hardware support varied across institutions. The need for training either by educational technology specialists or by librarians was not mentioned by research university faculty. There was an assumption that someone else was responsible for the technology, be it an IT or library professional or graduate and/or undergraduate students. In contrast, in the community college, a number of faculty took responsibility for technology, but lamented about the lack of training and workshops.

In some cases, faculty were in a continual state of cobbling together internal and external funds to support innovative work (e.g., finding the funds for a systems administrator of new servers) because their institution, although enthusiastic, could not provide the necessary resources.

Copyright: The nuances of copyright and fair use eluded many faculty members in our sessions, irrespective of institution type. Simply put, few faculty members had a clear understanding of how copyright laws applied to their use of digital collections in the classroom, despite voicing concern. Across each discussion group, individuals (confidentially) admitted to using material whilst ignoring copyright issues. Yet their motive was clearly due to time pressure and convenience; a desire for clearer information about fair use was expressed as well as an easy way to obtain copyright permission. Overall, faculty approaches to addressing copyright infringement in their use of digital resources varied from caution to boldness. Some faculty members hesitantly observed copyright by purposely using links to publicly available versions of teaching classics (e.g., *The Elements of Style*), so that they could avoid copyright infringement. Other faculty members reported that they used whatever digital collections they found of value and would continue, until the courts (or the campuses where they taught) defined their rights. Furthermore, other faculty, and we suspect they were in the majority, simply password-protected their course site in order that only enrolled students had access. The implications of this strategy for Open Knowledge/Courseware are obvious.

Some faculty voiced concern about copyright issues in relation to being able to copyright their own and their students' on-line materials. Although happy that their work was publicly available, they wanted to ensure the protection of their own intellectual efforts.

A few faculty members, especially those assembling homegrown and collaborative collections, expressed concern over the legal issue of obtaining permission from their students whose work was posted on a course site. Because of new laws (e.g., the Digital Millennium Copyright Act) and ongoing legal issues (e.g., downloading music from the web) many faculty looked to administration in their institutions to define legal rights, although few campuses had clear policies in place.