Chapter 2

Digital Collections

LMS Embedded Librarianship

LMS embedded librarians are engaged in student learning according to the Ithaka S+R US Library Survey 2013. They confer with faculty members to discover what their learning outcomes are and what their research assignments entail. After considering what students will have to know and do as researchers, the librarian identifies which subject databases are most appropriate. Academic libraries will license and sometimes buy hundreds of these subject databases. In addition to this proprietary content, LMS embedded librarians guide students to open-access content and open educational resources freely available online. Knowledge of the subject discipline, the library's collections, and the changing publishing landscape is needed to list and link to the best digital collections available for students. Often the LMS embedded librarian will create or link to available tutorials in an effort to explain visually how to navigate search interfaces and how the various collections overlap or are distinct from one another. With this kind of support, students are better able to decide which digital collections are most suited to their research needs.

The LMS embedded librarian might work in the following manner. After discussing the details of a research project with a professor, the librarian begins to build an LMS embedded librarian page or a course LibGuide for registered students. This is a carefully selected resource list, drawn from all digital collections available through the university libraries and online. After linking to general contact information, the embedded librarian may recommend databases that suggest topic ideas on controversial issues in the news, such as EBSCO's Points of View Reference Center or Gale's Opposing Viewpoints in Context or CQ Researcher. Individual electronic reference titles published by various companies (Gale, Oxford, Salem, Springer, Wiley, etc.) or reference collections like Credo can also be linked to for academic background research. The librarian proceeds to link to the library discovery service for its digital and print collections. The comprehensive discovery service for articles, books, and media may be highlighted using tutorials that demonstrate its purpose and search interface. Several subject databases may be individually linked to promote essential digital collections within a field, such as images in Artstor for art; scholarly journal articles in Criminal Justice Abstracts with Full Text for criminal justice; evidence-based practice reviews in the Cochrane Library for nursing; or company and market data in OneSource for business. Sometimes the LMS embedded librarian will need to steer students to specialized digital collections in statistics—like the Statistical Abstract of the United States by ProQuest or American FactFinder by the US Census Bureau—or in law—like LexisNexis for legal cases.

Normally the embedded librarian will include screencasts or screenshots that demonstrate how to conduct efficient online searching, explain research terminology such as *peer-reviewed*, describe a discipline-specific thesaurus such as the National Library of Medicine's Medical Subject Headings (MeSH) or codes used in business research such as the North American Industry Classification System (NAICS), or introduce a mnemonic system for evaluating websites such as the CRAAP Test: Currency, Relevance, Authority, Accuracy, Purpose. Finally, the embedded librarian will link to guides, generators, and managers for the required citation style or styles students

will use. By carefully directing students to these academic tools, explaining research concepts, and linking to digital collections, the LMS embedded librarian is able to help students develop their information literacy and encourage them to adopt more productive research strategies based upon a fuller understanding of the cycle of scholarly communication.

Digital Collections

Embedded librarians have many choices when it comes to directing students to scholarly digital collections within their LMS courses. Today, most academic libraries license or buy digital collections such as databases of full-text articles, dissertations, images, music, and videos as well as electronic journals and books. "Since 1995 our function has been, increasingly, to secure for our patrons the collective right to access and use digital documents that are housed and cared for elsewhere."[1] Academic libraries are transitioning from local print collections to remotely accessible, online collections, in part to reduce storage costs for print, which can be housed in high-density storage off site or replaced entirely by digital collections. User space for creation and collaboration has become a greater priority than collection storage in the physical library in higher education. This trend in collection development has been well documented by leaders in library and information science in various reports and studies (*NMC Horizon Report*: 2015 Library Edition, and David Lewis's 2013 *College and Research Libraries* article). Among librarians and scholars, this move towards greater reliance on digital collections and renovated, repurposed library space has been neither tranquil nor uncontested. Indeed, city-wide debates and litigation regarding the New York Public Library illustrates the discord such facilities decisions may unleash.[2]

Today's readers value instant access to content on their mobile devices. According to a 2014 report by the EDUCAUSE Center for Analysis Research, 60 percent of students access library resources via mobile devices.[3] While some view digital content online, others choose to download it and read it offline later. Views and downloads have become the new metrics library administrators study. Students and researchers in higher education increasingly expect online, full-text access to documents. Digital content is available for all learning styles. These digital documents have the advantage of immediate access from anywhere and can be marked up and shared with colleagues. According to the *NMC Horizon Report*, users prefer web-scale discovery of items, linked to library holdings of their institution.[4] In short, scholarship has gone digital and is headed towards open access. This priority expands the possibility of access to global scholarship over local physical collection development. Users understand and desire the ideal of simultaneous, unlimited, free access to information, thus ensuring equitable global access; however, it is not yet a reality.

Full-Text Articles

Anyone who attends national conferences and has strolled the exhibition hall is familiar with the major publishers that create and maintain databases of full-text articles. EBSCOhost, Elsevier, Gale, LexisNexis, ProQuest, and Thomson Reuters provide electronic access to current and back files of scholarly journals, popular magazines, and newspapers. Today's academic libraries are most likely to provide access to these full-text databases through subscriptions, licensing, or consortia-shared licensing. Publishers may opt to sell access to articles through full-text databases, through subscriptions to their journal titles, or even through access to individual articles. Pricing varies, depending on terms such as site license, building or location license, full-time equivalent (FTE) ranges, consortial multipliers from one to unlimited, simultaneous access, the number of units the institution already pays to that publisher, and timing due to special deals at the end of the quarter or the year. Clearly, pricing models are somewhat mysterious and require experienced negotiators' advocacy and action as vendors rethink their cash-flow models and reorganize their operations and adjust their pricing accordingly.

Not only are current journals available electronically, so too are historical journals and newspapers. Readex, a division of NewsBank Inc., offers three centuries under the label "America's Historical Newspapers," including "America's Early Newspapers Series 1–7, 1690–1922" (www.readex.com). JSTOR provides access to archival collections I–XI of scholarly journals in all disciplines (www.jstor.org).

Other traditional approaches to access are used as well. Document delivery services are made available by academic libraries to their users as an economical solution for providing quick access to a particular article. While an annual serial subscription may strain a library budget, paying for one specific article retains the user's goodwill and remains affordable for libraries. Libraries also provide interlibrary loan services to supply needed full-text articles at no cost to the user, while the library absorbs the expenses of staff time and associated fees. Sometimes users will find the desired article in an institutional repository or scholarly commons in the form of a preprint, postprint, or publisher's version or PDF. Some institutions require faculty and staff to upload their articles to make them freely available, while others leave it to the personal choice of the faculty

Full-Text Solutions

- document delivery services
- institutional repositories
- interlibrary loan services
- statewide or regional library consortia

or staff member. It is apparent that access to full-text articles can be no cost, low cost, or quite costly, depending on the suppliers' terms. Rarely is there a one-price-fits-all model.

E-books

More e-books are becoming available through libraries as publishers explore various business models. Libraries are able to acquire e-book collections from publishers and aggregators that build discipline-specific collections, such as nursing, and thematic collections, such as reference. In addition to buying or licensing e-book collections, it is also possible to order individual titles from publishers, even from major publishers like Oxford University Press, which had resisted allowing this option, through the academic book jobber, Yankee Book Peddler (YBP). Publishers are moving toward releasing more e-books simultaneously with their print editions. Frontlist e-book titles are becoming more readily available for libraries to order. Publishers that preferred to sell e-book versions of only backlisted, older titles are now willing to sell to libraries both electronic and print editions of newly released monographs.

Library pricing models for e-books are still under debate, however. Readers will recall the arbitrary limit of twenty-six loans per year implemented by HarperCollins. Librarians recognize that library prices are much higher than what the individual reader may pay for the same e-book. Another consideration is multiplier costs for a given number of simultaneous users within an institution or a consortium. Prices must be thoughtfully negotiated. A workable solution for electronic book interlibrary loans among libraries has yet to be achieved, although interlibrary loan e-book pilots have been run, like the Occam's Reader Project (http://occamsreader.org).

Another complicating aspect of electronic books concerns the e-book readers, or e-readers, necessary to read digital content. There are various open and proprietary e-book formats in use, such as PDF and EPUB, which present format compatibility issues to be considered with commercial e-readers. Apps can be used to read an e-book online or offline, on a desktop, laptop, tablet, or smartphone. Check the device's operating system. Determine whether it will be necessary to buy or borrow dedicated hardware such as a Barnes and Noble Nook or Amazon Kindle. Find out if it is necessary to download special software such as Adobe Digital Editions or if the e-reader is browser-based, as is true of the new EBSCO online e-book viewer. EBSCO (https://www.ebscohost.com/ebooks) offers a collection of more than 15,000 e-books. Is the e-book device-neutral? Can library users avoid becoming enmeshed in confusing digital rights management (DRM) difficulties?

There are many e-book database collections, which can be broad in scope or quite focused: Digitalia Hispanica (Latin American and Spanish literature, https://www.amigos.org/node/2665), R2 Digital Library (nursing, www.r2library.com), National Academies Press (STEM titles, www.nap.edu), Project MUSE (books and journals in the humanities and social sciences, https://muse.jhu.edu), Safari Online (technology, https://www.safaribooksonline.com), Salem Press (reference titles, www.salempress.com), Wiley Online Library (multidisciplinary books and journals), and Stalin Digital Archive (digital primary sources). This list indicates the range of disciplines and genres covered in e-books. In addition, individual in-print e-book titles can be selected from Amazon or the academic book jobber Yankee Book Peddler, recently acquired by EBSCO. Not only newly published titles, but also historical books are being distributed as e-books. Three centuries of individual historical texts can be accessed via Readex's America's Historical Imprints (www.readex.com/content/americas-historical-imprints): Early American Imprints, Series I: Evans, 1639–1800, ProQuest's Early English Books Online (www.proquest.com/products-services/databases/eebo.html), and Gale Cengage Learning's Eighteenth Century Collections Online (http://gale.cengage.co.uk/product-highlights/history/eighteenth-century-collections-online.aspx). SAGE Knowledge (https://us.sagepub.com/en-us/nam/knowledge) has been publishing its Historic Documents series of primary sources since 1972.

Dissertations and Theses

ProQuest/UMI indexes doctoral dissertations and master's theses from more than seven hundred universities. Its extensive archive is worldwide, beginning in 1743; the first American dissertation dates from 1861. Each year ProQuest archives more than ninety thousand new graduate works, which it then disseminates. Libraries subscribe to ProQuest's Dissertation and Theses bibliographic database of abstracts so that students, authors, researchers, and publishing institutions may search for, identify, and access graduate

works of interest. The dissertations and theses may be purchased or downloaded for a fee, but it is often possible to borrow them through interlibrary loan services for free (www.proquest.com/products-services/dissertations).

Videos

Many students satisfy their personal preference for visual learning by watching digital videos. In addition, faculty assign digital videos or clips as part of regular classroom instruction. Sometimes students view a video together in class, and sometimes individually outside class as homework. Digital videos or clips can be linked or embedded in learning management courses and streamed. Some commercial vendors allow subscribers to search across multiple video collections simultaneously, for example, Alexander Street Press, which offers this functionality in its Academic Video Online platform. Other commercial vendors, such as Kanopy, Kaltura, and Films on Demand (by Films Media Group), offer streaming of clips and complete videos. Still other vendors, such as Lynda.com and Atomic Learning, offer video training in technology and software applications as well as academic concepts. Commercial news databases, like AP Archive and NBC Learn, offer archives of news videos from the 1920s to the present. Scholastic BookFlix includes PreK–3 storybook and nonfiction videos to strengthen a love of reading and literacy. In addition, free digital videos may be located at YouTube, TED Talks, and Kahn Academy, where users may learn and review core subjects.

Free Video Search Tools

Blinkx
www.blinkx.com

ClipBlast!
www.clipblast.com

Creative Commons Search
https://search.creativecommons.org

Google Videos
https://www.google.com/videohp

OVGuide
https://www.ovguide.com

Tenplay
http://tenplay.com.au

Images

Images, maps, and photographs accent the visual and clarify textual descriptions and explanations. Professors and presenters may include images in class lectures, syllabi, and research findings to inspire the imagination, add humor, or clarify concepts. Images can be found both through commercial producers like Artstor (art and architecture images), Images of the American Civil War by Alexander Street Press, JSTOR Global Plants, or iStock by Getty Images.

Free Image Suppliers

American Memory (Library of Congress)
http://memory.loc.gov/ammem/index.html

Digital Public Library of America
http://dp.la

Flickr
https://www.flickr.com

Google Images
https://images.google.com

Wikipedia Commons
https://commons.wikimedia.org/wiki/Main_Page

Audio

Podcasts and music contribute to the learning experience. Some collections are free, such as the Library of Congress's American Memory, which includes oral histories and sound recordings. Other free sources include SoundCloud (https://soundcloud.com), the world's leading social sound platform using apps that allow users to upload, record, promote, and share original audio creations; Jamendo Music (https://www.jamendo.com/?language=en), a free service for digital music that also offers a music licensing platform; ccMixter (http://ccmixter.org), which allows downloads, listening, and remixes, with its community making mashups, remixes, and a cappella tracks under Creative Commons licenses. In addition, National Jukebox (www.loc.gov/jukebox/) provides historical recordings from the Library of Congress. Podcasts from radio broadcasts are included in proprietary databases like Gale's Opposing Viewpoints in Context (http://solutions.cengage.com/InContext/Opposing-Viewpoints/). Proprietary music databases like American Song (http://alexanderstreet.com/products/american-song), Naxos Music Library (https://www.naxosmusiclibrary.com/home.asp?rurl=%2Fdefault%2Easp), and Smithsonian

Digital Content Providers

Database Vendors

EBSCOhost
https://www.ebscohost.com

Gale
www.cengage.com/us

LexisNexis
www.lexisnexis.com/en-us/gateway.page

ProQuest
www.proquest.com

Thomson Reuters
http://thomsonreuters.com/en.html

Electronic Journals

Elsevier
www.elsevier.com

SAGE Publications
https://us.sagepub.com/en-us/nam/home

Springer
www.springer.com/us

Wiley
www.wiley.com/WileyCDA

Directory of Open Access Journals
https://doaj.org

E-books

ABC-CLIO
www.abc-clio.com

Cambridge University Press
www.cambridge.org

ebrary
www.ebrary.com/corp

EBSCOhost
https://www.ebscohost.com

Gale Virtual Reference Library
www.cengage.com/search/showresults.do?N=197+4294904997

JSTOR
www.jstor.org

Oxford Scholarship Online
www.oxfordscholarship.com

Project MUSE
https://muse.jhu.edu

Safari Books Online
www.proquest.com/products-services/safari_tech_books.html

SAGE Publications
https://us.sagepub.com/en-us/nam/home

Salem Press
www.salempress.com

Springer
www.springer.com/us

Wiley
www.wiley.com/WileyCDA

Open-Access E-books

Directory of Open Access Books
https://doabooks.org

Google Books
https://books.google.com

Project Gutenberg
https://archive.org/details/gutenberg

HathiTrust Digital Library
https://www.hathitrust.org

E-book Comparisons

Comparison of e-book formats
https://en.wikipedia.org/wiki/Comparison_of_e-book_formats

Comparison of e-book readers
https://en.wikipedia.org/wiki/Comparison_of_e-book_readers

Dissertations

Dissertations and Theses Dissemination and Ordering (ProQuest)
www.proquest.com/products-services/dissertations

Open Access Dissertations and Theses
https://oatd.org

PQDT Open
http://pqdtopen.proquest.com/search.html

Commercial Videos

Alexander Street
http://alexanderstreet.com

JoVE (Journal of Visualized Experiments)
www.jove.com

Kanopy
https://www.kanopystreaming.com

Free Videos

Kahn Academy
https://www.khanacademy.org

TED Talks
https://www.ted.com

YouTube
https://www.youtube.com

Commercial Images

AP Images
www.apimages.com

Artstor
www.artstor.org

Free Images

Flickr
https://www.flickr.com

Google Images
https://images.google.com

Commercial Audio Resources

American Song
http://alexanderstreet.com/products/american-song

Naxos Music Library
https://www.naxosmusiclibrary.com/home.asp?rurl=%2Fdefault%2Easp

Jazz Music Library
http://alexanderstreet.com/products/jazz-music-library

Smithsonian Global Sound for Libraries
http://alexanderstreet.com/products/smithsonian-global-sound%C2%AE-libraries

Free Audio Resources

Audio Recordings (Library of Congress)
www.loc.gov/audio/collections

National Jukebox (Library of Congress)
www.loc.gov/jukebox

National Public Radio (under programs & podcasts)
www.npr.org

Open Access Resources

arXiv
http://arxiv.org

PLOS (Public Library of Science)
https://www.plos.org

Open Knowledge Repository (World Bank)
https://openknowledge.worldbank.org

Commercial Learning Resources

Atomic Learning
https://www.atomiclearning.com

LearningExpress Library
www.learningexpresshub.com/productengine/LELIndex.html#/learningexpresslibrary/libraryhome

Lynda
www.lynda.com

Commercial Data

SimplyMap
https://www.simplymap.com/login.html

ProQuest Statistical Abstract of the United States
www.proquest.com/products-services/statabstract.html

Wharton Research Data Services (WRDS)
www.whartonwrds.com

Free Data

American FactFinder
http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

Data.gov
www.data.gov

Open Educational Resources (OERs)

John Burke, Textbook Alternatives & OER, Miami University Libraries
http://libguides.lib.miamioh.edu/textbookalternatives

Global Sound (http://alexanderstreet.com/products/smithsonian-global-sound%C2%AE-libraries) introduce listeners to their musical heritage and history. It is also possible to learn seventy foreign languages, including ancient languages, by taking advantage of the audio and video files in Mango Languages (https://www.mangolanguages.com).

Data Sets

Digital content is available in proprietary databases—for example, Key Business Ratios, Historical Statistics of the United States, Statistical Abstracts of the United States, and SimplyMap—as well as in free collections like American FactFinder, Business and Industry Statistics by the US Census Bureau, Census Reporter, Centers

for Disease Control and Prevention, Data.gov, National Center for Education Statistics, Organization for Cooperation and Development (OECD), UNdata, World Bank's Data and Research, International Monetary Fund Data, and NationMaster for country comparisons.

Open Access

The open-access movement began in the late 1990s and promotes unrestricted access to scholarly research online. Open-access may be *gratis* (free of charge), or it may be *libre*, which means free of charge with some additional usage restrictions, as with Creative Commons licenses. Authors may self-archive their articles in a repository, which is referred to as *green open access*, or publish in an open-access journal, which is known as *gold open access*.

ArXiv.org is an open-access repository of more than a half million scholarly electronic articles in the sciences maintained by Cornell University Library. Cornell University Vision and Image Analysis Group provides publically accessible and available medical image databases. Finding tools for open-access collections include the Directory of Open Access Books (www.doabooks.org), maintained by the OAPEN Foundation at the National Library in the Hague, and the Directory of Open Access Journals (https://doaj.org), founded at Lund University, Sweden, which includes 10,000 open-access scholarly journals in all disciplines.

Open Educational Resources

The term *open educational resources* refers to content for learning, teaching, and research that remains in the public domain and is freely accessible for use and repurposing. These resources may include open textbooks and openly licensed videos, software, learning objects, courses, and tests.

Please note: The commercial and free suppliers listed in the gray boxes serve as an indicative listing rather than a comprehensive list.

Notes

1. Rick Anderson, "A Quiet Culture War in Research Libraries—and What It Means for Librarians, Researchers and Publishers," *Insights* 28, no. 2 (July 2015): 22, Library, Information Science & Technology Abstracts with Full Text, EBSCOhost, http://dx.doi.org/10.1629/uksg.230.
2. Scott Sherman, "The New York Public Library Wars: What Went Wrong at One of the World's Eminent Research Institutions?" *Chronicle of Higher Education* 61, no. 40 (June 24, 2015): B9–B11, Academic Search Complete, EBSCOhost, http://chronicle.com/article/The-New-York-Public-Library/231127.
3. Eden Dahlstrom and Jacqueline Bichsel, *ECAR Study of Undergraduate Students and Information Technology, 2014*, research report (Louisville, CO: EDUCAUSE Center for Analysis and Research, October 2014), 21–22, https://net.educause.edu/ir/library/pdf/ss14/ERS1406.pdf.
4. Larry Johnson, Samantha Becker, Victoria Estrada, and Alex Freeman, *NMC Horizon Report: 2014 Higher Education Edition* (Austin, TX: New Media Consortium, 2014), 14, www.editlib.org/p/130341.