Digital Labs
Fall 2016
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Overview and Definition
When the Information Arcade at the University of Iowa opened in 1992, its stated mission was to “facilitate the integration of new technology into teaching, learning, and research, by promoting the discovery of new ways to access, gather, organize, analyze, manage, create, record, and transmit information” (quoted in Seal 2010, 3). Almost 25 years later, the mission of today’s library-based digital media labs is similar, although the tools they use to achieve their aims have changed. Sound editing studios, video recording suites, podcasting equipment, and multimedia software are some of the tools media labs feature. In addition to librarians, one might find instructional designers, IT staff, data scientists, and an array of faculty in these labs. The combination of technological tools and collaborative opportunities give librarians the opportunity to explore new ways to teach digital literacy, data literacy, and visual literacy.

Basis for Current Interest
Digital media labs in today’s library integrate technology into teaching, learning, and research in a variety of different ways. Some focus on forming successful partnerships between faculty and digital lab staff to enhance pedagogy. For example, the Digital Learning Lab at Princeton University’s McGraw Center for Teaching and Learning offers collaborative instructional design and consultation for faculty to develop new or reinvent current course curriculum. Other labs support teaching and learning by providing the equipment and skills needed to create learning objects to be included in both face-to-face and online courses. The Digital Media and Adaptive Technology Lab at Loyola - Notre Dame Library in Maryland helps to digitize material to include in the learning management system, provides support for students using video and editing software, and hosts classes in the lab space where students make audio, video, and other multimedia presentations. Other digital labs support students’ and researchers’ creation of sophisticated digital projects and collections. The Scholars’ Lab at the University of Virginia, for example, has supported research projects that feature a range of digital tools from augmented reality to geospatial analysis.

However, questions about space, scope of services, funding, and staffing must first be addressed before any digital lab can be successfully launched. Will the digital lab be housed in its own space, or incorporated into an existing learning commons? Will the digital lab serve as a lending library of technological tools? Will it offer staff support to students and faculty who want to use the lab? If the lab does offer training and support, who will provide those services? Will the library partner with IT or a center for teaching and learning to offer additional expertise in specific technologies or instructional design? If the digital lab is to be a collaborative effort across the institution, how will it be funded?

Whether the goal is to improve pedagogy, create digital projects, serve as a hub for experimentation, or a combination of those aims, digital labs’ presence in academic libraries opens up opportunities for librarians to reconsider the way they teach, how their students interact with information, and how those students then create new knowledge.

Current Applications in Academic Libraries and Higher Education
According to the American Library Association’s 2015 The State of America’s Libraries report, in the three years prior to that report’s publication, more than 62 percent of academic libraries renovated space for a variety of purposes, including the creation of digital labs.

Digital labs may be found in a variety of places on academic campuses: within main libraries as well...
as special libraries, such as those dedicated to science and engineering; as stand-alone centers; or embedded in other facilities. Library-based digital media labs can be grouped into three general categories based on the scope of the services and equipment they offer:

- Basic - lends digital media equipment and provides services such as large-scale poster printing
- Intermediate – offers basic services mentioned above and hosts digital media production space. Might also provide personnel to assist those lending digital media equipment
- Advanced – also collaborates with students on multimedia projects and works with faculty on technology-enhanced pedagogy.

**Digital Lab Examples**

The Digital Media Lab at the University of Miami Libraries provides poster printing, scanning and digitization of VHS, cassette and vinyl, and lending of audio and video equipment. Similarly, the Digital Media Lab at the University of Massachusetts Amherst includes digital media production space, equipment check-out, and 3D printing.

The Digital Media Lab at the UNC University Libraries offers those services as well as classes in a variety of software and digital applications. At the University of California San Diego’s Geisel Library, staff at the digital lab offer one-on-one consultations on topics such as creating short animations to illustrate chemical processes, creating a video abstract for an online journal, and printing protein structures from online databases.

In other institutions, such as the University of Virginia, digital media labs offer the equipment and services mentioned above and provide extensive support to faculty and students involved in digital humanities and other sophisticated technology-enhanced projects.

At Bard Graduate Center, the goal of the digital media lab is “increasing the integration and implementation of new media tools within the curricular and research goals of the institution.”

**Applications in Academic Library Instruction**

The ACRL Framework for Information Literacy frame Information Creation as a Process states that “information in any format is produced to convey a message and is shared via a selected delivery method. The iterative processes of researching, creating, revising, and disseminating information vary, and the resulting product reflects these differences.” Nowhere in the library is this process as clearly evident as it is in the digital lab when students come to the library to create a digital project. They work through each step from research to dissemination with the resources provided by the library.

Library instruction trends related to digital media labs include more collaborative projects and integrated classroom instruction. For example, Ros Bell, AV and New Technologies coordinator at the University of Manchester, has created programs that invite experimentation and collaboration with technology. Her program called DigiLab is designed to bring students from various majors and local inventors together to collaborate using a new technology. She holds events throughout the semester where anyone can attend, try the equipment, and work on a project. Instruction is provided by students who are trained on the equipment and experts who present their products.

In another example of collaboration, librarians at the University of Washington Bothell and Cascadia College partnered with a faculty member who developed a media production course called “Democratizing History through Digital Oral History.” The librarians provided support for the course, created a digital archive for the projects, and asked students to create metadata for their projects (Hattwig, Lam, and Freidberg 2015).

Bringing digital media tools into the classroom, librarians at the Queen’s University College in Kingston, Ontario worked with the Public Health Master’s program to show students how to use geospatial data to address public health issues. The instruction session focused on infographics and the tools used to create them (Berish et al. 2016).

Using the ACRL’s Visual Literacy Competency Standards changed the way Andrew Horbal (2016), University of Maryland, instructed his students on
creating video essays. Horbal modified his instruction from focusing on technology to emphasizing how to become a critical consumer of media in order to be more effective contributors. This led to the focus on message over a video that looked good.

Engaged learning and timely instruction can be blended in unique ways to teach critical thinking and collaborative skills. Clemson’s Digital Media and Learning Lab in the College of Education uses game design to develop these important skills. Students can partner on projects in game and app development. Teams consist of students, faculty, and K-12 teachers working together on a design project. As the group works on their project, they receive appropriate instruction and follow-up workshops. These instruction sessions can be teacher- or student-led. With the instruction and support students receive, they successfully complete projects that have an impact in classrooms and schools.

Opportunities for supporting classes through library instruction and use of digital media labs will grow as librarians partner with campus faculty in helping students accomplish course learning outcomes requiring a digital project.

Potential Value

Opportunities for Staff Development

The 2015 Horizon Report (Johnson et al 2015) identifies the need to rethink the roles and responsibilities of academic librarians as one of the six greatest challenges impeding technology adoption in academic libraries. Yet it also offers opportunities for academic librarians to add to their skill set and acquire expertise in new areas. San Jose State University School of Information student Jennifer Overaa’s report Emerging Career Trends for Information Professionals (2016) found that one of the job skills frequently required of college librarians is the ability to incorporate emerging technologies into research support and demonstrated creativity in integrating technology into teaching.

Koh and Abbas (2015) note that qualified staff are essential for the success of digital media labs and similar spaces. They point out that while the current ALA core competencies in librarianship do not list specific skills needed for what they describe as “new librarianship” (116), there are a number of key competencies for information professionals working in digital labs and makerspaces. Those skills include the ability to learn, to adapt to changing situations, to collaborate, to advocate for the digital lab or makerspace, and to serve a diverse population.

Given the pace of technological change, the ability to learn is particularly crucial, and digital media labs should strive to employ those who are enthusiastic about learning, exploration, and keeping pace with technological developments.

New Models of Student Library Employment

Personnel limitations and budgetary constraints might make it difficult to meet all the staffing needs of a digital lab. One potential solution is to look to students as digital lab employees.

Miller (2014) questions: “What if student employees were viewed as sources of potential innovation within the library and the academy more generally? How might student employees help libraries transform their services, collections, and spaces for current and future students?” (334). Miller notes that such an approach saw positive results at University of California, Los Angeles, where a group of student employees with development skills in iOS, Android, and web platforms designed mobile applications for the library.

Collaborating with Other Departments

Collaborating with other departments within the institution is critical to the success of any digital media lab. Shapiro (2016) offers a cautionary tale, describing how Sprague Library at New Jersey’s Montclair State University opened a Student Interactive Media Lab nine years ago. That lab, a joint effort with the campus’s Office of Information Technology, featured workstations, video/audio equipment, scanners, color printers and camera equipment. The lab closed several years ago because of low usage. Shapiro speculates that the lab might have been more successful had the library taken full ownership of the project and made more effort to partner with academic departments in structuring projects or assignments.
Opportunities to Reach Students in Hybrid/Blended Classrooms

Ready access to the tools and expertise needed to create videos, online tutorials, podcasts, and more gives librarians the chance to partner with faculty to create learning objects that will best suit the needs of their students. These learning objects would provide students with just-in-time instruction and make library instruction more scalable.

Potential Hurdles

Money is an obvious hurdle to overcome when creating and maintaining a digital lab. Funding may initially come from grants and one-time funding, but providing ongoing funding to sustain the service is a potential hurdle. Fees are a possible source of ongoing funding (Crumpton 2015); however, fees can become a barrier to students who are unable to pay. It is important to consider these concerns when planning for a sustainable digital media lab.

The skill sets required for staffing a digital media lab are different than those for a traditional reference desk. Lab staff are expected to have good interpersonal skills when interacting with patrons and have a variety of skills using different technologies, software programs, and applications. Ongoing training is foundational to a successful lab and may require significant time and commitments from employees. With the variety of skills needed to support a help desk in the digital media lab, training will have an impact on the schedule and budgets.

The amount of space allocated to the lab will determine what types of individual and group services are offered. Special construction needs such as electrical, network, and sound proofing add additional costs and complexity to the space used as a digital media lab. In addition to the physical space, the digital space needs to be considered as well. Software purchases and project storage and preservation add to the planning and preparation required to launch a digital media lab.

Maintaining the lab and adding new equipment can become a strain on the budget. However, the digital media librarian must also consider how to manage resources as needs grow. When campus faculty discover the value of the lab and want to bring classes to the lab, the librarian must balance those needs with the needs of students working on individual projects. Priorities and planning for success are sometimes overlooked when a service begins to gain popularity.

Support for a digital media lab may be hard to encourage if stakeholders, including library personnel, administration, and campus faculty, do not perceive a need or see the value. There may be support for basic technology services but not for some of the newer equipment and programs that have not been tried and proven valuable.

Conclusion

Digital labs offer academic libraries the opportunity to provide their patrons with a range of technological tools, training in their use, and the opportunity to collaborate with students and faculty to use these tools to enhance learning. These learning spaces continue to evolve, with an increasing number of institutions creating makerspaces.

As that evolution advances, librarians’ skills must continue to develop. In a study of the competencies needed to provide teen library services in the future, Koh and Abbas (2016) surveyed professionals working in museum and library learning labs and makerspaces. They found the majority of participants (74 percent) reported being asked to do something for which they were not prepared. New technologies, makerspaces, management, teaching and programming and community advocacy and partnerships were the competencies participants indicated they hadn’t learned through their higher education. That same study indicated that 90 percent of participants identified on-the-job learning as a means of gaining new competencies.

In order to provide skilled support for students and faculty, librarians working in digital labs must have plentiful staff development opportunities. Additionally, administrators need to consider when they must hire specialized staff – such as educational technologists or instruction designers – or partner with other departments that might have specialists in those areas.
References


Further Readings

