

# Spaces, Skills, and Synthesis

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## Introduction

The term digital humanities is not universally embraced. Faculty, students, and librarians generally greet it with nonplussed expressions. What does it mean? Is there such a thing as “analog humanities”? What is included? What is excluded? Who is a digital humanist? Who is not?<sup>1</sup>

We face similarly confused reactions when librarians venture into new territory—fancy study spaces, makerspaces, embedded librarianship, and so on. When a library opens a loud study space, the campus reacts with “But the space has no books. Why is this space in the library? What makes this space a library anyway?” Our miles of bookcases also receive confusing feedback. Some faculty members state with pride that they never enter the library. Others become incredibly upset when books are moved to off-site storage. As we change our perceptions of physical books, we are forced to confront our definitions of how we manage our academic work.

In contrast, consider trends in industries such as banking or real estate. One expects banks and realtors to have functioning, attractive websites

and to use technology to their advantage. We do not use terms such as *digital banking* or *digital real estate*. There are parallels within the university. Faculty and students in the sciences have integrated coding and technology into their work without facing terms such as *digital physics* or *digital biology*. Investing in appropriate technologies is a requirement in all fields, and the humanities are no exception.

In this chapter, we describe three learning spaces at Penn Libraries in terms of planning history, physical layout, technology capabilities, staffing, and programmatic decisions. We describe how support for “digital humanities” (DH) has grown deeper, more varied, better funded, and more effectively coordinated across units.

The work we describe is much greater than the efforts of the two authors. It reflects the dedication and creativity of scores of humanities scholars, librarians, instructional design staff, and administrators. We present our experiences and ideas in the larger context of Penn Libraries, attempting to distill concepts that may resonate in your campus context.

We write this chapter in our own voices. One of us works on the first floor of our main library in a busy area where scores of people pass by her office daily on campus tours. One of us works on the sixth floor of the same building with a city skyline view, a gallery, and quiet surroundings. The spaces we inhabit as individuals color our own academic work as well as the relationships we build within and beyond campus.

## University Context

The University of Pennsylvania (Penn) is an Ivy League university in an urban location. Penn has twelve schools and is consistently ranked among the top ten universities in the United States. The university’s responsibility-centered budgeting structure contributes to a highly decentralized campus environment. Innovations happen continuously all over campus, but sharing of ideas across units can be a challenge.

The School of Arts and Sciences houses all the humanities disciplines. The school has twenty-seven academic departments and offers fifty-four majors for over 6,300 undergraduate students as well as thirty-three doctoral and ten master’s programs for more than 2,100 graduate students.<sup>2</sup>

Penn Libraries is seen as a neutral place that does not favor one discipline over another (we hear the phrase “The library is like Switzerland”). We are recognized as the provider of comfortable, nurturing spaces, and strong technology infrastructure; in particular, our management of the campus-wide Canvas courseware system helps us engage with teaching and learning across campus.

Librarians at Penn have staff ranking, not faculty positions, a situation that reflects and contributes to perceptions of librarians as supporters of research, rather than as full collaborators or independent researchers. In recent years, we have developed staff-led research projects to engage staff with library work and collections and to support them in personally experiencing how it feels to do research. It is a slow but worthwhile process, and we believe it could strengthen the relationship between librarians and faculty.

DH projects are conducted at Penn in a variety of contexts, within academic departments as well as in the libraries. We offer a few examples. PennSound, supported by the School of Arts and Sciences, records poetry readings and makes those recordings available for download. The Schoenberg Institute for Manuscript Studies (SIMS) focuses on DH projects in the context of medieval manuscript collections. The Penn Humanities Forum has launched a Digital Humanities Forum (DHF),<sup>3</sup> which, in collaboration with Penn Libraries, has held several large symposia each year, bringing to campus internationally known DH leaders. A faculty committee is exploring the DH landscape on campus as part of strategic planning in the School of Arts and Sciences. Library conversations with this committee have helped us articulate our own capabilities, resulting in a crowdsourcing project to catalog library expertise to answer the question “Who to ask for what?”<sup>4</sup>

We structure this chapter in three segments to reflect the title—spaces, skills, and synthesis—beginning with our physical spaces.

## Spaces

Libraries are associated primarily with a sense of place. We “go to the library,” a physical building that contains resources to help us think, read, find materials, and conduct research. The appearance and functionality of the library can affect our research productivity as well as our metacognition—our perception of our own productivity. Spaces designed to encourage brainstorming and discussion need to look, feel, and function differently from those designed to support deep reading, note taking, writing, or presentation practice.

As documented by the Learning Spaces Collaboratory *Guide*, creative combinations of space and technology can catalyze scholarship.<sup>5</sup> Collocation of library expertise near collaboration spaces can help faculty and students draw connections between traditional library capabilities (collections, subject specialists, bibliographers, catalogers) and newer capabilities (scanning, digitization, data analysis and visualization, new media creation, web/blog design, audio/video editing). Effective space management through provision of reliable technology infrastructure can impart confidence to faculty and students taking on DH projects.

When a library space works well, it becomes a coveted destination.<sup>6</sup> We observe people “voting with their feet.” During final exams one semester at the Weigle Information Commons, a young woman looked around and, finding no open tables, pulled up her chair to a recycling bin and used it as a table for her laptop. She preferred to write her research paper there in the crowded open area rather than move to empty seats one floor above. When a space “feels right” for a particular purpose, people choose it again and again even when it is overflowing. Over 2,000 groups of students on average reserved space in the Weigle Information Commons each month during 2013.<sup>7</sup>

### The Importance of Learning Space Design

Think about your local mall. If it included a long row of identical coffee shops, would you still want coffee? How do endless stacks of books affect you? Recently Penn Libraries hosted a qualitative research exhibit created by

a graduate nursing class on the topic of stress.<sup>8</sup> Graduate students described their concerns through photographs. One graduate student reflected on the Sisyphean pessimism created by a photo of endless rows of book stacks on our fourth floor. When presented in creative ways, collections can instead inspire optimism and curiosity in learners. Bookstores, for example, choose artistic setups over book stacks, specializing in cozy corners, topical exhibits, and displays. Library spaces must prioritize the sense of place, an atmosphere that invites you to walk around and find a corner for your needs. We describe three spaces in the Penn Libraries that differ in layout, function, staffing, and programming—to support specific types of academic work.

### Space Planning History

In 2006, Penn Libraries opened the Weigle Information Commons (WIC) after a five-year planning process with committees representing faculty, students, and staff. A joint funding model with the School of Arts and Sciences created a renewing connection between Penn Libraries and the humanities departments. Formal “program partner” relationships with campus organizations including the writing center, academic support services (including support for students with disabilities), public speaking center, undergraduate research opportunities center, and career services help maintain the momentum built during planning. The space aims to support small-group collaboration by undergraduate students, with a one-stop-shop approach to academic support services.

In 2013, Penn Libraries opened the Kislak Center for Special Collections, Rare Books and Manuscripts after a seven-year planning effort. The large-scale renovation of two floors created spaces for presentations, discussions, and teaching as well as spaces for storing, cataloging, displaying, and working with library-owned materials. The space aims to encourage broad and creative use of physical materials and to serve as a state-of-the-art gathering place for campus.

In 2014, Penn Libraries opened the Collaborative Classroom after a two-year planning effort that included active collaboration with an undergraduate student group, the Student Committee on Undergraduate Edu-

cation (SCUE), and visits to other universities. The project complements a campus initiative funded by a 2013 grant from the Association of American Universities (AAU).<sup>9</sup> The space aims to support campus interest in new pedagogical methods including “flipped classroom” instruction.

## Facilities, Furniture, and Technology

### *Weigle Information Commons (WIC)*

The WIC has 6,600 square feet of space on the first floor of the main library building. It includes twelve Data Diner Booths that look and function just like their restaurant counterparts with the addition of computers. Each seats six people, and the benches are long and wide to accommodate the occasional nap. The high bench backs create a conversational buzz while limiting eavesdropping. Mixed in with the booths are ten study rooms for private conversations and two open alcoves for large-group brainstorming. The space includes a thirty-five-seat seminar room with built-in videoconferencing and the Vitale Digital Media Lab for self-service media creation. The variety of spaces in close proximity enables powerful synthesis activities.<sup>10</sup> Humanities classes will start with lecture or large-group discussion in the seminar room, break up for small-group conversations in the booths, and reconvene to share conclusions.

Several rooms allow self-service high-definition video recording and videoconferencing (Skype, Google Hangouts, etc.), role playing, and live interviews. The Vitale Digital Media Lab supports self-service media creation with a variety of gadgets including a vinyl record digitizer, a slide scanner, and a large-format printer. Faculty and students can borrow video cameras, audio recorders, and portable scanners for offsite use.

### *Kislak Center for Special Collections, Rare Books and Manuscripts*

The Kislak Center occupies the two top floors of the same library building. Renovations have made collections of rare materials dramatically more interesting and accessible. The Class of 1978 Pavilion is a glamorous space with built-in videoconferencing and video-recording capability that can accommodate 140 people for lectures or be rearranged for smaller discussions. Nearby is a row of three 20-person seminar rooms that can be combined by removable partitions.

The center includes the Vitale Media Lab (Vitale II), which focuses DH programming on cultural heritage and special collections materials. The room can be reconfigured easily for groups of up to twenty people and includes a high-definition ceiling-mounted camera for enlarging manuscripts on large monitors and sharing via videoconference. Closely related to Vitale II is the Schoenberg Institute for Manuscript Studies (SIMS), which focuses on research around medieval manuscripts, both physical and digital.

Down the hall, the Rare Book Reading Room provides a central space with small pullout rooms for researchers to handle materials. The Kislak Center also includes the Goldstein Exhibit Hall, the historically important Lea Library with its collection of eighteenth-century manuscripts, the Molis Terrace for informal study, and a balcony with a splendid view of the Philadelphia skyline.

### *Collaborative Classroom*

The Collaborative Classroom is an active learning space that includes a thirty-seat classroom for formal instruction set into a wide “porch” area where students can work informally in small groups. The classroom is located on the first floor next to WIC and a rare books exhibit area. Created in a room that formerly housed government documents, all the walls are writable surfaces. Designed for problem-solving activities, the space contains five round tables (with power and Internet wired into the centers) and one instructor station, each with a projection screen. Technology and furniture choices were made to explicitly support “flipped classroom” pedagogies.<sup>11</sup> An elaborate audiovisual system gives faculty members one-touch power to take or cede control over the six display screens.

### *Common Aspects and a Neighborhood*

Common technology capabilities across the three spaces include movable furniture, ability to display from personal laptops, access to MacBook laptops and iPads, and an extensive inventory of educational software.

All three spaces are in the Van Pelt-Dietrich Library Center, a half-century-old building with a twenty-four-hour café on the lowest level.

Together they create a powerful “neighborhood.” Faculty and students can accomplish different tasks on different floors—touch a manuscript in the reading room, take photos of a few pages in Vitale II, create a video of their conversation about the photos in a WIC study room, or annotate the photos on the writable walls in the Collaborative Classroom. Helping patrons explore, understand, and feel ownership over the capabilities available in our neighborhood of spaces is the challenge we face as librarians.

## Skills

In support of learning spaces, Penn Libraries has invested in expanding skill sets of library staff through professional development of current staff and recruitment of individuals with specialized skill sets, partially through postdoctoral DH fellowships. Reflections on DH support have required a reexamination of what it means to be a librarian and who is needed on deck in a modern library. We discuss three specific roles we perceive in the relationships librarians have developed with DH researchers.

### Librarian as Concierge

Successful DH projects require thoughtful planning. Eliciting the initial vision for a project requires careful conversations similar to the traditional reference interview. What do you want to accomplish? How will you recognize success? What obstacles do you perceive? How will you organize your project effectively? What skills are needed for the project to be successful? Who has those skills? It is worth mentioning that this is true whether the project instigator is student, faculty, or librarian, new to DH or seasoned.\*

Subject specialists who are themselves new to or nervous with technology tools may hesitate to guide faculty choices, defaulting to a “But that’s not my role” response. Having instructional design and information technology experts on staff and pairing them with subject specialists can improve library contributions in the initial stages of a DH project. Creating collaborative relationships between IT experts and subject specialists

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\* We use the term *project instigator* to refer to the person who is leading a project, whether faculty, student, or librarian.



also has positive side effects as described later in the context of our Digital Scholarship Workshop series.

A few tensions arise that are worth tackling head-on. Sometimes librarians are seen as insiders, and sometimes as outsiders. The librarian can stay outside the departmental politics, helping all members of a department and not distinguishing across hierarchies of tenured/untentured, standing/ad-hoc, faculty/graduate student/staff, and so on. The outsider role can be especially helpful in sharing successes and challenges across departments. If one department or research group faces difficulties with implementing a particular software program, the librarian can help share that information (while maintaining strict privacy guards) with another department that is considering a similar project. Successes can be shared through the library website and blogs, where we showcase good projects and abstract out from project details to the general functionality, helping with replication across campus.<sup>12</sup> Facilitating peer-to-peer sharing for faculty, such as our annual Engaging Students through Technology symposia, be highly effective.<sup>13</sup>

Librarians can benefit from insider knowledge if they have personal experience conducting research so that they come to the project understanding how difficult it can be to achieve productive research results. A librarian with strong relationships (think “embedded librarianship”) within a department can develop intuition that helps when new DH projects emerge.

### Librarian as IT Expert

To support or lead DH projects, libraries need staff with both wide and deep expertise. A project instigator may want to first look at a range of options before picking a tool set. (Should I start with a website or a multimedia-friendly database? Would a podcast work for me, or is video needed?) At this stage, assistance from the library needs to be perceived as unbiased and impartial. Project instigators do not want to be “convinced into” a particular tool, platform, or software choice, particularly if it seems like that the librarian is reverting to his or her own personal expertise (“If you have a hammer, everything looks like a nail”).

During this initial stage of tool selection, we need to acknowledge that exploring a new tool can be surprisingly stressful. An interface that feels natural to a regular user can look arcane and intimidating to a newcomer. When librarians take time to prepare extensive demonstration materials in a disciplinary context, faculty are more easily able to look past user interface limitations and glimpse the capabilities of a DH tool.

Once the project instigator has chosen the tools, deep knowledge is in demand. The project instigator needs to be paired up with a librarian who knows those tools well, can point out pitfalls ahead of time, and can effectively liaise with other library staff as needed. Every DH tool has its strengths and weaknesses, and knowing details early can reduce frustration.

We have worked toward providing a “geek squad” of sorts by making the expertise of our staff more transparent for faculty and students. We have used simple tools—a publicly editable Google Doc tied to a Spring-share LibGuide—to collect data from our librarians about their own expertise with DH tools. The crowdsourcing project took about four weeks. Librarians added in their names next to tools they were comfortable with. The results provide an easy place to find out whom to ask about what, and a useful listing of DH tools building on the DIRT Directory framework.<sup>14</sup>

### Librarian as Researcher

We face ambivalence from faculty members and students on the perception of librarians as researchers. As faculty and students use more online resources, subscription databases as well as materials available openly through the Internet, librarians need to develop new skills and approaches. One approach taken at Penn Libraries is to support library staff in some departments to be DH researchers in their own right in addition to supporting faculty and student research.<sup>15</sup> We see advantages for librarians to stay active in personal research activities—to continue their own learning and to remain connected to the difficulties of being a learner.

We have successfully used blogging as a way to expose the scholarship activities within the library to the broader campus community. We have several blogs highlighting the work of different units, including the

*Schoenberg Institute* blog, the DH tag on the general *PennWIC* blog, and the *Unique at Penn* blog.<sup>16</sup>

## Staffing Details

Providing support for the three types of roles defined above requires library staffing that is varied and flexible. Our spaces are supported by traditionally educated librarians, instructional designers, and software geeks. In addition to permanent staff, we take advantage of multiyear fellowships, year-long graduate internships, short-term visiting scholars, and ad hoc consultants.

WIC includes three full-time and two half-time staff and up to a dozen graduate and undergraduate students. Staff expertise includes video editing (Final Cut Pro, Premiere, iMovie), graphic design (Photoshop, InDesign, Illustrator), web design (WordPress, CSS), instructional design (lesson planning, assignment design), data analysis (Excel, Microsoft Access), and so on.

The Kislak Center has many full-time and part-time staff, including curators to collect and interpret collections, catalogers to describe materials, and staff to manage the reading rooms. SIMS has a separate research agenda, undertaken primarily by librarians and library staff. It is not a support unit for faculty and students, although faculty and students collaborate on SIMS projects. Directly involved with DH support are five full-time staff: two curators for Digital Research Services, a digital content programmer, a project manager for the Schoenberg Database of Manuscripts,<sup>17</sup> and a web developer. Staff expertise includes software development using programming languages, web server management, data mining, text mining, data visualization, TEI encoding, and Omeka.

The Collaborative Classroom is supported by several full-time librarians (including subject specialists and social science research specialists) and graduate students in the Research and Instructional Services department with assistance from WIC. A Teaching and Learning Fellow with a doctorate in education supports faculty who teach in the space.

Communication among the groups of staff has been crucial and an ongoing challenge. One effective mechanism is *The Thread*, a library-facing blog where staff share updates informally.<sup>18</sup> Another is the Public Services

Forum, a monthly library-wide meeting for librarians to share accomplishments and challenges. A recent Digital Scholarship Workshop series has successfully engaged librarians and the campus community by exploring DH topics through joint presentations that include tool demonstrations as well as conversation about effective liaison librarianship.<sup>19</sup>

## Program Support Models

Our three spaces and their staff configurations support different approaches to DH work. Collaborations in WIC typically begin with a faculty request for support for a course-related assignment. We meet with the faculty member to understand goals, course design, and expectations. We design and conduct training sessions for the students, as well as for teaching assistants.<sup>20</sup> We assist with setup of shared spaces (physical and online) and workflows. We hold open work sessions for students shortly before assignment deadlines to help manage last-minute stresses. We create showcases of exemplary student work.<sup>21</sup> Demand for course-level assistance has been steady for several years,<sup>22</sup> and we provide custom training on web design (WordPress, Tumblr, Google Sites), graphic design (Photoshop, PowerPoint, Instagram), and video (iMovie, Final Cut Pro, iPhoto, Canvas).

We explore new technologies, purchase sample gadgets for lending, help people feel more comfortable with new technologies, and showcase examples that might fuel replication. We provide iPads and laptops to support ad hoc use, such as a class project involving iPads and rare books.<sup>23</sup> We organize workshops for general audiences and provide ad hoc consultations. In 2013, WIC conducted over 220 open workshops for over 1,700 attendees and about 80 workshops by request for 1,000 attendees.<sup>24</sup>

Once a semester, we hold a Gadget Day for people from around campus to share their favorite new toys. We provide access to Lynda.com for self-paced skill improvement, especially with the Adobe Creative Suite of software. Once a year, we hold an Engaging Students through Technology Symposium, which attracted over 150 faculty and graduate students last year. Our faculty advisory group helped us build a faculty development module on Nurturing Student Creativity through Video Projects.<sup>25</sup> We run an annual Mashup Video contest to recognize student creativity.

Collaborations in the Kislak Center often include working with special collections materials, in addition to technical training. Programming offered through Vitale II tends to be ongoing and aimed at specific audiences, rather than through repeat sessions of discrete workshops. Much programming centers on what we call Focused Labs, set times each week for faculty, students, and librarians to meet and work through specific tools and techniques. The Focused Labs for 2013–2014 included Code Academy courses in Python and HTML/CSS<sup>26</sup> and an Omeka users group. Although all started off strong, by the end of the spring semester attendance had decreased. We are exploring ways to strengthen Vitale II programming, encouraging librarians in other departments to hold sessions in the space. We have organized several DH-focused events including three unconferences—PhillyDH@Penn 2013 and 2014, and THATCamp Penn 2012.<sup>27</sup>

Since opening in February 2014, the Collaborative Classroom has hosted several full-semester courses, brainstorming sessions for academic departments, outreach events, and workshops on DH topics including social media and mind mapping. In one presentation for the Digital Humanities Forum, a faculty member presented an extensive DH project that focuses on Philadelphia history and includes mapping, GIS, video, and animation technologies.<sup>28</sup>

## Synthesis

In this section, we explore examples of synthesizing spaces and skills. An important component of DH work is to assist librarians and staff with IT expertise in learning to articulate how what they know (creating a searchable web catalog) is helpful for a DH project (create a searchable catalog of student-selected items from the Penn Museum). Staff with significant IT expertise may not always understand the nervousness of faculty and students who are just getting started. Subject librarians can help bridge gaps and translate jargon.

## Examples

The examples below are actual projects, though some details have been stylized.

- A professor of Persian history visited the Vitale Digital Media Lab in WIC carrying an oversize battered book. She wanted to create an English translation of the book, which contained several hundred pages of Arabic text and color illustrations. We guided her through scanning and photography options available across different departments. After she had created a project plan, we trained her undergraduate students to scan and resize the original illustrations and lay out the pages with English text replacing the Arabic text. Over several weeks, her project grew to include scanning, optical character recognition, color management, graphic design, file and scan management, workflow planning, and backup procedures. She reflected that our guidance on the complexity of the process was especially helpful because she could assess feasibility and costs in terms of her time and her students' time.
- A professor of South Asian studies came to WIC with ideas for her eighty-person introductory undergraduate class. Students were preparing simplistic presentations and class time watching group presentations was minimally engaging. We explored a variety of technology options, including screen video creation (Canvas, Jing, PowerPoint), forms and polls (Google Forms, online voting systems), video editing (Final Cut Pro, iMovie, Windows Movie Maker) and video sharing (YouTube, Canvas, Blackboard). We conducted training for the professor and her four teaching assistants on how to manage the new course assignment: five-minute videos by each student that would be watched and voted on by the full class, with the winners shown at an end-of-term celebration. The process of creating an effective assignment included iterative analysis of the tools available in active conversation with the course TAs, demos in the classroom, and "tech office hours" for the students shortly before each deadline. The results are included in a class showcase page.<sup>29</sup> After watching the professor present at our annual symposium,<sup>30</sup> several faculty members around campus decided to incorporate this simple voice-over-PowerPoint technology solution in their courses.

- Several librarians expressed concern about their own knowledge regarding popular digital tools and techniques. They created a Digital Scholarship series to bring together librarians, faculty, students, and staff for workshops primarily led by librarians. Topics included choosing the right online exhibit software, qualitative research, choosing a citation manager, working with archival materials, and an Omeka overview. The series has provided short lunchtime workshops to explain what each tool does and why it is useful so that librarians can make informed decisions about which tools they want to learn.
- The Director of the Kislak Center and an English professor co-taught a freshman seminar *The World of Manuscripts* (ENGL 016.304), which introduced students in the class to a wide range of manuscript and manuscript-like materials (including cuneiform tablets and letters of Mary Shelley). As their final project, the students undertook a study of Penn's Wycliffite New Testament, Ms. Codex 201,<sup>31</sup> each student taking responsibility for a different aspect of the book. That study culminated in a short video, made with the assistance of library staff and using the ceiling camera available in Vitale II.<sup>32</sup> The video is public on the SIMS YouTube channel and showcases the contributions of the students and librarians.<sup>33</sup>
- Not all collaborations unfold as intended. A history of art professor came to the Kislak Center interested in a website to combine artifacts and archival documents relating to the Beth Shean archaeological dig held by the Penn Museum. The semester-long project included a small grant from the Digital Humanities Forum. Library staff conducted Omeka training, and students were responsible for selecting, curating, scanning, and loading materials into Omeka. However, the students found Omeka clunky and the exhibit-building function difficult. The hosted nature of the service limited our ability to customize the experience using server back-end functionality. The students chose to move the project to Squarespace, a commercial website hosting platform, without input from library

staff. Although the Squarespace website is beautiful, the cataloging and reuse capabilities possible with Omeka were lost. We are now exploring ways to possibly combine an Omeka back end with a Squarespace front end.<sup>34</sup>

- WIC's iPads in the Classroom program has worked well in conjunction with rare books and our stacks.<sup>35</sup> One English class used our iPads to explore rare materials with interactive research into authors and provenance. The professor reflected on her experiences, saying, "While I've given students similar assignments for several years, this is the first year that they've done the depth of research that I expected."<sup>36</sup>

These examples emphasize the importance of choosing between tools and surveying the universe of available tools. Faculty appreciate a safe space to play in, a sandbox of sorts, where trying out a new tool has a low level of risk. Once a professor has identified a tool that is a good fit, the need for hands-on training can be met in many ways, including using online tutorials from vendors. The librarian need not feel compelled to have expertise in all tools of potential interest, but the librarian does need to stay up-to-date on name recognition of the universe of currently popular tools.

### Repercussions for New Media Literacies

In addition to raising standards for librarian expertise, the importance of effective synthesis of DH tools leads to higher expectations for students and faculty. Alan Dix has written about the popular YouTube video "Middle Ages Tech Support" to explain how a familiar technology, such as the book, may have stumped scholars in previous centuries.<sup>37</sup> Today, our expectations for technology skills increase steadily. Mastery of skills in video creation, blogging, social media use, web design, text mining, and data analysis has become an expectation rather than an aspiration. Both faculty and students can face pressures to ramp up their own digital skills,<sup>38</sup> sometimes on short notice. The Technology Acceptance Model (TAM) may help us anticipate areas of difficulty.<sup>39</sup> For example, perceptions of difficulty of use and perceptions of usefulness impact how some students



acquire video-creation skills.<sup>40</sup> We may want to consider identity-related obstacles to the process of gaining digital skills. Explicit consideration of digital literacies and obstacles to their acquisition can help us organize how we support DH projects.

## Conclusion

In this chapter, we have reflected on the evolution of three spaces at the University of Pennsylvania Libraries. We end with a few philosophical comments.

All three spaces discussed here were created after extensive visits to other campuses and in coordination with national organizations considering learning-space design. Reviewing concrete examples from other contexts has helped us make informed choices when meeting with contractors and architects. Our staffing and programming decisions have also benefited from conversations with colleagues in other institutions.

How we manage our spaces after the ribbon cutting has been an important choice. We have taken the “better broken than dusty” attitude towards our shiny new spaces, taking care to make all of campus feel welcome and comfortable. It can be tricky to maintain high-tech spaces when they are packed with patrons who won’t always behave as expected. When we hosted the forty-eight-hour Penn Apps hackathon, every bit of floor space in the Kislak Center was filled with sleep-deprived undergraduates. Opening up spaces deliberately requires taking risks, and support for risk taking (with a sense of humor) from the highest levels of library administration has been essential.

Skill sets come in and out of fashion. The human connections we make with faculty and students are as important, if not more, than the specific technical skill we bring to a consultation. The push and pull between librarian-as-support-staff and librarian-as-researcher is a real one, and each librarian finds his or her own comfortable spot. Through writing this chapter together, we explored our own perceptions of this continuum.

Writing this chapter together has also been an example of successfully crossing organizational boundaries. As we struggle through our own writ-

ing and research projects, it increases our ability to empathize with faculty and students embarking on their research efforts.

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## Notes

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