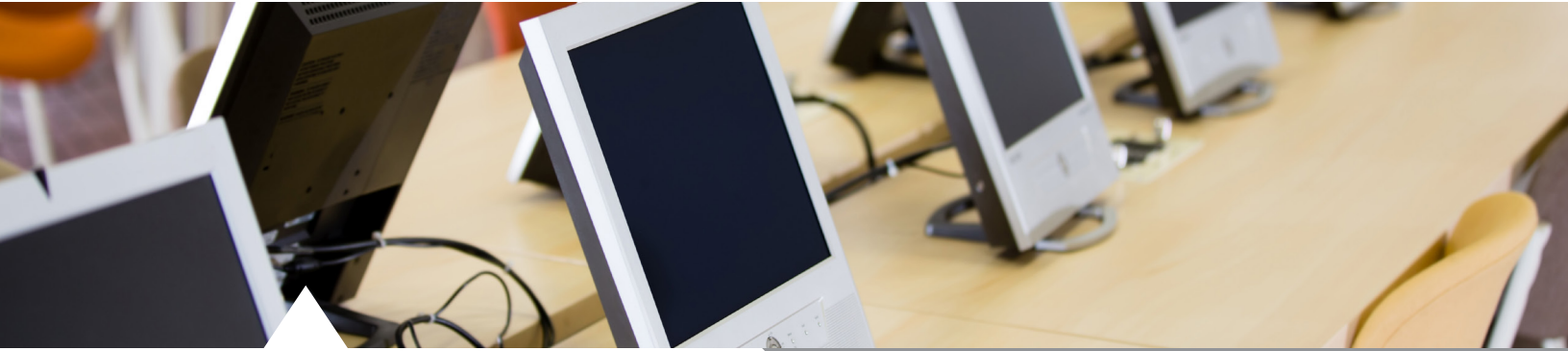


» “My two favourite things in life are libraries and bicycles. They both move people forward without wasting anything. The perfect day: riding a bike to the library.”

—PETER GOLKIN

# Strategic Library™



Issue 41 // August 15, 2017

## DIY Usability: Low-Barrier Solutions for the Busy Librarian

BY EMILY MITCHELL AND BRANDON WEST

**A**lthough every library would benefit from running usability studies, not every library has a dedicated staff available to conduct those studies. Anecdotally, librarians seem to feel incapable of undertaking usability studies for reasons including time, budget, and expertise. We all have other job duties and tight budgets. Moreover, how many of us have ever actually received any kind of training or education on conducting usability studies? For all their importance, they're not exactly standard coursework for a degree in library science.

We all may be jealous of the libraries that have dedicated usability/user experience librarians, but that doesn't mean the rest of us can't conduct successful, worthwhile usability testing that leads to website improvements. There are plenty of quick usability tests that can be run with just a little time and even less expertise. These studies probably won't get you the in-depth, fine-grained results that are possible with more

involved studies, but they will help you to identify your website's biggest problems. They'll also point you in a user-centered direction as you fix those problems.

As an added bonus, the data you gather could have applications beyond the website. Understanding which aspects of using the library give people trouble improves our ability to assist patrons at the desk and is useful to know when preparing instruction sessions. It can also inform library promotion and outreach as you learn more about your patrons' mental models of the library and its services. If you start by taking a couple minutes to figure out how the results of a usability test will be relevant to your coworkers, it will be much easier to ask those coworkers to collaborate with you on conducting the test(s). After all, the only thing better than an easy and productive usability test is an easy and productive usability test done with help!

### IF YOU HAVE A COUPLE HOURS

Can you scrape together five or six non-

### USING STUDENT VOLUNTEERS IN LIBRARY ORGANIZATIONS

### TEACHING A NEW DOG OLD TRICKS

*Supervising Veteran Staff as an Early Career Librarian*

### TECHNOLOGY SKILLS IN THE WORKPLACE

*Information Professionals' Current Use and Future Aspirations*

consecutive hours to gather data to improve the website? Better still, can you spare those five or six hours twice a year?

If so, consider doing some guerrilla usability testing. Just by walking up to people and asking them for three minutes or less of their time, and then asking them a few questions, you can gather quite a bit of useful data. For tasks as quick and easy as those involved in guerilla testing, you probably don't need to offer any incentives at all. That said, if you want to sweeten the pot for your participants, you can invest in a bag of individually wrapped chocolates or offer some other such tiny reward.

Consider these options:

### 1. Surveys

If you're curious what your patrons like, dislike, or believe about your website, a survey can help. Bear in mind that a survey won't tell you where patrons actually struggle on your website. You'll need to observe website use to find that out, since patrons don't necessarily realize when they're not using our sites as we intend and might occasionally exaggerate or downplay their struggles and misunderstandings. Still, it can be extremely useful to know what your patrons believe are the strengths and weaknesses of the site. This can also be a fantastic opportunity to ask questions like what they last used your website for. The results may surprise you.

Some things to keep in mind when running a survey:

#### Keep Your Survey Short

The shorter your survey is, the less time it takes to get someone to complete it—and the less time it will take for you to analyze the results. Let's be honest: asking two or three questions may well get you all the data you have time to work with. Plus, it's a lot easier to recruit patrons to participate if your survey is very short.

If you really can't decide on only two questions to ask, why not come up with a few different but equally short surveys?

You can run them simultaneously, or spread them out over the course of a couple months if that works better for your schedule.

### Running Your Survey

Unless you're able to offer a small incentive or a chance to win something for survey completion, you will likely get more results from running your survey in person. Walk up to people who are sitting down or at least don't appear to be in a hurry to get somewhere else and ask them if they have three minutes to spare to help make the library website better. (Make sure your survey really does only take three minutes to complete!) Better still, get a student worker or an intern to run the survey, or see if your service desks can hand out surveys to everyone they talk to. You can post your survey online instead of or in addition to this, but don't be too surprised if you have a very low return rate for the digital version.

At Penfield Library, we like to take our surveys to the campus food court and ask all the groups who are eating lunch to fill them out. During a moderately busy lunch hour, a single librarian usually averages about 20 responses to a two-question, open-ended survey. Happily, 20 responses to a question tend to be enough for us to see the major trends in people's answers.

### Write Good Questions

Entire books have been published about the art of writing good survey/questionnaire questions. For the purposes of librarians with 20,000 other things that need to get done today, here are some basics to keep in mind:

- Don't ask a question unless it will get you information you need and which will directly inform your decision making.
- Avoid leading or biased questions. For example, "Do you agree that the library offers quality reference services?" is a bad question to ask because it's both leading and closed ended. Consider asking something more like, "How would you describe your experience getting

help with your research?"

- If your questions have any kind of multiple choice answers, be sure the choices make sense and will allow everyone to answer honestly. It can be helpful to pilot test your questions with colleagues and students to make sure your questions make sense.
- Keep your language simple and avoid jargon.

Try out some questions on a small number of patrons. If you're not getting the answers that will help you make progress, change your questions and try again. If you want quick question-writing tips, [A Simple Guide to Asking Effective Questions](#) is a useful read.

### 2. First-Click Testing

First-click testing offers a way to gain insight about an interface in order to make design decisions based on data rather than opinion or anecdotal evidence. The concept is simple: show a patron a library web page and give them an imaginary task to complete. Then ask them to show you where they would click to get started with their task.

For example, a task for a college student may include asking them where they would find journal articles related to sociology for their Social Work 101 class. After the student makes their first click, the test is complete. Talk about simple!

The premise of first-click testing stems from research indicating that users are much more likely to succeed at a task if they are able to select the correct link or pathway to begin with. According to usability expert Bob Bailey (2013), a user will have an 86 percent chance of completing a website-related task if their first click sends them on the correct pathway. A person's success rate drops to 46 percent if they click on the incorrect path. While first-click testing is not a cure for the myriad issues that can plague websites, it does provide insight to help you make better web design decisions.



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» **Because the tasks in this section tend to be longer and more involved, you'll have to decide whether you'll have more success asking patrons to participate on the spot or by scheduling patrons to come in at set times.**

### **Set an Objective for the Test**

Before you begin testing, set an objective to test and decide which page you want users to start from. Do you want to know if patrons can find your databases on the library homepage? Do you want to know how they discover your ebook collection? Do you want to know if the wording you used on your journals page connects with patrons who are trying to check your holdings? Pick one or two things to test with each patron you talk to.

### **Running the First-Click Test**

The easiest way to collect first-click data is to do it in person and the easiest way to do it in person is on paper. Print off a picture of the library's homepage (or whichever page you want to test) and have the patrons circle where they would click. Completing these tests takes very little time; patrons are usually willing to participate if you make it clear that you will take less than three minutes of their time.

If you're able to put slightly more effort into your setup, you can run your first-click test digitally with software like Chalkmark. Chalkmark's free plan lets you test three tasks with as many users as you like. The benefit to running your test this way is that your results will be recorded as a heatmap of where users have clicked—very useful for showing off your results to other librarians or administrators! Another bonus is that you can link patrons to the test from your website, though you'll probably still get more responses by taking a tablet or mobile device and roving your campus or community.

### **IF YOU CAN SPARE A DAY OR TWO FOR USABILITY**

The world will not end if you never go beyond surveys and first-click testing. If you can make time for more in-depth testing, though, you will see the payoff in richer, more powerful data. It really is worth the effort if you can manage it—improvements to your website will come more quickly.

### **Recruiting Participants**

Because the tasks in this section tend to be

longer and more involved, you'll have to decide whether you'll have more success asking patrons to participate on the spot or by scheduling patrons to come in at set times. You may choose to do larger or smaller tasks with your participants depending on what makes sense for your recruitment efforts.

If you opt to schedule your tests ahead of time, be prepared to market the session, deal with patrons who don't show up on time (or at all), and to be generally flexible. Aside from hanging up posters or asking instruction librarians to help with recruitment, it's also helpful to offer an incentive for patrons to participate in longer usability tests. Tests can range from ten to thirty-plus minutes, depending on the patron and what you're asking them to do. The incentives don't have to be extravagant. Can you buy participants a coffee? Waive a fine? Give them a small gift certificate? Anything you're able to offer will make recruitment easier.

To streamline the scheduling process for your patrons, consider using a service like [YouCanBook.me](https://youcanbook.me) to let them set up their own appointments. This kind of flexibility seems to increase the percentage of patrons who will actually show up to their scheduled appointments. You'll still want to be sure you have some other work on hand to keep you busy in case of no-shows, though.

If possible, you should test patrons that represent your target audience for the task. For example, imagine that you want to find out how undergraduate students go about selecting subject databases to find articles. If you were to recruit graduate students you see studying in the library every day, then you may not learn as much as you'd hoped; the graduate student may have more experience in utilizing library resources than your typical undergraduate does. The sophomore who pops in once a week might be a more fruitful participant for the study in this example.

#### **1. Card Sorting**

Do you already know what content you're going to put on a page, or the labels in a navigational scheme, but you're not sure how to organize it so users can find things?

Don't just alphabetize that list of links!

Card sorting will get you a much more user-friendly answer by showing you what groupings of content and labels make sense in the minds of your users. For an "open card sort," all you have to do is:

1. Write down each of the link labels/pieces of content on an index card.
2. Shuffle the deck.
3. Ask patrons to sort the cards into any categories that make sense to them.
4. Ask patrons to name those categories.

Another variation of card sorting is a "closed sort" where you have patrons sort cards into predefined categories that you define for them at the beginning of the test. This makes it easier to analyze your data afterward (+1 for being easier!), but it also limits patrons to your categories with all the baggage and assumptions that go along with those categories (-1 for being less user-centric).

Regardless of whether your sort is open or closed, if you're running a small enough test, there are free tools that will let you do your card sorting online. OptimalSort, for example, will let you sort up to thirty cards with up to ten participants for free (you can pay to remove these restrictions). The benefits of online card sorts include the fact that you don't have to schedule meetings with patrons to conduct the card sorts. Plus, the software automatically generates graphs that take care of a lot of the grunt work involved in turning your raw data into meaningful information. Both of those features will save you a lot of time. Drawbacks, of course, include the fact that unless you have a budget to spend on software, you're limited to thirty cards and ten participants.

### **Running Your Card Sort**

Some people will sort the cards very quickly and decisively. Others will agonize over every decision, and you may need to reassure them that there are no wrong answers and everything is going to be ok even if they make a "rushed" decision. These personality differences mean that running a card sort

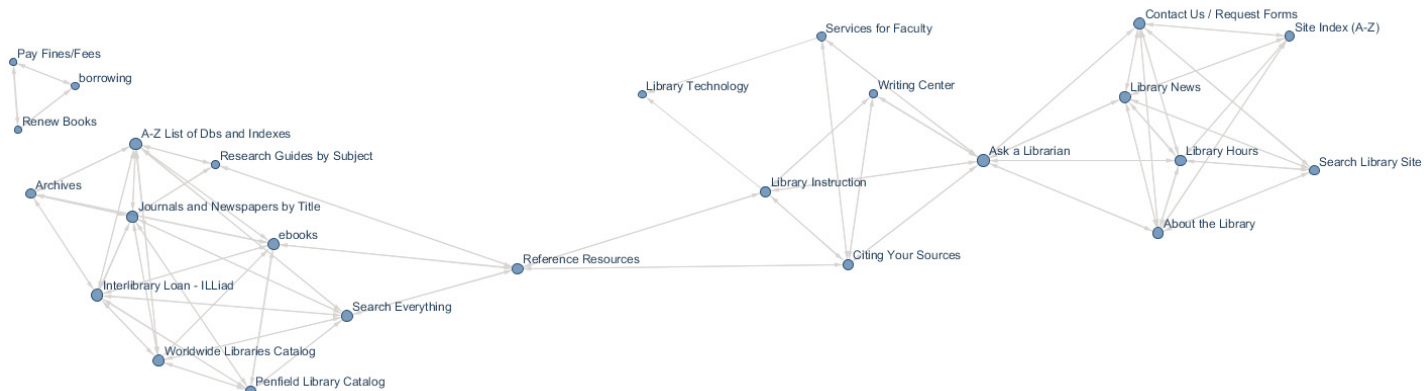


Figure 1. Network graph showing connections between items on SUNY Oswego's Penfield Library homepage that at least half of card sorters agreed on.

with thirty to forty cards could take you anything from ten to forty minutes. If you're doing the sort in-person, make sure your schedule allows for this.

Some participants might struggle to understand link labels when they see them out of context like this, no matter how clear the language is. To be certain that everyone understands what each card represents, try writing an explanation/description on the back of each card rather than explaining the labels verbally (Brucker, 2010, p. 51). That way, everyone is getting the same explanation. Since it could affect how someone sorts the card, this is important.

Our experience is that you probably want ten to fifteen participants, at least for an open card sort. For a closed card sort you may start to see trends before then, since you will be dealing only with variations in the content of each category, rather than variations in the categories themselves. Finally, because a card sort requires a substantial time investment from participants, it's nice to offer a small reward for participation if you have the budget.

### Analyzing Your Results

Analyzing the results of a card sort can be tricky. Be prepared to spend time on this data analysis, especially if you used physical cards instead of software capable of generating graphs and reports for you. [Google Fusion Tables](#) offers the capability of creating many different types of graphs for free, once you've cleaned up your data in spreadsheet form. Our personal favorite for visualizing card sort data is a network graph, which isn't an option in Excel—and that is why we use Fusion Tables (see Figure 1).

## 2. Think-Aloud Testing

When it comes to usability testing, the patron's actual thoughts and decision making

are the most difficult data to gather. While surveys, first clicks, and card sorting can be good for gleaning feelings, perceptions, and interactions, none of these methods fully capture patrons' actual thought processes when performing a task on a website. Since telepathy or crawling inside their brains is not an option (yet!), try the next best thing: a think-aloud test.

Think-aloud testing is easy to run and offers data that can be persuasive even to skeptical colleagues. Essentially, the patron says aloud what they are thinking as they navigate through a series of website tasks. During this test, the librarian keeps quiet except to remind the patron to articulate their thoughts if they go silent. It can be painful to watch a patron struggle through a task, but helping them defeats the very purpose of this test.

While easy to conduct, there is some advance legwork to the think-aloud test that may take a few hours. Since this testing can produce such meaningful yields, it's worth the initial investment of time: three to five think-aloud tests with your patrons should turn up plenty of fixes you want to make on your library website.

### Designing the Tasks

When you're coming up with tasks for your patrons, stay focused on gathering data you can act on. Avoid asking anyone to do more than five or six key tasks; that way the patrons won't get tired or frustrated. The tasks don't need to fall under a single theme but they should be related to actual patron needs and help to answer your questions about the website. Ask other librarians for task ideas; that way you'll better understand their concerns about the website and you might even get them interested in usability testing.

### Setting Up the Think Aloud

The think-aloud test can be done either in person or online. Before you start testing, do some pilot testing and make sure you're comfortable guiding participants through the test. By its nature the think-aloud test is an unnatural social situation, so building some quick rapport with the patron will make it easier for both of you.

For an in-person think aloud, try to conduct the test in a quiet, semi-private space. Keep in mind that not every patron will be comfortable sitting in a fully private space with a complete stranger. You will also want to make sure the computer you use is fully functional to minimize the patron's distractions.

For online think-aloud tests, you can use conferencing software with a screen sharing ability. Google Hangouts is a great, free option. Whatever you choose, make sure you pilot it ahead of time so you can anticipate or preempt technology issues like outdated plugins, etc.

### Recording the Data

Before the think-aloud test, decide how you'll record the data. It's best practice to let the patron know that you are recording their responses, regardless of how you record the test.

Some of the options for recording a think-aloud test include:

- Take careful, handwritten notes. This is cheapest way to record the session, but you may miss out on essential details, especially if the patron works quickly through the tasks.
- Record the think aloud using video or screencasting software. This is an easy way to ensure you capture the entire think aloud. Just make sure to use a microphone to capture the audio. You don't have to use a high-end product to



» Above all else, don't worry if you're not able to fix every problem users have right away. Fix what you can, and keep track of the remaining issues in case the opportunity to correct them arises later on.

capture the think aloud but be aware of the time limits on some free options. You don't want to disrupt the patron's train of thought by fiddling with the software.

- For online think-aloud tests, keep in mind that conferencing software usually has the ability to save the session.

If you're still worried about whether your think-aloud sessions will run smoothly, check out a copy of Steve Krug's [Rocket Surgery Made Easy](#). Krug provides step-by-step instructions for the whole process from planning to analyzing, including scripts you can follow.

#### MAKING SENSE OF YOUR RESULTS

Regardless of the test you use to collect usability data, you will need to interpret your findings. If you're a one-person usability team with lots of other responsibilities—or even if you've successfully roped in a few of your colleagues—you're probably not going to have as much time as you'd like to spend wrangling usability data. Never fear! You don't have to apply advanced statistical methods to your data to learn useful information. The biggest thing you want to do with your data is simple: look for trends.

#### Analyze Your Results

For survey results, read through all the answers by question rather than by participant. That is, read every participant's answer to the first question, and then every participant's answer to the second question, etc. Are there common themes? Type those themes into a Word document as headings, and copy/paste the relevant answers be-

neath them. Read through them again now that they're organized, and there's a strong chance you'll see a direction you want to take in improving your website.

You can treat most of the other usability tests we mentioned in this article the same way. Look for the patterns in your first-click tests or your think-aloud sessions. For card sorting, if you don't have time to fight with spreadsheets of data, even just a look at which cards appear frequently with which other cards can be useful. While a fuller analysis can provide more insight, the bottom line is that if your data provides you with a user-centered direction to move in, you've achieved something worthwhile.

#### Share Your Results

Once you have patterns to report—most users fail to figure out how to pay their fines online, or they're failing to distinguish between journals and databases, or whatever the stumbling blocks are—draw your coworkers into a discussion of what comes next. You never know when someone who works in a different capacity might be able to point you toward a solution for seemingly intractable usability problems.

Similarly, you never know when you'll be able to reassure your coworkers about something that worries them. It's a lot harder for someone to raise a stink about the wording of a link on the homepage if you bring back data showing that actual patrons understand that wording and use it successfully. By sharing what you've learned from usability testing, it's often possible to tone down opinion-based arguments over the website.

#### Fix What You Can


Above all else, don't worry if you're not able to fix every problem users have right away. Fix what you can, and keep track of the remaining issues in case the opportunity to correct them arises later on. Part of the beauty of quick, low-cost usability testing is that you can find ways to fit it into your schedule and budget on a recurring basis. Even if you can only squeeze this in once a year, think long term. Eventually, small fixes can add up to big change. ■

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# Using Student Volunteers in Library Organizations

BY KATHY CHRISTIE ANDERS, STEPHANIE J. GRAVES, AND ELIZABETH GERMAN

## INTRODUCTION

**S**tudent volunteers can be a valuable resource for outreach programs. This paper presents two case studies on how the Texas A&M University Libraries leveraged several registered student organizations (RSOs) to create our freshman orientation video and staff our library's Open House. Using student volunteers in orientation events helped reduce library anxiety among student participants, engage our freshman audience, and create meaningful connection between library services and campus life. Through these case studies, readers will discover how to:

- tap into their campus student volunteerism culture,
- leverage student organizations,
- positively employ affect for student volunteers and student audiences.

## LITERATURE REVIEW

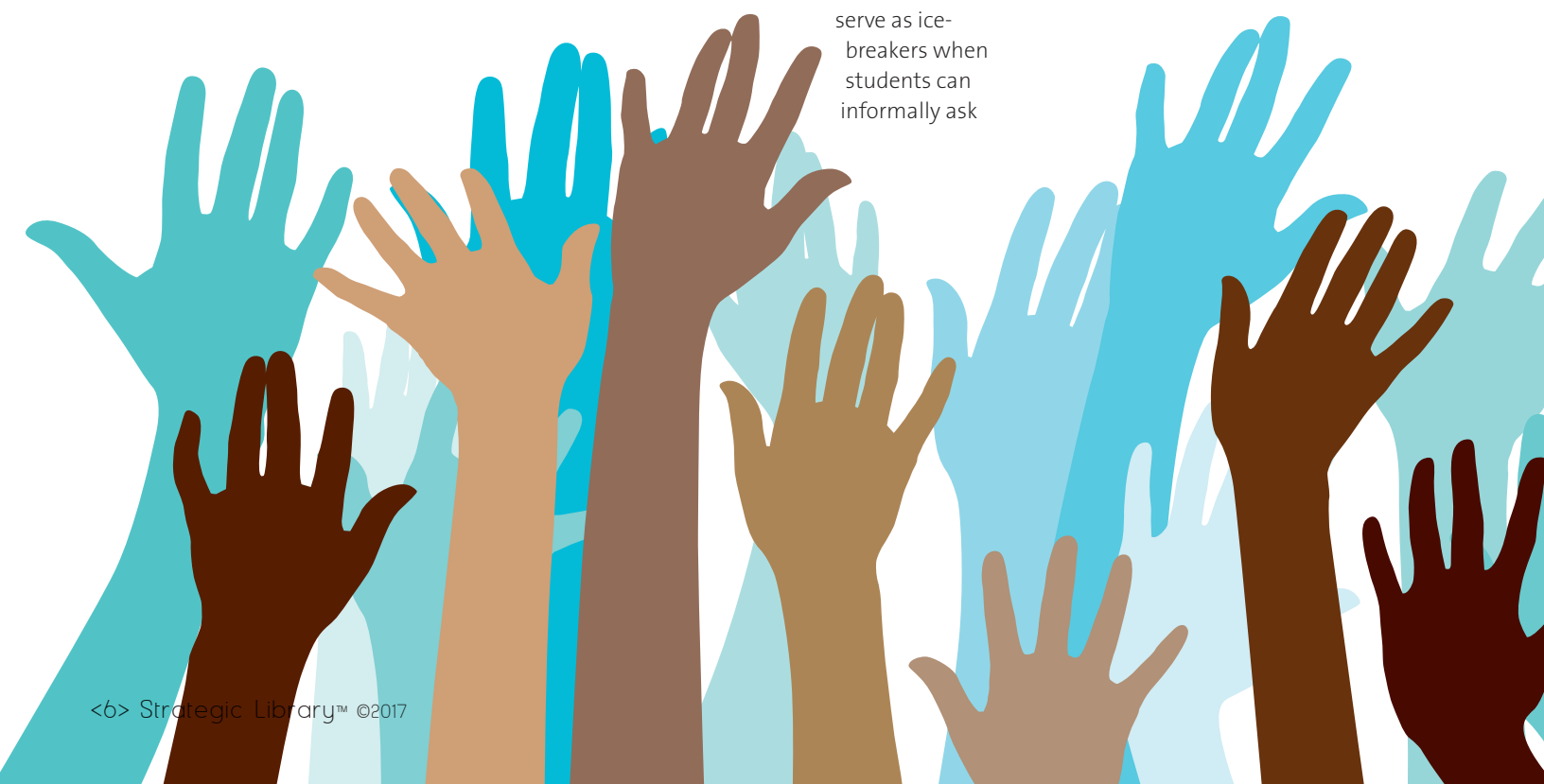
Library orientations are helpful for introducing students to the spaces, collections, and services that libraries provide. In addition, they can help create “sticky relationships” with students. Wilcox and Chia (2013) describe how they turned to the business concept of “stickiness,” or having a product that gets and keeps user attention, to analyze how their library sticks with their users. According to the model they followed and the survey they conducted, they found that one way for their library to increase stickiness was to “ensure that engagement remains positive” (p.184). Library orientations, particularly those that feature student workers and volunteers, can go a long way towards creating positive engagement.

One barrier to user engagement can be discomfort on the part of the student population. For some first-year students large academic libraries can be intimidating, and orientations can

questions about library services and become more comfortable with library staff. These orientations can come in different formats: in-house scavenger hunts, classroom visits, library tours, etc. Regardless of their format, they serve as important introductions to the academic library.

Library anxiety, Mellon observed in her foundational 1986 article, refers to the “feelings of being lost” in the library (p. 162). Students, this study found, had negative emotions when they entered the library. She reasoned that these emotions “stemmed from four causes: (1) the size of the library; (2) a lack of knowledge about where things were located; (3) how to begin, and (4) what to do” (p. 162). In short, students become overwhelmed by academic libraries both because of their size and because they do not understand how materials are organized or how to find them. In a valuable large-scale study at Utah State University, Brown et al. (2004) found that library orientations

serve as ice-breakers when students can informally ask



can help students lose some of that library anxiety (p. 398). In order for libraries to effectively engage the student population, they must be seen as being welcoming, and students must be able to see themselves in the library.

When student volunteers are involved in outreach events, other students can see them navigating library spaces and services. By using student volunteers in this way, libraries can draw upon the wealth of benefits that come from peer-assisted learning. Both peer tutoring and cooperative learning, major schools of peer learning thought, demonstrate social benefits for students. Maheady (1998) states that peer-assisted learning “increase[s students’] feelings of self-worth, and create[s] a more positive learning environment” (p. 50). Many studies have shown that peer learning results in “transferable social and communication skills and in affective functioning” such as “improvements in self-esteem, liking for partner or subject area” (Topping, 2005, p. 635). Students’ emotions concerning the library are so important that Schroeder and Cahoy (2010) called for affective learning to be incorporated into the revision of *ACRL Information Literacy Competency Standards for Higher Education*, citing the dispositions of the *AASL Standards for the 21st Century Learner*. Recently, the affective domain was incorporated into the dispositions of the *ACRL Framework for Information Literacy for Higher Education* (2015). Addressing affect and increasing positive emotions towards the library are some of the goals of outreach events; thus having peers present to educate and assist students is vital.

Given that negative emotions are a part of the barrier to student use of the library, creating an outreach campaign that focuses on the affective dimension is an appropriate solution for changing student perceptions about library spaces, services, and staff.

Presenting the academic libraries as welcoming is important for creating a positive first impression with new student groups. Texas A&M University Libraries presented the library as a “happy” place by creating a playful orientation video and hosting a fair-style open house. Orientation events focusing on how students feel in the library rather than specific library services

are not altogether common in library open houses, but they do prove to be successful. Previous to our own Open House, the Penn State University Libraries found that developing an affective, fun open-house event increased positive engagement with their student body (Cahoy & Bichel, 2004). Being inviting can diminish students’ feelings of the library as an intimidating place.

In addition to reducing library anxiety, using student volunteers in outreach programs can be a cost-effective way to scale up library outreach initiatives. Though budgets have tightened in recent years, the prominence of outreach in academic libraries has increased (Dennis, 2012). Student volunteers can be recruited at little or no cost as help for staffing events and providing entertainment. For the university library’s orientation events, student groups volunteered their time and services free of charge. In return, the university library held a special viewing party and a catered reception and gave the participants t-shirts. Needless to say, the cost of the reception and t-shirts was far below the cost of hiring professionals.

Seeing students in the library also prepares incoming students for future library experiences. Increasingly, reference desks are being staffed by student workers (Gremmel, 2013), so students can expect to see their peers behind the desk. Libraries looking to engage their student population can use student workers as volunteers to make connections with their future patrons by pointing out that students already work in the libraries.

### UNDERSTANDING YOUR STUDENT VOLUNTEERISM CULTURE

A key element of success for engaging student volunteers is tapping into the preexisting student culture. This environmental scan can uncover strategic student groups and initiatives that can aid library outreach efforts. Investigating campus culture is not necessarily difficult or time consuming. Libraries should ask themselves some of the following questions to get started:

- How can the library take part in student traditions that are an important part of campus life?
- How does the library take an active role in existing student activities?

- What is the culture for student participation in campus events?
- How can the library engage with student groups on campus who do philanthropic work or require community service hours?
- How is the library leveraging their student workers as library student ambassadors? Could this be increased?
- How does the library incentivize or reward student volunteerism?

Librarians can contact the offices for student activities, residence life, registered student organizations, student government, and new student orientations. These campus offices can quickly help libraries assess the campus climate and tap into existing student programs. Library student workers can also serve as a focus group for gauging the culture of student volunteerism and participation.

### OUR CAMPUS CULTURE

The Texas A&M University Libraries are fortunate to have a deeply engaged and responsive student body. With a total enrollment of over 62,000, we are one of the largest universities in the nation. Undeterred by the size of the student body, the campus is dedicated to creating leaders and responsible students. Our student body has a remarkable degree of participation in campus events. With over 1,000 registered student organizations, the campus culture both supports and expects student participation in campus life. Keeping this in mind when recruiting student volunteers, the university library is mindful of the six core values students learn at the university: integrity, loyalty, respect, excellence, leadership, and

selfless service. In particular, the university library tries to promote leadership and service among their student volunteers. The emphasis on student involvement is crucial to understanding how our library has leveraged campus culture into effective library outreach.

The university library strategically taps into the existing campus traditions by participating in two key campus events, new student orientation camps and the fall open house. These are large-scale orientation programs that take place before classes begin in the fall semester. During the summer months many

## » The size and scope of these two orientation events can be intimidating for librarians to plan. It can also be difficult to provide students with a meaningful interaction with the library on such a large scale.

incoming students participate in four-day orientation camps that take place at camps in the woods. College freshmen attend a “Fish Camp” and transfer students attend “T-Camp.” Campers learn about the university’s traditions and hear tips on becoming successful college students and for creating meaningful relationships with small groups. The university library has the opportunity to visit each camp and give a 20-minute library orientation presentation. For the fall semester of 2014, the library visited nine camps and presented to over 6,500 incoming students. This is the largest learning and outreach opportunity available to the library.

The second orientation event takes place once students arrive on campus. They participate in a series of pre-semester events, called Gig ‘Em Week, created to help them navigate the large system. The university library hosts an Open House that is open to all new and returning students. We aim to foster positive feelings about the library; engage students in learning about our services through fun, interactive, or memorable interactions; and give them a sense of belonging to the library and university. During the Fall 2014 Open House, over 3,622 students visited the library.

The size and scope of these two orientation events can be intimidating for librarians to plan. It can also be difficult to provide students with a meaningful interaction with the library on such a large scale. As the library’s participation and reach have grown over the past few years, we have learned to leverage library student workers and registered student organizations to help meet the goals of our programs. Students are typically recruited based on the needs of the programs. When knowledge of library services is necessary, library student workers are a valuable asset. When programs require special skill sets, registered student organizations can

provide skills not typically found amongst the librarians. Student volunteers proved to be integral to the success of the university library’s outreach programs because of the practical help they provide in staffing events, but, more importantly, because of the ways they welcome other students into the library.

By keeping the focus of these events on the students, we have tapped into the campus culture of student leadership and participation. This is important because students look to fellow students to set examples for behavior. By showcasing student dance groups in the library’s orientation video, student audiences could see peers being comfortable and relaxed in the library spaces. Student volunteers for the Open House welcomed fellow students into the library, again demonstrating that the library is a place for students, not just professors. By focusing on students, we have effectively delivered the message that the Texas A&M University Libraries are essential to a successful college experience.

### CASE STUDY: MAKING A “HAPPY” VIDEO WITH STUDENT VOLUNTEERS

Orientation programs at Texas A&M University are an integral part of the campus traditions. As mentioned earlier, freshmen have the opportunity to participate in a 4-day orientation retreat known as Fish Camp, and transfer students attend T-Camp. In 2014 Fish Camp celebrated its 60th year where a record-breaking 6,500 students participated over the course of seven four-day sessions. T-Camp holds three camps of approximately 350 participants, two during the fall and one additional camp in the spring semester. Campus services have the opportunity to make presentations to large groups of students during camp sessions. As technology has developed, it is now common for the

presenters to show short 3-8 minute videos followed by question and answer sessions. Creating videos has been an effective way to keep students entertained as they sit through multiple presentations because these videos often have high production value, are engaging, and are custom made for the Fish Camp audience. However, the students take in a great deal of information during these large presentation settings. It was the goal of the library to create a video that would stand out among the other videos as well as simply give students a good feeling about the library in order to reduce library anxiety and engage the first-year audience. In order to do this, we wanted to highlight actual students who were happy using each of our five libraries.

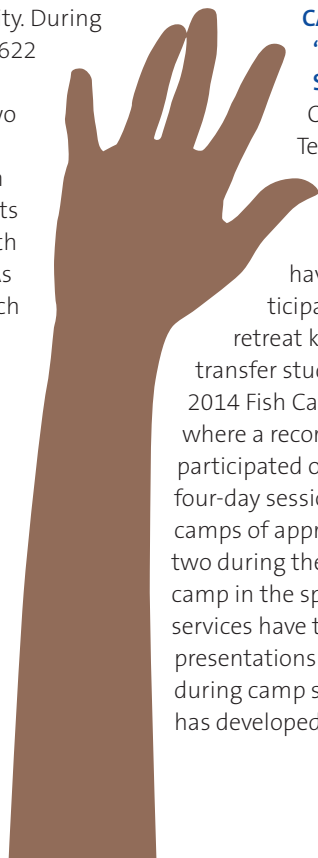
### PLANNING AND DESIGN

The Texas A&M University Libraries’ team consisted of the members of the Learning and Outreach Department and the Marketing Department. Together we met to brainstorm ideas for a video to present at Fish Camp. The group discussed many ideas and reflected on previous videos, advantages and drawbacks of those projects, and best practices within their respective areas of expertise. In the end we decided upon some guidelines that would lead to success:

Make it relatable to students by using popular music, themes, and using real students.

- Keep it simple; focus on just a few key points.
- Make it relevant to students by emphasizing the services that help them the most as they are getting started.
- Hire professional videographers and trust their skills.
- Do not try to do too much and dilute the message.

Using these guidelines, the team decided to create a video tour through the five university libraries with student dancers set to the song “Happy” by Pharrell Williams. The song “Happy” was chosen to help build





upon our focus on the affective dimension of our outreach campaign. “Happy” was a good fit for this video not only for its high energy and positive message but it also allowed us to capitalize on the fact that Texas A&M University was named the happiest campus in America by *The Daily Beast* in 2013 (Twenty happiest colleges, 2013). Following the guidelines for our general video, we engaged a local videographer who developed a series of continuous long shots. The video starts with a student dancing outside and up the steps into the first of six library buildings. Through continuous movement and dance, the video highlights services in each area of the building while presenting the broad range of spaces that the library has to offer. The total production time was approximately two months; it included a meeting with the director, one and a half days of filming, and then six weeks of editing and production. The end result was a four-minute 43-second video that has been viewed over 68,000 times and has received national recognition.

#### LEVERAGING REGISTERED STUDENT ORGANIZATIONS

In making the video, the student dancers were extremely important to the success of the video. The use of students was intended for the incoming first-year students to see themselves in the actors using the library, thus reducing library anxiety. We used three dance troops on campus: Fade to Black, a hip hop group; Aggie Wranglers, a country dancing group; and Salsa Fusion, a Latin dance group. This diversity of dance styles created a wide appeal for the different preferences and backgrounds of our incoming students.

The dance students brought their knowledge of movement and their dance expertise to the creation of the video. Librarians had to do very little choreography, instead relying on the skills of the dancers. Soliciting the leadership and knowledge of these student groups is one way that the library helped to contribute to the learning

mission of the university. Dancers not only provided labor but also provided leadership and learned how to make a dance video. The video proved to be an engaging product for students and a valuable learning experience for our student dance groups.

#### SUCSESSES AND NEXT STEPS

The “Happy” video was very successful. Feedback received from Fish Camp indicated that the library’s presentation was a favorite. It is the hope that the library will continue to receive positive reactions from the students. Due to the continued focus on “Happy” within the outreach campaign and the high cost of the video production, the “Happy” video was reused for the 2015 Fish Camp sessions. In order to keep it relevant to new students, however, a new video will need to be created. For the 2016 year, we plan to create a new video using the same guidelines as the “Happy” video where we focus on the affective idea that the library is a place where you want to be. Additionally, we will continue to use student volunteers for our videos. This process itself is a learning opportunity. It is our intention that the learning outcome for these student volunteers is that they become more aware about library services as well as enhance their leadership skills.

#### CASE STUDY: MAKING A “HAPPY” EVENT

The Texas A&M University Libraries have embedded themselves into the student campus culture through the libraries’ Open House event. The seminal event takes place during Gig ‘Em Week, the campus-wide week of welcome. This week-long series of events takes place the week before fall classes begin. It is organized by New Student and Family Programs through the Offices of the Dean of Student Life. Campus partners, organizations, colleges and departments, and even the local area community are involved in creating a welcoming environment for all new and returning students.

Groups are encouraged to host events, which are publicized widely through cam-


pus marketing and social media channels. Large-scale events are tagged as a Gig ‘Em Week Signature Event. The library’s Open House has obtained Signature Event status by meeting a certain set of criteria. Events must have an attendance of at least 500 for more than three years, be open to the entire student population, free to attend, and the event organizers must fill out post-event surveys maintained by New Student and Family Programs. As a Signature Event, the library’s Open House enjoys privileged status on the Gig ‘Em Week marketing poster, schedule of events, and we retain the ability to choose the date and time. We are also guaranteed that other programs will not conflict with our time slot.

#### PLANNING AND DESIGN

While the library’s Open House has been going on for a few years now, in 2014 the library added an active learning component; and in keeping with the spirit of the campus culture, the library’s Open House established a set of outcomes for the event:


- Foster positive feelings about the library,
- Give students a sense of belonging to the library and university,
- Engage students in learning about our services through fun, interactive, or memorable actions.

In 2014, students came to the main library for a two-hour event. They were treated to food, prizes, t-shirts, entertainment, and library information booths. Library units developed carnival games to briefly highlight their services. Fourteen different games were offered, and students were asked to participate in at least three library games. Examples included library blackjack, an interlibrary loan cake walk, the AskUs fortune tellers, a word wall sponsored by the writing center, and a “Guess which one costs more?” journal game. The games allowed librarians to teach students about library services in a fun and engaging way, also one of our articulated outcomes.



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» **Despite the large amount of library engagement, more volunteers are still needed to make Open House a success. The setup for our Open House is labor and time intensive.**

#### **VOLUNTEER MANAGEMENT**

The success of the event has created issues of scalability. An event of this magnitude requires a significant pool of volunteers and should be considered carefully during the planning process. We are fortunate to have the continued support of library administrators who encourage library-wide participation. Over 85 volunteers from the libraries' staff, faculty, and student workers participated in making the 2014 event a reality.

The theme of the library orientation video, "Happy," was also used for the 2014 Open House. Easily identifiable during the event, all volunteers were sporting "Happy" t-shirts. Our library student workers played a special role in our event management and success. These students served on our front-line service points and were an important touch point both for understanding and meeting our student needs. Student workers participated in every aspect of the Open House, from preparation, to event staffing, to cleanup. They helped unload boxes, counted swag, moved furniture, staffed the library games, handed out food and water bottles, provided crowd control, took tickets, passed out t-shirts, and ran errands throughout the event. The Learning and Outreach Program Assistant coordinated the flow of student work helpers to the various team leaders using a walkie-talkie system.

Honoring the commitment of both their time and talent is important to maintain a motivated group of student volunteers. Student worker volunteers received "Happy" t-shirts and snacks during the day of the event. They were clearly marked as library staff by their libraries' lanyards and nametags. Additionally, their youth and exuberance added to the carnival-like environment. Incoming students could see that their fellow students were engaged in putting on the event. It sent a clear message that the library was not only there for the students but had a place for students to participate as workers and leaders in student life.

#### **LEVERAGING REGISTERED STUDENT ORGANIZATIONS**

Despite the large amount of library engagement, more volunteers are still needed to make Open House a success. The setup for our Open House is labor and time intensive. We have learned to use student organizations to address issues of scalability and help reduce the number of library staff hours needed to organize the event. Our Marketing Manager has helped by connecting the event to the coed service fraternity, Alpha Phi Omega (APO), that he advises. Over a dozen students from APO volunteered an entire afternoon of their time to help organize the library's Open House. Students formed an assembly line and packed over 3,500 bags of library-related swag to be distributed to Open House guests. The labor involved was repetitive and laborious, so we were mindful about making the bag-packing event fun. We played dance music, made games out of who could pack the most bags at once, treated the students to pizza, and gave each student volunteer a "Happy" t-shirt.

Libraries of all sizes can reach out to fraternities, sororities, or other campus groups (academic or otherwise) that have any sort of service component to come to libraries to prepare for outreach events. If it is

difficult to contact such groups, consider reaching out to the faculty and staff who act as their advisors. They may be able to help identify if working with the library is something in which the organization would be interested. Additionally, keeping the atmosphere light and playful can make even the preparation for an outreach event enjoyable. Creating contests and handing out awards can be a great way to engage your student volunteers. Student groups were also involved in entertaining students during the Open House event. As students waited in line to enter the library, the student improvisation theater group, Freudian Slip, and student illusionists performed tricks and skits. The collaboration was beneficial to the library and the student organizations. The student groups had a captive audience for promoting their organization and practicing their skills. The library benefited by keeping students entertained and happy while waiting outside in the summer heat. The improv students cracked jokes, acted out skits, and bantered with waiting students. They even created good natured library jokes that they have used during the past several Open House events.

Libraries looking for volunteers can also tap into student groups who want to publicize themselves. Try putting out an open call for student groups to audition for outreach events or work through the campus coordinator for student groups to find ones that would welcome the opportunity to have a large audience. In particular, this can be a valuable opportunity for groups looking to recruit new members.

#### **SUCCESSES AND NEXT STEPS**

The Open House has enjoyed tremendous growth. In 2009 it drew 400 students, growing to an attendance of over 3,622 in 2014. Students return year after year, many wearing their library t-shirts from the previous year's Open House. Attendance growth and repeat participation demonstrate success in meeting our outcomes for fostering positive feelings and a sense of belonging. By keeping the atmosphere light,



jovial, and happy, our student volunteer organizations help us create a feeling of acceptance and warmth when students experience the library for the first time during our Open House. The success of this partnership has been so great that the library has relied on student volunteer participation for several years. For the future the library is considering ways to develop a tool that will assess the impact of the event on student attendees.

## CONCLUSION: CONSIDERATIONS FOR YOUR LIBRARY

The Texas A&M University Libraries orientation program is an example of how libraries can effectively use student volunteers. Working with student groups is not without its challenges. Other libraries looking to leverage student volunteers should keep in mind several principles of successfully working with student populations:

- Tap into the culture of your campus.
- Working within the traditions and culture of your campus will help situate the library as central to student life. Do not reinvent the wheel. Do an environmental scan and take advantage of opportunities to tap into established programs.
- Make volunteerism into a learning experience.
- Highlight the ways that students can learn by volunteering for the library. Consider the learning outcomes that you would like for your student volunteers and offer the students opportunities for leadership. The effect will be a more engaged volunteer force and students who will take your message out to their respective groups.
- Leverage existing groups.
- There are many groups on campus that have community service hours as a requirement. Contact Greek organizations or student groups for assistance. Many are looking for projects and ways to contribute.
- Timing is crucial.

Time of year can drastically affect your plans. We particularly struggled during the summer when many students were not on campus. Students also have a wide range of commitments, and sometimes students' schedules change with little notice. A great deal of flexibility needs to be maintained.

Some factors that can lead to success in working with these groups include:

- offering a range of times when students can volunteer,
- being prepared with backup plans when students are unable to show up,
- being mindful that this is a learning experience for student volunteers and not just free labor.
- Affective motivation is important.

It sounds simple, but students want to have fun and know that they are making a difference. Make sure that you sell the volunteerism as an engaging, fun way to contribute. Thank student volunteers liberally, both privately and publicly. Give them gifts to thank them for their efforts and let them know how their contributions added to the success of your program.

The university library's orientation program has successfully leveraged student volunteers to scale a large outreach program. However, student volunteers have added more than free labor. The presence of student volunteers shows that students are at the heart of the libraries. Furthermore, the student volunteers were able to participate in learning and leadership opportunities that tie into the educational mission of Texas A&M University and its core values. The use of student volunteers in library outreach programs has been a strategic collaboration of significant importance. We hope to continue to grow this program with more opportunities for student engagement. ■

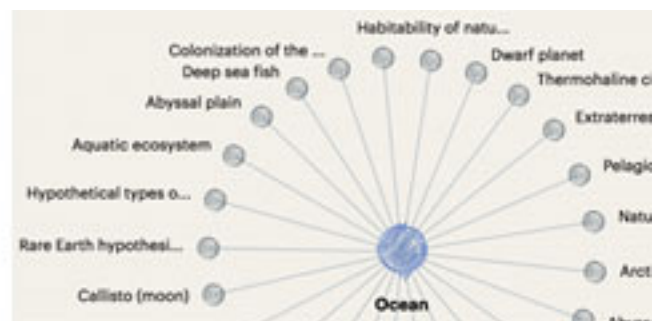
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# Teaching a New Dog Old Tricks

## » Supervising Veteran Staff as an Early Career Librarian

BY AUTUMN FAULKNER

### INTRODUCTION

Whether you work in an academic or public library (or another type of library altogether), you will be familiar with the management model of a librarian supervising paraprofessional staff. There are many factors that support this arrangement, but in general the assumption is that since librarians hold advanced degrees, they can more fairly be expected to assume the extra responsibility of supervision; additionally, librarians are connected to peer networks and professional organizations, which keep them more in tune with developments in the field and therefore capable of guiding policy and procedure.

But does this assumption still hold true when a relatively inexperienced librarian is supervising paraprofessional staff of long tenure? Can that new librarian truly be an adequate manager, and can the veteran employees truly accept that leadership? These are the questions I asked myself when I was given management of staff members who had been in their positions at least since I was in high school. The answers to those questions, barring any extraordinary resentment or conflict, is yes—a newer librarian can find ways to serve a team of veteran staff despite gaps in experience, at least based on my own findings.

In March of 2012, when I was fresh out of library school with hardly any true library experience under my belt, the Michigan State University Libraries graciously hired me as a half-time paraprofessional cataloger. My work in those first few months involved a lot of training and some basic practice, and then gradual expansion into more complicated work. In June of 2012, I applied internally for a catalog librarian posting and was hired, officially becoming a tenure-track librarian at that point.



My responsibilities began to include some project management work (i.e., coordinating cataloging of various special groups of materials) and music cataloging. Our unit also completed a migration from Millennium to Sierra, as well as training in and implementation of RDA.

All of this is to say that, when my transition to a supervisory position occurred in February of 2014, my experience had moderate breadth, but not much depth.

Much of my first two years had been spent in grasping the basics—of authority work (which is only minimally covered in library schools), of local tech services workflows, of the special quirks of music cataloging, of managing vendor contract cataloging, of Innovative's Millennium system and then their Sierra system, of RDA. I still felt very much like a beginner in most areas of my work; every day still felt like practice, rather than comfortable routine.



## » To allay initial anxiety, use your first interactions with your staff to show your willingness to learn from them and your commitment to supporting their work.

Such was my level of ability when I took over management of five copy cataloging staff members, all of whom had at least a decade of cataloging experience at the MSU Libraries, and some of whom had been working in their positions since I was a baby! My concerns about this disparity of experience can be imagined. And though I had gained some brief managerial experience in a previous student services position at a university, I did not feel it was of substantial assistance in my new role given the widely different nature of library work.

The observations, examples, and recommendations that follow are drawn directly from my own attempts to process the natural awkwardness and inherent challenges of supervising veteran staff as a new librarian. Though there is plenty of literature concerning good management techniques, no formal guidance is available to those who find themselves in this situation, so ultimately I am offering my own personal views on best practices. My hope is that even if my practical approaches aren't fully relevant to others, I can at least provide a little reassurance of the "me too" variety to other new managers of experienced staff, and normalize some of the issues we often face but rarely discuss.

### LITERATURE REVIEW

Although there are numerous articles and books available for those seeking managerial skills in a library setting, little has been written to address the concerns of early-career librarians managing late-career paraprofessionals—even though the literature does contain hints that this state of affairs is not uncommon. In the 2010 article "Considerations for Managing an Increasingly Intergenerational Workforce in Libraries," Munde examines the prevalence of library workforces which are concentrated on two ends of the spectrum: Baby Boomers approaching retirement and recent LIS graduates. The study focuses primarily on librarians and does not directly address paraprofessional staff, and while the author suggests strategies for productive communication and interaction within such an intergenerational workforce, she offers no

specific recommendations for supervisors dealing with this issue.

Rooney comes closer to the mark in "The Current State of Middle Management Preparation, Training, and Development in Academic Libraries" (2010), which contains survey data concerning supervisors and their levels of preparedness for their responsibilities. Among other things, Rooney's findings indicated that on average, librarians in middle management supervise 4.6 paraprofessional employees, and that a need exists for better training for these librarians. Though it is not explicitly stated as a finding, comments from some individual librarians who completed Rooney's survey hinted at a general reluctance to assume managerial or administrative duties that interfere with what those librarians view as their true duties. We can infer from this (and corroborate with our own collective anecdotal evidence) that in many libraries, supervisory responsibilities are often assigned to librarians based on the needs of the institution, rather than on the interest or willingness of those librarians to become middle managers. But again, while Rooney's data supports the existence of situations where underprepared middle managers might have to manage veteran staff, no solutions are offered for that particular problem.

Trotta's 2006 book *Supervising staff: a how-to-do-it manual for librarians* does tackle some issues that new managers face and offers much practical in-depth advice. James's, Shamchuk's, and Koch's 2015 article "Changing Roles of Librarians and Library Technicians" would also be of service to new managers hoping to create a fulfilling work environment for their library paraprofessionals. But while each work looks at the needs of support staff in relation to their supervisors, neither work addresses the particular issues which might arise for a new librarian supervising veteran staff.

In short, there are resources from which helpful information can be gleaned, even if they are not specific in addressing the situation outlined in this article. I offer my own more particular observations about taking on supervision of experienced support staff as a supplement to existing and future

management literature. For librarians in this situation seeking some quick, intensive assistance beyond what this article can offer, I recommend two books from the broader field of leadership development: *Working with Emotional Intelligence* by Daniel Goleman (2000) and *Crucial Conversations* by Kerry Patterson and Joseph Grenny (2011).

### MANAGING YOUR TEAM

#### *Establishing trust*

The first task upon assuming your new role is to establish trust with your supervisees.

Consider the sense of upheaval and anxiety they will also experience during the transition; all of us have had negative experiences with managers at some point in our lives, and every change in management leads us to worry about the new person stepping in. If your employees don't know you very well, they will have natural concerns about what kind of impact you will have on their lives. If this concern shows, avoid taking it personally. You are an unknown quantity—especially so because you have so much less experience than they have.

To allay initial anxiety, use your first interactions with your staff to show your willingness to learn from them and your commitment to supporting their work. Start from the assumption that your veteran employees know more than you, both in terms of institutional memory and the nitty-gritty details of the work that managers do not have to handle every day; it is easier to acknowledge this disparity from the beginning without defensiveness. By doing so, you are not indicating incompetence—after all, there are things you bring to the table too. But there will be ample time for you to introduce your own skills and ideas, once you have demonstrated respect for the work already being done by your team. Here are three ways to do this:

1. Ask questions about the workflows each person handles. Collect a lot of information and don't offer comments yet on methods and techniques currently in use; take some time to get the full picture. Use these conversations to simultaneously acknowledge your staff's expertise and your own intention to learn first and act

» **It is also crucial to keep good documentation of procedures and update that documentation accordingly. If you make iterative changes and just periodically alert your staff by email, instead of providing them with a static set of instructions to reference, you will be taxing their memory and their patience pretty heavily!**

later. This will reassure anyone who may be anxious about a new and ill-informed manager swooping in to change or criticize the way things have been handled. As a side benefit, mapping out the logistical work of your unit will reduce your own anxiety about managing your new responsibilities. You will become more conversant in the concerns and culture of the group, and better equipped to approach future planning and decisions.

2. Answer questions honestly and promptly. In the beginning, your staff will ask you questions you don't have the answers to. When this happens, tell them you don't know. As most of us have heard from leadership books or seminars, it is disingenuous and dangerous to do otherwise. The insecurity you may feel in your new position will prompt you to always appear confident and knowledgeable; but again, it is not an indication of incompetence to acknowledge your lack of experience in some areas. You can demonstrate your abilities in a different way by energetically finding the answers your employees need, overcoming any obstacles encountered, and building your own knowledge and expertise as you go. "I don't know but I'll find out" should be your constant refrain. If you are responsive and quick in following up to questions, you make it clear that you take your staff's concerns seriously, you are a consistent and dependable person, and you are invested in their success. Establishing all of these realities for your team is crucial. Of course, you will never be able to respond promptly or completely to every single question that comes your way, but no one can reasonably expect you to bat a thousand. If your staff sees you are doing your best, that is all that matters.
3. Encourage questions, suggestions, and further learning. Depending on the work style of the last manager in your position, you may be inheriting a staff who has not been encouraged to share their input or develop their interests. I think this is especially true of technical services work,

where routine is king and experimentation has historically been a major no-no. So make it clear from the beginning that you welcome their curiosity and their feedback. A good exercise in creating two-way dialogue is to identify areas where workflows aren't documented, and ask for an employee's help in getting procedures written down. This will provide opportunities for you to show your respect for their existing knowledge gained in the trenches, your own receptiveness to their input, and your openness to possible changes or expansion of skill and responsibility where desired.

#### ***Build confidence through change management***

If at all possible, avoid making changes within your unit until you have adequately established trust and reciprocity. You will encounter some natural skepticism and resistance when any change is proposed, and as a new supervisor of a team who knows its business much better than you (at least initially), it will be difficult to weather this with confidence unless you have already laid the necessary groundwork.

Let us assume that you have done so, and it is time to start addressing the proactive aspects of your responsibilities. These will almost always involve change of some sort. Some changes can be anticipated well in advance, especially if you are a savvy manager in your area and you are paying attention to national and local trends. But the unfortunate reality is that we will not often get much time to prepare our staff for major transitions. The best you can do is count on some change occurring, sooner or later—whether in the shape of special projects, sudden crises, or transitions to a new physical or technological environment. Regardless of the particulars of these always vague but ever-impending future events, you can prepare your team by using small, incremental shifts to help them build resilience, agility, and confidence in your managerial abilities.

A caveat: This does not at all mean

making change for change's sake. Rather, it means taking time to get to know and trust your team, and then finding the right balance between continuity and continued growth. Obviously, it is not the right choice to remain a slave to convention or comfort. As managers, we are stewards of the library's collective time and resources, which can both be needlessly wasted by outdated procedures or systems. But those of us with a passion for improvement bordering on perfectionism (you know who you are) should also take time to weigh the benefit of a change with the anxiety that can result from disrupting existing workflows. Sometimes it may be best to let certain cogs of the machine keep clinking away, even if they rattle a bit.

Once you have considered these points and carefully identified some areas that would benefit from small, productive changes, proceed confidently. This is the area where you can bring your own skills to bear. You may not have the years of experience your staff possess, but you do have the advantages of fresh perspective, the collective wisdom of larger peer and professional networks, and an understanding of the ever-evolving best practices of your field. It is crucial that as you implement a change, you distill that information for your staff in ways that are relatable to their work; for instance, in encouraging my copy catalogers to employ new RDA terms and MARC fields, I explain exactly how these changes will lead to better indexing and access in library catalog systems, and how crucial that work will continue to be for our patrons, especially as collections increasingly become electronic and patrons depend heavily on connections between catalog records to discover related resources.

It is also crucial to keep good documentation of procedures and update that documentation accordingly. If you make iterative changes and just periodically alert your staff by email, instead of providing them with a static set of instructions to reference, you will be taxing their memory and their patience pretty heavily! Maintaining documentation is also a good way to continue inviting feedback and discussion of

procedures; if one of your employees notices something incorrect or out of date on paper, a conversation about that work is much more likely to happen than if no written evidence of that discrepancy exists.

In short, good communication is key to creating a culture of agility. Tell your staff why you think a change is necessary; show them you have been thoughtful about the costs and the advantages. Further legitimize your changes with plenty of solid documentation, which also gives your employees a consistent and permanent framework for implementing those changes. Remain open to comments, questions, and feedback. In this way, you will be laying upon that foundation of initial trust another layer of empowerment and confidence, counteracting your own lack of experience and any natural concerns your staff may have about your ability to lead.

## MANAGING YOURSELF

### *Reduce anxiety*

If you are like me, you are too quick to identify your shortcomings and too slow to recognize your strengths. And if you already have this tendency, becoming an early-career supervisor of veteran staff will only make it worse. The gaps in your knowledge will seem glaring and the questions you ask will seem embarrassingly basic. You will wonder if you have made a huge mistake accepting responsibilities which you aren't actually capable of fulfilling. Never fear—this is a normal response to a challenging situation. Here are my recommendations for easing those first few panicky weeks:

#### 1. *Acknowledge what you bring to the table.*

As mentioned, your degree in librarianship and your membership in the larger professional community is an important advantage and at least one of the reasons you have this job. And perhaps you also have the kinds of soft skills that are so crucial in management: emotional intelligence, tact, empathy. There is more to being a good manager than just being knowledgeable about the details of the work (though these will continue to be important, so eventually you will need to fill in those gaps in your learning). You may not have the same weight of experience your staff have accumulated, but you are positioned to take a high-level view of the work, the field, the trends, and the overarching purpose your team serves. You are there not only to give support for present-day work but to plan for the future—and your work

as a librarian has already given you the framework to do that.

2. *Boost your confidence through accomplishing familiar tasks.* You will inevitably feel overwhelmed by all of the things you don't know during the first weeks in your new job. Reduce the cloud of bewilderment by handling tasks that you're comfortable with and that give you a sense of accomplishment. These may be cleaning out your email inbox, responding to a difficult patron question, or creating a high-quality catalog record for an artists' book. Exercise your existing skills and remind yourself of all the ways you are competent and knowledgeable; then remind yourself that there was a time you were still learning those skills too.
3. *Have patience.* Although you will feel pressure (usually self-imposed) to learn as quickly as possible and present a knowledgeable demeanor to your staff, there will be inevitable mistakes and moments of uncertainty. Expect these in advance and be forgiving of yourself, instead of setting unattainable goals. Embrace the reality of your trial-by-fire situation!
4. *Make a plan.* As inveterate list-writers can attest, there is nothing so effective for reducing anxiety as getting everything down on paper. Instead of repeatedly fretting about possible slip-ups or areas of weakness, take some time to identify the ways you feel you need to improve so you can adequately perform your new job. Once you have made a list of these, note the concerns which only time will resolve (for instance, only years of cataloging will give me the same deep memory for MARC and AACR2 as my copy catalogers), and forget them. For the remaining items on your list, make some concrete plans for learning. Find an article or a webinar that will help you improve. Think of a colleague who can give you advice. Ask your own supervisor for suggestions. Once your worries are out of your head, on paper, and mapped to possible solutions, you'll feel some measure of control over your anxiety.
5. *Educate yourself.* If some of the gaps in your knowledge are significant enough, you will benefit from some formal training. At Michigan State

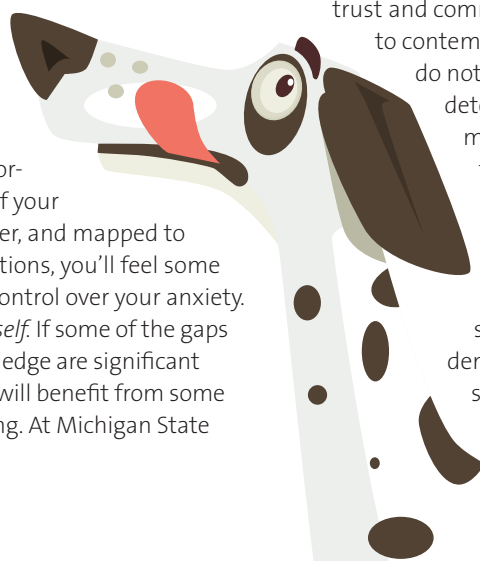
University, our human resources department offered a 12-week course for new supervisors that covered both the specific administrative aspects of supervising unionized staff as well as general guidance on topic like setting expectations, evaluating performance, and having difficult conversations. This was all immensely helpful and comforting. I learned some valuable approaches and I also realized that I already had some of the skills necessary to be a supervisor.

### *Develop decisiveness*

Being given responsibility for an experienced group of staff is an exercise in balance. Your team is probably going to be able to run itself, at least in terms of daily routine and longstanding procedures. You may have a lurking doubt about your legitimacy and feel you are not qualified to make decisions about a team you have just joined, and whose members have so much more experience than you. This is a natural gut-level reaction, but it's ultimately a disservice to the employees you are supervising. Dithering or avoiding an issue will damage your relationship with your staff, who count on you to assume ultimate responsibility and who will begin to view you as unreliable if you aren't able to give decisive responses.

As discussed previously, this does not mean pretending to know things you don't. Instead, it means making it clear when you don't have an answer, and actively finding one. Even if you don't know something, you can be decisive about not knowing it! You can also be decisive immediately about low-level tasks like scheduling meetings, ordering supplies, relaying information, approving leave requests, etc. Build up from there as you settle into your new responsibilities and learn what kinds of higher-level decisions your team needs from you.

Once you have established enough trust and communication with your team to contemplate these bigger decisions, do not let the fear of risk or failure deter you. Again, expect to make mistakes and plan in advance to learn from them. When you do make a mistake, be ready to reconsider or reverse your decision. Changing your mind on occasion does not show inconsistency; it just demonstrates that your decisions are for the benefit of the team, and not a prop to your



own vanity or insecurity.

After all, it's important to remember that this is the whole reason you make the big bucks, as it were—while your employees may have more years of work under their belts, they are not expected to put themselves on the line by making judgment calls or directing resources or changing workflows. That is your contribution to the team, and if you hesitate because of a misplaced sense of inadequacy or a fear of making mistakes, ultimately you are not pulling your weight.

### **Manage your time**

Of all the challenges I encountered, the disappearance of my time caused me the most stress. I had not anticipated how much of day would get eaten up with the kinds of small administrative tasks that managers must handle. Answering questions, answering emails, attending meetings, making decisions (large and small)—suddenly the day is over and you feel you haven't actually accomplished anything. I don't have a pat strategy to assist with this problem, which doesn't ever truly go away. But I can attest that it is worst in the first few months, when the new demands on your attention are compounded by your own lack of experience and your attempts to navigate an unfamiliar environment.

Additionally, it's a good idea to adjust your perspective about the use of your time. Logistical, administrative work like answering emails or attending meetings is by its nature invisible, and this can lead to the feeling that you have made no measurable progress at the end of the day. But all such work should still be viewed as progress; you have contributed to the operation of your team by taking some small step toward ensuring its present and future productivity, or you have by some small word or action demonstrated again your investment in the success of your employees. These things must be done every single day or your team will ultimately pay the price.

Instead of regretting this invisible work, reduce your anxiety about your disappearing time by training your brain to give weight and importance to these aspects of your daily routine. Pause at the end of the day to reflect on the long-term outcome of the messages you sent and the questions you answered and the discussions you had at meetings; keep the big picture in view and remember to discuss this kind of work in your yearly evaluation from a high-level perspective. It's important to give yourself

credit on paper for all the administrative maintenance you have done—both as an act of self-validation and as advocacy for the work of your team as a whole.

And again, give yourself time to adjust to this new rhythm. Once you become more comfortable with responding to questions and making decisions, these tasks will eat up less and less time, and you will learn how to accommodate them more efficiently in your daily routine.

### **CONCLUSION**

After I had been a supervisor for about seven months, I sat down with one of my staff for the yearly review required by the university. We discussed her work, the slight changes in responsibility that had occurred over the year, and our plans for the upcoming year. Finally, I asked her if there was anything I could do better as a supervisor.

"Well," she said, "I don't think so. I'm really proud of you. You've done good in the new job."—sounding for all the world like a pleased parent!

Her maternal remark initially made me chuckle, but after some reflection, it's become one of the most meaningful pieces of feedback I've received. I'm still realizing how much she told me in those few words.

Clearly, the age difference wasn't only upmost in my own mind. Her words reminded me again what kind of anxiety the unit probably experienced at the beginning of our journey together. Even the most sanguine of persons must feel some slight apprehension upon learning their new boss is young enough to be their kid (in most cases).

However, although I had been convinced that my lack of experience and a good deal of personal anxiety had been glaringly obvious to all my staff, I had apparently managed to demonstrate enough trust in their work and enough decisiveness in appropriate areas to resolve whatever concerns she may have had.

But most importantly, her words taught me that I had been thinking about the whole situation from the wrong angle, and that there was no need to eventually reach a point where the gap in age and experience had no part in how my employees viewed me. Rather, she showed me that she had embraced that difference, and she was living comfortably with some seemingly opposing truths that I still hadn't recognized could coexist: that although I had started behind the eight ball and had plenty more to learn, I was nevertheless trustworthy

and competent; that she could both take guidance from me when she needed it, and give it when my own experience fell short; and that she could take parental pride in my progress while simultaneously taking direction from me.

It was this initially casual and ultimately meaningful moment that calmed most of my remaining anxiety. On an intellectual level, of course, I had gone through all of the pep talks and reassurances detailed above, many times over. But most of us are like Alice, and it's difficult to take the good advice we give ourselves. My staff member's generous words are what did the trick in the end.

That's why I wanted to share them here. For those of you who find yourself in the same situation I did, do not despair. Her remark is proof that as long as you approach supervision of veteran staff with respect and patience, there is every reason to believe that any initial awkwardness or resentment will not be permanent obstacles to success—either yours or theirs. ■

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# Technology Skills in the Workplace

## » Information Professionals' Current Use and Future Aspirations

BY MONICA MACELI AND JOHN J. BURKE

### INTRODUCTION

Over the past several decades, technology has rapidly moved from a specialized set of tools to an indispensable element of the library and information science (LIS) workplace, and today it is woven throughout all aspects of librarianship and the information professions. Information professionals engage with technology in traditional ways, such as working with integrated library systems, and in new innovative activities, such as mobile-app development or the creation of makerspaces.<sup>1</sup> The vital role of technology has motivated a growing body of research literature, exploring the application of technology tools in the workplace, as well as within LIS education, to effectively prepare tech-savvy practitioners. Such work is instrumental to the progression of the field, and with the rapidly-changing technological landscape, requires ongoing attention from the research community.

One of the most valuable perspectives in such research is that of the current practitioner.

Understanding current information professionals' technology use can help in understanding the role and shape of the LIS field, provide a baseline for related research efforts, and suggest future directions. The practitioner perspective is also valuable in separating the hype that often surrounds emerging technologies from the reality of their use and application within the LIS field. This paper presents the results of a survey of LIS practitioners, oriented toward understanding the participants' current technology use and future technology aspirations. The guiding research questions for this work are as follows:

1. What combinations of technology skillsets do LIS practitioners commonly use?
2. What combinations of technology skillsets do LIS practitioners desire to learn?

Library Type	Number of Respondents	Percentage of All Respondents
Academic	1,206	54.4
Public	545	24.6
School	266	12
Special	138	6.2
Other	61	2.8

Table 1: The types of libraries in which survey respondents work.

Task	Number of Respondents	Percentage of Respondents
Reference	1,404	63.4
Instruction	1,296	58.5
Collection development	1,260	56.9
Circulation	917	41.4
Cataloging	905	40.8
Electronic resource management	835	37.7
Acquisitions	789	35.6
User experience	775	35
Library administration	769	34.7
Outreach	758	34.2
Marketing/public relations	722	32.6
Library/IT systems	672	30.3
Periodicals/serials	659	29.7
Media/audiovisuals	566	25.5
Interlibrary loan	518	23.4
Distance library services	474	21.4
Archives/special collections	437	19
Other	209	9.40%

Table 2: Tasks performed on a regular basis by survey respondents.

3. What technology skillsets do newer LIS practitioners use and desire to learn as compared to those with ten-plus years of experience in the field?

### LITERATURE REVIEW

The growth and increasing diversity of technologies used in library settings has been matched by a desire to explore how these technologies impact expectations for LIS practitioner skill sets.

Triumph and Beile examined the academic library job market in 2011 by describing the required qualifications for 957 positions posted on the ALA JobLIST and ARL Job

Announcements websites.<sup>2</sup> The authors also compared their results with similar studies conducted in 1996 and 1988 to see if they could track changes in requirements over a twenty-three-year period. They found that the number of distinct job titles increased in each survey because of the addition of new technologies to the library work environment that require positions focused on handling them. The comparison also found that computer skills as a position requirement increased by 100 percent between 1988 and 2011, with 55 percent of 2011 announcements requiring them.

Looking more deeply at the technology

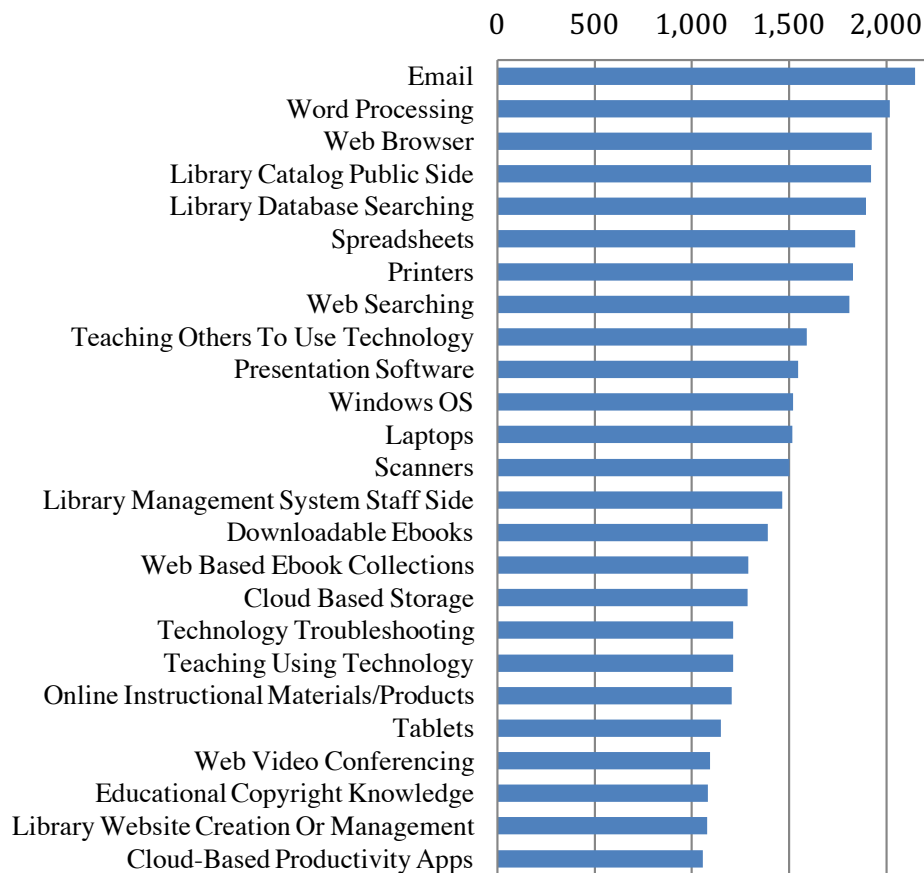


Figure 1: Top twenty-five technology skills/tools used by respondents (N = 2,216).

requirements specifically, Mathews and Pardue conducted a content analysis of 620 jobs ads from the ALA JobList to identify skills required in those positions.<sup>3</sup> The top technology competencies required were web development, project management, systems development, systems applications, networking, and programming languages. They found a significant overlap of librarian skill sets with those of IT professionals, particularly in the areas of web develop-

ment, project management, and information systems.

Riley-Huff and Rhoads found that the most commonly sought technology-related job titles were systems/automation librarian, digital librarian, emerging and instructional technology librarian, web services/development librarian, and electronic resources librarian.<sup>4</sup> A few years later, Maceli added to this list with newly popular technology-relating titles, including emerging

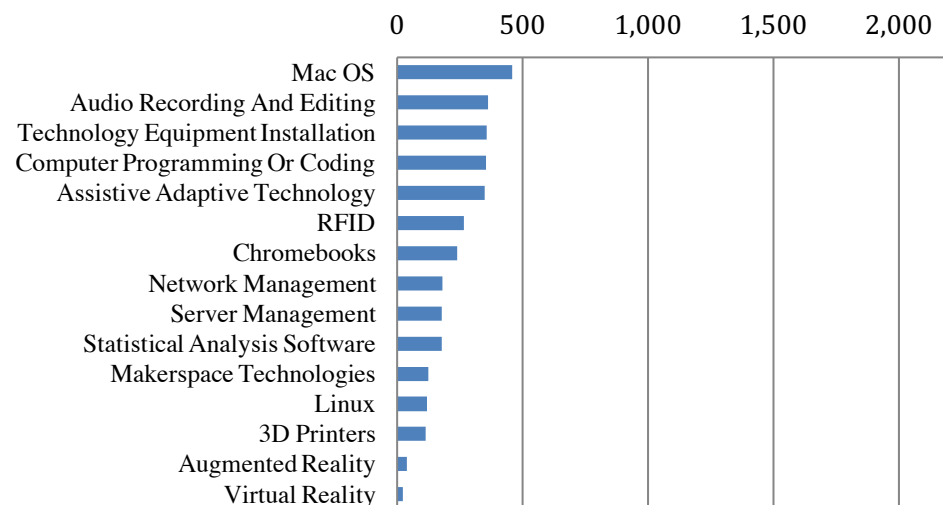


Figure 2: Bottom fifteen technology skills/tools used by respondents (N = 2,216).

technologies librarian, metadata librarian, and user experience/architect librarian.<sup>5</sup>

Beyond examining which specific technologies librarians should be able to use, researchers have also pondered whether a list of skills is even possible to create. Crawford synthesized a series of blog posts from various authors to discuss which technology skills are essential and which are too specialized to serve as minimum technology requirements for librarians.<sup>6</sup> He questioned whether universal skill sets should be established given the variety of tasks within libraries and the unique backgrounds of each library worker. Crawford also questioned the expectation that every librarian will have a broad array of technology skills from programming to video editing to game design and device troubleshooting. Partridge et al. reported on a series of focus groups held with 76 librarians that examined the skills required for members of the profession, especially those addressing technology.<sup>7</sup> In the questions they asked the focus groups, the authors focused on the term “library 2.0” and attempted to gather suggestions on skills that current and future librarians need to assist users. They concluded that the groups identified that a change in attitudes by librarians was more important to future library service than the acquisition of skills with specific technology tools. Importance was given to librarians’ abilities to stay aware of technological changes, be resilient and reflective in the face of them, and to communicate regularly and clearly with the members of their communities.

Another area examined in the studies is where the acquisition of technology skills should and does happen for librarians. Riley-Huff and Rhoads reported on a dual approach to measure librarians’ preparation for performing technology-related tasks.<sup>8</sup> The authors assessed course offerings for LIS programs to see if they included sufficient technology preparation for new graduates to succeed in the workplace. They then surveyed LIS practitioners and administrators to learn how they acquired their skills and how difficult it is to find candidates with enough technology preparation for library positions. Their findings suggest that while LIS programs offer many technology courses, they lack standardization, and graduates of any program cannot be expected to have a broad education in library technologies.

Further research confirmed this troubling lack of consistency in technology-re-

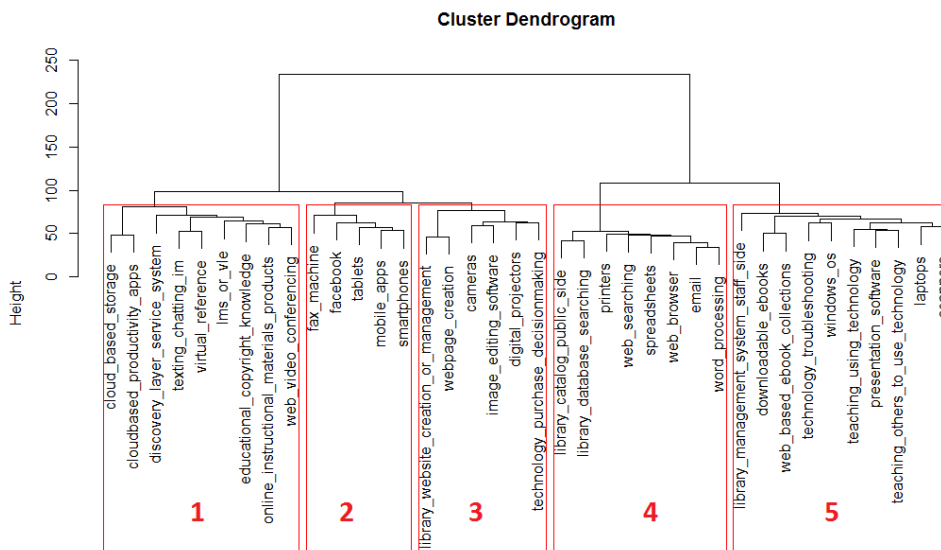


Figure 3: Cluster analysis of most frequent technology skills used in practice, with red outlines on each numbered cluster.

lated curricula. Singh and Mehra assessed a variety of stakeholders, including students, employers, educators, and professional organizations, finding widespread concern about the coverage of technology topics in LIS curricula.<sup>9</sup> Despite inconsistencies between individual programs, several studies provided a holistic view of the popular technology offerings within LIS curricula. Programs commonly offered one or more introductory technology courses, as well as courses in database design and development, web design and development, digital libraries, systems analysis, and metadata.<sup>10,11,12</sup>

As researchers have emphasized from a variety of perspectives, new graduates

could not realistically be expected to know every technology with application to the field of information.<sup>13</sup> There was widespread acknowledgement that learning in this area can, and must, continue in a lifelong fashion throughout one's career. Riley-Huff and Rholes reported that LIS practitioners saw their own experiences involving continuing skill development on the job, both before and after taking on a technology role.<sup>14</sup> However, literature going back many decades suggests that the increasing need for continuing education in information technology has generally not been matched by increasing organizational support for these ventures. Numerous deterrents to continuing technology education were

noted, including lack of time,<sup>15</sup> organizational climate, and the perception of one's age.<sup>16</sup> While studies in this area have primarily focused on MLS-level positions, Jones reported on academic library support staff members and their perceptions of technology use over a ten-year period and found that increased technology responsibilities added to workloads and increased workplace stress.<sup>17</sup> Respondents noted that increasing use of technology in their libraries has increased their individual workloads along with the range of responsibilities that they hold.

## METHOD

To build an understanding of the research questions stated above, which focus on the technologies currently used by information professionals and those they desired to learn, we designed and administered a thirteen-question anonymous survey ([see appendix](#)) to the subscribers of thirty library-focused electronic discussion groups between February 25 and March 13, 2015. The groups were chosen to target respondents employed in multiple types of libraries (academic, public, school, and special) with a wide array of roles in their libraries (public services librarians, systems staff members, catalogers, and so on). We solicited respondents with an email sent to the groups asking for their participation in the survey and with the promise to post initial results to the same groups. The survey included closed and open-ended questions oriented toward understanding current technology use and future aspirations as well as capturing demographics useful in interpreting and generalizing the results. The survey questions have been previously used and iteratively expanded over time by the second author, first in the fall of 2008, then spring of 2012, with summative results presented in the last three editions of the Neal-Schuman Library Technology Companion. We obtained a total of 2,216 responses to the question, "Which of the following technologies or technology skills are you expected to use in your job on a regular basis?" Of these responses, 1,488 (67 percent) of the respondents answered the question regarding technologies they would like to learn: "What technology skill would you like to learn to help you do your job better?" We conducted basic reporting of response frequency for closed questions to assess and report the demographics of the respondents. To analyze the open-ended survey question results in greater depth, we conducted a textual analysis using the

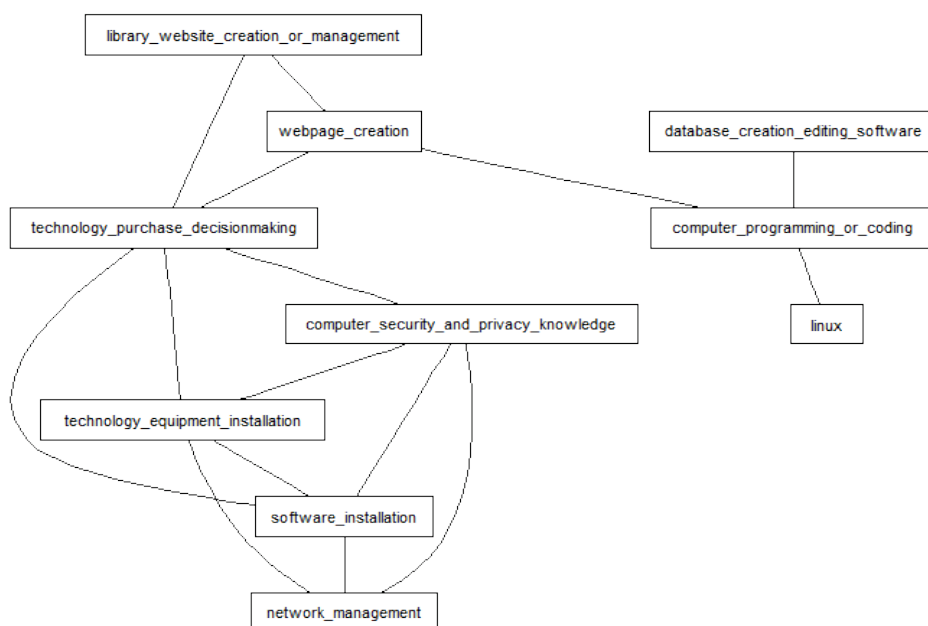


Figure 4: Terms correlated with "server management," indicating commonly co-occurring workplace technologies for highly-technical positions.

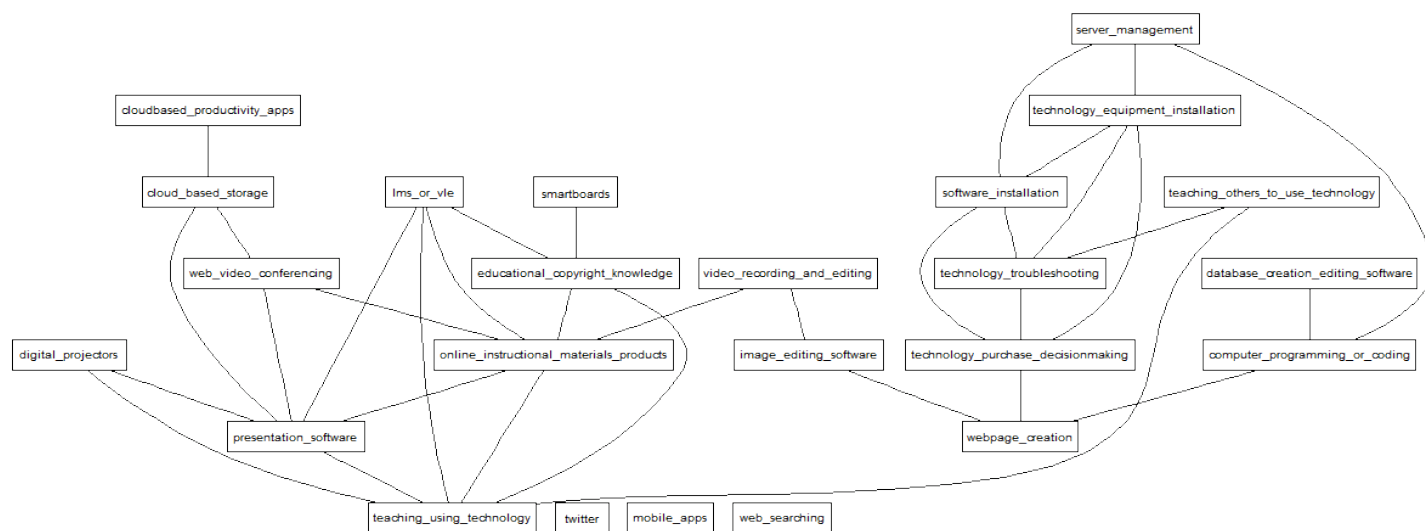


Figure 5: Terms correlated with “library website creation or management,” indicating commonly co-occurring technologies used on the job.

R statistical package (<https://www.r-project.org/>). We used the tm (text mining) package in R (<http://CRAN.Rproject.org/package=tm>) to calculate frequency, correlation of terms, generate plots, and cluster terms.

## RESULTS

The following section will first present an overview of survey responses and respondents, and then explore results as related to the stated four research questions. The LIS practitioners who responded to the survey reported that their libraries are located in forty US states, eight Canadian provinces, and forty-three other countries. Academic libraries were the most common type of library represented, followed by public, school, special, and other (see Table 1).

### Library Type Number of Respondents Percentage of All Respondents

Respondents also provided their highest level of education. A total of 77 percent of responding LIS practitioners have earned a library-related or other master’s degrees, dual master’s degrees, or doctoral degrees. From these reported levels of education, it is likely that more respondents are in librarian positions than in library support staff positions. However, individuals with master’s degrees serve in various roles in library organizations, so the percentage of graduate degree holders may not map exactly to the percentage of individuals in positions that require those degrees. Significantly fewer respondents (16 percent) reported holding a high school diploma, some college credit, an associate degree, or a bachelor’s degree as their highest level of education.

Another aspect we measured in the survey was tasks that respondents performed

on a regular basis. The range of tasks provided in the survey allowed for a clearer analysis of job responsibilities than broad categories of library work such as “public services” or “technical services.” Some respondents appeared to be employed in solo librarian environments where they are performing several roles. Even respondents who might have more focused job titles such as “reference librarian” or “cataloger” may be performing tasks that overlap traditional roles and categories of library work. The tasks offered in the survey and the responses to each are shown in Table 2.

### TASK NUMBER OF RESPONDENTS PERCENTAGE OF RESPONDENTS

While public services-related activities lead the list, with reference, instruction, collection development, and circulation as the top four task areas, technical services-related activities are well represented; the

next three in rank are cataloging, electronic resource management, and acquisitions. The overall list of tasks shows the diversity of work LIS practitioners engage in, as each respondent chose an average of six tasks. The results also suggest that the survey respondents are well acquainted with a wide variety of library work rather than only having experience in a few areas, making their uses of technology more representative of the broader library world.

The survey also questioned the barriers LIS practitioners face as they try to add more technology to their libraries, and 2,161 respondents replied to the question, “Which of the following are barriers to new technology adoption in your library?” Financial considerations proved to be the most common barrier, with “budget” chosen by 80.7 percent of respondents, followed by “lack of staff time” (62.4 percent), “lack of staff with appropriate skill sets” (48.5 percent), and

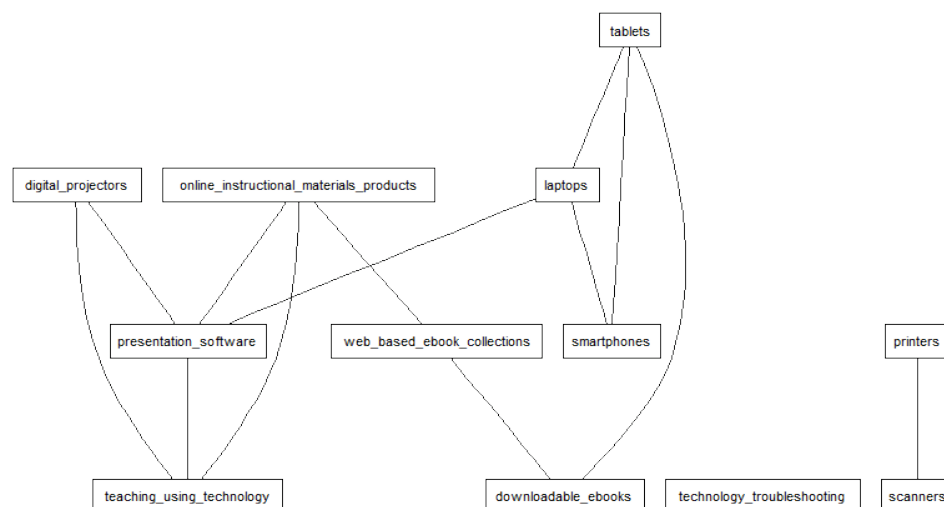


Figure 6: Terms correlated with “teaching others to use technology,” indicating commonly co-occurring technologies used on the job.





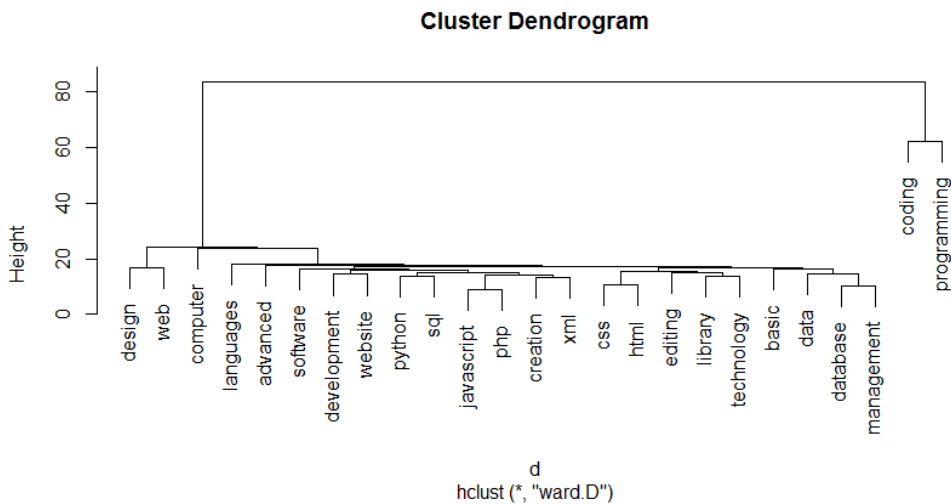


Figure 8: Clustering of terms present in responses indicating the desire to learn coding or Programming.

in Burke<sup>18</sup>—and consistent with the prior year’s findings—coding or programming remained the most desired technology skillset, mentioned by 19 percent of respondents. The raw text analysis yielded a fuller list of the top terms mentioned by participants (Table 3 and visualized in Figure 7).

We then explored the deeper context of responses and individually analyzed responses specific to the more popular technology desires. First, we assessed the responses mentioning the desire to learn coding or programming. Of these responses, the most common specific technologies mentioned were HTML, Python, CSS, JavaScript, Ruby, and SQL, listed in decreasing order of interest. Although most participants did not describe what they would like to do with their desired coding or programming skills, of those that did, the responses indicated interest in

- becoming more empowered to solve their own technology problems (e.g., “I would like to learn the [programming languages] so I don’t have to rely on others to help with our website,” “I’m one of the most tech-skilled people at my library, but I’d like to be able to build more of my own tools and manage systems without needing someone from IT or outside support.”);
- improving communication with IT (e.g., “how to speak code, to aid in communication with IT,” “to better identify problems and work with IT to fix them”);
- creating novel tools and improving system interoperability (e.g. “coding for app and API creation”); and
- bringing new technologies to their library and patrons (e.g., “coding so that I can incorporate a hackerspace in my library”).

Next, we took a clustering approach to visualize the terms commonly desired in combination.

Figure 8 describes the clustered terms that we found within the programming or coding responses. The terms “programming” and “coding” form a distinct cluster to the right of the diagram, indicating that many responses contained only those two terms.

The remaining portion of the diagram begins to illustrate the specific technologies mentioned for those respondents that answered in greater detail or expanded on their general answer of programming or coding. Other related desired technology-skill areas become apparent: database management, HTML and CSS (as well as the more general “web design,” which appeared in the top terms in Table 3), PHP and JavaScript, Python and SQL, and XML creation, among others. The bulleted list presented in the previous paragraph illustrates some of the potential applications participants envisioned these skills being useful in, but the majority did not provide this level of detail in their response.

Editing was another prominent term that appeared across participant responses and was largely meant in the context of video editing. Because of the vagueness of the term “editing,” a closer look was necessary to determine other technology desires. Looking at terms highly correlated with “editing” revealed both video and photo editing to be important to respondents. Several of the top-appearing terms were used more generally: “database” and mobile “apps” were mentioned without specifying the technology tool or scenario of

use, such that a more contextual analysis could not be conducted. These responses can be particularly difficult to interpret as the term “databases” can have a technical meaning (e.g., working with SQL) or it can refer to the use of library databases from an end user perspective.

### WHAT TECHNOLOGY SKILLSETS DO NEWER LIS PRACTITIONERS USE AND DESIRE TO LEARN AS COMPARED TO THOSE WITH TEN-PLUS YEARS’ EXPERIENCE IN THE FIELD?

Of the 2,216 survey responses, 877 stated they had worked in libraries for ten or fewer years. We analyzed these responses separately from the remaining 1,334 respondents who had worked in libraries for more than ten years. Of this group, 644 had worked in libraries for twenty-plus years (see Figure 9). A handful of participants did not answer the question and were omitted from the analysis.

The top technology skills used in the workplace did not differ significantly between the different groups. The top skills, as discussed earlier and presented in Figure 1, were well represented and similarly ordered. A few small percentage points of difference were noted in a handful of the top skills (see Figure 10). Those newer to the field were slightly more likely to teach others to use technology, use cloud-based storage, and use cloud-based productivity apps. More experienced practitioners regularly used the library management system (on the staff side) more than those that were newer to the field.

For the question regarding technologies they would like to learn, 69 percent of the participants with zero to ten years’ experience answered the question compared to a slightly smaller 65 percent of the participants with more than ten years’ experience. Top terms for both groups were very similar, including coding or programming, software, web, video, design, and editing. These terms were not dissimilar to the responses taken as a whole (see Table 3), indicating that respondents were generally interested in learning the same sorts of technology skills regardless of how long they had been in the field.

A few noticeable differences between the two groups emerged. The most popular skills mentioned, coding or programming, were mentioned by 28 percent of the respondents with zero to ten years’ experience, and by 15 percent of the respondents with eleven-plus years’ experience. There was slightly more interest (by a few percent-

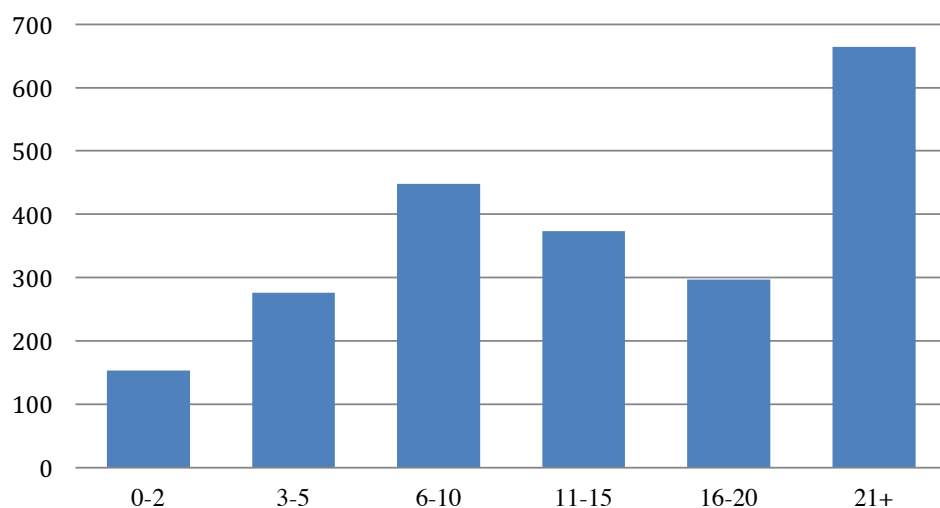


Figure 9: Number of survey responses falling into the various categories for number of years working in libraries.

age points) in databases, design, Python, and Ruby in the zero to ten years' experience group. Taking a closer look at the different year ranges in the zero to ten years of experience or less group, revealed that those with three to five years of experience were most likely to be interested in learning coding or programming skills.

Of the participants that answered the question at all, several stated that there were no technology skills they would need or like to learn for their position, either because they were comfortable with their existing skills or were simply open to learning more as needed (but nothing specific came to mind). Combined with those who did not answer the question (and so presumably did not have a particular technology they were interested in learning), 28 percent of the zero to ten years' experience group and 31 percent of the eleven-plus years' experience group did not have any technologies that they desired to learn at the moment.

## DISCUSSION

As detailed earlier, the most common technologies employed by LIS practitioners were email, office productivity tools, web browsers, library catalog and database searching tools, and printers. Generally similar technology usage patterns were observed for early and later-career practitioners and programming topped the list of most-desired technology skill to learn.

The cluster analysis presented in **Figure 3** suggests that a relatively small percentage of practitioners have technology-intensive roles that would require skills such as programming, working with databases, systems administration, etc. Rather, the cluster analysis showed common technol-

ogy skillsets focused on the end-user side of technology tools. In fact, most of the top ten skills used—email, office productivity tools (word processing, spreadsheets and presentation software), web browsers, library catalog and database searching, printers, and teaching others to use technology—are fairly nontechnical in nature. A potential exception is that of teaching technology. **Figure 6** suggests that teaching others to use technology entails several hardware devices (for example, laptops, tablets, smartphones, and scanners) as well as online and digital resources, such as eBooks. However, most of the popular skills used would be considered baseline skills for information workers in any domain.

As suggested by Tennant, programming and other advanced technical skills do not necessarily need to be a core skill for all information professionals, but knowledge of the potential applications and possibilities of such tools is required.<sup>19</sup> This idea was echoed by Partridge et al., whose findings emphasized the need for awareness and resilience in tackling new technological developments.<sup>20</sup> These skills alone would obviously be too little for LIS practitioners explicitly seeking a high-tech role, as discussed in Maceli.<sup>21</sup> However, further research directed toward exploring the mental models and general technological understanding of information professionals would be helpful in understanding the true level of practitioner engagement with technology, to complement the list of relatively low-tech tools employed.

Programming has been a skill of great interest within the information professions for many years and the respondents' enthusiasm and desire to learn in this area was

readily apparent from the survey results, with nearly 20 percent of participants citing either "programming" or "coding" as a skill they desired to learn. In the context of their current responsibilities, 15 percent of respondents overall mentioned "computer programming or coding" as a regular technological skill they employed (see **Figure 2**). There was a slight difference between the librarians with fewer than eleven years of experience—19 percent coded regularly—compared to 13 percent of those with eleven or more years of experience. Within the years-of-experience divisions, the newer practitioners were more interested in learning programming, with the peak of interest at three to five years in the workplace (see **Figure 11**).

The relatively low interest or need to learn programming in the newest practitioners potentially indicates a hopeful finding—that their degree program was sufficient preparation for the early years of their career. Prior research would contradict this finding. For example, Choi and Rasmussen's 2006 survey found that, in the workplace, librarians frequently felt unprepared in their knowledge of programming and scripting languages.<sup>22</sup> In the intervening years, curriculum has shifted to more heavily emphasize technology skills, including web development and other topics covering programming,<sup>23</sup> perhaps better preparing early career practitioners. Overall, programming remains a popular skill in continuing education opportunities as well as in job listings,<sup>24</sup> which aligns well with the respondents' strong interest in this area.

The skills commonly co-occurring with programming in practice included working with Linux, database software, managing servers, and webpage creation (see **Figure 4**). Taken as a whole, these skills indicate job responsibilities falling toward the systems side, with webpage creation a skill that bridged intensely technical and more user-focused work (as also evident in **Figure 4**). This indicates that, though programming may be perceived as highly desirable for communicating and extending systems, as a formal job responsibility it may still fall to a relatively small number of information professionals in any significant manner.

Makerspace technologies and their implementation possibilities within libraries have garnered a great deal of excitement and interest in recent years, with much literature highlighting innovative projects in this area (such as American Library Association<sup>25</sup> and Bagley<sup>26</sup>). Fourie and Meyer provided

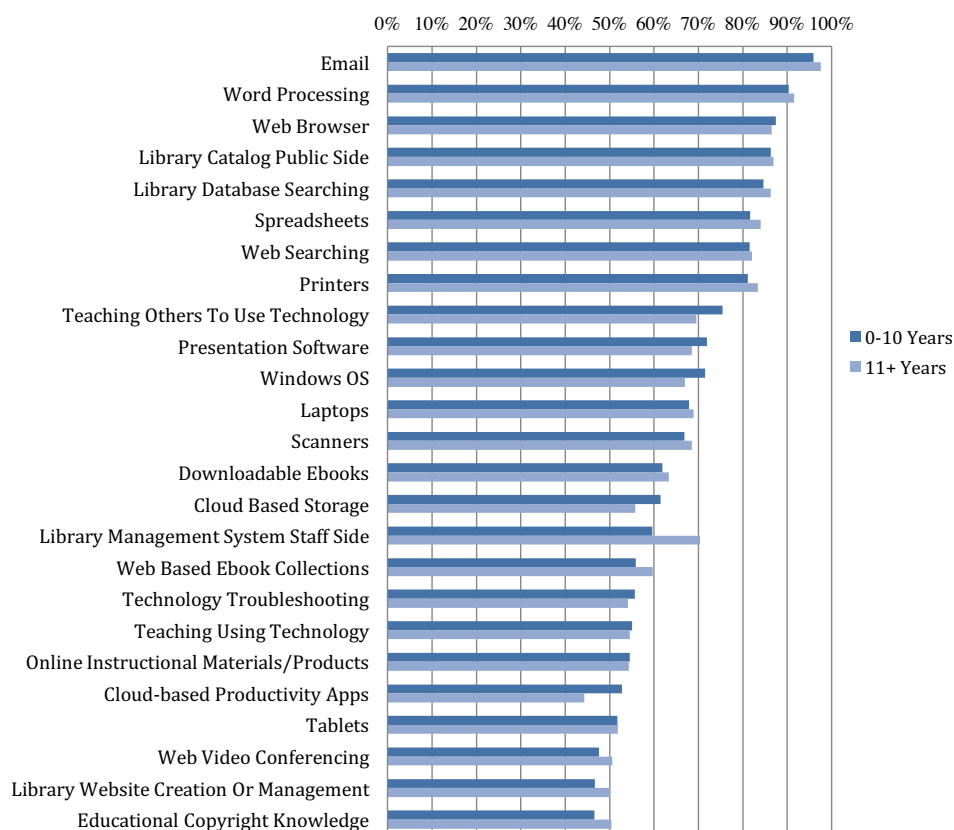


Figure 10: Top twenty-five technology skills used by respondents in the zero to ten years' experience (dark blue) and eleven-plus years' experience (light blue) groups.

an overview of the existing makerspace literature, finding that most research efforts focus on the needs and construction of the physical space.<sup>27</sup> Given the general popularity of the topic (as detailed in Moorefield-Lang),<sup>28</sup> it is interesting to note that such technologies were infrequently mentioned by survey participants, both in those desiring to learn these tools and those who were currently using them. The most infrequent skills used (see Figure 2) included makerspace technologies, 3D printers, augmented, and virtual reality. Only a small number

of respondents currently used this mix of makerspace-oriented and emerging technologies, and only 3 percent of respondents mentioned interest in learning makerspace-related skills.

Despite many research efforts exploring the particulars of unique makerspaces in a case-study approach (for example, Moorefield-Lang),<sup>29</sup> little data exists on the total number of makerspaces within libraries, and the skillset is largely absent from prior research describing LIS curriculum and job listings. This makes it difficult to determine

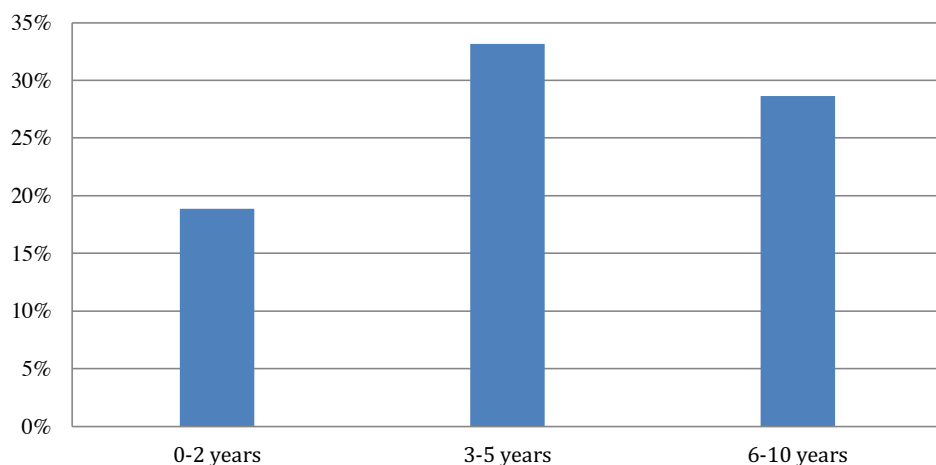


Figure 11: Percentage of respondents interested in learning coding or programming in the groups with ten or fewer years' experience.

whether the low number of participants that reported working with makerspace technologies is reflective of the small number of such spaces in existence or simply that few practitioners are assigned to work in this area, no matter their popularity. In either case, these findings provide a useful baseline with which to track the growth of makerspace offerings over time and librarian involvement in such intensely technological work.

Despite the interest and clear willingness to learn and use technology, several workplace challenges became apparent from participant responses. As prior research explored (notable Riley-Huff and Rhoads),<sup>30</sup> practitioners assumed they would be continually learning and building skills on the job throughout their career to stay current technologically. As described in the earlier results section, many participants mentioned that, although they were highly willing and able to learn, the necessary organizational resources were lacking. As one participant noted, "I'd like to learn anything but the biggest problem seems to be budget (time and monetary)." Several participants expressed feeling overwhelmed with their current workload. New learning opportunities, technological or otherwise, were simply not feasible. Although the survey results indicated that practitioners of all ages were roughly equally interested in learning new technologies, a handful of responses mentioned that ageist issues were creating barriers. Though few, these respondents described being dismissed as technologists because of their age.

These themes have long been noted in the large body of continuing-education-related literature going back several decades. Stone's study ranked lack of time as the top deterrent to professional development for librarians, and it appears little has changed.<sup>31</sup> Chan and Auster noted that organizational climate and the perception of one's age may impair the pursuit of professional development, among other impediments.<sup>32</sup> However, research has noted a generally strong drive in older librarians to continue their education; Long and Applegate found a preference in later career librarians for learning outlets provided by formal library schools and related professional organizations, but a lower interest in generally popular topics such as programming.<sup>33</sup> These findings were consistent with the participant responses gathered in this survey.

Finally, as detailed in the results section, a significant percent of respondents (33 per-



cent) did not answer the question regarding what technologies they would like to learn. As is a limitation with survey research, it is difficult to know what the respondent's intention was in not answering the question, i.e., are they comfortable with their current technology skills? Do they lack the time or interest in pursuing further technology education? And of those that did answer, many did not specify their intended use of the technologies they desired to learn. So a deeper exploration of what technologies LIS practitioners desire to learn and why would be of value as well. These questions are worth pursuing in more depth through further research efforts.

## CONCLUSION

This study provides a broad view into the technologies that LIS practitioners currently use and desire to learn, across a variety of types of libraries, through an analysis of survey responses.

Despite a marked enthusiasm toward using and learning technology, respondents described serious organizational limitations impairing their ability to grow in these areas. The LIS practitioners surveyed have interested patrons, see technology as part of their mission, and are not satisfied with the current state of affairs, but they seem to lack money, time, skills, and a willing library administration.

Though respondents expressed a great deal of interest in more advanced technology topics, such as programming, the majority typically engaged with technology on an end-user level, with a minority engaged in deeply technical work. This study suggests future work in exploring information professionals' conceptual understanding of and attitudes toward technology, and a deeper look at the reasoning behind those who did not express a desire to learn new technologies. ■

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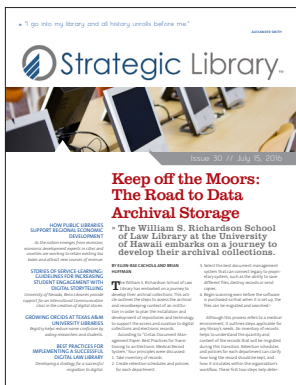
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