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Feeding Kids for Free

» A Q&A with Spokane County Library District's Amber Williams

BY ELIZABETH KOENIG

Amber Williams and the Deer Park location of the Spokane County Library District (SCLD) have been feeding kids healthy snacks after school and during the summer for two and a half years. The library has been reimbursed for all of that food through two federal programs – the Child and Adult Care Food Program (CACFP) and the Summer Food Service Program (SFSP).

I attended Amber's session, "Feeding Kids for Free" at the WLA Conference in Yakima, which was chock full of information and details on how to replicate their success. It was easy to see how passionate Amber is about this program, and after hearing her speak I hope more libraries in areas experiencing poverty can also begin to feed kids for free.

I asked Amber these questions a few weeks after the conference.

Q. WHAT HAPPENED TO INSPIRE YOU GET INVOLVED WITH FEEDING KIDS AT THE LIBRARY?

A. I heard about food scarcity issues in the area when we held community conversations about aspirations and concerns, which is what started the inquiry. What really galvanized me to make it happen was watching local elementary schools kids argue over a bruised apple at an afterschool program at the library.

Q. WHAT DID YOU NEED TO DO TO CONVINCE YOUR LIBRARY DIRECTOR THAT THIS WAS A WORTHWHILE ENDEAVOR THAT FIT INTO THE MISSION OF THE LIBRARY?

A. I wrote a three-page proposal addressing the process, which included detailed work plans and research. In Deer Park there was no other organization well-suited to take on feeding kids. I made the case that the library was the best option and then explained how it could work. I addressed who

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would do what in each department and the estimated time it would take. I laid out how the programs were financially viable and asked to pilot the program with the intent to reevaluate in six months. At the time to reevaluate everyone who took on some of this work was in favor of continuing.

Q. WHAT IS THE FIRST THING LIBRARY STAFF NEEDS TO KNOW ABOUT BEFORE DIVING INTO THE PAPERWORK?

A. Whether or not you qualify as a site. The easiest way is to search for your library's address on the eligibility map:

<http://bestpractices.nokidhungry.org/Averaged-Eligibility-Map>

The map takes into account the last five years and if any of the schools (elementary, middle or high school) exceeded 50% free or reduced lunch numbers, your area will be eligible.

Most of all I want people to know the worth totally outweighs the work and at \$.89 per snack the program pays for itself.

Q. YOU MENTIONED THAT REAPPLYING EACH YEAR IS FAIRLY QUICK. IS THE APPLICATION PROCESS DIFFICULT WHEN YOU FIRST GET STARTED?

A. Your Nutrition Specialist will help -- they're like a loan officer -- they want you to do this well. Your success is their success.

Q. THERE ARE STRICT GUIDELINES ON WHAT FOOD YOU CAN FEED KIDS THROUGH THESE GRANTS -- COULD YOU GIVE US A QUICK OVERVIEW OF WHAT SNACKS YOU CAN PROVIDE?

A. Requirements include minimum portion sizes and decent nutritional value. Snack has two components and the two items need to be from different food groups. A recent change has been a shift to requiring that grains be "Whole Grain Rich" (WGR). Today's snack is a 1 oz. bag of WGR cinnamon graham crackers and a 1 oz. string cheese.

Tomorrow, kids are having a 1oz bag of WGR Sun Chips and a 6 oz 100% juice Capri Sun.

Q. HOW DO YOU GET THE FOOD -- DOES SOMEONE ACTUALLY GO SHOPPING, OR DO YOU ORDER IT? HOW MUCH DO YOU BUY AT A TIME?

A. All of our food is prepackaged, which means many of the grain items are purchased from online vendors like Wal-Mart and Amazon. Greek yogurt and cheese sticks are picked up by a staff person, during paid time, from Costco. We typically have three weeks' worth of food on hand with the goal that shopping happens once a month.

Q. HOW MANY STAFF MEMBERS ARE INVOLVED IN KEEPING THE PROGRAM RUNNING?

A. Everyone who regularly works at our Deer Park location is trained and involved, this includes volunteers, the library supervisor, pages and public service associates. We can all comfortably handle the cart. In addition to frontline staff, the SCLD Business Office manages our reimbursement claims and shopping requests.

Q. DO YOU COMBINE THE SNACKS WITH ACTIVITIES OR PROGRAMS?

A. We time the majority of our school-age programs to begin when snack is being served.

Q. HOW MANY KIDS HAVE YOU FED OVER THE YEARS? ARE YOU SEEING AN INCREASE OR DECREASE IN THE NUMBER OF KIDS COMING IN FOR SNACKS?

A. In October 2018, we passed the 15,000 mark for reimbursable snack. Our daily average drops when school is not in session but has remained steady for the past two years.

Q. WITH ALMOST 43% OF STUDENTS IN THE STATE QUALIFYING FOR REDUCED OR FREE LUNCH (MAY 2017) IT SEEMS LIKE THERE MAY BE THE OPPORTUNITY FOR MANY OTHER LIBRARIES TO OFFER FREE SNACKS

TO KIDS. DO YOU HAVE ANY IDEA ABOUT HOW MANY OTHER LIBRARIES ARE TAKING ADVANTAGE OF THESE GRANTS?

A. In Washington State, when we started in 2016 no other libraries were using this program for afterschool snack. I hope there are others by now. I have seen there are some east coast libraries offering snack.


Q. THANK YOU FOR SHARING THE LINK TO ALL OF YOUR DOCUMENTS AND RECORD KEEPING THROUGH THE WLA CONFERENCE SESSIONS WEBPAGE. OF ALL THAT CONTENT YOU'VE PROVIDED, WOULD YOU SUGGEST ANY DOCUMENTS IN PARTICULAR AS MOST USEFUL TO GET STARTED?

A. The Google Drive has a complete snapshot of what you need to implement this program (with the exception of OSPI provided example documents), menus, shopping lists, sign in sheets, tally forms and examples of required documents. As for a good place to start, check out the shopping lists and menus and you'll see that this is doable.

We keep extra packages of items like goldfish crackers that are purchased by the Friends of the Library, on hand for kids who are in the library outside of our serving time. We won't be reimbursed for these but it really means that no one has to be hungry. ■

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Library Services Navigation » Improving the Online User Experience

BY BRIAN RENNICK

ABSTRACT

While the discoverability of traditional information resources is often the focus of library website design, there is also a need to help users find other services such as equipment, study rooms, and programs. A recent assessment of the Brigham Young University Library website identified nearly two hundred services. Many of these service descriptions were buried deep in the site, making them difficult to locate. This article will describe a web application that was developed to improve service discovery and to help ensure the accuracy and maintainability of service information on an academic library website.

INTRODUCTION

The Brigham Young University Library released a new version of its website in 2014. Multiple usability studies were conducted to inform the design of the new site. During these studies, the web designers observed that when a user did not see what they were looking for on the homepage, they were likely to click on the “Services” link as the next best option. The word services appeared to be an effective catch-all term.

Web designers asked themselves, “What is a library service?” They concluded that a library service could be anything public-facing that meets the needs of a user. Using this broad definition, services could include:

- Library materials—both digital and physical (e.g. books, DVDs)
- Material services (e.g. course reserve, interlibrary loan)
- Equipment and technology (e.g. computers, cameras, tripods)
- Help and guidance (e.g. research assistance, computer assistance)
- Locations (e.g. group study rooms, classrooms, help desks)
- Programs (e.g. Friends of the Library, lectures)

Because libraries offer so many diverse services, structuring a website to effectively promote them all brings many challenges. For instance, a common approach to presenting library services on a website is to

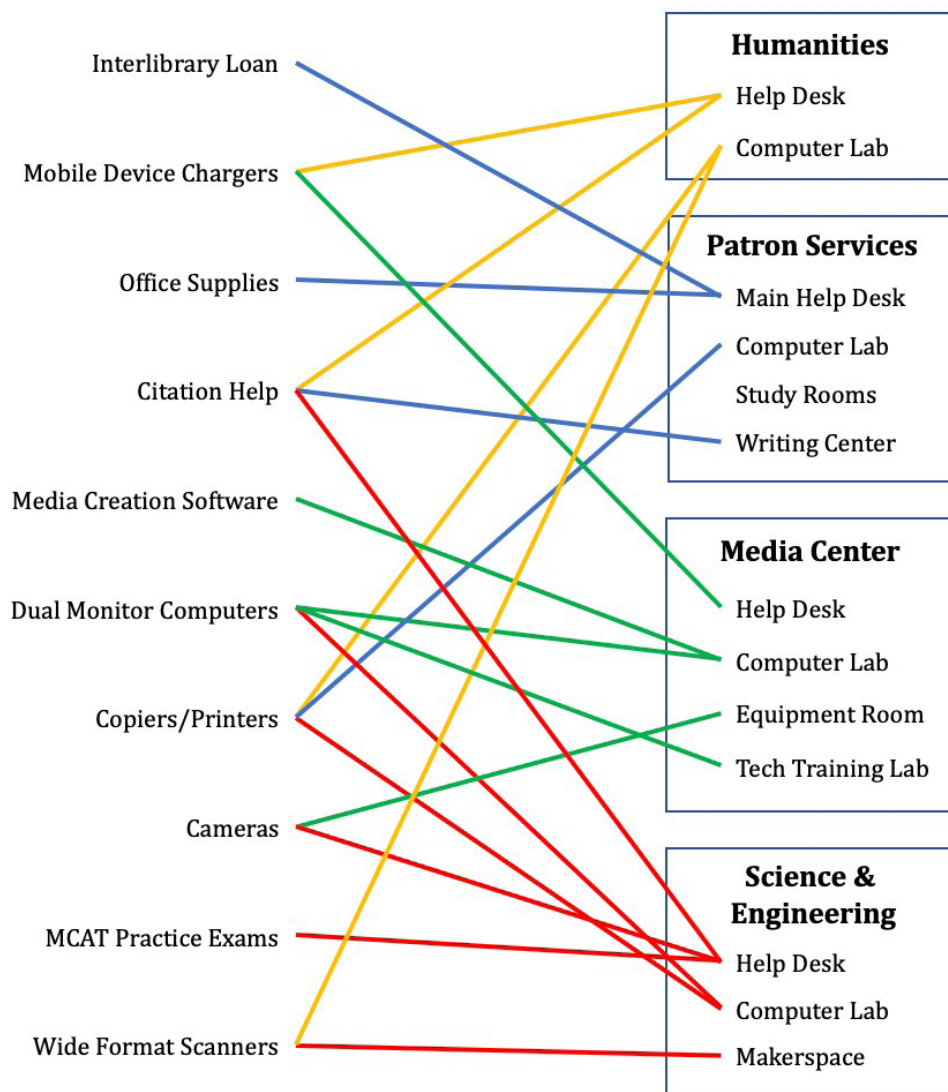


Figure 1. Sample map illustrating relationships between services (on the left side) and service area locations (on the right side).

have a menu that lists a few of the most popular or important services. The last menu item will normally be a link to a web page for “Other Services” that provides a more comprehensive service list. Such an all-inclusive listing of library services on a single web page can easily lead to information overload for users.

Where do services belong in a library website’s information architecture? Determining the one correct path is not easy because there are multiple valid ways to organize services into web pages. Services could be arranged by department, service category, user group (undergraduates,

graduates, faculty, visitors, alumni), or any number of other ways. An ideal system would allow users to follow the path that makes the most sense to them.

User expectations for a single (Google-like) search box add to the challenges for service listings.¹ A single search box, also known as a metasearch system, web-scale discovery service, or federated search, combines search results from multiple library sources. A study at the University of Colorado found that users expected to locate services by entering keywords into the single search box on the library’s homepage.² For example, the users attempted to search for

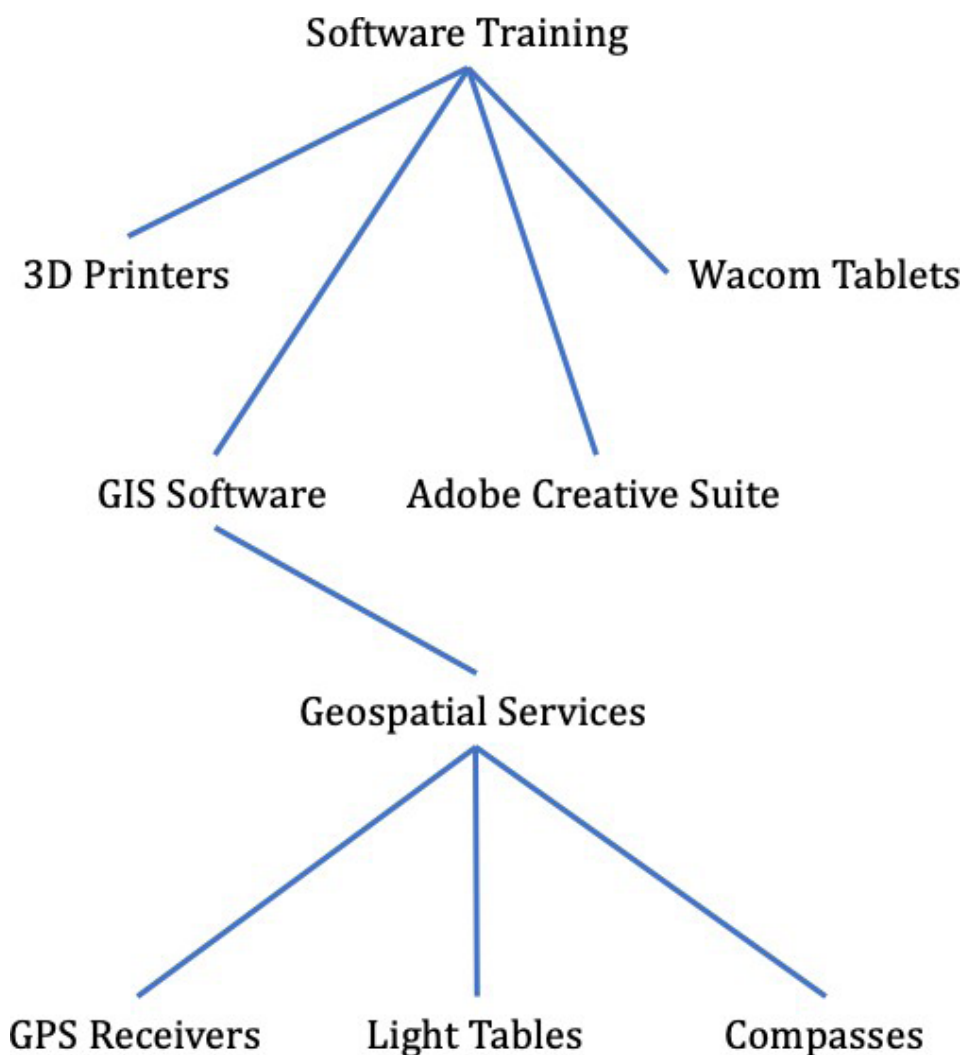


Figure 2. Sample map of how related service web pages are linked.

“interlibrary loan” and “chat with a librarian” using the single search box. It is unrealistic to expect all users to follow a specific series of links in order to find the one correct path to information about a service when they are accustomed to Google-style searching.

Even when a user manages to locate the correct web page where a service is described, the pertinent information can still be difficult to pinpoint when service descriptions are buried in paragraphs. Users need to be able to quickly perform a visual scan of a web page to locate service information. Kozak and Hartley suggest that “bulleted lists are easier to read, easier to search and easier to remember than continuous prose.”³

The ongoing maintenance of service listings poses another significant challenge. For large academic libraries, up-to-date service information is difficult to maintain because it is typically scattered throughout a website. Each department may have its own set of web pages and

service listings. Department pages created and maintained by different individuals end up with inconsistent design, organization, and voice. Services that are common to multiple departments will have duplicate listings with different descriptions. Maintenance of accurate information becomes an issue as services change; tracking down all of the references to a discontinued or modified service requires extensive searching of the website.

LITERATURE REVIEW

Studies and commentaries regarding the information architecture of academic library websites have been covered extensively in the literature.⁴ A few articles specifically address the way that library services are organized on websites.

Library services are a significant component of academic library website content. Clyde studied one hundred library websites from thirteen countries in order to compare common features and to determine

some of the purposes for a library website.⁵ Purposes for the sites varied. Some focused on providing information about the library and its services while others functioned more like a portal, providing links to Internet resources. Cohen and Still developed a list of core content for academic library websites by examining pages from university and two-year college sites.⁶ They organized the content into categories: Library Information, Reference, Research, Instruction, and Functionalities. Liu surveyed ARL libraries to get an overview of the state of web page development.⁷ The subsequent SPEC Kit identifies services commonly found on academic library websites. Yang and Dalal studied a random sample of academic library websites to see which web-based reference services were offered and how they were presented.⁸ They also examined the differing terminology used to describe the services.

The choice of terminology used on library websites impacts the findability of services. Dewey compared academic websites from thirteen member libraries of a consortium to determine how findable service links were on the sites.⁹ The service links used in the evaluation covered “access, reference, information, and user education” categories. The study measured the number of clicks from the homepage that were required to find information about a service. Dewey found inconsistent use of terminology used to describe library services from one site to another. Dewey posited that extensive use of library jargon could, in a sense, hide links from users. The overall conclusion was that the websites contained “too much information poorly placed.” A study of an academic library website by McGillis and Toms also found that participants struggled with terminology when attempting to locate services.¹⁰ The website reflected “traditional library structures” instead of using categories that were meaningful to users.

The decision on where to place library services on a website is an important step in the design process. As part of their proposal to establish a benchmarking program for academic library websites, Hightower, Shih, and Tilghman created classifications for the web pages they studied.¹¹ Library services were assigned to the “Directional” category instead of representing a separate category. Vaughan described a history of changes to an academic website that took place from 1996–2000.¹² An interesting change was that, after multiple redesigns, the web designers combined two categories

into a single “Library Services” category in order to simplify top level navigation on the home page. Comeaux studied thirty-seven academic library websites to see how design elements evolved between 2012 and 2015.¹³ A portion of the study compiled terms used as navigation labels. The term “About” was the most common navigation label followed by “Services” as the second most common. Use of the term “Services” as a main navigation label increased in popularity from 2012 to 2015.

Several researchers suggest organizing library services into web pages or portals that target different audiences. Gullikson et al. studied usability issues related to the information architecture of an academic website and discovered that study participants followed different paths in their attempts to locate service information on the site.¹⁴ Some users found items easily while others were unsuccessful. Menu labels were not universally understood. The researchers identified a need for multiple access points to information in order to accommodate different mental models. They suggested employing multiple information organizational schemes, such as categorizing links by function, frequency of use, and target user group. Adams and Cassner analyzed the websites of ARL libraries to see how services for distance education students and faculty were presented.¹⁵ They recommend strategies for helping distance students navigate the website, including maintaining a web page designed specifically for distance students that avoided jargon and clearly described services. Detlor and Lewis envisioned academic library websites as “sophisticated guidance systems which support users across a wide spectrum of information seeking behaviors—from goal-directed search to wayward browsing.”¹⁶ They reviewed ARL library websites to see which important features were present or absent. Their coding methodology was adopted by Gardner, Juricek, and Xu in their study of how library web pages can meet the needs of campus faculty.¹⁷ Liu proposed a conceptual model for an improved academic library website that would be organized into portals designed for specific user groups, such as undergraduates, faculty, or visitors.¹⁸ Some of the ARL websites studied by the researcher already implemented portals by user group.

A more recent approach for locating library services has been to include website search results when using the single search

← Services

Interlibrary Loan

If the Library doesn't have what you're looking for, Interlibrary Loan will get it for you

[Hours](#)
[Location](#)
[Contact](#)

Overview

- ✓ Borrow almost anything from other libraries for free (books, DVDs, CDs, scores, maps, microfilm, periodicals, newspapers, etc.)
- ✓ Get articles and book chapters as PDFs for free
- ✓ Delivery of Library items to Distance Education patrons (usually Independent Study students)
- ✓ Pick up requested items at the [Circulation Desk](#)
- ✓ Faculty can have books delivered to their department offices

[Submit a request](#)

Frequently Asked Questions

- › What is interlibrary loan?
- › How do I make an Interlibrary Loan request?
- › Where do I pick up and return my interlibrary loan book?
- › When should I expect my Interlibrary Loan book to arrive?
- › See all FAQs

Additional Resources

- › [Worldcat](#) (use to search for items to order through Interlibrary Loan)
- › [Lending to Other Libraries Policy](#)

Figure 3. The interlibrary loan service web page.

from the homepage. For example, the North Carolina State Libraries website includes library-wide site search results when using the single search.¹⁹ The Wayne State University Libraries single search displays results from a university-wide site search.²⁰

An influential report produced by Andrew Pace provides practical advice for designing library websites.²¹ In the report, Pace described the library services that should be included on a site and stressed that website design affects the discoverability and delivery of these services: “Whether requiring minimal maintenance or constant upkeep, the extensibility of the design and flexibility of a site’s architecture ultimately saves the library time, money, hassle, and user frustration.”²² The web application described in this article aims to achieve these goals in terms of service discoverability and website maintainability.

A SERVICES WEB APPLICATION

In an effort to tackle the challenges of services navigation and maintenance, the Brigham Young University Library developed a web application for organizing services that allows multiple routes to service information. The application, known internally as “Services,” was built using Django, an open-source Python Web framework. The application incorporates a comprehensive list of library services and a map of service relationships. Each service is assigned one or more categories, locations, and service areas within the application:

- **Categories and Subcategories**—broad groupings of services (e.g., research help, for faculty, printing and copying)
- **Locations**—physical or virtual places within the library where services can be found (e.g., help desks, rooms)
- **Service Areas**—library departments or other organizational units that offer services (e.g., Humanities, Special Collections)

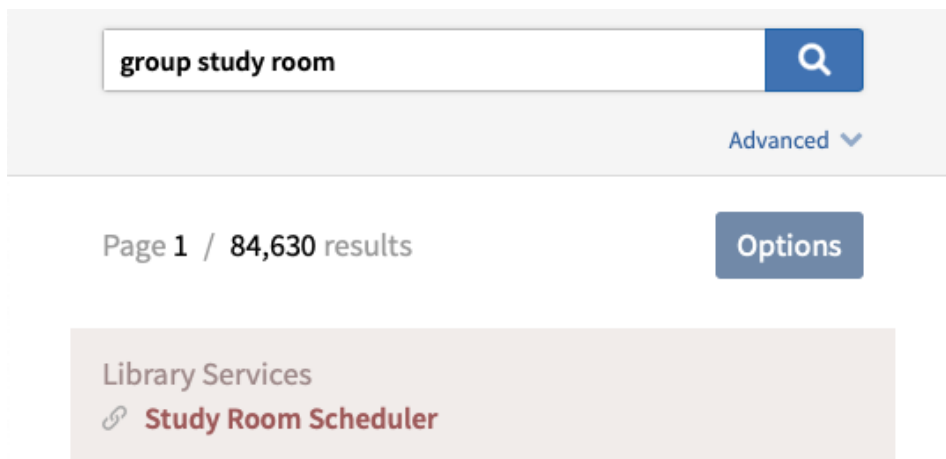


Figure 4. Search for a service from the single search box on the library's homepage.

Services can have multiple categories, locations, and service areas and some service areas have multiple locations within the library (see figure 1). Service information can also include links to related services. These links facilitate the serendipitous discovery of additional services (see figure 2). Service information is stored in a relational database that joins connected entities together.

An HTML template is used to format service information from the database in order to generate web pages for each of the services. Maintaining the data in this manner ensures that changes made to service information in the database flow through to all of the associated web pages. Adding or modifying entries automatically triggers the generation of new HTML for only the impacted services. Generating static content by using triggers keeps the web pages up-to-date without the performance hit of real-time dynamic page generation.

USER SCENARIOS

The following examples of navigation paths typify how the web application can help users locate services. In each case there are multiple alternative paths that could be followed to find the same information.

Scenario 1. A student is looking for a computer that has music notation software installed. Clicking the “Services” link on the library homepage leads to a summary of library services. The student clicks the “Public Computers” link found under the “Featured Services” heading and is presented with detailed information about the computers. In the bullet points listed in the “Overview” section there is a link to “See the list of software available on these computers.” Following this link the student is able to learn that the desired software is available in the library’s Music and Dance Media Lab.

Scenario 2. While visiting a web page for the faculty delivery service, a professor notices a link to the category “For Faculty.” Following the link leads to a page that highlights some of the library services provided exclusively to campus faculty. The professor clicks the link “Faculty Expedited Book Orders” and is taken to a web page that describes the service and provides an online form for requesting a book.

Scenario 3. A student would like to borrow a camera for a class project. Entering “digital cameras” into the main search box on the library homepage produces a link to “Digital Cameras (DSLR)” listed under the “Library Services” heading at the top of the search results. Following the link leads to

a web page with information about the library’s digital camera offerings. The web page provides links to related services, including the library’s video production studio. The student decides to reserve the studio instead of checking out a camera.

ANATOMY OF A SERVICES WEB PAGE

Each Service web page is divided into sections to help users quickly find the type of information they seek. Each section represents an information module with a specific purpose and an identifying design; the sections are color coded and displayed in a consistent order on each page. This helps users to find the same kind of information in the same place on every service page.

Major sections include:

- Title
- Description
- Keywords
- Hours
- Location
- Contact
- Overview
- Call to Action
- Frequently Asked Questions
- Additional Resources
- Related Services
- Categories

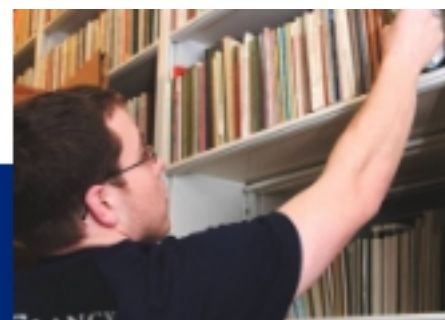
A few of the sections require an explanation. The Hours, Location, and Contact sections are links located directly below the Title and Description. Clicking these links displays the section content. The Overview section is intended to provide brief bullet points near the top of the web page so that users can quickly scan the most important information about the service. The Call to Action section follows these bullet points and contains one or more links to web applications that facilitate use of the service. Examples of calls to action include:

- Place a hold
- Reserve a group study room
- Register for an advanced writing class
- Submit an interlibrary loan request



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```
{
  "status": 200,
  "results": [
    {
      "url": "https://lib.byu.edu/services/data-management/",
      "type": "service",
      "name": "Data Management",
      "slug": "data-management",
      "description": "Through our institutional repository ScholarsArchive, faculty can store research data. This is particularly useful for faculty who must develop data management plans for research projects funded by grants.",
      "keywords": ["data curation", "DMP", "data management plan", "data storage", "open access"]
    }
  ],
  "total": 1,
  "query": "dmp"
}
```

Figure 5. JSON results from the Services API.

Most of the sections are optional since not all sections apply to every service. The Services web pages can also include raw HTML that is embedded in a section in order to provide unique formatting for those services that do not neatly fit the standard layout. For example, the Public Computers page includes a section that displays the current availability of computers for each floor of the library.

The look and feel of Services web pages can be extended to other pages on the library website. Library departments have web pages that provide information about personnel, mission, location, and services offered. Some of these pages have been converted to a format that resembles the services layout in an effort to add cohesiveness to the library website. The department pages have sections similar to Services pages such as hours, location, contact information, and an overview with bullet points. The pages can automatically display links to all of the services available in the department. Because department pages are part of the Services application and are connected to services with a relational database, changes to service information remains in sync across the entire website. This helps alleviate the problem of out-of-date department web pages.

SEARCHING FOR SERVICES

Services can be located by submitting a query in a search box or by following links found on the main Services web page. The Services

search engine matches words from the query with words found in a service name or associated tags. Each service is tagged with keywords, phrases, or synonyms to increase the likelihood of successful searching. Users may not be familiar with library jargon and will search for services using a variety of terms. It is impossible to name library services in a way that is understood by everyone, especially since academic library services target both students and faculty. A study on library services and user-centered language found that: "The choices of the graduate students did not always mirror those of the faculty. This highlights the inherent challenge of marketing services—the target audiences for the same service can have very different opinions and preferences."²³

Services can have multi-word phrases assigned in addition to individual keywords. For example, the data management service has the following synonyms assigned: data curation, data management plan, and DMP. New keywords and phrases can be identified by reviewing search queries in the system log files and by conducting usability studies.

In addition to using a search box on the Services web pages, users can search for services using the single search box on the library's homepage. The single search box returns a link to matching services as part of search results when the search engine recognizes services keywords in a query. The Services application has an API that makes keywords and other service information available to the single search box application.

To facilitate browsing, services are organized into three groups on the Services web page: Featured Services, Categories, and Service Areas. The Featured Services group highlights the most commonly sought-after services. Categories are organized by the type of service or the target audience. The Service Areas group directs users to services available in library departments or units. The Services web page does not list every service but instead directs users to web pages based on categories or service areas that list individual services.

The Services search feature can also include links to non-services. For example, library policies are not services yet users occasionally search for them on the Services page (the library website posts policy documents on the About page). In order to minimize user frustration with searching, links to non-services are included in search results so that users can be redirected to the desired pages.

To help with optimization for external search engines such as Google, each Services page has a user-friendly URL that clearly identifies the service. For example, the 3D printer service has the URL <https://lib.byu.edu/services/3d-printers/>. Each web page also includes the service name in an embedded HTML title tag.

CONCLUSION

Adopting a broad view of what represents a service has altered the library's approach to the information architecture of the website.

» **The look and feel of Services web pages can be extended to other pages on the library website. Library departments have web pages that provide information about personnel, mission, location, and services offered. Some of these pages have been converted to a format that resembles the services layout in an effort to add cohesiveness to the library website.**

The Services web application offers several innovations for improving library service discoverability and maintenance including:

- Standardized organization of service information
- Attaching keywords/aliases to service descriptions
- An API for integration with the single search box on the homepage
- Links to related services
- Generation of web pages from a relational database

Usability tests were conducted throughout the development of the Services application. Follow-up assessments are planned for the future in order to verify that the application works as expected and to identify potential adjustments to the design. The Services application shows promise as an effective tool for facilitating the discovery of services and increasing the reliability and uniformity of service information. ■

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[crl-321](https://doi.org/10.5860/crl.60.3.275).

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Makerspaces in the Library

» Science in a Student's Hands

BY KRISTI D. JULIAN AND DEBORAH J. PARROTT

For America's future leaders to compete in a global market, science, math and technology skills are imperative. To instruct students in the sciences, educators and librarians are now partnering to support STEM or STEAM activities, or science, technology, engineering, art and math-based research, curriculum, and projects. STEM stands for science, technology, engineering, and math. Science, technology, engineering and math represent the different areas of STEM education. A common definition is:

STEM education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in contexts that make connections between school, community, work, and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy. (Tsupros, Kohler, & Hallinen, 2009).

A variation of STEM is STEAM, which includes an 'A' for art and design." (National Science Teachers Association, 2015). "STEAM = Science & Technology interpreted through Engineering & the Arts, all based in Mathematical elements" (STEAM Education, 2015). The goal of STEM/STEAM is to motivate student learning using hands-on science and math skills, as well as to encourage higher order reasoning and problem-solving skills. One current successful approach to STEM/STEAM is occurring in academic libraries: makerspaces. Although the subject of makerspaces in K-12 libraries is a popular topic of national attention, makerspaces in college academic libraries provide a significant bridge from the university curriculum to the workplace.

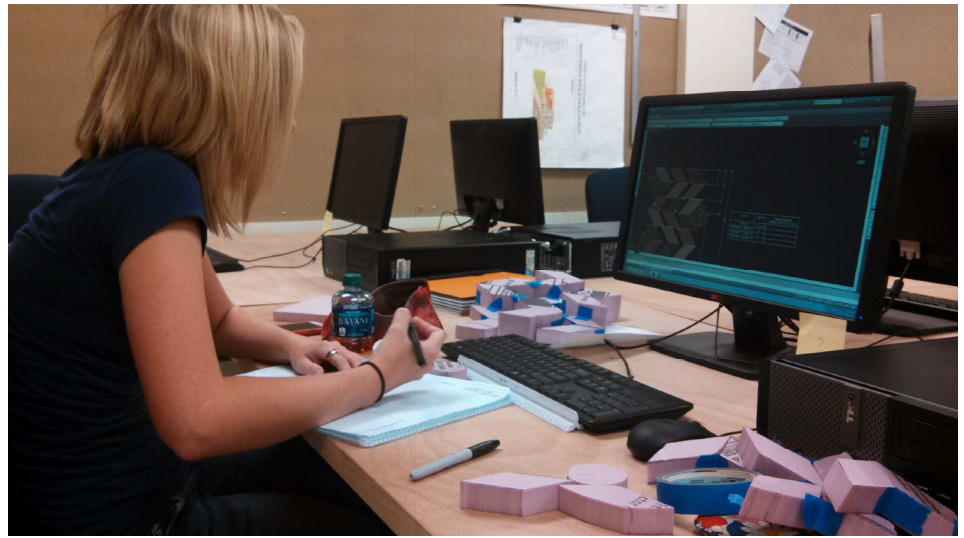


Figure 1: Student with foam model pieces and computer drawing of clock.

The utilization of library makerspaces allows for a powerful combination: science and information. Makerspaces enable STEM and STEAM to come alive at the college level by allowing students to explore course objectives within the curriculum through a "hands on" approach. In a historical context, "makerspaces first appeared around 2005 as part of the popular DIY (Do it Yourself) movement" (Fisher, 2012). In fact, Dale Dougherty, publisher of *Make* magazine, is the one who gave the movement its name in 2005" (Jeffries, 2013). The purpose of the makerspace is to create a comfortable environment for users to experiment, create and learn within a controlled setting. How do makerspaces facilitate science education? Makerspaces enable students and faculty to apply scientific principles and meet curricular science through the design, creation and building of products. Makerspaces may include 3D printers to produce three dimensional products such as toys and robots, tools for welding or building, software for the production of music as well as craft and art supplies (Fernandez, 2014).

Libraries are ever-changing hubs, resolutely benefitting the communities

and schools that support them. Librarians, keeping in tune with the constant changes around them, realize that the optimum way to continue support for their stakeholders is to look toward the future. It is important to realize that "for 65% of scientists with advanced degrees, their interest in science started before middle school" (Institute of Museum and Library Services, 2014, para.1).

In order to instruct and expose more children more deeply to the sciences, educators and librarians alike have come together to support the influence of STEM activities, or science, technology, engineering, and math-based research, curriculum, and projects. Government agencies, like the National Aeronautics and Space Administration (NASA) or the National Science Foundation (NSF), are helping fund STEM development through youth and community projects aimed at STEM innovation (Hopwood, 2012). However, it is the librarian's job, as the intellectual leader of the community in a neutral setting, to promote science literacy, research, creativity, ingenuity, and scientific thinking. Of particular significance, for librarians, regardless of their educational backgrounds, is to realize their impact on

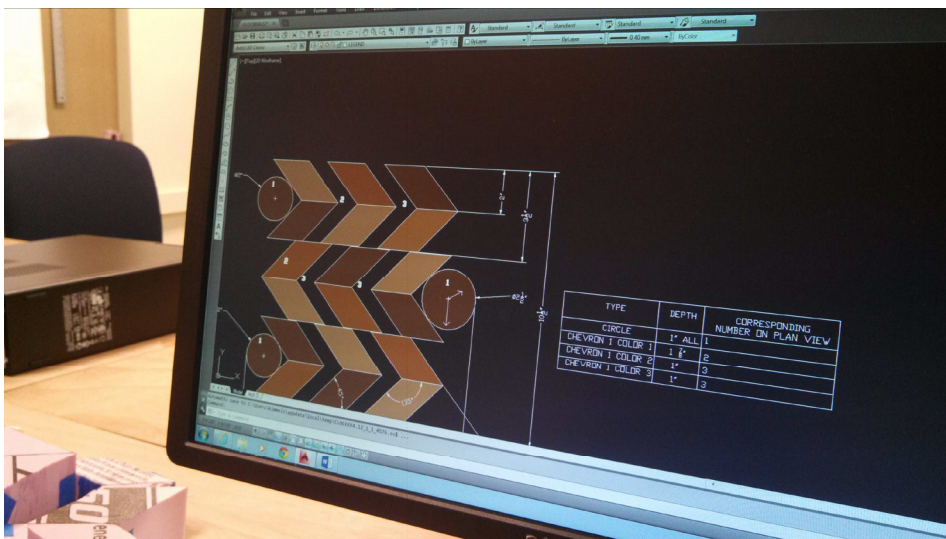


Figure 2: Student clock drawing on computer before making foam models and then wood final.

the academic community and the opportunity they have to teach their patrons about STEM subjects.

Lippincott, Vedantham & Duckett describe examples of librarians collaborating with teaching faculty to supplement class learning in several case studies of academic libraries in the North Carolina State University library system such as the James B. Hunt Jr. Library and the D.H. Hill Library. In the instance of the James B. Hunt Library Makerspace that opened in 2013, the library makerspace became a campus center of creativity and area for faculty partnership. NCSU's College of Engineering used the popular James B. Hunt Library Makerspace for class assignments, course projects and co-curricular activities. In addition, Hunt library faculty and staff reached out to Nicholas Taylor in the North Carolina State University Department of Communication to facilitate course work in humanities and social sciences curriculum areas not just the typical math and engineering STEM/STEAM areas. Students' projects and course assignments were used to prototype tools such as 3D printing and circuit boards. (Lippincott, Vedantham & Duckett, 2014). Other makerspaces prototypicals may include the University of Toronto. Matt Ratto at The University of Toronto, Department of Faculty of Information, "focuses on how hands-on activities with technology can help learners think critically about the relationships between digital technologies and social issues." (Ratto, 2011). Matt Ratto, an Associate Professor in the Department of at the University of Toronto in the Critical Making Lab "coined the term 'critical making' in 2007 to describe work that combines humanities insights and engineering practices, and has published extensively on this concept"

(Critical Thinking Lab, 2017). Ratto's critical making work at the University of Toronto provided inspiration to NCSU librarian Brendan O'Connell and Taylor who co-designed an assignment for the undergraduate COM 250: Communication and Technology course in which students engaged in critical making using circuit boards with ideas discussed in their course (Lippincott, Vedantham & Duckett, 2014).

At NCSU, the James B. Hunt Library as well as D.H. Hill Library and other branch libraries, the librarian oftentimes becomes an "integral part of the course project, consulting frequently with the professor and her students as they moved from design ideas into content development and, ultimately, implementing their vision in the exhibit experience" (Lippincott, Vedantham & Duckett 2014).

This project would never have happened were it not a) for Hunt Library and for the technology, and the possibilities opened up by the space, and b) for Jason [the librarian] who not only facilitated my relationship with the library — because I had no connection to Hunt prior to my connection with this project — but really did so much of the groundwork with making the room happen, making the technology happen, helping me and my students understand how to use the technology that we had access to make this happen. (Lippincott, Vedantham & Duckett 2014).

Library involvement in promoting STEM or STEAM awareness at any level helps show "how essential libraries are in the digital age" (Duff, 2012, p 24). Farkas (2015) asserts that the primary mission of educators and

librarians is to promote a culture that values creation and "making" as a lifelong learning quest. In her opinion, inspiring students to pursue new proficiencies with STEM or STEAM-related subjects and their emergent career fields will be "part of the solution to a major national problem (Farkas, 2015, p. 27.)

Libraries are uniquely positioned to work with faculty on curricular change. Students associate libraries with research paper assistance and think of libraries as a place to borrow books, videos, laptops, and so on. Adding in expertise with media creation positions libraries to take advantage of constructivist trends in teaching and learning. (Lippincott, Vedantham & Duckett, 2014). One faculty member at The University of Pennsylvania Libraries' David B. Weigle Information Commons (WIC) stated after her experiences at the WIC, "the skills the students learn at the WIC help them for other classes. They develop a rapport with the staff and are encouraged to think outside of the box." (Lippincott, Vedantham & Duckett, 2014).

THE VALUE OF MAKERSPACES IN THE LIBRARY

Having long been the center of information and knowledge, the library is an ideal destination for projects to blossom (Preddy 2013). Librarians continually search for ways to engage students in thinking, creating, sharing, and growing; therefore, the partnership of the science educator and librarian to encourage these skills is quite powerful. A makerspace is an ideal place to incorporate more STEM activities into a fun and inspiring environment beyond the constraints of a traditional classroom setting.

Because academic libraries already nurture critical thinking and learning, they are a perfect environment for makerspaces:

Librarians can help faculty develop new assignment types that both connect to the disciplinary content and encourage students to experiment with new media. In many cases, faculty are open to thinking about such assignments if they are not solely responsible for the technical aspects of its implementation and the associated risks (Lippincott, Vedantham, & Duckett, 2014).

For example, the librarian, as an information specialist, possesses the knowledge and expertise to guide budding scientists to the right DIY instructions and information through library sources such as virtual

databases, informative websites and credible journals. However, collaborating with trained STEM/STEAM educators, technology faculty and library staff may provide new opportunities by combining their shared skillset and expertise. Science educators and librarians can create a partnership to develop spaces for probable heightened collaboration, enhanced mutual respect and the achievement of common professional goals (Augustin, 2014). For example, Luz Rivas (2014), an electrical engineer and educator, created a makerspace for young women in her community where they are able to create real products, like toys, video games, and electronic garments. She believes that the makerspace is helping the young women gain scientific skill and confidence, which could lead them to a better future career. Although Rivas' research addressed young women, in today's increasingly computerized, scientific environment, this could be true for either gender in gaining scientific skill and confidence.

Involving the library in promoting STEM proficiency is an extremely important key to reaching a wide variety of people of all ages and backgrounds. Library programs can benefit STEM learners by offering everyone "learning opportunities that spark curiosity and build interest in STEM subjects" (Institute of Museum and Library Services, 2014, para. 2). Unfortunately, research has shown that the STEAM workforce is lacking in female and minority employees. The Institute of Museum and Library Services

(2014) reports that "women hold only 23% of STEM jobs." (Institute of Museum and Library Services, 2014, para. 1). One reason for injecting an art aspect into the STEM program to form STEAM is because art projects based on math and science principles tend to encourage participation from girls who are perhaps intimidated or overwhelmed by the math and science subjects alone (Koester, 2013). Encouraging female and minority participation is another positive aspect of involving the library in this national push towards STEM subject mastery. Since the majority of librarians are female, they can act as positive mentors when modeling STEM and STEAM activities and projects in the library. Koester (2013) emphasizes, "That's the power of STEAM: To bring together all the facets of the things we find interesting in the world in a way that's tactile and packs educational punch." (Koester, 2013, p. 22). In the case studies of North Carolina State University and The

University of Pennsylvania Libraries' David B. Weigle Information Commons (WIC), it was suggested that academic libraries can stimulate curriculum connections by directly linking these students, staff and faculty with library spaces and technologies. (Lippincott, Vedantham, & Duckett, 2014).

PARTNERSHIP SPACES

Makerspaces not only allow students to form cooperative teams but allow for educators to plan, collaborate and execute hands-on projects to meet academic standards and curricula. The learning process within the making environment is conveniently supported by local, state and national standards for inspiration, production, thinking, contributing and inquiry are met through makerspace activities (Preddy, 2014). In the K-12 school setting, there has been a popular trend for STEM because the objective of recently implemented Common Core Standards is to ensure that our college graduates are able to compete effectively in a global market. Common Core Standards came into existence because many industry employers lamented that college graduates are extremely unprepared for the demands of the workplace. In turn, colleges and universities have noted that the high school graduates lack the necessary skills to succeed in the academic environment. Therefore, the concept of the makerspace reinforces the concept of problem based learning in the university setting. Not only do makerspaces extend the precepts of Common Core and STEM, but they also support National Science Education Standards and creative thinking. Because library faculty may teach in a K-12 setting rather than just a university setting and many times interact with students of all ages, Common Core precepts were included. Why is Common Core relevant in the academic setting? Common Core's mission is to prepare K-12 students to be college and career ready as well as to solve problems collaboratively within a given context. Makerspaces enable students to exchange ideas and solve problems within the scientific framework. Makerspaces not only provide physical areas for the university curriculum to transform into learning for business and industry needs but they also promote cross-discipline communication among students by offering collaborative opportunities and conduit between the university setting and the community.

The curriculum is, in fact, a primary factor to consider for developing a maker-

space. Makerspace projects are enjoyable for students but it must support academic objectives. It is crucial that the educator be involved with the planning and utilization of tools and activities in the makerspace to ensure that science and technology curricular needs are met. For example, engineering or architecture professors may ask students to create building models using AutoCAD and 3D printers housed in the library makerspace.

Through the achievement of academic standards, makerspaces fit the needs of science education by capturing the interests of today's inquisitive and curious learner. Makerspaces allow the free flow exchange of ideas by accepting changing opinions, reasoning and answers encountered in the school media space and through personal experience; when school libraries, science curriculum, and maker mentality work together, it is ultimately students who benefit in this innovative model for education (Gustafson, 2013). In the end, the learning space should be reflective of the goals of the educators yet easily adaptable to the physical constraints of the actual environments.

THE ENVIRONMENT OF A MAKERSPACE

Kurti, et al, (2014b) shared some qualities of an ideal makerspace as it is aligned to the tastes and purposes of the population it is serving. First, the space should be inspiring. It should be open, full of light, inviting to students as well as have sufficient space for creation to occur. The furniture should be flexible and easily rearranged, and spacious. There should be sufficient access to electrical outlets, easily cleaned tables and access to a sink is also good if projects get messy. Preddy (2013) encourages seating or standing space for the patrons, as well as adequate storage space for both tools and projects that are underway. She also advocates clearly defined rules and policies, including safety and clean-up procedures.

In addition to these physical needs, the ideal makerspace should include some objects that encourage students to think about things they may never have considered. There could be regular events at which students share their own projects. Students can be encouraged to solve a problem facing their own community. These events encourage students to create their own solutions and help solve some of the world's issues (Preddy, 2013). Many makerspaces projects can be tailored to community needs to add a layer of purpose or activation of prior knowledge. Projects in the makerspace



Figure 3: Students in the lab with foam models and wood.

could even promote social responsibility, providing an outlet for students to create innovative solutions for projects such as home models for displaced veterans, battered wives, etc. using sustainable materials. By creating these models and then, ultimately the structures, students also learn the importance of life-long service and community involvement.

Additionally, makerspaces in academic libraries supply a bridge to real-world applications. Architectural or engineering students may be given hypothetical scenarios based on geological or climatic challenges. For example, a university may use AutoCAD and 3D printers to design homes for displaced families due to natural and man-made disasters. Engineering students may be tasked with the creation of robotics or prosthetics.

The environment of a makerspace will include a variety of tools, from simple to complex. As the students increase in skill and confidence, some intermediate tools can be introduced, budget permitting. Some of these are 3D printers and drawing programs, scanners, and simple electronics. As students become more skilled, the tools should become more complex, and should include a wider variety of electronic equipment, both to use and to disassemble, investigate, and reassemble. As the tools become more advanced, expert advice may be helpful in selecting the best devices for the students. However, some librarians have already adopted a more hands-on approach by providing instruction in various technology applications.

IMPLEMENTATION AND FUNDING IN THE UNIVERSITY LIBRARIES

Once the librarian has established need,

demand and environmental considerations for a makerspace, how does one begin? Commonly, limited budgets and long-term sustainability may be obstacles for enthusiastic, wellintentioned librarians. Crumpton (2015) suggests developing funding strategies in the initial planning stages to ensure long-term maintenance. "Developing a makerspace can be much the same as starting a business and creating a business plan for growth" (Crumpton, 2015, pg. 92).

Some libraries go above and beyond the simpler science or math-related readings and group experiments, and offer recurring youth programs, workshops and special events for their communities. They work with local companies and businesses to get additional funding and supplies, host sponsored workshops and guest speakers, and acquire technical volunteers for group STEM demonstrations. Communities greatly benefit when libraries offer their patrons new technology options and supply learning spaces that feature youth-centered approaches to create a foundation for the pursuit of higher education STEM opportunities and jobs. Some STEM-based recurring youth library programs encourage weekly participation and "value beyond entertainment," The Chicago Public Library has teamed up with Northwestern University's FUSE project to encourage their patrons to use kits that "explore topics like robotics, biotechnology, and app design" (Koester, 2013). Although some of these projects are very ambitious, it is understood that every library has different space, staffing, and budget issues. It is important for each library to accommodate STEM or STEAM projects in the manner that best fits their community. Koester (2013) points out, "STEAM programming can be as

simple or complex, lowtech or high-tech, or cheap or lavishly funded as you like." (Koester, 2013, p. 22).

Ultimately, a preferable approach is to utilize materials that are easy accessible and affordable. Creative funding and thrift material hunting is certainly feasible. The academic librarian and science instructor may write collaborative grants as well as elicit community partnerships to reduce implementation costs. For example, many national and local businesses in the science and technology sectors donate funding or even materials such as iPads or used printers. Preddy (2013) offers some advice which could be useful, especially if the budget is small. She suggests first setting aside a percentage of the annual library budget for the space, then soliciting the help of the administration, especially after they have seen student interest and excitement in the space, and including a list of the academic standards being met within the makerspaces.

Finally, Kurti, et al, (2014c) share their observations about the creation of a successful makerspace. They discuss one particular librarian who was given the challenge to transform the library into a "vibrant learning environment," a space where "every student has the ability to invent, tinker, create, and innovate" (p. 21). The initial investment was less than \$1,500, with the exception of the cost of a 3D printer, and many of the tools were free. The space had fixed stations, such a 3D printer, with quick makes, as well as flexible stations, which might include more complex projects like stop-motion animation or engineering inventions. Two of the students, in particular, have emerged as the 3D printer experts, and other students come to them for advice and assistance. Because this makerspace is only a year or two old, its long-term effects cannot yet be measured. However, it is a tremendous success in student popularity. Many students have tried the simple tools and are ready for a more complex challenge, with an emphasis on robotics.

The authors recommend following these steps in order to create a successful makerspace:

- Observe the students to determine their interests.
- Review curriculum and college programs to find compatibilities and possible augmentations to offer in the makerspace.
- Consider national and global trends in technology and culture.
- Set aside space and bring in tools and parts.

- Create an environment promoting student ownership of the makerspace.
- Reinforce to students that problem solving, multiple iterations and process thinking is preferable in product creation.
- Continue assessing, redesigning, and adding new tools every semester to ensure a relevant, growing experience (Kurti et al, p. 23).

MAKERSPACE CASE STUDIES

Through a comparative case study, (Sheridan, et al. 2014) explore how makerspaces may function as learning environments. Sheridan conducted a cross case analysis of three makerspaces: (1) Sector67: Madison Wisconsin (2) Mount Elliott Makerspace: Detroit, Michigan (3) Makeshop, Children's Museum of Pittsburgh, Pennsylvania. The authors studied the relationship between the makers and the space itself and how each supports making in multiple disciplines. "One of the distinctive features of all of the spaces is the way diverse learning arrangements (e.g. solo exploration facilitated one-on-one or small group projects, collaborative projects, online forums, and structured classes) often informally evolved to support the projects and goals of the participants." (Sheridan, et al, p. 521). These makerspaces help to illustrate the fact that makerspaces can be a drop-in space, a dedicated space, a mobile makerspace, maker workshops or any combination.

In the experience of the authors, the learning spaces integrated into the academic library may have a positive correlation on students' learning. Beginning in 2015, in the southeastern part of the United States a class of engineering, technology and interior architecture students were the pilot class to utilize a makerspace in the library (Julian & Parrott, 2015). These students, as part of a clock creation assignment, were directed to use a space at the library created for this purpose. This makerspace was designed as a collaborative effort between the professor of engineering, technology and interior architecture along with the academic librarian.

Previously students had no common space for creating products such as those required by science, technology and interior architecture instructors. The engineering, technology and interior architecture classroom spaces, like in many college classrooms, perhaps designed decades earlier, are not always conducive to the technological functions required today for learning. They are



Figure 4: Students in lab (studio) installing tables they made.

often cramped for physical space and not updated to accommodate today's technological requirements. As mentioned in the article herein, budgets are commonly a detriment to learning spaces which frequently need expansion and upgrades in response to classroom needs; this instance was no exception. Professors are required to be creative in terms of space because of a classroom shortage and the makerspace in the library is the ideal solution to create additional space with the necessary technological necessities. Therefore, this project was born from necessity of space. The professor and academic librarian collaborated to form one of the first creative endeavors in a location which had been underutilized in the library. Creating the makerspace in the academic library was a natural trajectory due to lack of space in other campus buildings.

The exercise conducted by the authors of the study was assigned as an experiment or possible prototype for future assignments. In the makerspace, the students were asked to draw a clock in AutoCAD or Revit and create models. The students also benefited from the use of a 3-D printer and foam cutters provided in the library. Previously, the students had to share an antiquated printer. The library's new 3-D printer helped the class to leverage time and resources. Another advantage of the makerspace being located in the academic library was the close proximity of technology support and the expertise of the academic librarians in locating resources which might support the making culture. The students were assigned

to groups and given 4 weeks to complete the assignment. Upon completion, students presented their finished clocks to the class and described the process in informal presentations.

Assessment was administered in the form of a written test on the technical aspects of the clock, use of materials, wood joinery and safety in addition to a participation grade for group work.

The use of the makerspace in the library became an actual extension of the classroom in which didactic knowledge transformed into three dimensional products. The space for students to move about and tinker with the product allowed for increased engagement between students who might not normally interact. Although in the infancy stages, the use of the makerspace for the project shows immense promise to grow and correlate to other disciplines. As a result of this pilot project, the professor and librarian observed the students' increased understanding of the importance of shared space in the collaborative classroom as well as team cooperation in terms of time management, accomplishment of goals and content comprehension. These items were observed in student focus groups, class discussion and reflections. Additionally, the professor noted a 10 percent increase in the written post-test scores for this project. Based on this limited measurement, the professors anticipate increased test scores as the makerspace gains funding, participation and growth.

IMPLICATIONS AND REFLECTIONS

The authors felt that this “accidental makerspace” collaboration was a success. Based on the positive feedback and assessment scores from this initial exercise in clock making, the authors suggest that the makerspace in the academic library could be the hallmark of physical space in which future engineers, architects and technology professionals gain necessary hands-on experience. The professors and academic librarian are in the planning process for additional projects to be completed in the makerspace such as prototypicals for building models or electronic circuitry before more expensive materials are utilized or purchased as part of the design process. Further, the academic librarian and professors are researching grants and enlisting the support of local businesses to build the makerspace. For future collaborative assignments, the authors plan to modify the assessment by weighting the assignment more heavily in the group dynamic. Because collaboration in the workplace is so critical in today’s global market and because strong professional dispositions are heavily emphasized in college accreditation standards, it makes sense to also assess students’ abilities to work within a team.

Additionally, the professors and recruit industry for material resources. The professors are also investigating the uses of scraps that industry would typically discard as a use for the makerspace. For example, some businesses discard sheet metal, plastic resins, ceramic tile or glass; students may take this scrap material and use it to create items in the makerspace.

In terms of implications for academic librarians, makerspaces have the potential to increase library visits, and possibly circulation, due to increased use. Increased usage data, which could be important in future fund-raising endeavors and provide valuable data for approaching industry for funding as well as material resources.

CONCLUSION

In conclusion, makerspaces are immensely exciting for both college science educators and academic librarians because they powerfully allow students to step away from the classroom and actually apply scientific principles as well as information knowledge. Makerspaces are engaging for all of those involved-- especially students. There is no limit to the types of workshops one could create in the makerspace environment to

fit curriculum needs. Because the academic library is a venue where students assemble to collaborate and learn, it is an ideal area for a makerspace to thrive.

Moreover, learners delight in the hands-on application of emerging technologies and a comfortable familiarity with the type of experimentation that leads to a finished project. Any dedicated educator can create a makerspace, regardless of budget, as long as there is vision and willingness to try.

Makerspaces are a means to engage students from multiple disciplines. “The Committee on Equal Opportunities in Science and Engineering recommends that National Science Foundation implement a coordinated initiative that would create centers, dedicated to transforming U.S. educational institutions into inclusive STEM institutions.” (CEOSE, 2012, p. 21). Makerspaces in the academic library assist in achieving this goal; they elevate STEM learning at the collegiate level and provide a coordinated initiative and dedicated space to address emerging challenges and opportunities. They also help to stimulate participation in STEM as it relates to university long-term academic goals. ■

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More than Fun and Games

» Changing Library Perceptions through Outreach Efforts

BY MAUREEN RUST AND
ELIZABETH H. BROWN

INTRODUCTION

On public university campuses across the country, there is a climate of decreased state funding and increased competition for student recruitment, retention, and progression toward degree completion. Additionally, the prolific availability of instant information via Google searches supports the impression of decreased reliance on traditional academic library services and resources. To accommodate the first phenomena, and to counteract the second, formal outreach programs at academic libraries have been developing at a rapid rate. Yet assessing how successfully these programs are meeting their objectives has proven to be a slippery endeavor. This study investigates what effect one academic library's outreach efforts have had on campus perceptions of the library, its resources, and the services it provides. This particular academic library is at a Master's granting regional comprehensive public university, with a current enrollment of approximately 12,000. A tremendous amount of resources have been directed to the library's outreach efforts in the past five years. Is it possible to assess if the university community's perception of library relevance has changed after increased student exposure via instruction, engagement, embedded librarian efforts, branded marketing, and an increased social media presence? Can library outreach increase awareness of library resources and influence library use among students and faculty? Understanding the relationship between changing stakeholders perceptions of the library and demonstrating the relevance of these perceptions can inform our methods for illustrating library value. Offhand comments and compliments from students and faculty alike indicate that library outreach efforts are making a positive difference in terms of library perceptions

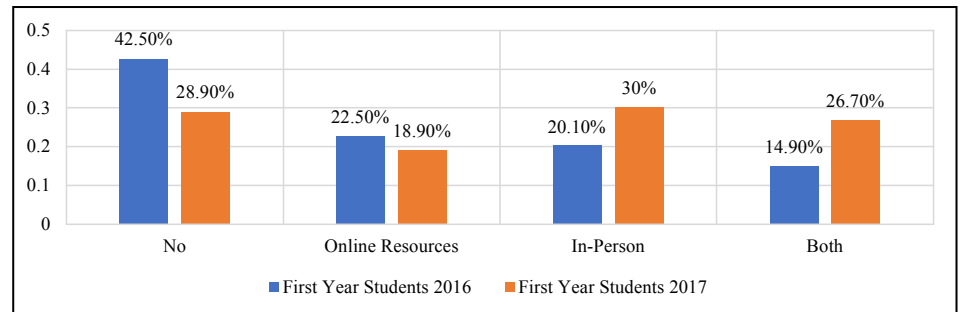


Figure 1. Student responses to the question "Have you accessed the university library?" Question conducted with "select all" settings and question totals do not equal 100. E. Scott, personal correspondence, November 2017

and use. This study attempts to offer support for this hypothesis, using both qualitative and quantitative methods.

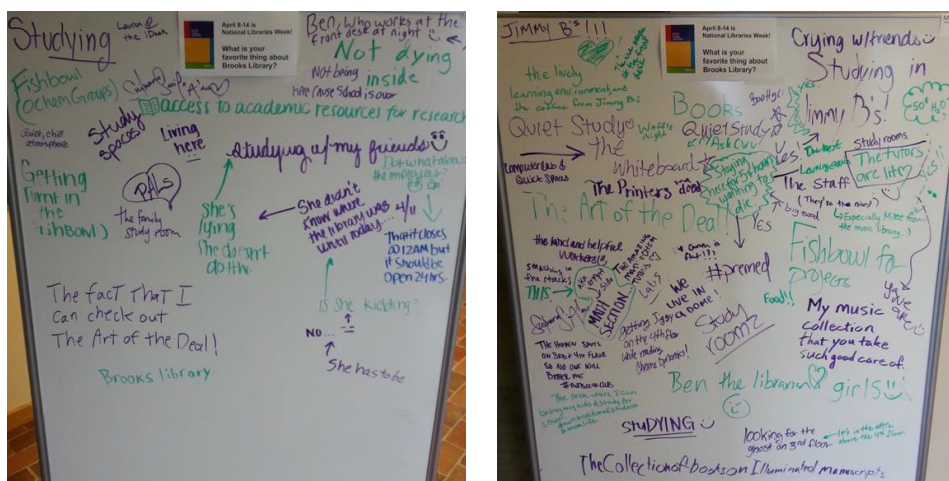
The impetus for this research came in the form of an email from the Sophomore Year Experience Assistant Director. At the library's request, he had added a question about student library use to the annual MapWorks (Making Achievement Possible) student survey. Tabulation of the 2017 results indicated first-year student use of library resources had increased significantly (Figure 1). Was this due, at least in part, to increased outreach efforts? Was outreach having the same effect on faculty and staff, in terms of heightened awareness and use of the library's resources?

LITERATURE REVIEW

Research regarding aspects of academic library outreach assessment and analyses is a flourishing genre. Library support for faculty, student retention and progress toward degree completion are some of the issues addressed in this research. (Alapo, 2013; Association of College and Research Librarians, 2017; Farrell & Mastel, 2016; German & LeMire, 2017; Murray & Ireland, 2017; Oakleaf & Kyrrilidou, 2016). Despite the wealth of related scholarship, there is little published assessment of student and faculty perceptions of the academic library following concerted outreach efforts. However,

scholarship confirms the inherent value of library outreach to its campus community. Increased awareness of library resources benefit students in their coursework and improves student retention among library users. Additional library actions proven to have positive affects on student learning include participation in successful campus collaborations, information literacy instruction on general education outcomes, and one-on-one research consultations (Association of College and Research Libraries, 2017).

Soria (2013) found that 71.3% of the students surveyed reported access to a world-class library collection was important, very important, or essential. Soria recommends that library outreach efforts to undergraduate students should not solely focus on evaluating or imparting the value of library resources and services directly, and suggests other methods such as campus partnerships with student success departments and strategic marketing campaigns. Employing methods designed to "reduce the potential bias found within students' self-selection to use specific library resources" (p.7), Soria, Fransen and Nackerud (2017) studied the "perceived importance of the role of the library in helping undergraduate students develop research, critical analysis, and information literacy skills" (p. 6) and concluded: "The results of this study suggest that first-year students who used a



library resource at least once were significantly more likely than their peers who did not use the library to report development of critical thinking and analytical skills, written communication skills, and reading comprehension skills” (p. 14), reinforcing the importance of reaching out to students and encouraging them to see the library as a welcoming, supportive environment.

collaborative with faculty and students, facilitating the development of support and resources more in line with the users' actual needs (Delaney & Bates, 2015; Henderson, 2016; Young & Kelly, 2017). Collaboration with non-academic departments on campus provide a multitude of benefits, such as increased interaction with students, and sharing effort and cost (Wainwright & Davidson, 2017).

INSTRUCTION AND OUTREACH OVERVIEW

Library Instruction

efforts. Following the summer of 2015, the library undertook a standardized approach to information literacy instruction for first year students (Brown, 2017). Prior to this standardized approach to instruction, librarians had accommodated instruction requests on an as needed basis without the assistance of a dedicated role to help with instruction oversight or coordination. Along with standardizing instruction delivery and redefinition of course goals, the new implementation involved a flipped model for instruction with online content, a pre-test and post-test, and in-person class activities building in more opportunities for student engagement. This positively influenced student experiences and after the first year of instruction, increased buy-in from orientation course instructors who were pleased with the changes to the curriculum and excited to continue partnering with the library for future years.

Library Engagement and Outreach

reach (SECO) librarian position fell to faculty and staff who had to shoehorn in programming among their other, higher priority tasks and responsibilities. Nevertheless, by 2013 the library had started to increase its visibility with programs such as participation in summer and fall orientations, resource tables at campus events, a Banned Book table at the community farmers market, International Games Day, quarterly all-you-can-eat waffle nights during finals week, and an annual Gala fundraiser. The 2015 advent of a SECO librarian dedicated specifically to engagement and outreach provided a person to oversee established events, further develop engagement and outreach activities, and implement an outreach tracking system. New programming included a “Welcome Back, Students” library information give-away, therapy dogs each finals week, monthly game nights, quarterly book discussions, mid-term “long nights against procrastination,” and an annual Wikipedia edit-a-thon. Simultaneously, other library faculty continued to develop new programs such as bilingual poetry readings, regional archives and museums tours, Blind Date with a Book, a #lovemyFDL campaign organized by the Government Publications and Services unit, and two National Endowment for the Arts Big Read programs.

One continued method of engaging with students on a weekly basis has been through the use of a whiteboard question in the library entryway. During the early stages of testing out the whiteboard questions, few students stopped to write a response, or treated the board hesitantly.

As the year wore on, students became more active in their responses and the 4x6 foot whiteboard could be full after two days depending on the new question (see Figure 2). During the school year, the whiteboard question has become a casual place to share favorite quotes, best class of the quarter, most recommended book titles, or positive advice during finals. This can also be used as a qualitative method for student feedback on library use and resources. NOTE: not all comments are sincere or appropriate and libraries that choose to implement such a board should plan to monitor the content.

Additional changes to library outreach during the 2013-2018 period include the formal establishment of an embedded librarian program, the creation and promotion of an institutional repository, the reorganization and promotion of the Government Publications and Services unit, and

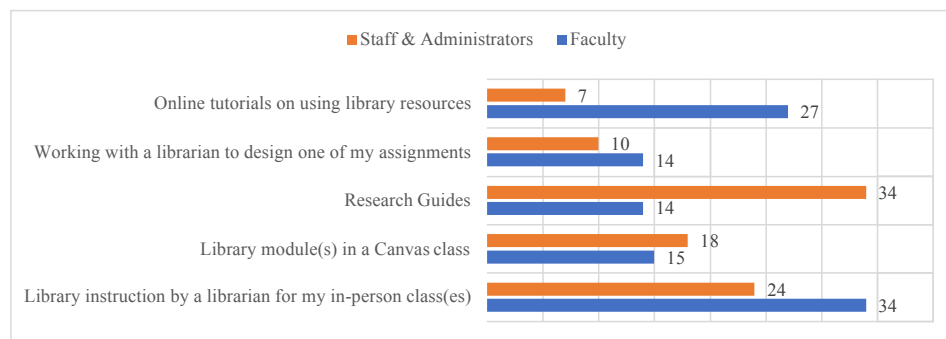


Figure 3. Use of library instruction resources comparison.

increased library representation on university committees.

While the library had developed a standardized system for tracking instruction statistics since 2013, by working with an individual from technical services in the library, the SECO Librarian implemented a tracking system specific to outreach efforts. This resulted in a better method of understanding patterns of change in library activities and engagement. Outreach statistics are entered into the tracking system by the organizing faculty or staff member. During the early establishment of the outreach tracking system, due to a lack of standardized data requirements, some events were incorrectly classified, double counted, or never entered. When inconsistencies became apparent, the tracking system was revised and resulted in more standardized options for data entry and better education to staff and faculty about appropriate information to include.

Given that some outreach is misrecorded, or never recorded, there is an expected degree of variance in these numbers.

A comparison of the outreach statistics for 2015/16, 2016/17, and 2017/18 reveal an upward trend in outreach activities and participation. Statistics reflected are for the fiscal year July 1 – June 30 in order to consider summer orientation and the library’s involvement with this higher number of first-year and transfer students. In 2015/16, the library recorded 220 separate outreach activities with a total attendance of 11,088, for the 2016/17 year the library saw 276 separate activities and 14,517 total attendance, and 2017/18 with 172 separate outreach activities and 14,462 total attendance. The additional Big Read activities in 2016/17 account for the spike in activities and attendance.

The arrival of the User Experience Librarian in 2015 heralded an expanded social media presence and the establishment of library branding standards and identity.

These factored significantly into the library’s increased visibility on campus in both electronic and printed promotion of programming and resources.

Creating a culture of student engagement with the library requires time, along with trial and error to establish approachable avenues for students to engage with the library. When the User Experience Librarian joined in 2015, they were able to significantly increase student reach on social media through intentional posting and using platforms like Snapchat that are more heavily used by younger generations. While the library didn’t track social media engagement prior to having a User Experience Librarian, the significance of having a librarian dedicated to social media engagement efforts is clear by looking to the numbers in the interim after losing the person in that position. During the 2017/18 academic year, social media responsibilities were reassigned among individuals who had other primary duties. During this period, the effect of making social media outreach a secondary focus was evident and Facebook engagement decreased by 75%, Snapchat followers decreased by 56%, and Twitter engagement decreased by 79%. As libraries transition or lose staff, it’s often easier to discuss how the loss of a position negatively affects production rather than show it. However, being able to demonstrate through numbers the effect of a dedicated role has proven meaningful to maintaining a place for this position in the library.

Over the past three years, the library has made significant and intentional investments in outreach and engagement ranging widely to include rebranding library promotions, increased marketing, social media engagement, increased programming and library involvement in campus and community events, and many other outreach activities. Changes in instruction have also resulted in increased teaching. Collectively, these

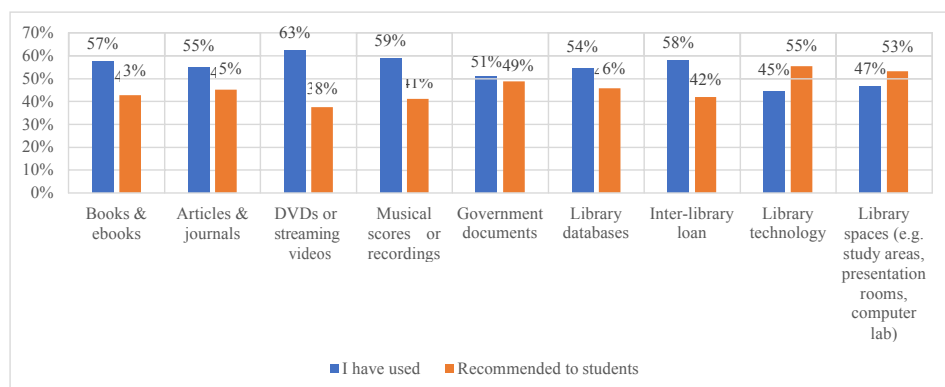


Figure 4. Responses to the question: What library resources have you used and/or recommended to your students?

increases in activities and involvement on campus can be attributed to the overall increase in patrons reached and impacted.

METHODOLOGY

Survey of Faculty, Staff, and Administrators

This research examined campus perceptions of the library through a survey developed by the authors. Questions were reviewed by the faculty chair, Human Subject Review Council, and campus survey approval groups prior to distribution. The survey included 14 questions, three of which asked for demographic information, and one used skip logic—only appearing when specific criteria was met. Emailed to all faculty, staff, and administrators, all respondents were informed that their responses were anonymous and their participation was voluntary. Conducted using Qualtrics software, the survey was distributed to 1,744 individuals. The survey was open for 11 days and 319 individuals started the survey, 266 self-selected individuals completed the survey for a response rate of 18% and a completion rate of 15%.

RESULTS

Survey responses represented individual perspectives from 94 departments on campus out of 189 contacted (50%). Departments representing the most responses with nine or more respondents from the department included Academic Advising, English, and Psychology. While 84% of participants chose to identify their department, 16% did not. Therefore, 52 included in the results are not associated with a department. Responses from individuals working in the library were excluded from the analysis. Not all participants answered all questions and totals between questions varied.

When asked how long they had worked at the university, 47% of participants stated that they had worked at the university

between 1-4 years, and 31% indicated that they had worked on campus longer than 10 years. The smallest represented group of respondents were those that had worked between 5-10 years at 22%. With regard to roles held on campus, participants represented in the survey were 53% staff, 36% faculty, and 11% administration.

When asked about their use of library instruction, 55% of respondents indicated that they had used one or more of the offered library instruction resources. In comparison to all respondents, faculty tended to use more in-person library instruction for a course (59%), online tutorials (78%), or have worked with a librarian to design course assignments (57%) (see Figure 3).

Individuals who were from staff or administration groups indicated more frequent use of library modules in Canvas (55%) or use of research guides in Libguides (71%). The high use of research guides by staff and administration in comparison to faculty may be explained through use of research guides for our library orientation courses taught by campus staff. During the 2016/17

and 2017/18 academic years, library instruction in the orientation course comprised 38% and 39% of all library instruction for the year and follows a lesson that consistently uses a specific libguide. This guide sees the most use of any research guide and may account for the indicated usage by staff.

In response to the question about what library resources they use and/or recommend to their students, the general trend among participants was to indicate that they used library resources at a slightly higher rate than they recommended resources to their students (Figure 4). The authors speculate that this may be explained through fewer opportunities to recommend resources to students than use materials

themselves, higher resource demands for research or teaching preparation, or forgetting library resources as a recommendable source. When isolating for only faculty, we found that the same trend of use and recommendation was true. The exception to this trend was for “library technology” and “library spaces,” for which participants were more likely to indicate they would recommend them to students than use themselves.

In comparing faculty use and recommendation to students, with staff and administration use and recommendation habits, we saw similar trends. For most resources, faculty were more likely to use a resource than recommend it to a student. Faculty were 52% more likely to recommend students use library spaces than to actually use spaces themselves. In comparison to faculty, staff and administration were more likely to use resources than recommend them to students. In reviewing group numbers as a whole, staff and administration are quite similar in their levels of use and recommendation patterns. Broken into groups, faculty were 29% more likely to use library resources than staff and administration, and 61% more likely to recommend them. This wasn't particularly surprising given the nature of work expected by respective groups. Results from two questions are listed in Table 1, numbers are totals.

One question asked participants to consider a selection of library services and indicate whether they had “Utilized, or directed your students to utilize,” “Know of, but haven't participated in,” or “Don't know about” (Figure 5). Some of the notable discoveries from this question included that for five of the seven questions, “Know of, but haven't participated in,” was the most chosen response. This response may be for a variety of reasons, and faculty responded differently to some questions than staff and administration. The combined average from the categories of “Utilized, or directed your students to utilize” and “Know of, but haven't participated in” was 68%, indicating knowledge of programs or resources, regardless of use. Unsurprisingly, social media ranked lowest for useage and 46% of respondents indicated they didn't know about it.

Isolating for only faculty, 78% of faculty knew of or had utilized the liaison librarian for their department. As part of the embedded librarianship program, each department has a dedicated library liaison who serves as the department's primary contact to the

Table 1: Resource Use by Type and Group

	Have Used		Would Recommend	
	Faculty	Staff & Administrators	Faculty	Staff & Administrators
Books & ebooks	74	86	67	53
Articles & journals	82	82	77	59
DVDs or streaming videos	34	36	22	21
Musical scores or recordings	14	24	9	19
Government documents	22	29	24	25
Library databases	69	70	71	47
Inter-library loan	70	63	57	41
Library technology	15	41	25	39
Library spaces (e.g. study areas, presentation rooms, computer lab)	23	64	44	54
Library instruction	28	16	40	25
In-person reference services	34	19	54	32
Chat reference	7	5	16	11
Library Programs (e.g. poetry readings, book discussions, workshops, Waffle Night)	11	20	14	41
Family Friendly space and/or Family Literacy Night	13	17	11	28

library on matters of collection development, instruction, and general questions. Establishing this connection is a continued effort and recognizing that 22% of faculty either didn't know of or didn't use their library liaison indicates an area for building further awareness. A few non-academic departments who deliver instruction also have a library representative or liaison, and this likely accounts for the 14% who indicated they utilized, or directed students to consult with a library liaison. One of the most significant results from this question, was that only 18% of respondents indicated they didn't know about the library student success programming.

When asked about their relationship with the library with regards to developing or offering programs, 36 individuals from the staff and administration group skipped the question and all faculty completed it. Both groups follow the same bell curve with most falling into the category of promoting library programs to the students they serve, but not co-developing programs with the library (Figure 6). Information not gathered by this question was the reason behind why individuals selected "I don't work with the library to develop co-sponsored programs and don't promote them to the students I serve." Of the 23 individuals who indicated "other," reasons for not promoting or partnering on library programs included: being located at a distance campus, working in a capacity that doesn't have direct student contact, or lacking the clearance to plan

programs. Some of these scenarios may also apply to option 4, but no space was allowed for respondents to indicate why they neither attended or promoted library programs.

In addition to the question about program partnerships and promotion, respondents were asked how likely they were to recommend library services or resources to a peer or colleague. To this question, 71% indicated that they were likely or very likely to recommend library services, 19% were indifferent, 7% indicated they were not likely, and only 2% indicated never.

Asked to reflect on prior interactions

with the library, respondents were prompted to consider just the past 5 years and whether their use of resources or participation in library events and partnerships has increased. Since the development of the SECO Librarian position and increased partnerships with the library, this question examined whether this may have had an impact on library involvement. Overall, 24% of respondents indicated that their participation had increased, 10% indicated it decreased—a difference of 13%—52% indicated it stayed the same, and 13% indicated they hadn't attended, recommended, or

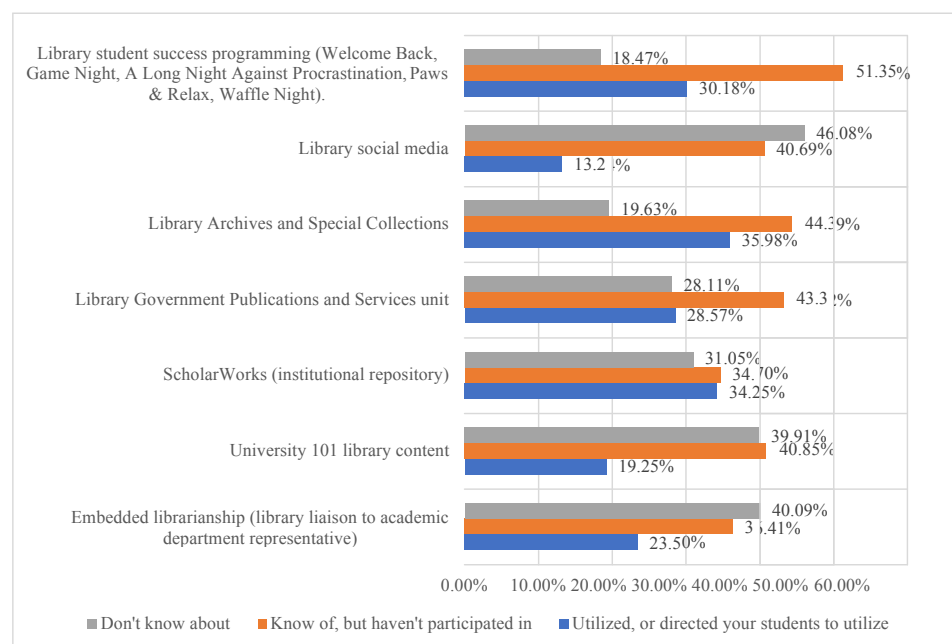


Figure 5. Use or knowledge of library programs (all respondents).

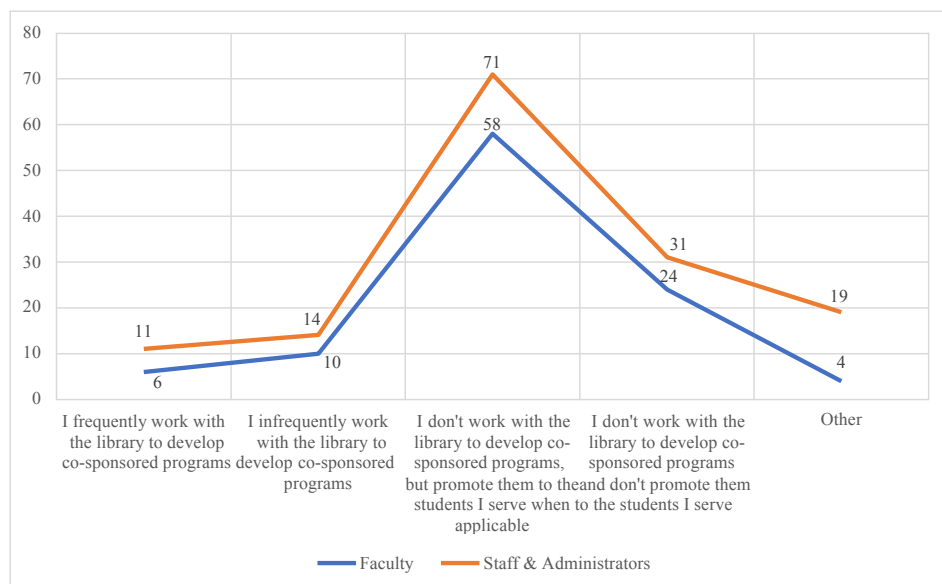


Figure 6. Relationship with the library regarding developing and/or offering programs.

partnered on any library events, or used any library resources. Within the group of faculty respondents, as compared to staff and administration, 5% of faculty and 19% of staff indicated that they hadn't used any library resources. Given the nature of some staff jobs on campus, it's unsurprising that they wouldn't need to use the library; however, it's worth acknowledging that some library services or events may not be easily recognized as being associated with the library (e.g. cosponsored events, online resources found through Google Scholar, resources made available within their online course).

As a follow up question, respondents were asked to elaborate on why their involvement increased or decreased. In response to the question about decrease, some indicated that they were on a different campus, their job required less use of library resources, and change of priorities. A number of individuals indicated that there is more access to resources online, or that they used online library resources and didn't have a need to physically come to the library. Most responses were related to a change in their job resulting in a reduced need for library resources. Even though 10% of respondents indicated their use of library resources had decreased, only 4 out of 25 responses indicated their use of the library had decreased for negative reasons.

Individuals who responded to the question on why their involvement had increased, included a variety of reasons: learning more about what the library offered, good relationships with staff, better advertisement of library resources, being located physically

closer to the campus library, noticing a positive effect on student work after library use, partnering with the library on events, pursuing a degree/education while working, access of online resources, more meetings being held in the library, increased research or scholarship projects, partnerships with other groups physically housed in the library, being invited to present for library programs, increased online instruction, and liking the new search engine better.

DISCUSSION

Since the Student Engagement & Community Outreach Librarian position was created and filled in the summer of 2015, the library has significantly increased its efforts and offerings of student success programs. Distinct from library instruction efforts, these programs are attended by interested students or community members and are not a required part of course participation.

Promotion efforts started with establishing a library brand identity. This facilitated standardization and consistency throughout all promotion methods, including printed materials, social media posts, and website presence. Flyers were posted throughout campus, including all residence halls. Events were electronically posted to the library website calendar and campus and off-campus calendar platforms. Additionally, the User Experience librarian invigorated the library social media accounts and expanded forums from Facebook and Instagram to include Twitter and Snapchat. The finding that 82% of respondents indicated they were aware of library student success program-

ming is significant. Reviewing the increases in number of students reached through outreach clearly demonstrates the impact of intentional outreach efforts.

Connecting the number of individuals reached with the event knowledge on campus, demonstrate that developing and marketing these events has resulted in a broad campus knowledge of library programming.

Analyzing the resource usage and recommendation patterns uncovered that DVDs and streaming media were the most used resource, and also the least recommended to students. In review of faculty use or recommendation of library instruction and/or in-person reference services, an interesting parallel emerges. In looking at sheer volume of students reached with instruction in the past year (not controlling for students who may have received two instruction sessions), approximately 37% of undergraduates received information literacy instruction in the 2017-18 academic year and 27% of faculty surveyed indicated they had used library instruction. The differences in percentage could be accounted for in that faculty teach more students in this comparison. Perhaps more significant, was that 39% of faculty said they would recommend it to their students. For many faculty who didn't have time or space in their class for library instruction recognized that their students would benefit from library instruction.

While libraries everywhere would like 100% of their patrons to know what services are available to them, this is rarely the case. The response that 78% of faculty utilized or knew of their department library liaison is a significant group, but also means 22% of respondents didn't even know they had a librarian for their department. This is an area for continuous outreach to work with departments and ensure they are aware of what the library has to offer them.

Through evaluating responses that indicated decreased use of library resources, it became clear that individuals did not see use of online materials as equivalent to use of physical library space. In multiple cases, individuals indicated they weren't using the library because they were using more online library resources, or online resources (which may or may not have been from the library). While this dichotomy of perspectives is not new to librarians, it illustrates a perception that online resources are not equivalent to using the library.

While the results of this survey tell the story of current perspectives on library

outreach, and ask participants to reflect on prior engagement with the library, conclusions could be improved if accompanied by a pre-survey. Given the organic growth of outreach activities, there was not a clear timeline between “no outreach” to “outreach program.” While an assessment of campus perspectives prior to the library’s recognized outreach efforts could have added to this comparison, that data was never gathered. Questions from this survey regarding changes in library involvement begin to open that discussion. For institutions in the process of designing a dedicated outreach program, considering further research on the pre/post efficacy could benefit the field.

CONCLUSION

Conclusions from this research suggest the significance of having dedicated staff and faculty roles to manage library outreach and marketing efforts. Campus knowledge of newly developed library programming correlate with revitalized and intentional marketing efforts. In the reverse, transitional staff phases without dedicated roles for social media management can contribute to a decline in engagement on these platforms.

Dedicated faculty roles for oversight of instruction efforts and library outreach have resulted in more coordinated efforts, along with increased reach to patron populations. While student involvement numbers confirm use of programs or instruction, learning from faculty, staff, and administrator perspectives can inform our understanding of how a campus views library efforts or resources. In turn, a better understanding of campus perceptions can be an effective gauge of what and where the library is noticed, and indicators of why it may be underutilized. As libraries engage in discussions of ROI, the findings from this study contribute a campus perspective that reaffirms the benefits of a strategic approach to instruction and outreach from the library. ■

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