2nd - 4th November 2021

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Performance Measurement in Libraries
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“We’re all online students now”: Using Participatory Design to meet the needs of students at the University of Washington Libraries

Reed Garber-Pearson, Jackie Belanger, Angela Rosette-Tavares, Charlotte McGrew, Derek Flora, C. Phillips
A library visit is more than a number: The impact and value of public libraries

Christian Lauersen
Roskilde Libraries

Purpose/Research Question
How do we understand and talk about the value and impact of a library? The way it effect people and communities? In the Danish public the debate about libraries often refers to a handful of established key figures: How many people visit our public libraries and how many materials do they borrow. Important data that says something about the use of public libraries but not really gives us insight on the value and impact public libraries have on individuals and communities.

Roskilde Central Library has the ambition to put people at the center of the debate about the public library. To do so we have developed a new design and methodology and carried out a national study putting the citizens at the center of the impact of public libraries.


Design, methodology or approach
This analysis of the impact of public libraries in Denmark is the first of its kind. It is based on a methodological foundation with inspiration from the Cultural Value Project by the Arts and Humanities Research Council

This study of the impact of Danish public libraries on the Danish public rests on three overarching methodological approaches:

- Developing an analytical framework for the impact of public libraries
- Carrying out a quantitative questionnaire survey (1,509 interviews)
- Conducting qualitative interviews and observations at selected libraries (30 interviews and observation on two different libraries - one larger and one smaller)

For more on design and method see full report page 48.

Findings & limitations (as applicable)
The study shows that public libraries has a multi-faceted impact on citizens in Denmark and that the most significant are:

**Haven:** Public libraries are highly impactful to users in terms of being a haven that allows them to take a much-needed break in everyday life. The libraries are a place where they can take time for themselves and each other and experience well-being, immersion, and emotion.

**Perspective:** Public libraries stimulate reflection, learning, the acquisition of knowledge and critical thinking.

**Creativity:** Public libraries are a source of inspiration, and help stimulate the imagination of their users. The library can also help motivate people to try new things and acquire new skills
Community: Public libraries help form and maintain communities, both directly – by being a place where you can meet and experience togetherness with each other – as well indirectly by citizens looking at libraries as communal property in society.

Conclusions and how findings have been applied
Alongside significant findings the study concludes a great potential for putting people at the center of studies on the impact of libraries. Therefore design and methodology has been released in a practical user's guide for other libraries and institutions of culture to use.

Findings has been applied in the public debate - both nationally and locally - to change the language and understanding of the impact and value of libraries. The findings are being applied in the context of society meaning are we talking about a growth in loneliness the study is used to point to the fact, that citizens finds the library a place that fosters community.
A Modern Electronic Resources Usage Statistics Dashboard

Marie R. Kennedy

Loyola Marymount University, Los Angeles, California (USA)

Introduction

“A dashboard is a visual display of the most important information needed to achieve one or more objectives: consolidated and arranged on a single screen so the information can be monitored at a glance” (Few, p.34).

My role in the library as Serials & Electronic Resources Librarian extends beyond providing access to licensed content, to also providing needed resources so that the team selecting that content can do so from a base of evidence. My daily work supports/is supported by one assistant assigned to electronic resources. To begin our work, in 2013 I partnered with that assistant (Marisa Ramirez), to collaborate in the development of a dashboard of usage statistics and summary information about the electronic collection.

Purpose

The purpose of our dashboard is to provide easy access to usage data and information regarding the library’s licensed electronic resources. Our goal for the dashboard is to communicate to the librarians on our campus simply, clearly, and quickly about electronic resource usage. Though our primary users for the data are the librarians from our own campus, we do have in mind that librarians at other institutions might like to have access to our data, for collection comparisons and benchmarking. We developed the dashboard with a spirit of sharing and openness.

Content and Design Considerations of the 2013 Dashboard

To begin our work, we first identified what kinds of data should be included, and how it would be organized. The basis for all of the dashboard content was taken from data provided by publishers using the COUNTER standard (https://www.projectcounter.org/), so that usage across publisher platforms could be fairly compared.

We determined that we would include brief narrative content, in an area on the dashboard referred to as Quick Facts. This summary information about the collection would support the frequent queries from our librarians about the number of e-books in our collection, the most used e-journals, etc. Quick Facts would contain these numbers that our librarians could easily consult. In addition to Quick Facts, we decided to add a glossary, to define the types of data presented on the dashboard.

Acknowledging that the visual summaries of data are a common feature of a dashboard, we decided to also include graphical information, such as charts and figures of: e-journal usage over the years, by month; database usage over the years, by month, and; e-book usage over the years, by month.

We also decided that the dashboard would also contain the following lists of rankings: top 10 most-used e-journals; top 5 providers of e-journal content; top 10 most-used databases; top 5 providers of database content; top 10 most-used e-books, and; the top 5 providers of e-book content.

We lastly decided to also include links to external data sets of all of the raw, unanalysed usage statistics that we had gathered, stored in a shared Google folder.

Maintenance of Dashboard Content

We determined how often each component of the dashboard would need to be updated to remain relevant for decision-making, and assigned those components to library staff. As the content found in the brief narrative, graphic, and list areas are summaries of our fiscal year reporting data, we decided that those areas would be updated annually. We intended to update the linked data sets monthly, in order to provide “in the moment” usage, but that proved to be too time consuming with too limited an impact, and turned to also updating linked data annually as well.
**Desired Functionality**

We planned to provide a static display of the content, using an integration of graphics and text. We did not plan for any interactive features; the dashboard would be used passively.

**Limitations of the Dashboard, Based on our Decisions**

Librarians agree that COUNTER statistics are more meaningful than non-COUNTER statistics; support for this is found in Cox, 2011, p. 120. Our decision to only report COUNTER statistics on our dashboard, however, has a limiting effect since not all content providers offer usage statistics using the standard; in fact, some content providers provide no usage statistics at all. As a result, we cannot fairly compare usage from a COUNTER-compliant vendor with usage from one that does not use the standard (or one that provides no statistics). We decided that over time we may want to gather non-COUNTER statistics for electronic resources, if the publisher provides them; we decided that gathering these statistics was a low priority given that they cannot facilitate an evidence-based evaluation of the resource.

**Types of Dashboard Format**

A design imperative was to create a resource that was easy to view and use. This desired ease of use guided our decisions about the types of dashboard formats to consider.

In our review of the literature about dashboards, we identified four main kinds of dashboard: wiki-based, web-based, LibGuide formatted, and intranet versions. Of those four kinds, we preferred the ones that were publicly available. With this preference in mind we decided to not consider any intranet-based solutions for our dashboard because those are generally internally-facing and password protected. We preferred a web-based solution for the customizability; we did not want to be constrained by the template approach used in wikis and LibGuides.

In addition to a review of the literature on dashboard design, we looked for examples in use by libraries. We did not find any libraries using a wiki-based model. We offer here for the reader this example of a wiki-based dashboard in use for Wikimedia: http://stats.wikimedia.org/. We found two libraries using a LibGuide for their statistics (Oklahoma City University Law Library and Lamar University Library), though the URLs for those Guides (captured during our review in 2013) are no longer resolving and are not reported here. We found several web-based dashboards in use by libraries, though only two are currently still accessible: http://www.tadl.org/stats/ (Traverse Area District Library) and https://library.indstate.edu/dashboard/ (Indiana State University Library). It is notable that we did not find any dashboards specifically for reporting electronic resource usage statistics. We further examined dashboards of commercial entities as a source of inspiration.

With these visual examples reviewed and content decisions in place, Ms. Ramirez constructed the dashboard on a Google Site (see Figure 1 for the main page of the dashboard), at https://library.sites.google.com/site/eresstatistics/home. Its clean design and need for only annual updates served the needs of our librarians for seven years, through 2020.
Content and Design Considerations of the 2021 Dashboard

During the COVID-19 pandemic, as we switched to working from home, I subscribed to a coding tutorial service in order to learn how to program in R to gain skills that would be useful in my analysis of data gathered as part of my daily research tasks. With my background in fine art, I quickly became interested in the coding behind summary visualizations of data. I wanted to put into practice what I was learning so I decided to update the e-resources usage statistics dashboard to include interactive elements, and this time build it in R.

The rationale for the dashboard remained the same as in 2013, to communicate clearly and simply. Over the years of its use, I came to know that the brief narrative content (Quick Facts) was very useful to our librarians in providing summary information of the electronic collection. I also decided to retain the Glossary and update it to reflect the terminology used in the new release of the COUNTER standard, R5.

I also decided to retain the graphical information, the bar charts and line charts of trends of usage over the years since our librarians found the graphics to be engaging and easy to understand. I also retained the lists of rankings, now adding the Top 10 e-books and streaming videos to the dashboard.

The least used components were the links to external data, to the entire annual data sets of e-resources. I decided not to include links to external data on the new dashboard.

Considerations using R

I used R Studio (freely available, open-source desktop tool, accessed at https://www.rstudio.com/) to program the dashboard. I built the dashboard using the flexdashboard package (https://rstudio.github.io/flexdashboard/articles/using.html) because it was well documented and seemed fairly intuitive for a novice programmer, like myself. Within the container of flexdashboard I used several packages to manage the data components of the dashboard, using Shiny (https://shiny.rstudio.com/) to facilitate interactivity.

Whereas on the old dashboard the Top 10 e-journals were hard coded HTML with only one year’s worth of data able to be represented, the Top 10 list on the new dashboard is generated on the fly, by calling to an external data source to respond to user input. In the new dashboard a user can use a drop-down menu of the year they wish to view, and the Shiny app returns that year’s Top 10 list. Figure 2 shows a screen capture of the e-journals page that employs this Top 10 feature, along with examples of the Quick Facts about the e-journal collection.

Figure 1: Main page of the e-resource usage statistics dashboard (2013)
The dashboard is hosted on the Shiny site. Because my dashboard has just a few Shiny components, I am able to take advantage of their free hosting service. The dashboard may be accessed at https://whheresourceusage.shinyapps.io/dash/.

**Figure 2:** The e-journal page of the e-resource usage statistics dashboard (2021)

**Limitations**

A major limitation of any kind of statistical dashboard is that it can never tell the whole story. In the case with this dashboard, it is important to note that not all content providers have COUNTER data available, and some provide no usage data at all; as a result, it is impossible to provide a comprehensive assessment of use across the library’s electronic collection. This is notable for our subscriptions to databases that cost thousands of dollars per year – because not all providers offer usage statistics, we are at a disadvantage to not know how much a resource is being used, and as a result cannot make an evidence-based decision about it at the time of renewal.

Practically, if a database does not have usage statistics, it does not end up in the pool for annual evaluation. For the 2021 revision of the dashboard, I have chosen to represent those resources without available usage statistics (those databases are shown with a 0 (zero) in the “Number of searches (FY)” columns). In this way the titles of the databases are still in front of those making renewal decisions, and it tells a fuller picture about the number of databases to which we subscribe (or own).

Another limitation of this dashboard is me, the designer. My use of the programming language R is at the beginner level. It is certain that there are more sophisticated ways to program such a dashboard that I have not yet learned.

**Application of the Results**

The dashboard is being used for the purpose it was designed, communicating quickly about the electronic collection at a glance, so that it is clear to our librarians which resources should be prioritized at the time of renewal. I will share two examples of unexpected outcomes, based on the data presented on the dashboard:

1. From the data shown in the line chart of trends of use of the library’s e-journals over the year, it is clear that August, January, and May are the months with the least usage. Based on this information, our electronic resources unit plans its maintenance around those times. We hold maintenance tasks in our library systems until the expected use of them is low, and then perform platform migrations, URL updates, and changes in the systems that interact with publisher content. In this way, the dashboard has had a practical use for determining when maintenance is least likely to impact our library patrons.

2. One of our Reference librarians noticed that the Wall Street Journal has, over the years, been in the Top 10 used e-journal use. This prompted her to create an FAQ for our patrons about how to access and use the daily newspaper.
I have been encouraged by others that freely share their own code and advice. In turn, it was important to me that my own code is made freely available. On the top right-hand side of the dashboard, I provide a link that shows the source code (shown on the dashboard as “</> Source Code”) so that others may view/copy/take inspiration from my dashboard. At the top of the code view, you may see all of the R packages I used to build the dashboard, along with my commentary to describe where on the dashboard I have employed the code from those packages. The dashboard is offered with a Creative Commons BY-NC 4.0 license to allow for sharing and remixing, not to be used for commercial purposes.

My plan going forward is to make annual updates to the data shown on the dashboard, which will increase its usefulness by having multiple years of data for each title represented there. I will also continue to consult with our collection development librarians to identify possible other useful metrics.

**Bibliography**

In 2013 we consulted the library literature and found the following to be useful in constructing the content and look of our own dashboard:


Accessibility Stories

Student Voices in Accessibility Research

Caroline Barratt

The Open University, Library Services

Background and purpose

The Open University (OU), a distance education institution headquartered in the UK, was created over fifty years ago and is the largest provider of higher education for people with disabilities. Commitment to accessibility is a priority at the OU and the Library supports this mission by performing usability testing on its website and accessibility audits on the many third-party databases it subscribes to. Library staff have had success in sharing their findings of these audits with publishers to bring about positive improvements in accessibility. These improvements are then enjoyed by all users all over the world.

Publishers often request to hear from OU students directly. This can be difficult to achieve, but the aim of this project is to provide exactly that kind of insight into the student experience. We work regularly with our panel of student volunteers to perform research on our services and resources. Students with a declared disability account for 37% of the current Library Student Panel. This project was designed to learn more from this group to inform our conversations with publishers regarding database and ebook platforms as well as our own service development.

We contacted a sample of the student panel to learn from their experience using Library resources in their academic work, particularly regarding accessibility. Our questions were: how accessible are the databases we offer, what workarounds do they employ, and what technologies do they use to make their experience better? These conversations have given us rich stories to share with publishers when we speak to them about any issues we have found in our accessibility testing of their products.

We hope that hearing from students - something publishers often request - will provide the illustrations they need to make changes to their platforms which will improve accessibility. If this is successful these publisher platforms will be improved not only for OU students, but for everyone.

Method

We used a mixed methods approach.

1) Survey – Our sample consisted mostly of students who had declared a disability to the OU but also those who had not. Our thinking was that some students may not see their particular challenges as a disability or have chosen not to formally declare a disability.

A short survey helped determine some information about what kinds of assistive technologies and work-arounds people use. Responses helped pinpoint areas of interest for the interview stage.

The survey included an invitation to participate in further research and we recruited our interviewees from those who chose to help us with the second phase.

2) Interview – The interview opened with broad questions around their experience with databases and websites. Then, we asked participants to do a few tasks using the Find, ‘Understand, Do, Feel’ framework to guide them through an exercise.

For example, for a given database we asked participants to:
1. Find an article
2. Understand what they have found
3. Do a task related to what they have found (e.g. email or download it, find a stable URL)
4. Feel – talk about their experience in terms of how they feel whilst performing the task (e.g. frustrated, ease of use, confused, confident)

Survey findings
The survey was sent to 270 students from the Library Student Panel. As some disabilities may not be declared, or even thought of by the individual as a disability, we invited more than just those who had officially registered as disabled.

Disabilities declared to the OU could consist of a range of challenges such as physical impairments, long term illness, neurodiversity, and mental health issues like depression. We only knew that participants had or had not declared a disability, not what it entailed, unless they specifically mentioned it to us themselves.

The survey was completed by 84 students giving a participation rate of 31%. Respondents included 60 with a declared disability and 24 who had not declared a disability to the OU.

Survey questions
1) Do you use any adaptive technologies?

Students were given a list to choose from and could select more than one adaptive technology to represent the unique combination they employed. Six respondents chose multiple adaptive technologies. Most respondents did not use adaptive technologies to navigate the web or databases. For those who do use adaptive technologies, screen readers are the most common followed by text magnification. For those who indicated “other,” technologies included software to change the colours or brightness of their screens.

![Graph showing the use of assistive technologies](image)

Figure 1. Do you use any assistive technologies?

2) Why do you use assistive technology?
In a follow-up question, some students explained why they use assistive technology. Reasons included using software to help process information, to combat fatigue and to allow them to take notes on screen using their keyboard.

Students also described other workarounds they used to make their experience better. These included adjusting text size and colours in their browser or computer settings and using their computer’s read aloud function.

3) What is your biggest obstacle to using databases and websites?

This open text question asked students to describe their biggest obstacle when it comes to using databases. Eight students responded that they did not experience obstacles in using databases. Most respondents, however, did record reasons for not feeling successful in searching databases. Responses could include more than one reason. We coded these open text answers to create themes.

These included:

**Poor UX design/Not easy to use** – Finding database interfaces difficult to use, unintuitive (n= 6)

**Unsuccessful searches** – Not finding what they set out to find, irrelevant results, unsuccessful search strings (n= 8)

**Knowing how to use** – Some students felt they were not equipped with the knowledge to use databases effectively (n= 5)

**Overwhelm** – Due to busy or confusing interfaces or sheer number of results (n= 7)

**Personal disability** – This includes fear and anxiety about using databases, cognitive issues, dexterity issues with number of clicks required (n= 9)

**Incompatibility with assistive technology** – This topic is of most interest to us in the context of this research and one that publishers may more easily address. Working with screen reader software and other assistive technology during development and testing could make a big difference to users who rely on it to navigate and read on the web (n= 5)

4) What change would make the biggest impact to improve accessibility of databases and websites for you?

Of forty-seven responses, twelve did not indicate any change needed to improve accessibility. Simplifying or improving the intuitive design of the databases, when combined, was the second most mentioned (n=9). Having the ability to customise the display settings within the database appeared six times. Improving compatibility with screen readers appeared three times. Four students indicated that they felt becoming more familiar with the databases through training or practise would improve their experience.
Figure 2. What change would make the biggest impact to improve accessibility?

Other suggestions included: using dyslexia-friendly fonts and design, improving the description of databases (e.g. what you should use this database for, what does it contain), making databases mobile-friendly, including more options to sort and filter results, and adding suggestions for keywords or misspellings.

Interview Recruitment
Finding students who were willing to be interviewed and recorded about how their disability impacted their use of library-subscribed databases was a challenge. Though there were plenty of students who signed up to speak with us, few had a disability that would allow us to investigate how this affected their use of databases or they chose not to articulate their experience in that way. We ran the survey twice with different samples to try to recruit more participants for the interviews and had almost the same number of respondents in each phase. Though recruitment for the interviews was difficult and we experienced a few no-shows, we did speak with five students. Three of those provided rich commentary on how their disabilities, which were all related to neurodiversity, affected their use of library-subscribed databases.

Interview highlights
Our interviews yielded rich conversations about students' personal experiences using databases. We were able to observe their interactions as we spoke and could see and hear their reactions to working in the databases, what they struggled with and how they worked through any problems that arose. The names of our participants have been changed, but their words are taken directly from the interview transcripts.

Like the survey results, our interview participants emphasised the need for customisation.

Pauline: “If there was some sort of accessibility setting or personal profile when you signed in, you could say, ‘Right, this is the issue,’ tick your boxes, and then it's all done for you.”

Sam: “Um, I don't see settings that would make it easier to adapt it. So obviously you have your basic search or advanced search, search history, but there's nothing to change light, for instance, different colors, backgrounds, sizes to make it a lot easier for somebody who can’t read it. ...Make is easy for someone to change background color. People with dyslexia...
obviously quite often need to read on a different background color. And size of texts and sometimes being able to change the layout really helps.”

Compatibility with assistive software is also important. Not only does the database itself need to follow principles of accessible design, it also needs to work with other assistive software, including simply enlarging text. Problems re-flowing the layout after using browser text magnification was noted by our participants, as was incompatibility with some text-to-speech software.

Journal and ebook formats are an issue. A PDF is not as easy to use with a screen reader as is HTML. Content notwithstanding, this formatting detail would influence their decision to use or ignore database results. Sam: “I’m looking at the results to see if it’s HTML or PDF Full Text. So, a lot of these are PDF which obviously doesn’t suit me... I prefer HTML over PDF. One of the other reasons I like HTML is because it can meld a lot better with things like Google Assist and other apps that can read text-to-speech.”

Organisation of information in the layout of search and result pages is key in helping students locate what they need. Colour blocking was preferred by one student as the monochromatic theme of the database tended to blur everything for her: Pauline: “Like on this database, everything is blue. Absolutely everything is blue and I’m like, “What?” [laughs] Like, you know, when you look at this webpage that is all blue text. It’s like a lot of blue fish swimming around the page. If you can imagine that and you’re trying to find one fish, you know what the fish looks like, but the darn fish keeps moving! That’s what it feels like [laughs]. So, if that was a different colour, which wasn’t on the-the blue scale, like a red or a green, that would make it immediately obvious. That would just draw your eyes straight in to go, ‘There is the search.’”

Another student wished for a simpler layout and to use colour tones to help organise the information:

Yasmin: “Yeah, it seems to be very busy. Like for example, if these were a different colour that was slightly more muted, if that makes sense. Then it might be easier to navigate my way around. But this, I really struggle when it comes to lots of things happening on a page, and I find it really difficult to navigate my way around them.”

Bookmarking and breadcrumb trails were also highlighted by our students as useful tools in managing information, coping with fatigue and overwhelm.

Sam: “Bookmarking is a big one as well, so I can go back again, especially if I’m having concentration or memory issues. It’s nice to be able to go back and reinforce what I’ve already read.”

Yasmin: “Bookmarking is also important so I can go back and find what I have read before – this is due to concentration and attention issues. It’s good to be able to go back and see what I’ve read.”

Pauline: “A breadcrumb trail. It doesn’t sound like much, but believe me, I have clicked on things so often, and then I’ve had to go back into them and you’re like, just one little click and then ‘oops!’ [laughs] So I’ve got 1, 2, 3, 4, 5, 6 windows open, and currently to do what we’re doing now because I keep having to open different windows so I don’t get lost.”

Creating videos

These discussions provided the script for the videos we produced to share with publishers. We used students’ own words and vivid descriptions to create narratives exploring their experiences. Because this was not aimed at a particular publisher, we needed to obscure or omit any indication of the database we explored in the interview. Additionally, the OU’s Human Research and Ethics Committee (HREC) requires us to keep these interviews and any video we produce completely anonymous. We could not use their image, their voice or any other identifying characteristics. To do this, we constructed personas to represent the students that do include their disability but have changed other attributes like name, age, gender, ethnicity and course of study. We recorded these using voice over actors but have preserved students’
actual words so that the narrative is authentically their own. The video itself is comprised of stock video footage and music with original artwork and animation by OU Library Engagement & Insight Assistant, Chloe Ratcliffe.

Conclusion
This research reinforced our knowledge that everyone has individual needs and not all disabilities present themselves in the same way. This means that customisation is essential for individuals to easily be able to adjust text, colours and layout. Additionally, testing databases alongside adaptive technologies to determine their compatibility is important. These tools must work together in order to be effective. Our next steps will be taking our findings and videos to the publishers. With our videos as advocacy tools, we will work with publishers to discover what positive outcomes could be gained in collaborating on improving accessibility using this insight from students.

This project has been reviewed by, and received a favourable opinion from, The Open University Human Research Ethics Committee, reference HREC/3811.
An Inclusive Process for Strategic Planning

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Introduction

Library staff involvement in strategic planning processes is often limited to a few individuals in a representative group, or to providing input in one or two library-wide meetings. This is both because strategic planning is a time-intensive process that can make fulfilling regular job responsibilities difficult, and these types of representative committees are common in library (and academic) governance. However, this traditional approach can leave portions of the library feeling that their opinions weren’t heard and that the final plan is irrelevant to their work. This paper presents practical tips for how to involve an entire library and encourage feedback from many individuals, and includes example activities. This process is scalable to many sizes and types of libraries, by focusing on consistent communication and multiple avenues for individual and group input.

This paper covers how to create and balance different kinds of goals, planning a variety of meetings and activities, developing a shared vocabulary, and how to consider assessment while goals are being crafted. This paper particularly focuses on constructing a planning process that includes many different voices and involves all levels of the organization, and how that can increase buy-in. The end goal is a living document, presented in a digestible format that is flexible and outcomes-based. This paper describes how to put this into practice in a specific context is rarely included.

Background

Strategic plans are often formed either top-down, or through a small committee assigned to the task (Bütüner, 2016; Matthews, 2005; Keller, 1983). Out of necessity continuing library services during a planning process, libraries may choose a small representative group to lead the planning process (Clement and Rounds, 1995; Reed, 2016; Matthews, 2005). These planning-focused groups are recommended to involve ten or fewer people, both for the sake of timeliness and easier decision-making (Matthews, 2005). The role of non-management staff is usually limited to one or two library-wide input mechanisms at a specific stage rather than throughout the process. Additionally, most strategic planning guides discuss the planning process and activities without fully discussing how to involve what groups of people (likely due to the varied sizes of organizations for which they are intended). There is usually a discussion of who “stakeholders” are and that they should be involved to some degree, but an explicit description of how to put this into practice in a specific context is rarely included.

Another aspect of traditional strategic planning guides that we wanted to move away from were classic corporate-based exercises, such as the SWOT analysis (Matthews, 2005; Keller, 1983; Martinez & Wolverton, 2009). While these exercises have their place, their inherent corporate focus on competition and profit can feel opposed to library
values and processes. Hence, we drew from nonprofit processes and devised original exercises and questions that felt more aligned to library principles like learning and access.

Rather than replicate a literature review on strategic planning here, McNichol's (2005) article on the challenges of strategic planning for academic libraries provides a good overview of strategic planning in general, as well as some typical ways libraries plan and how library staff are involved. Bryson, Edwards, and Van Slyke (2018) provide an in-depth look at planning process literature, albeit from a public-sector perspective.

**Purpose**

*History of Strategic Planning at the UNLV Libraries*

The University Libraries at the University of Nevada, Las Vegas (UNLV) had modeled our previous strategic plan closely after the 2015-2025 university-wide UNLV plan (University of Nevada, Las Vegas, 2020). The university plan featured five goals centered around student achievement, faculty research, community engagement, infrastructure, and the creation of an academic health center (related to the School of Medicine, which opened in 2017). The 2017-2019 Libraries’ strategic plan simply transformed those goals into more library-centric language (UNLV Libraries, 2017). For instance, the 2015-2025 UNLV Top Tier Goal on Student Achievement said, in part, "We will recruit, retain and graduate a diverse body of motivated students through the strength of our innovative learning experiences, access to mentoring and research opportunities and our vibrant campus community," while the Libraries’ corresponding 2015-2017 goal stated that "University Libraries collaborates broadly to ensure student achievement through direct instruction, partnering with faculty on assignment design and development of learning experiences outside the classroom."

This model’s advantage was that its close alignment with university goals easily showed how the Libraries’ goals and progress directly contributed. The downside was that the plan wasn’t specifically strategic and the broad goals weren’t specific to the UNLV Libraries’ priorities and expertise. While this approach worked well for communicating the Libraries’ role to the UNLV campus, it wasn’t necessarily compelling as an internal decision-making document, and not everyone in the Libraries felt reflected in or inspired by the top-level goals.

*Need for a New Planning Process*

For the UNLV Libraries’ 2019 strategic planning process, Dean Maggie Farrell had expressed interest in a broader planning process involving as many Libraries employees as possible. She wanted the strategic direction and vision to be driven from the Libraries broadly instead of top-down, to align with her consensus-based leadership style. She also expressed interest in new mission and vision statements, which had been created under a previous dean and not revisited in quite some time.

With Dean Maggie's request in mind, James and I set out to create a ground-up inclusive planning process. Our goal was to incorporate more input from a variety of different library groups, get a truer “grassroots” sense of library priorities, and create a collaborative process for greater buy-in. We hoped this would increase forward momentum on goals, and in particular to create goals around equity, diversity, and inclusion (EDI) through broad library input and thus to set them up for success.
Approach

The New Strategic Planning Process

Our review of existing strategic planning processes in academic and business literature brought up primarily traditional methods of planning, either top-down or by a small committee, as mentioned in the introduction above. We found almost nothing that discussed how to incorporate an entire organization into the process, so we set out to build a process from scratch.

We first outlined the types of meetings and activities needed to get the information and feedback necessary to build the plan. Each library-wide meeting was held twice, usually on different days with one in the morning and one in the afternoon, to provide broader options for participation. Table 1 provides a timeline of the various meetings and activities we held in 2019.

Most of the meetings were library-wide (open to any library employee) and were announced through a “LibraryAll” email list and in “Announcements” emails that are sent out weekly by Library Administration. Library Council is a group made up of department heads and division heads, but its meetings are open for anyone in the library to attend. We provided process updates in Council, as that group’s meetings are a primary method of sharing library information and updates. Finally, the Library Leadership Team (LLT), who participated in a May meeting (Table 1), is the senior leadership group for the library. Its membership is the dean, associate dean, the four additional division directors, and the Director of Planning and Assessment (myself).

The kickoff meeting, "What is a Research Library?" introduced the concept of a research library supporting a R1 “Highest Research” university and what strategic priorities we might want to consider. We also held one meeting with the 13 department heads before our subsequent department visits, to explain how they could prepare their staff to discuss their department's plans and goals. We then held individual meetings with every department in the library (and a few other interested groups, namely the Metadata Committee and the Inclusion and Equity Committee) to discuss their area's goals and how they fit into the draft strategic plan.

Table 1: Strategic Planning Timeline

| November 2018 |  
| --- | --- |
|  | Introductory Session (Terms, Process, and Timeline) |
| January 2019 |  
|  | Library-wide Kickoff: What is a Research Library? |
| February |  
|  | Library-wide Meeting: Defining Our Mission and Values |
|  | Department Heads Meeting |
|  | Library-wide Meeting: Setting Library Goals and Themes |
| March / April |  
|  | Library Council Update |
|  | Survey to narrow down values statements |
● Generating Goals and Objectives: We concurrently held individual meetings with each library department, and a couple with specific groups like the Metadata Committee.

● Survey for feedback on mission statement draft

<table>
<thead>
<tr>
<th>May</th>
<th>Library Leadership Team Review Meeting</th>
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<tbody>
<tr>
<td></td>
<td>Library Council Update: Draft Plan and Process Review</td>
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<tr>
<td></td>
<td>Library-wide Meeting: Creating a Vision</td>
</tr>
<tr>
<td></td>
<td>Survey with additional values statement revisions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>June</th>
<th>Finalized writing the plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Worked with designer on graphics</td>
</tr>
<tr>
<td></td>
<td>Library-wide Meeting: Strategic Plan Launch</td>
</tr>
</tbody>
</table>

**Terms and Structure**

Our November 2018 meeting introduced the process and defined the terms we used throughout. Ultimately, the actual terms are irrelevant—what matters is having a shared understanding of how they will be used. For reference, below are the terms that we used.

- **Strategic Plan:** a list of goals that an organization will focus on for a short, defined time period (usually two to five years). Our plan has two parts:
  - **Strategic Themes:** are timely and take us in a specific direction.
  - **Core Themes:** reflect ongoing, important work that supports our core library values.

- **Theme:** a broad idea that we want to achieve as a library, that reflects our values.

- **Goal:** supports a theme and describes more specific action to be taken in a concrete time period (two-year cycle). May be at the library-wide level, or may be specific to a division or department.

- **Objective:** an action or project that supports that goal (indicates how we plan to reach a goal, what we do to get there). May be at the division or departmental level.

- **Action Item:** a specific task or action taken in order to reach an objective. Usually at the department level, possibly the individual level.

- **Measure:** a metric or measure that indicates progress on an objective or action item.

Structurally, these terms fit together in a hierarchy, as seen below. In the final library-wide plan, only themes and goals are used, but the underlying objectives and action items are relevant for divisions, departments, and individuals in their own plans. Another way of looking at this is: action items are specific tasks that help achieve department
objectives, which in turn contribute toward fulfilling a library-wide goal, which is in pursuit of reaching a broad strategic or core theme. We use measures to assess progress on objectives, goals, and themes.

- Theme (Strategic or Core)
  - Goal (aggregated from department/division objectives)
  - Objective (division or department level)
  - Action Item (division, department, or individual)

Beyond Strategic Goals

A big change compared to previous strategic cycles was expanding the plan to include what we termed “core themes” in addition to the strategic themes. An issue with previous strategic plans was that not everyone felt represented or that it wasn’t relevant to their work. This was particularly true of areas that perform services that are central to the Libraries’ mission, such as Access Services. Much work done in the Libraries isn’t necessarily “strategic” but should still be acknowledged as important and be a part of how we make decisions library-wide. Also, since the strategic plan is a key part of how we communicate library priorities and accomplishments to the broader university community, it was important to ensure that integral library services were reflected in it. Adding these core themes increased the plan’s buy-in across the libraries, as indicated when staff have continued to refer to this plan in their work and in conversations far more than previous plans.

From Goals to Themes

When deciding how to approach the library-wide level goals, we decided to call them “themes” and to specifically target large ideas that the Libraries wanted to accomplish, something that would take longer than the two year cycle we anticipated for this plan. This ensured that the themes were aspirational, big enough to inspire library-wide efforts and to provide vision for real transformation.

A nice side effect of this is that our strategic and core themes were somewhat future-proof. We were able to pivot during the pandemic and continue to do work that fit under these themes, and although we are now beyond the two-year cycle our plan was intended to cover, these broad themes are still relevant, allowing us to evaluate progress on the smaller goals that lie underneath them, and to revise and add new goals as needed to continue that progress.

Baked-In Assessment

Because the themes themselves were so broad, and in fact may be impossible to ever fully accomplish, it was even more important that the goals underneath them were measurable. When we met with library departments individually to discuss their goals, we asked questions to help them focus on measurable outcomes. Those questions included:

- What do you want your department to have achieved in five years?
How do you make progress toward this in the next two years?

What do you want to let go of? What is important to keep doing?

What do you want to improve?

We also emphasized the characteristics of "good" (assessment-friendly) goals. These characteristics include a balance between realistic and challenging, focusing on a single issue, and being measurable. We also discussed how goals are meaningful when they either seek to solve a problem or tie directly to library values (we had already completed the values statements at this point). When discussing measurability, we specifically discussed how we might assess the goals they were forming, and what types of data or information were the best indicators of true progress.

Activities, Analysis, and Iterative Feedback

In this section, I'll describe some of the activities we led throughout the meetings described in Table 1, and the analysis and feedback methods we used to synthesize that content into a cohesive strategic plan. (See the Appendix for resources we used to brainstorm exercises and how to facilitate small group discussions.) Table 2 lists these in an effort to make our process and the different levels of library-wide engagement more clear.

Table 2: Planning Activities & Participation

<table>
<thead>
<tr>
<th>Plan Section</th>
<th>Activity</th>
<th>Participants</th>
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</thead>
<tbody>
<tr>
<td>Mission</td>
<td>Marked-up mission statement examples</td>
<td>70 library faculty and staff</td>
</tr>
<tr>
<td></td>
<td>Wrote &quot;best work&quot; stories &amp; grouped concepts</td>
<td>70 library faculty and staff</td>
</tr>
<tr>
<td></td>
<td>Drafted four mission statements</td>
<td>3 specialized faculty/staff</td>
</tr>
<tr>
<td></td>
<td>Feedback survey with &quot;like/dislike&quot; options for words and phrases</td>
<td>57 responses</td>
</tr>
<tr>
<td></td>
<td>Combined versions based on feedback</td>
<td>3 specialized faculty/staff</td>
</tr>
<tr>
<td>Values</td>
<td>Grouped post-it responses to questions</td>
<td>70 library faculty and staff</td>
</tr>
<tr>
<td></td>
<td>Ranking values survey</td>
<td>80 responses</td>
</tr>
<tr>
<td>Goals/Themes</td>
<td>Exercises in initial goal meetings</td>
<td>60 library faculty and staff</td>
</tr>
<tr>
<td></td>
<td>Department meeting discussions</td>
<td>13 department &amp; 3 groups</td>
</tr>
</tbody>
</table>
Each time we gathered information from a new meeting, James designed a new method of analyzing it, drawing from quantitative methods but also simply creating much of this from scratch. One of the trickiest aspects of the process was determining how to incorporate not only the most popular, majority ideas, but how to ensure that many voices were reflected in the final work. James and I reflected on this together throughout the process, and I hope that in the end we were able to strike a balance.

Once James had analyzed and compiled the information we received, we produced a draft of that “product” -- whether that product was a mission statement, a vision, or a list of themes (goals) or values. We then sent that draft back to the organization and sought additional feedback. The values, mission, vision, and strategic and core themes all went through multiple cycles of feedback and revision. The process is examined in more detail below.

**Mission Statement**

The first workshop-style meeting that we held in this process was called “Defining Our Mission and Values,” and we funneled content from it into separate processes for crafting a mission statement and library values. Before the meeting, we looked up mission statements for peer academic libraries and others closely aligned with us, and picked examples with a variety of styles, emphases, and lengths. We had these printed on large sheets of paper and posted them in our largest instruction room. This room has about 10 separate small group workstations with room for 4-6 people, a small whiteboard, and monitor at each; we posted the statements between each of these workstations (Figure 1).
Participants were provided with markers and post-it notes and invited to walk around the room to mark up the statements with comments about what they did and didn't like (Figure 2). People circled and crossed out words, added new phrases, and wrote out their thoughts. In a second round, we had participants use colored dot stickers to indicate which statements (either the original wording, or text added by their colleagues) that resonated with them most.
After the meeting, James analyzed the comments based on both how many people reacted to specific words and phrases, and whether those reactions were positive or negative (Figure 3).

### Figure 2

After the meeting, James analyzed the comments based on both how many people reacted to specific words and phrases, and whether those reactions were positive or negative (Figure 3).

### Figure 3

<table>
<thead>
<tr>
<th>Library</th>
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<th>Neutral</th>
<th>Negative</th>
<th>Grand Total</th>
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<td>student success, knowledge creation and preservation, and globally competitive research.</td>
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<td>10</td>
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<table>
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For the second exercise in that meeting, small groups wrote stories or short statements in response to the question, "What does it look like when we're doing our best work?" (Figure 4). Then as a large group, we broke those stories down into concepts such as "connecting with knowledge" or what "impact" looks like in the UNLV Libraries.

For instance, Figure 5 shows the concepts around "impact" as told in those stories. The handwritten notes at the top left are the impact concepts that the group identified during the meeting. Later, James and I grouped similar ideas, so that we could see commonly occurring themes.
We used ideas drawn from all of these inputs to draft four mission statements, with expertise from the Libraries’ Director of Communications, Sean Kennedy. We then solicited feedback on these four drafts in Qualtrics. Rather than merely asking people which statement they liked more, James created a survey in which respondents were able to select individual words or phrases and indicate "like" or "dislike" on each (Figure 6). This provided nuanced reactions that informed our next draft. We solicited final feedback through a library-wide email.

![Image](image_url)

Please click the words or phrases you like or dislike about the mission statement you preferred the most. You do not need to mark up all words or phrases.

The University Libraries is a welcoming and inclusive center for learning at UNLV that fosters discovery, innovation, knowledge creation, and academic achievement, which enriches the lives of our students, faculty, staff, alumni, and the Southern Nevada community.

Figure 6

Our resulting final mission statement is:

The University Libraries is a welcoming and inclusive place for learning. We foster innovation, knowledge creation and discovery, and academic achievement to enrich our UNLV and Southern Nevada communities.

Values Statements

In that same initial workshop meeting, we held another activity designed to highlight shared library values. Attendees wrote responses to these questions on post-it notes:

- What is important at the UNLV Libraries?
- What is unique about working here?
- What are the beliefs that define our culture?
- What do we want to aspire to?

Then attendees sorted these post-it concepts into groups of related values, on large blank sheets of paper. As a large group, we discussed what word or phrase to term each group, and then attendees took colored dot stickers and "voted" for the groups that were most important to them (Figure 7).
Afterward, James and I compiled these and analyzed recurring themes. We produced a list of seventeen value groups and created a survey in which respondents ranked them (Figure 8).

![Survey Image](image)

**Figure 7**

Afterward, James and I compiled these and analyzed recurring themes. We produced a list of seventeen value groups and created a survey in which respondents ranked them (Figure 8).

**Figure 8**

Based on those survey rankings and comments, as well as looking back at the original input from the meeting, we
regrouped and rewrote six values that we got further iterative feedback on in Google Document drafts (Figure 9).

Figure 9

The resulting values statements for the UNLV Libraries are as follows.

We believe:

- Everyone deserves a welcoming, inclusive, and equitable environment where they are treated with respect and dignity.
- Holistic student success should be fostered.
- Our work should be driven by the needs of our communities.
- All users have the right to equitable and ready access to information.
- Intellectual curiosity and lifelong learning should be nurtured.
- Collaboration and diverse perspectives enhance our work.

Goals and Themes

The “Setting Library Goals” meeting began with attendees individually writing out library issues (things to improve or change) and opportunities (what to create or support) as actions (such as “make books easier to find for students”) on post-it notes. Next, they worked in small groups to respond to each issue individually, writing the consequences of either not addressing an issue, or of addressing it successfully. Small groups used whiteboards to map these in chains of consequences, leading up to why they ultimately mattered (Figure 10). This led to what we termed “big ideas” that pointed toward goals or themes for the Libraries. Attendees then aligned these themes with the draft library values (see above). After some discussion as a large group about these, individuals used dot stickers to vote on which ideas to concentrate on in the next two-year strategic cycle.
Later in this meeting, attendees examined strategic goals from other libraries and shared what they liked and didn’t like in terms of content, style, and design. They also brainstormed the types of goals (or “themes”) they wanted to see in the final plan.

After this meeting, James, Sean, and I drafted library-wide themes based on that input. As we created the initial drafts of the themes, we pulled ideas and concepts not only from the “Setting the Goals” meeting outputs, but also looked for recurring ideas from other meetings in the planning process (Figure 11). We especially focused on ideas that didn’t necessarily fit as values or mission, but that had recurred throughout the process.
Those drafts were collaboratively revised in a Library Council meeting; the revised versions were sent to the entire Libraries as a Google Doc for further comments and editing (Figure 12).

While these themes were being drafted and revised, we concurrently held meetings with library departments and two groups (the Metadata Group and the Inclusion and Equity Committee). These meetings were described above in the...
“Baked-In Assessment” section because of their focus on assessment measures, but goals were discussed hand-in-hand with ways to measure progress on them.

After soliciting multiple rounds of library-wide feedback on the library-level themes, we sought additional input from the Library Leadership Team. This was primarily to work on aggregating the department-level goals into broader goals that would provide insight into how we planned to make progress toward the library-wide themes during the strategic cycle. For instance, under the Core Theme of “Contribute our knowledge and expertise to global conversations...” there is an aggregated bullet-pointed goal “Enrich our professional communities by contributing concrete outputs” which refers to several different department-level initiatives to share open source code as well as metadata records and name authority files. We chose three to four of these aggregated goals to include as bullet points under each theme in the final plan (UNLV Libraries, 2019).

**Vision Statement**

The "Creating a Vision" meeting was the last original exercise meeting in the process (the final meetings were revision-focused or informational). Small groups worked together to answer what their ideal library would look like in ten years, and grouped similar ideas. They then drafted statements around those ideas. Similar to the mission statement process, James and I worked with Sean to compile and revise them into drafts, which library employees ranked in a survey.

The resulting vision statement is:

Graduate lifelong learners, inspire transformative research, connect diverse communities.

**Final Work and Results**

Our final strategic plan is a three-page document, with the mission, vision, and values statements on the first page, then one page of the five strategic themes (with a few select goals as bullet points beneath these), and a third page with the five core themes (and bullet-pointed goals beneath them). The Libraries’ Multimedia Designer, Hugh Aoki, provided a compelling design for this that resulted in a professional document suitable for printing and sharing with donors and university administrators. Figure 13 shows a comparison between the old and new strategic plan formats and length.
This ground-up process was well-received throughout the libraries, and we received many positive comments throughout. I would like to continue using this method in future strategic cycles, with revisions based on what we learned.

Scaling the Process

At the time of this planning process, the UNLV Libraries had about 144 faculty and staff. Our largest in-person meeting had 69 participants and our largest survey had 80 responses. Scaling the process up for a larger library would need to involve strategies for either holding more or larger meetings. The more difficult part of the process, depending on the library's structure, would be holding meetings with each library department. This could be accomplished by either involving additional staff to help facilitate those meetings, or by training the department heads to lead those meetings themselves.

We had a test-run of using these same principles in a smaller organization when we worked with the UNLV School of Medicine Library to create their first-ever strategic plan in spring 2021 (UNLV School of Medicine Library, 2021; Weeks, 2021). This library, which reports to the UNLV Libraries Dean but is primarily funded by the School of Medicine, had seven faculty and staff at the time. Their plan needed to align with both the UNLV Libraries' strategic plan and the School of Medicine's strategic pillars. Together with the Interim Director of the School of Medicine Library, Aidy Weeks, we scheduled a five-month process to create the plan. We joined their regular library meetings once a month, for 90 minutes each, and used similar collaborative processes: small groups (often pairs) working on specific parts of the plan, then coming together to discuss as a whole and edit wording (Weeks, 2021). Our role in this...
process was primarily facilitative, asking questions to guide them to create the content themselves. The final plan newly created values specific to this library, and the goals are organized into five strategic pillars (themes) that echo both the School of Medicine's strategic pillars and the UNLV Libraries' strategic themes (UNLV School of Medicine Library, 2021).

**Tips and Lessons Learned**

This method of planning is time-consuming compared to traditional processes. This is primarily because more people are involved and there are additional steps to both analyze a large amount of content generated in the meetings and to request and process feedback during revisions. Because of that, I recommend not only scheduling more time for the process than usual, but also building in some "squish time" just in case meetings have to be rescheduled, someone is out of the office, or communication is delayed. We built in a month of "squish time" and used it.

It's also a good idea to build in time for reflection about the process itself, ahead of time. We took time to read literature on strategic plan processes, and for James and I to talk about what creating a more inclusive process might look like. This preparation in the fall of 2018, along with scheduling and planning the meetings for spring 2019, took us about two months.

Because of the time and effort that the organization expends in creating such a plan, I don't recommend undertaking such a process every two or even three years, at least, not in full. We are currently preparing to review and update our plan with a much less intensive process, while still trying to involve broad library participation. We're able to do this on a smaller scale in part because we specifically chose strategic and core themes that we couldn't accomplish in two years. That frees us up to make just minor changes to the themes, and instead focus on how much progress has been made on the goals nested under them. We will then decide which goals have been accomplished, which we've made progress on but want to keep in the plan and continue to work on, and what new goals we should add, under those broader strategic and core themes.

It's key to be prepared to pivot during the process. Any ground-up process is going to be iterative and messy, so we rolled with it as best we could. We had to make a number of last-minute changes, including editing some of the meeting exercises on-the-fly depending on how people responded and what kinds of information they generated. James also had to continually create new methods of analyzing all the content and feedback people provided us. Both the large number of people involved and the newness of the process meant that there were a lot of unknowns and shifting variables--being able to shift quickly or improvise was key.

As with any teaching or group facilitation exercise, it's important to be comfortable with leaving silence and wait for people to speak up. We also tried to throw people together in different kinds of groups, to start conversations across areas. Some ice-breakers or exercises may feel goofy, but they can be helpful to start groups talking.
To ensure that the people truly feel heard and able to voice their concerns—not only with the plan content but also with the planning process itself—we emphasized how to contact us. We added our contact information and the message to contact us about any concern or feedback to each of our emails, slide decks, and said it out loud in every meeting. It’s important to stress that there are additional ways for people to share their thoughts, and that the process itself is flexible.

If possible, it’s helpful to have the process lead by a person or unit that’s viewed as “neutral” in the organization. In our case, the Planning and Assessment Unit is technically a part of the Library Administration Office, but its position outside of large functional divisions like the Research and Education Division (public services) and the Collections, Acquisitions, and Discovery Division (technical services) means that we’re not seen as siding with one area over another. Also, consider involving someone in leading the process that doesn’t have a hierarchical leadership role in the organization. James’s co-leadership of the process was helpful not only because of his expertise in data analysis, but because his position outside the leadership hierarchy made him approachable.

Providing updates on the process helped keep us on track and helped ensure that people across the Libraries didn’t feel lost. I created a slide that listed every planned meeting throughout the five-month period, and used it in every slide deck at every meeting, indicating which meetings had already occurred and which were still ahead. All slide decks were posted to our internal staff page on the strategic planning process after each meeting, and that link was shared regularly in staff email announcements.

Encouraging cross-library involvement in the process throughout was key. When communicating about the process and meetings, whether in person or by email, we encouraged employees of all classifications to contribute. It’s helpful if you can also directly get supervisors on board, to encourage their direct reports to be involved and indicate that participation in the process is viewed as a part of their work (not something they’d need to do in their free time).

We documented the process throughout, noting the number of participants, photographing their work, and noting what to change for future activities. This was helpful for many reasons, most notably in updating the organization throughout and thanking them for their involvement. It has also helped create this paper and provided us a detailed breakdown of what we might repeat or change in future planning cycles. I recommend saving all materials (slide decks, handouts, activity scripts, email messages, and photos of the process) in a single internal staff-accessible folder. We also linked these materials on our staff intranet and referred to them whenever updating the organization on the process.

**Conclusion**

Changes from the 2017-2019 to the 2019-2021 UNLV Libraries’ strategic plan included incorporating core services into our goals, so that the entire organization is reflected in it and can use the plan to prioritize and make decisions. In addition to updating the mission, vision, and values, the plan decreased from nine pages to three. The final plan is
less granular than previous plans; specific actions were left to divisions and departments to outline in their own annual goals. This resulted in a shorter and broader document that is easy to refer to and also digestible for an external audience, such as donors and university administrators.

Adjusting a traditional strategic planning process to one that includes more library-wide input throughout is a time-intensive process that necessitates creative thinking and the ability to pivot as needed. The benefit of broader input includes greater buy-in, relevancy for more library staff, and a plan that's easy to use and refer to, rather than left on a shelf.

Appendix: Helpful Resources


A book that wasn't published when we started this process, and thus couldn't use, but has many helpful tips and examples that would greatly facilitate this style of process:


References Cited


Matthews, J. R., (2005), *Strategic Planning and Management for Library Managers*, Libraries Unlimited, Westport, CT.


UNLV School of Medicine Library, (2021), *2021 Strategic Plan*, UNLV School of Medicine Library, Las Vegas, NV. [https://www.library.unlv.edu/sites/default/files/inline-images/aC1Oog409ImqFni0vVqdZP3Mzp6yOKy6cElxwSrbGLuQ22RZuP.pdf](https://www.library.unlv.edu/sites/default/files/inline-images/aC1Oog409ImqFni0vVqdZP3Mzp6yOKy6cElxwSrbGLuQ22RZuP.pdf)

Weeks, A., (2021), "UNLV Health Sciences Library: Strategic Plan Journey," Unpublished Internal Presentation, UNLV Libraries internal staff website, University of Nevada Las Vegas, Las Vegas, NV.
Analyzing circulation data to support evidence-informed decision-making during COVID

Giovanna Badia and Colleen Cook
McGill University Library

Purpose/Research Question
The HathiTrust Emergency Temporary Access Service (ETAS) has helped libraries provide electronic access to a portion of titles in their print collections during COVID-19. Some libraries have also provided a pickup service for print items that are not available through ETAS. The combination of ETAS and a pickup service enables McGill University Library to provide access to most of its print collection while branch libraries are physically closed due to COVID. Has usage of the print collection changed during the pandemic since access to this collection is currently provided differently? If changed, which subject areas of the collection are most affected? Changes in circulation have the potential to affect collection development and library space allocation decisions, which prompted the authors to answer these questions by comparing the circulation statistics of McGill Library’s print collection pre-pandemic with usage statistics of its pickup service and ETAS during COVID.

Design, methodology or approach
Statistics were analyzed using frequency tables, graphs, regression, and logic modelling. Multiple methods of analysis were employed to obtain a more comprehensive understanding of print collection usage during different contexts.

Findings & limitations (as applicable)
Preliminary findings indicate similar patterns of overall usage during the same times of year pre-pandemic and after the physical closure of McGill branch libraries. The authors will show the similarities and differences in usage for specific subject areas.

Conclusions and how findings have been applied
This lightning talk will provide an overview of the complementary data analysis approaches used and how the outcome of the analysis helped inform decision-making about library services during the pandemic.
Assembling a Virtual Student Library Advisory Board During COVID-19

Chantelle Swaren and Theresa Liedtka

University of Tennessee at Chattanooga

Background
UTC is a public university, the second-largest of the four primary campus institutions within the University of Tennessee system. UTC is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award bachelor’s, master’s and doctoral degrees and hosts five colleges: Arts and Sciences; Business; Engineering and Computer Science; Health, Education, and Professional Studies; and the Honors College and offers 95 undergraduate, 53 master’s, five doctoral and four specialist degree programs in addition to 30 certificate programs. Prior to the pandemic, there were two online degree programs offered and approximately 20% of classes were offered online. UTC is primarily structured as an on-campus, in-person learning environment.

Currently, UTC’s undergraduate student full-time equivalency (FTE) is 9,550.8 and the graduate student FTE is 994.5 (University of Tennessee at Chattanooga, 2021). The total headcount for the number of UTC students in the 2020-2021 academic year was 11,728.

Professor Theresa Liedtka (Liedtka, 2021) has led the UTC Library as Dean since 2004, helping the library to grow in its employee numbers from 28 positions to its current total of 44 employees, representing 57% growth in the library’s human resources. Under her purview, the library built a modern newly constructed 180,000 square foot facility in 2015, implemented a student library fee of $25.00 per semester, and welcomed oversight of the university’s Writing & Communication Center and Media Creation Studio. Associate Professor Chantelle Swaren (Swaren, Chantelle Swaren, 2021) has held the position of Assessment and Outreach Librarian since 2013 and develops and manages outreach programs and assessment initiatives. Under her leadership, the library has expanded to offer well-attended annual programs, increased promotional activities, and new data-collection methods.

The UTC Library is a college within the UTC campus and is structurally part of the Academic Affairs department. The UTC Library serves students, staff, faculty, alumni, and the Chattanooga community. As UTC is a metropolitan campus, the library regularly has visits from researchers at local grade schools, other colleges, and the general community. With an impressive archive of artifacts from the southeastern United States and a robust digital archive, UTC Library also welcomes a lot of virtual visits to its website and digital collections.

In the academic year prior to any COVID effects (2018-2019), the UTC Library welcomed annual visitor traffic of approximately 700,000 per year, with a typical weekly measurement of 24,000 people entering the library during academic semesters (ACRL, 2019).

The global pandemic significantly impacted academia, and UTC was no exception. The university changed the majority of 2020-2021 academic year classes into an online format and significantly reduced the occupancy of on-campus housing. Library operations were correspondingly affected, and occupancy in the building was reduced by limiting the building entry and seats to current faculty, staff, and students. Library seats were reduced from approximately 2,200 to 500 to allow for physical distancing. Throughout this period, the number of people using the physical library services, materials and spaces was significantly reduced, as were interactions between library staff and students.

Approach
The UTC Library prides itself on using user feedback to enact operational changes to best serve our community. Students, staff, and faculty are regularly consulted for input which is subsequently used to make decisions. Typical library feedback
channels include discussion with patrons inside the library, a campus survey, a liaison program, and meetings with Student Government Association leaders. Additionally, the Faculty Senate has a Learning Environment Committee, composed of faculty, that focus on library operations.

Library management was concerned about the reduction in student feedback caused by the global pandemic and corresponding move to online classes; library managers discussed implementing new methodologies to reach online students. A student advisory board had long been desired but had never risen to the top of the priority list.

**Surveying the Landscape**

Over the summer of 2020, it was determined that we would assemble a student library advisory board during the upcoming academic year and a survey of the landscape and literature on existing programs at other universities was conducted (Appendix A). This survey was limited to North American universities but was not limited by size or region. There were many examples of academic library advisory boards, running the gamut from small community colleges to large public and private research institutions. The University of Southern Maine Libraries boasts the history of their advisory board (“Library Club”) dating back to March of 1933 (University of Southern Maine Libraries, 2021).

The most commonly-stated purpose of academic libraries in forming student library advisory boards is to ensure the library is aware of and meeting student needs. Meeting frequency commonly runs between one and four meetings each semester, and membership typically lasts one academic year.

UTC Library followed these general best practices in establishing its first student library advisory board.

**Working with Campus Partners**

One of the primary concerns with creating a student-filled advisory board was ensuring that students’ time was valued and that students would benefit from having served. The UTC Library provided small tangible attendance benefits in the form of branded keepsake items and also secured an intangible benefit. UTC has a campus-wide experiential learning program to engage students beyond the classroom. By participating in campus events, students earn points and student who earn a point-minimum can receive valuable benefits for course registration and graduation. Working with the coordinator of the experiential learning program, *ThinkAchieve*, the library secured points for students who attend board meetings. This was done to aid in attracting initial members, as well as to encourage members to attend all meetings, as each individual meeting offered its own *ThinkAchieve* credit points.

The idea for a student library advisory board was shared during an online campus meeting hosted by UTC’s Provost, which had more than 60 faculty members in attendance. Promotional support and encouragement were also requested from campus support services.

**Findings**

After only one semester, it would be premature to make sweeping interpretations. However, the library is analyzing early indicators that hold the most opportunity for ongoing success. In the following sections, various findings are examined in detail.

**Getting Members**

The initial goal was to establish a board with at least 6 student board members. Student members were solicited using a variety of methods, including soliciting student members through posted printed materials, the library’s website and blog (Swaren, Join the Library Advisory Board, 2021), and inviting student using the campus listserv (Appendix B1). As well, campus partners were asked to encourage students to join. The most successful promotion method was the direct email to students (Appendix B1, C), and the second-most effective method was from a campus partner; UTC’s Disability Resource Center heavily promoted the board to their community members and several students joined because of this direct encouragement. In response to our solicitations, 39 students volunteered to serve on the Library Advisory Board.

Because of our agreement with the campus Experiential Learning partner, we continued to keep open the chance for any student to attend by listing the meeting dates on the library’s blog as well as on the online hub for campus involvement.
However, we did not actively solicit or promote the advisory board meetings after the initial solicitation because of the overwhelming initial response.

**Retaining Members**

The primary method employed to keep student members was to show appreciation for their time and contributions by thanking members during the meeting and emails, as well as through low-cost tokens of appreciation. We did not pay members, nor offer any stipend. The library provided small tokens of appreciation for each meeting a member attended, that included library-branded items including notebooks, pens, USBs, and other small items. The secondary method employed was to offer the non-classroom credit for the campus-wide experiential learning program. While this was promoted as a benefit and may have helped to attract members, based on the low uptake it did not seem to be a driver for attendance. The most vocal and engaged members of the board did not participate in the ThinkAchieve program.

**Board Meetings**

The library advisory board met three times during the Spring 2020 semester. All meetings were conducted on Zoom, and board members received a formal agenda and meeting reminder prior to each meeting.

The board experienced a dramatic reduction in the number of attendees from the first meeting to the second meeting; from 20 attendees in February to 10 attendees in March. By the April meeting, we had 7 members in attendance. This drop in attendance was not unexpected; several students who were particularly vocal about a single issue in the first meeting did not attend after sharing their specific feedback. This made the first meeting more of an open town hall for single attendees, which provided excellent feedback and was a valuable temperature-check about specific policies. In contrast, the continued attendance in future board meetings focused more on library operations as guided on the meeting agendas developed by Dean Liedtka and Professor Swaren with input from library colleagues.

**Member Motivations**

From the comments made both verbally and using chat as part of the first-term Zoom board meetings, it was clear that many of the members joined the board as a way to interact with other students. During the 2020-2021 academic year, UTC had moved most classes and social activities online in response to the COVID-19 pandemic. While this was necessary due to the public health crisis, it was unexpected and often undesired by the UTC student population; students had enrolled under the assumption that classes would be held on campus. As many across the globe experienced, the forced isolation was difficult and many of the students who joined the board expressed relief at having some interpersonal activity. While the library was the reason the group came together, it was not necessarily the focus or priority for all members.

As planned and expected, the board members gained valuable insight from each other, though this was limited by the number of people willing to participate. Campus tools, tips and tricks were shared among the students in the meetings; however, much of the questioning was related to general campus I.T. information. It became evident that students frequently misunderstood services provided by campus I.T. and those provided by the library.

As many of the board members were primarily interested in interacting with others as a bar against loneliness resulting from online learning, the idea of board-related social activities was broached almost immediately. One student took the initiative to use the software communication tool GroupMe, which is popular amongst UTC students for facilitating group work on class projects, to set up a discussion forum amongst the members. While the GroupMe app is popular and commonly used, it is not governed by UTC and is not part of the suite of approved software used for classes; rather, it is social media used for informal communication. Initially, the library interacted with the students using the app but discontinued that practice when the discussions happened outside of business hours and were unrelated to library board matters. After a couple of weeks, the library left the student members to informally communicate with each other as they chose since GroupMe participation was not required as part of the library’s expectations for board members.

Additionally, several board members expressed interest in starting a book club specifically for board members. While the library was supportive of this idea, it was made clear to the members that this would be a personal club that the students would manage themselves as there were no book club expectations or obligations for board members. Students were advised...
that all necessary tools (Zoom, Google, Doodle, etc.) were readily available to them for free or as part of their student status and were encouraged to organize their desired book club. Though students were assured that they had the right, opportunity, and tools to start their book club, none took advantage of the opportunity and the club was never realized. Despite their yearning for personal interactions and the chance to develop friendships, the students declined to participate in a book club or any other type of meeting outside of the formal board meetings. Since forging personal connections with other students is one of the stated aims of many students who joined the board, it will be interesting to discover whether meeting in person engenders those relationships in a better way than online meetings; this is part of the test that we are conducting in the second year of convening a student advisory board.

Member Contributions

Getting actionable feedback proved more challenging than expected. As noted above, 39 students served on our board members and three board meeting were held, but attendance dwindled each meeting. While it was wonderful to have that many students express a desire to help the library, only a small fraction of those students actively participated in board meetings. During meetings, many board members would remain silent, or would share only when presented a limited menu of possible responses. There are many possible explanations for the limited engagement, and it is unclear which explanation(s) had the strongest impact. This will be an ongoing area of development and testing.

Refinements and Revisions

In the fall semester of the 2021-2022 academic year, the UTC Library began organizing its second student’s library advisory board. As the advisory board is an ongoing program and will continually adapt to meet the needs of its student members, there will be many refinements and revisions over time. Following is an initial list of changes implemented during the second year.

Narrowing the Scope

Many board members were thrilled to have someone from the university asking for their opinion, and they shared feedback about all areas of their academic experience. While it was gratifying and illuminating to hear about the overall campus experiences, much of the feedback was related to aspects firmly outside of the library’s scope such as specific professor’s classroom techniques, dorm living, the campus costs, etc. During the second year, board conversations will be redirected to library-related topics as necessary.

Application Process

In the second year of assembling an advisory board, a formal application process was developed. By requiring a completed application form (Appendix B2), we are aiming to convene a representative sample of the UTC student community. Specific questions were asked (Appendix D) to determine to which of the popular learning communities the prospective board members belonged; applicants were chosen from each community to bring a variety of perspectives to the board meeting discussions.

As well, applicants for the 2021-2022 board were asked to state why they wanted to join. The purpose of this information was to invite members who had input and feedback to share with us and each other. While many applicants expressed good feelings about the library, the applicants who were invited to join had expressed a desire to help adjust and change the library’s operations. In this way, we are hoping to garner feedback for the questions that we pose as well as to gain insight into student perspectives about which we may not have known to ask.

Limit the number of participants

In the second year, the number of students appointed to the advisory board was intentionally reduced because too large of a group can be intimidating for some student attendees. To test this, we have substantially reduced the number of board members invited to join the second board in 2021-2022; only 14 of the 27 applicants were invited. Fourteen is still a large number of people, but from past experience we know that some of the students will not attend as promised.
In our second convening of an advisory board, we had two former board members apply to be on the board for a second term. One was a highly engaged, non-traditional student who had kept in regular contact after the dissolution of the 2020-2021 board. As we purposefully limited the number of board members during the second year, we declined his application to be on the board. The second student who applied for a second term was more of a surprise; this student was not particularly active in the first year of board membership and it will be interesting to see whether this student is more engaged in the second term, especially as we are meeting in-person as compared to online in the first term.

To date, we have hosted one board meeting of the 2021-2022 academic year; 5 students attended out of the 11 who indicated that they were available. This meeting took place on the Friday prior to a campus-wide long weekend break from classes, which likely impacted attendance. The 5 students who attended were all forthcoming with feedback and the conversation was engaging and illuminating. We will continue to invite the full board roster of 14 students to future meetings and we will pay close attention to whether, and in which ways, the size of the group affects the level of interactions.

**Meeting Modality**

In the Spring 2020 semester, the only feasible option for meeting was via Zoom, UTC’s designated and licensed option for online meetings. There were benefits to using Zoom because of its helpful tools, including closed captions, the option to use text chat to provide input, the ease of transcription using captions and saving chats, producing meeting recordings, and using polls and reactions to facilitate member engagement throughout the meeting.

As we are now able to meet in person since campus activities have resumed this academic year, we are now meeting exclusively in person. We will gather feedback from students over the year to ascertain whether this meeting modality is preferred to an online meeting. Over time, we may find a balance of online and in-person meetings works well, but we are committed to being flexible to best meet the needs of the current board members at any given time.

An immediate benefit of meeting in person is the ability to provide food and beverages for board members during the meeting. From the initial meeting, we found that all students took advantage of this benefit and were very appreciative. As well, it seemed to foster a welcoming environment as we observed members immediately chatting informally with each other upon entering the meeting room. This is a benefit over the Zoom meetings as there were limited informal discussions between members during those; since there are a limited number of meetings to compare and a variety of contributing factors, this should not be interpreted as a conclusive analysis of the different modalities.

**Meeting Scheduling**

Another meeting change in the second year is that we no longer set specific dates and times in advance of assembling the board. During the first year, meeting dates were set prior to soliciting members (Appendix B1).

For the second year, the library indicated in the solicitation of members that the board would meet at least twice each semester (Appendix B2). However, the specific dates and times were left to be determined based on the student board members’ availability. Once the students were appointed to the board, the library utilized a Doodle poll to determine what the best date and time was for those specific students.

In doing so, the library reversed its initial approach; rather than finding students who were available for specific dates and times, we found a diverse group of students and then determined timing using their specific availability. This has been a helpful refinement; however, it is imperative to provide enough advance planning time to incorporate everyone’s schedules. For our first meeting of this current year, there was not any one timeslot that worked for all members; the best option was on a day and time where only 11 of the 14 members were available. By providing more than a week’s notice for the next meeting, we hope to find a time that will work for all 14 board members’ schedules.

**Benefits and Motivation**

In the second year of the board, the library adjusted the benefits offered to student members. Due to the constraints of the experiential learning ThinkAchieve program, we were unable to offer it in the second year because we were limiting the number of participants; if a program is not open for all students to attend, experiential learning credit is not offered. This is a
great opportunity to test whether that benefit was meaningful to prospective board members. With an initial crop of 27 students who applied within 48 hours of the initial solicitation, the appeal does not seem dependent on extra credit.

When asked for their motivation on the application form, most prospective members explicitly stated altruistic motivations related to helping the library. As well, several prospective members noted as a motivator the opportunity to meet others and be involved with campus beyond their own classes. Over the coming meetings, we will attempt to ascertain the driving force behind continued attendance and will determine which of the members are involved in the campus-wide experiential learning program.

Changing the Acronym

There are many terms used to denote a group of students providing input and feedback to academic libraries; the most common include library advisory board, student library advisory board, library council, advisory council, and student library advisory team.

Initially, the UTC Library referred to the group as “Library Advisory Board”, or “LAB”. However, we have now refined the name to highlight that it is student-comprised, by referring to it as the “Student Library Advisory Board” or “SLAB”. The identifying mark, or logo, has been updated to reflect the change and is used on all promotional materials including the webpage.

This also leaves room to develop additional advisory boards with other campus populations, including a Student Worker Advisory Board (SWAB) or Faculty Library Advisory Board (FLAB). As these acronyms are – at best – blunt, the library avoids using the acronym on public-facing materials.

The Future of the Student Library Advisory Board

By design, the advisory board will continually evolve to best meet the current needs of the UTC Library and to fit the preferences of the current board members. As with most programs, we will endeavor to find the most productive, efficient, and successful operations; with those as a starting point, we will refine the board activities as needed.

This year, members will serve for two consecutive semesters and the library will analyze whether this is an appropriate length of time. We will remain open to the idea of having shorter or longer tenures, and whether recurring membership adds value to the board and is a benefit for the student member. Another area of focus will be seeking additional methodologies to obtain actionable and meaningful student feedback.

In general, we will remain flexible to adapt as needed both short-term based on the current board’s needs within an academic year and long-term over time to incorporate best practices. Student feedback and input is invaluable, and the UTC Library is committed to incorporating it into all library operations.

Current information about the Student’s Library Advisory Board is available on the UTC Library’s website at https://www.utc.edu/students-library-advisory-board.

Appendix A

These selected resources from our literature review conducted in the summer of 2020 were particularly helpful in guiding our creation of the UTC Library’s Student Library Advisory Board:


Additionally, we reviewed a large number of academic libraries' own webpages. There are dozens of websites featuring invaluable information and some of particular guidance to the UTC Library are:

- University of Southern Maine Libraries: https://libguides.usm.maine.edu/USM-SLAB
- Glendale Community College Libraries: https://lib.gccaz.edu/students/slab/
- Columbia University Libraries: https://library.columbia.edu/about/student_advisory_committee.html
- University of North Carolina at Chapel Hill University Libraries: https://library.unc.edu/about/slab/
- St. Ignatius College Preparatory: https://www.siprep.org/si-academics/library/library-advisoryboard
- Carleton University’s MacOdrum Library: https://library.carleton.ca/about/student-libraryadvisory-committee
- The Library at UC San Diego: https://library.ucsd.edu/about/library-student-advisorycouncil.html

### Appendix B

The UTC Library deeply values input from students about what services, materials, spaces, and programs you want from the Library. We’re thrilled to announce a new way for you to help make the Library even better: you are invited to join the Library Advisory Board!

The Library Advisory Board gives students an active voice in library-related issues on campus. The Library Advisory Board is a forum for information exchange between students and the UTC Library with a shared goal of supporting the success of UTC’s diverse student community.

All students are welcome to join, as we want to make sure that the Library is meeting everyone’s needs. Your input will help make the Library better, which will benefit you throughout your studies at UTC and as an Alumnus. As well, we hope this experience can provide you a good introduction to serving as member of a Board and how professional Board meetings are run, which could help you in your future.

Some FAQs:
- Meetings will be held monthly on Zoom throughout the Spring semester: February 4th, March 4th, and April 1st. All meetings run from 12:30 – 1:30pm.
- You can attend any meetings that fit your schedule, you are NOT obligated to attend all three. However, if you do attend all three, you will receive a certificate from the Library that you can reference on your resume when applying for jobs.
- As a bonus for attending any board meeting, you will receive ThinkAchieve credit! And a small Library keepsake as a thank-you for your time!

If you’re interested, please provide your info here and we’ll send you more information and the meeting Zoom link.

If you have any questions, please use the form above or email Chantelle-Swaren@utc.edu.

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Figure 1. A screenshot of the email invitation sent to all UTC students to join the 2020-2021 Student Library Advisory Board

Figure 2. A screenshot of the email invitation sent to all UTC students to apply to join the 2021-2022 Student Library Advisory Board
Thanks so much for expressing interest in making the UTC Library even better!

Please share your contact info and general information in the fields below. Filling this out does NOT obligate you to participate in the Library Advisory Board, but it will ensure that you receive an invitation to the meetings.

Thanks again! We’re excited to hear your thoughts about the Library!

* First Name (your preferred first name):

Last Name

Your Preferred Pronouns

* Your UTC ID:

* Your Preferred Email Address (Work email or another that you check frequently)

What’s your current status at UTC?

- [ ] Freshman
- [ ] Sophomore
- [ ] Junior
- [ ] Senior
- [ ] Graduate Student
- [ ] Alumna

Your current or anticipated major (If you already know, no problem if you don’t):

Figure 1. The survey that interested UTC students filled out to join the 2020-2021 Library Advisory Board

Appendix D
Figure 1. A screenshot of the linked application UTC students used to apply for the 2020-2021 Library Advisory Board.

References


Introduction
The foremost aim of Teesside University’s ‘Future Facing Learning’ strategy is the digital empowerment of students. One element of this approach is the operation of a scheme ‘Teesside Advance’, which provides all new full-time undergraduate students with an Apple iPad, the Future Facing Learning toolkit, a keyboard case and up to £300 of learning resources. In the first two years of the scheme, learning resources were ring-fenced to books from reading lists, and students are allocated £100 each academic year to spend at the John Smiths (JS) online store. In the third year, the scheme was extended to include other resources to further support students studying at home during the pandemic. Other resources included art supplies, stationery, various ICT equipment and mobile data including wifi hotspot devices. Mobile data was especially important to help with the issue of data poverty. As Teesside University is located in an area of socio-economic deprivation, and the majority of students are local, this was a real issue (Milan and Trere, 2020), which had an impact upon learning during the pandemic.

“The mobile data top-up has taken a strain off my mind—especially having all of the family at home. Having my own internet access means I can access my classes without any worry” (Paramedic Practice student. JS report, 2021).

The JS bookstore highlighted titles from Teesside University reading lists, with the Library providing the data from the Reading Lists Online system. Academics were also asked to create course level ‘book-bundles’ to the approximate value of £100 to aid student selection of titles.

The focus of the purchasing policy of the university Library has been on providing access to all reading list books in electronic and printed formats, e-journals and other electronic information sources.

At the start of the pandemic, purchasing policies were adjusted to ease electronic access and e-book licences increased in instances where single user licences were in place. Digitisation services of print-only sources were extended to students as well as staff, although take up was relatively low.

This paper discusses an evaluation of the books element of the Teesside University Advance scheme. There were two evaluation projects conducted in 2019 and 2020 and although both projects had the same research design, significant modifications had to be made to the year 2 project because of the pandemic.

Purpose/Research Question
The overall project explored the impact of Teesside Advance upon the student’s experience and perceptions of the Library, and how this initiative has affected their overall use of learning resources for their assessed work. We are aware that students’ access information from Library e-resources and printed sources; books and other sources purchased from 2 themselves from multiple suppliers; materials from the open web; and sharing of resources within cohorts or friendship groups. It is a complex picture, and the pandemic tested the resourcefulness of students.

One of the original keys aims of the project was to evaluate the Teesside University Advance scheme against baseline data of book borrowing of reading list titles. We wanted to see if there was an effect upon borrowing of titles bought through the scheme and this may consequently affect purchasing policies. This was not possible in year 2 of the project, although we will return to this analysis.
Design, methodology or approach

Teesside University runs a Students as Researchers scheme. Participating students develop and enhance transferable skills of benefit to them in their future careers. The projects to be discussed are two from the SAR scheme, with the same research aim and design. Student researchers in both projects were first year undergraduates: the first from English Studies and the second from Law and Business Management.

There were qualitative and quantitative strands to both of the projects.

The quantitative strand analysed data from library systems and data provided by JS. For Year 1 of the project, Excel analysis of book borrowing data and book purchasing patterns via the Teesside University Advance scheme was conducted. This was not possible in Year 2 of the project because of the withdrawal of the software used (Google Fusion). While we would still like to perform this analysis, other priorities emerged in the light of the pandemic. As the learning environment changed so dramatically because of lockdown measures, further research would aim to discover students coping strategies for accessing relevant academic information, given that not everything could be supplied electronically.

In both Year 1 and 2, we also conducted an online survey to students about the scheme to obtain views from as many students as possible from the eligible population.

The qualitative strand enabled an insight into student selection of titles to purchase; and expectations of the university library for supply of reading list titles. The method used was one-to-one interviews conducted by the student researchers, mostly in person, and in Year 2, some via e-mail. The student researchers recruited participants, aiming for representation from each of the 5 academic schools.

Analysis of the interviews was done using Grounded Theory (Glaser and Strauss, 1967). The research team discussed and agreed themes that emerged to ensure consistency.

Quantitative strand: Excel analysis in Year 1

Excel data from JS was meshed together with Talis decisions reports about book borrowing and reading list occurrence, allowing analysis of how library borrowing had been impacted by the titles students selected for purchase via JS. The impact varied for a variety of reasons, but overall:

- 31% of the book titles sold through JS were on a reading list
- 68% of all the books sold by JS were on a reading list
- 5.4% drop in traffic through the RLO website
- 7.5% decrease in borrowing of the books sold by JS
- 54% of the book titles sold by JS saw a decrease in borrowing

Survey data

The same questionnaire was used in both projects (minor changes in 2020), with the online survey designed in collaboration with JS. Links to it were posted in various student led places, such as relevant Facebook groups. In Year 1, 159 responses were gathered, with 63 responses in year 2. Response rates will have been lower in year 2, as anxiety about the pandemic was beginning to build in February and March 2020, when the survey was posted. For both years there was an even distribution of responses across all Schools.

Questions were asked about feelings in relation to the overall scheme, and about the range and availability of Library stock and whether students had borrowed from the Library or not. Students were positive about the scheme. Headlines from the survey data are:
In 2019, 70% of survey respondents had borrowed from the University library. This increased to 75% in 2020.

87% of survey respondents awarded the range of printed books in the library a 4 or 5 star rating in 2019, and in 2020 was 83%.

In 2020, we asked about the range and availability of e-books, with 77% awarding a 4 or 5 star rating. An open question followed the initial question. Both positive and negative responses were received, one comment pointing to the lack of awareness of e-books: “E-books should be advertised more widely as many students are completely unaware that you can download some books”.

Another respondent felt the range should be increased: “...There could be more because when I am off-campus like the coronavirus there’s not much to read”, while others felt the restrictive options for the number of days a book could be downloaded for were problematic: “When I have tried to borrow e-books from the Library, it appears that they are only available for a loan of 4 days. This is ridiculous”. The variety and complexity of e-book models can easily lead to misunderstandings of how they operate and in challenging times, clear communication to library users about how to access available resources increases in importance.

Qualitative strand: Interviews

In 2019, ten face to face interviews were conducted, with eight face to face in 2020 and seven conducted via email, once lockdown had begun. Despite our ambitions of increasing the number of in-depth interviews in year two, this proved near impossible because of lockdown. We tried to address the shortfall by conducting email/Teams interviews. Participants chose the email option which meant in some cases that questions were skipped and there was not the option to ask follow up questions.

Key themes from the interviewee data from both years is discussed below

**Book bundles**

Six of the ten interviewees bought the book bundle for their course in 2019, and in 2020, six of the fifteen interviewees. Students clearly appreciated guidance on which titles to select for purchase. “I also selected the bundle because the course leaders do know the best about which books will assist me in my studies” (Participant 8, 2020).

Interviewees also talked about how resource selection was aided by library stock selection, as a quality control mechanism: “I feel as though whatever the library provides is actually good for the course” (Participant 7).

Views about the contents of the book bundles were mixed, with interviewees in both years stating that they had not used the books at all and felt that they may have rushed into selecting the bundle. “Books are awfully expensive and I bought too quickly – I wish I had waited a little before buying” (Email interviewee 1, 2020).

One of the interviewees in 2019 discussed how the composition of the bundles should also have taken into account if there were multiple copies available to borrow, as it does not make financial sense for students to use their funds to buy those titles.

However, overall, comparing the titles which accrued the most Library loans and the most purchased titles via Advance, many titles appear in both lists, showing both the overall popularity of titles (with cohort sizes being a factor) and also how students still purchase readily available, loanable titles.

**Financial considerations in source selection**

The main theme from the interview data from both years was that students are making complex decisions about which resources to use based on cost: is it more cost effective to buy a particular title because it has enduring usefulness throughout my course? Do I borrow a particular title from the Library because it is very expensive to buy? and so on.
Students are very price-savvy, and make price comparisons across book suppliers, and second-hand suppliers to get best value for money. Students may gravitate towards bookstores which provide second hand, as there will be considerable savings made: “I purchased them from Amazon and Ebay. I bought from here because …it is cheaper to buy from there because they are second hand (Participant 5, 2020).

Library borrowing as opposed to buying the title in question was chosen as an option if there was limited use to be made from the overall content of the title: “The particular texts I used, it wasn’t financially worth buying the book when I’d be only using maybe a single chapter from the book and it would be quite expensive.” (Participant 6, 2019).

Some participants discussed how in specific discipline areas the £100 allocation went further than others, and so felt the average book price should be factored in. However, this would make the scheme much more complex to administer.

Students did appreciate the fact that the allocation of funds for books was advantageous: “The whole scheme makes students feel that they have these funds there available, it’s not just them wasting their money out of their own pocket so just for these certain things where you do have to buy books and you do go through that, so yeah it’s quite good” (Participant 1, 2020).

The £100 allocation per academic year was not questioned by interviewees and does fall in line with published studies such as the Government’s Student Income and Expenditure Survey (2015) and the NUS/Unipol Accommodation Costs Survey (2018). The variation in the cost of books and course materials geographically and from one institution to another is highlighted in the survey. A Which? Survey (2018) showed that student’s book budget was typically just over £100 per academic year.

There is limited analysis of the financial demands of students who obtain books recommended on course reading lists. Typically advice is offered to students on how to reduce course materials expenditure, suggesting that students continue to feel the financial strain of accessing course books. The gap in definitive research could be attributed to the varying ways in which texts can be sourced, including increasingly well stocked and accessible academic libraries, the availability of e-literature and online bookshops offering second hand materials at reduced cost. Wider research that incorporates more in-depth questions reflecting the changing ways in which course materials are accessed would provide more authentic view of undergraduate book expenditure.

**New editions**

New editions as a theme appeared in 2019 data only. It is not clear why this theme was of less importance to 2020 interviewees, but one explanation could be the need to access any relevant materials, given the constraints of lockdown.

In 2019, interviewees discussed how they delayed committing funds as they were aware a new edition was about to be released. One interviewee discussed how their confidence in the Library having the latest editions, influenced their own purchasing decisions: “…the unreal stuff because the unreal keeps getting updated and stuff so sometimes the books are like obsolete after a few years so they said it’s a lot easier to borrow them here, which it is because ever since I started in September they’ve had like four different versions come out and it’s like yeah so you have to keep buying the books” (Participant 8, 2019).

**Reading Lists**

The composition of reading lists and their currency is a problem we struggle with in academic libraries. Some titles on reading lists may be designated as essential reading, but may not be used by students in their assessed work. In addition they may not even be referred to by academic staff in their lectures and seminars. “One thing I’ve noticed is that even though they’ve got on the recommended and essential reading lists they’re not always, how do I put it? They’re not always useful for what you actually need.” (Participant 2, 2019).

What became clear from the interviews was the importance of guidance from both academics and peers about which texts are the most useful in specific contexts. “Yes and for all modules this is very vital you do this because without this course
reading list, you can spend a lot of time deciding which books have the relevant information for your coursework” (Participant 5, 2020).

Students did seem to like to see their own tutor’s books on reading lists, allowing them to see them as experts in their academic fields: “I’ve used them loads and you get your four separate subjects for your different modules and you refer back to them all the time and I love their books because erm.. well mostly your tutors have written them so what they’re teaching you is effectively in their book which matches up.” (Participant 2, 2019).

E-books

Library usage of e-books has been steadily rising and increased considerably since the start of the pandemic. However, e-book purchases by students via Teesside Advance are still low, at a ratio of 1:25 against print book titles. Recent studies on e-book usage show that students have not universally adopted e-books because of issues such as the complexity of access models, format and some titles only being available in print format (Casselden and Pears, 2019; Vogus, 2020; Wilson 2020).

Even students who we might think would prefer e-books, such as Computing students don’t necessarily. Interviewer: “What format did you purchase the books? …an eBook or a journal or physical?”. Interviewee “For all of them physical because I prefer the feel of them. Yeah cause a lot of them I purchased I had the option to buy the eBook, but I wanted the physical version” (Computing student, Participant 3, 2020).

We also found that the format of an e-book is an issue too, with one participant only interested in Kindle versions. Interviewer: “Are you aware that e-books are available to purchase through Teesside Advance?”. Interviewee: “Yes, but not Kindle so I’m not interested” (Email Participant 1, 2020).

Collective purchases

A heart-warming feature that emerged from the 2020 data is how students pool resources, sharing books they purchased: 7 “I have made many purchases as I prefer to keep the books for my friend in the year below me so it’s like we get 2 for the price of 1 as we are on the same course but just different years groups” (Participant, 6, 2020).

Anecdotal evidence shows that students can be altruistic and share not only useful references, but texts themselves and review the titles to give fellow students a feel for what is worthwhile content.

Limitations of the studies

The study was limited by the pandemic, and further data needs to be collected, whilst other pre-existing data sets analysed fully. A major factor was that we were unable to conduct the quantitative analysis whereby meshing data on book purchases via the scheme and library borrowing, to be able to see percentage change in borrowing of the titles purchased. This was due to Google Fusion being withdrawn and a free replacement software not being available to enable the analysis to be done easily. In addition, because of the pandemic, we were unable to compare like for like borrowing.

Further qualitative data collection is needed on the effects of the pandemic on students. Students have been adversely affected from many perspectives, but in this context, access to learning resources has been very difficult, especially in subject areas with more reliance on printed sources. At Teesside University access to printed library stock varied throughout the pandemic, but was stopped completely for six months. Whilst alternative provision (a chapter scanning service) was made available, it was not well used. The SCONUL access scheme was suspended and although public libraries re-opened in advance of academic libraries, access to relevant texts was likely to be limited. The Teesside Advance scheme enabled an alternative: for students to buy books, but factors such as hidden postage costs were seen as a disadvantage.

Conclusions and application of the results
The two projects have provided some valuable insights into student choices about accessing learning resources. However, the extraordinary conditions created by the pandemic have meant that the studies do not allow us to build upon the findings in the way we might have expected. In this academic year, we are finding that undergraduate students in years two and three of their studies are lacking confidence in their academic skills and their abilities to navigate academic literature successfully. Therefore we need to work with all students to ensure they understand the information environment of the university fully; the multiple models provided by multiple publishers and aggregators of electronic information, and the realm of printed sources, often preferred as a format.

The world has changed since the inception of these projects, and so to take forward findings to date, we will need to understand how students have been affected by the limitations of the last two years and how we can improve on what went before.

References
Benefits of Remote Usability Testing

Our Experiences

Kitte Dahrén, Sarah Meier, Ingela Wahlgren

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Introduction
At our university library we have been conducting usability testing during the last couple of years. When the pandemic hit in 2020, we wanted to develop a method of remote user testing, preferably at a low cost and with minimal effort using existing tools and resources. The basis for our usability testing has always been the method described by Steve Krug in his 2010 book Rocket Surgery Made Easy. We have now adapted this method to a video conference setting, where facilitator, test participant, and observers are all in different locations. So far, we have used this method to test our discovery system and website.

The Swedish University of Agricultural Sciences (SLU) has around 4000 students and roughly the same number of employees, making it a research heavy university. Its principal sites are in Alnarp, Umeå and Uppsala, but activities are also conducted at research stations, experimental parks and educational establishments throughout Sweden. Alnarp is in the very south of the country, Umeå is in the north, and Uppsala is located a short distance north of Sweden’s capital city Stockholm. The library is organised across these three main campuses, and functions as one (1) unit, with staff working together in departments and teams regardless of location.

Purpose
The main goal with UX at the SLU University Library is to provide relevant and usable services and systems to our users, and we’ve been working strategically towards this since 2017, though a focus on user experience was emerging even before that but it depended on individuals showing an interest and taking initiative. The hub for our UX work is the internal method support team called The UX Button, staffed with three librarians. We provide support to colleagues wanting to work with UX methods in order to improve services or systems they are in charge of. The support is scalable, from just brainstorming potential UX methods to one of us being project leader. The UX Button librarians also work in other areas of the library which helps spread the UX mind-set across the organisation.

When the circumstances changed in the wake of the pandemic, we needed to find a way of continuing towards our goal. From March 2020 staff at Swedish universities mostly had to start working from home, and there was a decision made at our university that all teaching would be done remotely. The UX Button has supported colleagues wanting to do usability testing “the Krug way” for a few years before the pandemic hit, and we did not want to stop because our circumstances changed, especially considering the increased need for usable digital services when no one can visit campus to get help in person.

Methodology and approach
The initiative to do a usability test typically comes from the system management group, or alternatively, usability testing is part of a project assignment. During the pandemic we have conducted tests on our library website and on a new service that we implemented in our discovery system, where we wanted to create an easy-to-use access point for licensed databases.

The method described in Rocket Surgery Made Easy (Krug, 2010) states that a group of observers sit together in a room equipped with a large screen or projector, where they can hear the voice of and see the screen of the test participant, who is in another room with the test leader, completing the tasks mentioned above while describing their actions and thinking aloud.

Part of the reason why our library opted for usability testing as described by Steve Krug (2010) was that Anneli Friberg at Linköping University, a forerunner in UX in a Swedish library context, had adopted the method for continuous usability testing already in 2014 (Friberg, 2016).
When a decision has been made by our colleagues to carry out a usability test of a system, they usually contact the UX button for help with recruiting and setting up the tests. As prescribed by Steve Krug (2010) we recommend them to choose a problem area and formulate scenarios with tasks. Our experience is that five to six tasks are usually appropriate, as any more often gives an overwhelming amount of data.

Someone from the UX Button will book a meeting in our video conference tool Zoom with all observers and send the meeting link to the test participants. So far, there is no big difference to how we used to do tests before the pandemic, even then the observers would most often be in different locations. The biggest change for us was to have the test participant join from their home or some other location, as opposed to one of us as the test leader sitting next to them while they are performing the tasks in the test. A new concern then became to make sure the test participant was well prepared to do the test remotely, for example that they needed to make sure they were in a quiet space, using headphones with microphone and that they would need a stable Wi-Fi or broadband connection. These instructions are sent out when first recruiting so that participants will understand what they are signing up to do. This can of course also mean that we are missing out on potential test participants that might not be as comfortable with remote testing.

At the day of the test the test leader and the participant meet for a couple of minutes before the observers join in Zoom. The test leader has their sound and video on, the test participant should only have their sound on. The test leader changes the test participant's display name in Zoom, to Participant 1, 2, etc. The test leader asks the participant to share their browser and select Show small active speaker video in the video panel that appears in Zoom. The observers enter the meeting five minutes after the time given to the test participant. All this is to ensure the anonymity of the participant, which is easily achieved when the participant meets up with the test leader in one of our physical locations, but the observers are somewhere else. When we are all joining the same online meeting, we found we had to think about all these details to be able to ensure the privacy of the participant.

The test leader checks that all observers who are to be present have entered as they should before starting the test. In parallel to the Zoom meeting, the test leader and observers also have a Microsoft Teams chat channel open where any technical glitches can be announced and discussed. The observers enter the meeting with their sound and camera turned off, this needs to be set as default for the Zoom meeting by the person sending the invitation.

The test leader reads the prepared script and starts recording the test, if consent to record is given by the respondent. The test leader stops the recording between each participant. The recording is useful if any observer suddenly can’t hear, or if we wish to show other colleagues who are not observing the test what happened. They can also be used for reminding observers what happened, if there is a discussion at a later date.

During the ongoing test, the test leader publishes the questions one at a time in the chat of the Zoom meeting for all to see and asks the participant to read them aloud. This way the observers can also read the question, which is helpful if there are any sound quality issues. After the last question or task is completed, the test leader thanks the participant and asks them to leave the meeting without stopping sharing their screen, again to ensure that their face is never shown to observers.

To ensure ease of organising a test, we have documented all of the steps carefully in a cheat sheet, and we also have standardised emails for recruiting and communicating with participants.

After the test sessions, we typically do three in one morning, the observers meet to discuss what they have seen and heard. We use the online whiteboard tool Mural to list and map out the observed issues and behaviours and observers are asked to prioritise them according to what they feel are the most urgent problems to fix from the end user perspective. The issues are discussed, and if needed prioritised again, as to what we will move forward to find solutions for. All this is in line with the Steve Krug method (2010), but we have also added boxes in our Mural template to capture user behaviours that are not necessarily problems and if there are any issues that should be fixed by another team at the library.
Findings & limitations

We see several benefits with this kind of remote testing. It makes it feasible to conduct tests with participants and observers at all of our different campuses, thus helping us ensure we have a level quality of service regardless of where in the world the end user is located. Remote testing will potentially also help us recruit a more diverse group of test participants, as the pool of potential participants grows significantly when we are not bound to running the test on a specific campus.

We see it as an advantage that test participants can use their regular computer equipment and software, since this provides a realistic test setting with a more reliable result. It might also reduce stress for the respondent around using unfamiliar equipment.

A very practical benefit is improved sound quality for observers, as the test participant is also instructed to use a headset with microphone, instead of speaking out loud next to the test leader and using a table microphone.

One limitation with remote testing is that it might be more difficult to conduct a test with a visually impaired participant using a screen reader to navigate. This is however not something that we have tried so far. There might also be a limitation when recruiting participants, as maybe not all are equally comfortable with the remote setting. This effect could be mitigated by also conducting more traditional on campus testing.

Conclusions and applications of the results

We plan to continue using this method of usability testing even when meeting at our campuses is possible again, as we see several benefits with remote testing. Our university has not only its three main campuses spread out across Sweden, but also activities in many other locations throughout the country and the world, and even on a ship! Considering that our end users are spread far and wide in Sweden and the world, the advantages of remote usability testing outweigh the few downsides for us. A university having multiple campuses is not unique to our university, not in Sweden, nor in the world, so we believe many others could benefit from remote usability testing. A lesson learned is also that if there is a will there is a way. We managed to switch successfully to remote testing by taking the time to think through the necessary steps, documenting them carefully and doing trial runs in our remote test environment. We did not need to invest in special software or extra equipment, and conducting a test today does not take longer than before. Workflow changes can always feel intimidating initially, but if you focus on your purpose or your “why”, that can make it easier to see what needs doing to make the change happen. We hope that our presentation and paper might inspire others who have not already tried remote testing to do so.
References

But can it last?

How the pandemic transformed our relationship with data

Dr Frankie Wilson
Bodleian Libraries, University of Oxford

Introduction
Gathering data about its activities is not something new for the Bodleian Library at the University of Oxford - records show that it was collecting data on the number of readers in the 18th century (Killick and Wilson, 2019). This is not just a historical foible; the library has been investing time and resource in acquiring data about its operations for over 30 years. Throughout this period, such data has been submitted to the SCONUL statistical set, and included in the Library’s annual report. Under the expert auspices of the former Bodley’s Secretary, such data was even used in elegant and innovative ways (Heaney, M. 2011).

In 2013 something changed. The historic role of Bodley’s Secretary was replaced by a Head of Assessment, whose remit was to “embed a culture of assessment across the libraries”. Data was moving from an administrative specialism to a tool for decision-making at all levels throughout the libraries. At least that was the plan.

Background and Purpose
It all started well – the data gathered expanded from that required by SCONUL to reflect every aspect of the Libraries’ activities. Annual summary data was collected on the extent and use of provision, use of services, and ‘busyness’ of supporting activities. In total, there were 467 lines of data covering: collections; physical space; information skills teaching; enquiries and help; support for disabled students; document supply; online reading lists; open access research repository; digitization; specialist services supporting research (3D printing, copyright advice, restricted data use, in-depth literature searches for systematic reviews, Article Processing Charge payments); publishing; tours and events; retail; communications; public engagement; conservation, exhibitions, book moves; staff; finance.

This data was reported internally to the Libraries’ governing Board, to the Division in which the Libraries sit (Garden, Libraries and Museums) and on to the University governance committees, as well as to the academic Divisions. The data was also reported to SCONUL and the International Alliance of Research Universities library group. It was communicated in the Libraries’ Annual Report (2020) and via colourful infographics (see Figure 1), which could be used in presentations, and on social media.

The Senior Management Team received all the data annually, and were alerted to interesting trends (see Figures 2 and 3 for examples). They were encouraged and supported to use data for strategic decision-making. Service owners and Librarians-in-Charge of each of the 28 physical libraries in the Bodleian Libraries group were also trained, supported and encouraged in using the data in their native systems (i.e. the systems that generated the annual summary stats) to monitor service provision and use, and inform their operational decision-making.

Nevertheless, data continued to be treated as “the thing Frankie does” - a condiment, something served up on the side to add interest and even piquancy, not the main event.
Figure 1: Infographic of annual data for Academic Year 2018-19.

Figure 2: Trend from 2013/14 to 2018/19 in print ingest.
Then in March 2020 England went into lockdown and the Bodleian Libraries closed its doors, while vowing to “Keep Oxford reading”. A month later, the demand from the Libraries Senior Management Team for data was insatiable. In the volatile situation, with services being developed at unprecedented speed, managers needed real-time data to evaluate the impact that those new services and policies were having.

**Design and Methodology**

There was a need for the data relating to the extent, use and impact of all the ‘Keep Oxford reading’ services to be directly accessible to the Service Continuity Planning Group, which met weekly (more frequently at times of extreme volatility). This data needed to be suitable to inform decision-making, and be used in communication and advocacy. The latter was extremely important, as the standard way throughout the University of expressing what had taken place when the Bodleian Libraries shut their doors on 17 March 2020 was “The libraries are closed” – an inaccurate reflection of the situation, which needed data to refute. At this point, it was believed that lockdown would be a few weeks and then the situation would go back to normal.

There were a number of challenges in providing this data. Firstly, unknown aspects of the data:

1. Did the data actually exist? For example, the Libraries do not use an enquiries management system, and therefore there was no existing method to count the number of enquiries being received.
2. If the data did exist, where was it? For example, finding all the sources of data to answer the question “How many new e-books have been made available this week via the resource discovery system?” Involved investigations by 6 people, across 3 departments, and it was discovered that parts of this data were held in three different systems.

3. What was the definition of the data; and did it match the definition of what data was needed? The Libraries are early in the process of implementing Data Governance, and very few data sets had documented definitions.

4. What was the format of the data? Was it available as a CSV export from a system? A manual CSV download from a web interface? A manually created Excel file? A JSON file? Just on a web reporting interface? In an email? Written on a bit of paper?

Secondly, even when all these aspects were known, as the data was used in the annual statistics, the systems set up to report and collate it were based on an annual reporting cycle, not daily updates. Therefore, most of them were manual (as it only needed to be done once a year).

The solution was an entirely manual process of extracting, cleaning and transforming the data and presenting it via a Tableau dashboard. The data was presented with a daily interval, updated weekly as the process took 15 person-hours each week. This solution was developed over three iterations.

**Iteration 1**
The aim of the first iteration was to gain access to the data; set up reporting to be by daily interval, reported weekly; and bring the data together in a Word document, that would be circulated via email. The process is presented below, and an example of the output can be seen in Figure 4.
Iteration 2

The aim of the second iteration was to automate some aspects of the process, and publish the data via a Tableau dashboard instead of circulating a Word document. The process is presented below, and an example of the output can be seen in Figure 5.

- Receive 26 weekly emails
- Download / extract data manually from 9 systems
- Receive ad hoc emails from colleagues with feedback from users
- Update 40 Excel spreadsheets held on shared drive
- In Tableau, click ‘refresh data’ then ‘Publish dashboard’
Iteration 3

The aim of the third iteration was to create further Tableau dashboards providing greater detail. This included time series data showing progression over the course of the lockdown; data by physical library; and feedback from students, academics and other users illustrating the impact that the provision of the services and the efforts of Libraries’ staff were having. Examples of the output can be seen in Figures 6, 7 and 8.
Figure 6: LiveChat data illustrating time series

Figure 7: Deliveries from Book Storage Facility, illustrating library-specific data

Figure 8: Feedback illustrating the impact of the Bodleian Libraries’ efforts to ‘Keep Oxford reading’
Findings and Actions

As weeks extended to months, the evolving situation meant that additional services were launched to ‘Keep Oxford reading’, all of which needed to be monitored using data, and so the amount of data needing to be reported increased.

The ‘Keep Oxford reading’ services were:

- **E-books**
  - Already purchased/subscribed
  - Purchased with additional funds
  - Temporarily made freely available by publishers
  - Free

- **E-journals**
  - Subscribed
  - Temporarily made freely available by publishers

- **Other electronic resources**
  - Temporarily made freely available by publishers
  - Hathi Trust ETAS

- **Document supply**
  - Scan & Deliver
    - OffsiteScan (existing service but now free)
    - LibraryScan (new service)
    - Special Collections non-photographic scan (new service)
  - Inter-library loans

- **Online reading lists**
  - Lists provided
  - Scans provided

- **Resource discovery interface use**

- **Research repository deposits**

- **Digitized images of special collection items made publically available via Digital Bodleian**

- **Information skills teaching**

- **Volume of enquiries**

- **Website use**

- **LibGuides use**

- **Social media engagement**

- **Physical lending**
  - On loan at closure of buildings
    - Unreturned by now ex-students
  - Click & Collect (new service)
  - New loans

- **Deliveries from Book Storage Facility (offsite store)**

- **Study spaces**
  - Seats
  - Session-seats
  - Bookings
o Attendance (no shows)

By November 2020 there were 32 indicators, based on data from 22 different systems, taking 30 person-hours each week to extract, clean, transform and load. And the Bodleian Libraries Assessment Team (1.5FTE) were completely burnt out. The frequency was reduced to monthly (to support advocacy) and although there was still demand for weekly updates, it was accepted by the Senior Management Team that it was not reasonably possible with the current resource.

Nevertheless, it had achieved the desired impact. The presentation of timely, relevant, detailed data had normalised data-informed decision-making across all the Senior Management Team. And the evidence-supported advocacy worked – the narrative changed from “The Libraries are closed” to “The Libraries are keeping Oxford reading via online and low contact services”. The impact vignettes demonstrated the reliance on the Libraries by students and researchers from all disciplines. And the proof of demand for study space in libraries – again across all disciplines – dissolved previous long-held assertions that “libraries are only used by humanities students”.

Then, as quickly as it arose, management interest in the data faded. As the choppy waters of volatility, uncertainty, complexity and ambiguity calmed in summer 2021, so the life-raft that data provided was no longer clung to.

Conclusions and Next Steps

What is left are the foundations that will support managers in using data to inform decision-making in the future. There is now the technical knowledge and understanding about what is required to automatically extract data overnight from the 22 native systems, clean it, transform it, and present it on a Tableau dashboard. The medium-term aim is to implement this automation in a measured way, ensuring that data governance principles are applied, dashboards are appropriately designed, the user experience is tested, and data connections are robust. This will support the termly reporting of key statistics to the various internal committees and boards, supplementary to the full set of annual statistics.

Furthermore, Senior Managers have the skills to undertake analysis of the data and elicit insights, and there is an awareness of the breadth and depth of data available. Use of data for advocacy has been normalised.

However, there are negatives to the success of the endeavour: the herculean effort by the two-person Assessment Team to produce the weekly updates hid the complexity and resource requirements of data acquisition, cleaning and presentation. In addition, every time one piece of data was incorporated into the dashboard, it immediately created a demand for “more” – more detail, more coverage, more analysis, and providing this is not possible within existing resources.

The challenge remains how to embed the use of data in day-to-day decision-making, not just in times of crisis. Adoption of data-informed decision-making needs to take place in more areas, and with that comes an expectation for timely data to support that decision-making. Data Governance is required to ensure the nature of the data being used is widely understood. There needs to be a focus on improving data literacy, to ensure the data provided is used appropriately. And finally, data wrangling needs to be appropriately resourced and recognised as a specialist skillset.

References


Charting the Change

Analysing How Online Delivery Made A Difference to Who Is Accessing Academic Skills Programmes

Elaine Sykes and Louise Makin

Liverpool John Moores University

Introduction

This lightning talk will discuss the preliminary findings of a project analysing how online delivery changed the demographics of who was attending sessions as part of the Skills programme at Liverpool John Moores University (LJMU).

LJMU is a thriving teaching led institution, in the middle of a busy city with over 25,000 staff and students. The institution’s Library Services provides a complete infrastructure for the institution’s teaching and research activities, including provision of spaces, instruction/guidance and learning resources.

In 2017, Library Services brought the university’s skills team under its umbrella and plans began to be developed for an overarching Skills@LJMU offer. The idea behind this was to create a central, recognisable brand encompassing elements of academic skills, English for Academic purposes and maths, statistics and IT skills as well as the information skills teaching as delivered by the liaison librarians. The programme delivered under the banner of Skills@LJMU is generic and is intended to complement the subject specific, in curricula programmes offered by each of the constituent parts. This programme is further enhanced by Ask Us Anything sessions where students can get guidance on a range of queries both online and face to face from staff from all the teams that are part of the Skills@LJMU sessions. This is in addition to other interactions offered by both teams, such as one-to-one appointments and support offered via our online skills courses which are hosted on the institutional Virtual Learning Environment (VLE). The Skills@LJMU programme is managed by the Academic Achievement Manager and supported by the Academic Engagement Manager.

In March 2020, the Covid-19 pandemic broke out and the UK entered its first national lockdown. As a result, all the Skills@LJMU offer had to be adapted quickly to be delivered online, via Zoom.

Purpose/Research Question

The purpose of this study was to better understand how the sudden shift to online delivery affected demand for services, including whether the demographics of who was attending had changed.

It should be noted that due to the sudden shift to online delivery caused by the pandemic, this information was required quickly in order to provide managers with rapid information with which to evaluate how well the online offer was meeting student needs. This was a key factor in designing the approach.

Design, methodology or approach

To answer this research question, firstly it was important to identify relevant data sources. The first and most obvious source was attendance data. Even prior to the pandemic, some facilitators kept registers of attendees at Skills sessions which were maintained in a central database by the Skills administrator. This continued even when sessions moved online. This data included the student number, faculty, school and level for each student and was checked for quality by the Skills administrator.

In addition, data regarding usage of the VLE was also available through the Canvas platform and used as a second source of activity data. Some manual data cleaning was required to ensure that the VLE data was in a similar format to the attendance data, and the Skills administrator had to use a bespoke online tool to ensure that the student number, school, faculty and level for each student was being kept.
A final data source used a second in-house tool developed by Academic Registry. This allows users to enter a series of student numbers and receive back aggregated data on sensitive demographic data such as gender, age, ethnicity etc. This has the advantage that it does not disclose sensitive personal information at an individual level, thus conforming to General Data Protection Regulations (GDPR).

Next the method of analysis was considered. It was agreed that a dashboard be created in Microsoft Power BI data visualisation software. Library Services is increasingly using data visualisation software to create dashboards to deliver up to date, accurate and interactive information to inform their decision making. (NB You can read more about the LJMU Library Services approach to designing dashboards in the session; ‘Knowledge is PowerBI’ also included in these conference proceedings.)

Taking the research question outlined above, the design of the dashboards concentrated on two main groups of analyses. The first compared the 2020-21 data with the 2019-20 patterns of usage. These analyses concentrated particularly on Semester 1 (Sep-Dec) as it was a good comparison of pre and post pandemic behaviours.

The second set of analyses focused on differences between the different interaction types; central teaching programme, embedded sessions, one-to-one sessions and feedforward and whether certain schools/demographic had different preferences for different sessions.

The report was designed in draft and then several managers were consulted for feedback.

**Findings & limitations (as applicable)**

**Findings**

Comparing the usage data for Semester 1 both pre-pandemic and during, showed some interesting findings;

- Although there were fewer embedded sessions, attendance at Central Teaching Programme sessions increased by over 250%.
- The increase in demand was mainly driven by Level 4 and Level 7 students.

The reasons for this increase were not proven, although it was hypothesised that students turned to Skills for help and support, when their informal support networks (e.g. their peer groups) were less available. This was in part suggested by concurrent research on enquiry types, which showed a significant increase in basic enquiries following lockdown. Again it was suggested that this increase was in part due to students not regularly seeing their peers and being able to ask them for help.

The second series of analyses compared usage by interaction type for 2020-21 academic year. This showed the following findings:

- Different Faculties had different usage patterns across the 4 different interaction types. The Faculty of Health were most likely to engage in the feed forward service. By contrast, students from the Faculty of Business and Law were the most likely to attend Central Teaching Programme events.
- Level 7 students were the most likely to attend Central Teaching Programme events.
- Level 6 students were the most likely to use the feed forward service.

The difference in usage patterns for different Faculties was a particularly interesting. This could in part be driven by the different context for different subjects. For example, the Nursing students continued with some in-person teaching even when all other teaching was delivered online. In addition, their placements continued. This may have informed their preferences for the asynchronous elements of the Skills offer (e.g. feedforward).

Finally the demographic analyses delivered the following findings:
• That male students were most likely to attend Central Teaching Programme sessions. By contrast female students were most likely to access one to one and feedforward services.

• That Students from IMD Quintile 1 and POLAR4 Quintile 1 attended IC sessions in a higher proportion than the LJMU population.

Limitations

There were several limitations to this approach.

• The reports were very much based on the data instantly available that could be quickly analysed. As a result, the reports were effectively retrofitted to suit the data.

• That findings were observational only. No attempts were made to determine causality.

• Although managers were aware of the wider university context, this was not specifically included in these reports which would have made them harder to share outside of Library Services.

• Due to timing constraints, the breakdown of schools/faculties was treated as a separate entity to the demographic data. No attempt was made to look more deeply at the demographic data within each school and faculty and cross reference the two.

• The analyses were all quantitative in nature and no corresponding qualitative analyses were carried out.

• This was such an unprecedented situation that setting the activity data in context was difficult. This meant it was difficult to share the reports with other stakeholders from outside of the libraries.

• Significant manual data cleaning and restructuring was required which demanded significant staff resource, particularly from the Skills Administrator and the Team Leader (Business Administration).

• That these analyses were treated separately to other library usage measures, to provide wider context.

Despite these limitations, it was agreed that this was a successful approach to better understanding the popularity of the Skills@LJMU offer and who was using it and the managers agreed that there was a desire to develop these reports more in the 2021/22 academic year.

Conclusions and how findings have been applied

This research was a preliminary study, aimed to aid managers to better understand how changing the service offer changed patterns of demand. As noted, it was designed to offer some quick insights, rather than being a longer, more considered study. This aim was achieved, although its limitations were recognised and it is intended to develop these usage reports further.

However, this project has highlighted some disparities in the approaches and methods of data collection between the Academic Achievement team and the Academic Engagement team. Whilst it was widely felt that the same groups of students were accessing support from each team, in the case of attendees at library and information skills sessions, this was anecdotal rather than being borne out by the data.

A key action going forward will include changing the data collection methods for the Academic Engagement team so that it can be treated in the same way as that from the Academic Achievement tutors. This will allow for a more accurate assessment of the demographics of those students who attend the library and information skills sessions in the programme, and identify those who engage with all parts of the programme.

From the 2021/22 academic year, usage will continue to be monitored and analysed closely, as the Skills offer begins to offer in person sessions again as well as continuing with an online offer. As a result, there is ongoing demand to have rapid information as to how the services are being used as LJMU adapts to the ‘new normal’. In addition, it is recognised that the current student cohorts have all experienced significant disruption to their educations, therefore it is hypothesised that there...
will be high demand for skills sessions. Managers want to monitor demand closely in order to provide the most tailored service offer possible.

In particular, we look forward to analysing the demographics of attendees to the in person and the online skills offer to see whether there are any significant differences between who is attending the two types of sessions.

In addition, as noted in the limitations, the analyses were based purely on analysing the demographics of student attendees. There is an ambition within the service to conduct a deeper and more thorough research study in order to try and articulate the impact that Skills@LJMU has on key metrics such as progression and retention.

This project is still in the scoping stage but it will be carried out in conjunction with colleagues in the Teaching and Learning Academy. Given its high dependency on using student data, it will need to follow the full LJMU research approval process, including ethical approval, and permission to use other university data sets (e.g. retention data) will be required. It is hoped that it will show that attending Skills@LJMU sessions has a positive impact on both progression and retention.
1. Introduction
At the start of Lancaster University’s Research Intelligence journey in early 2019, one of the initial requests for support was informing the current practice of using citation metrics as institutional level strategic key performance indicators. This area of service delivery was not a one-shot piece of advice, and has grown over the 2 years. This paper details an updated version of the scoping work that was completed and the view of the landscape in this area that this provides, as well as recommendations offered upwards at Lancaster University and the workflow that developed as a result. It serves as acknowledgement that librarians can have valuable input at the institution wide strategic level.

The Benefits and Limitations of Using Citation Metrics as KPIs

Benefits
- A clear understandable relatively simple measure
- Researchers focus on citation metrics for many positive reasons e.g. promotions, supporting collaboration, increasing visibility
- Supports world rankings position, with all the benefits that an increase in ranking brings
- Acknowledgement of the reality of the research environment

Limitations
- Over simplification of a complex research process
- Not indicative of research quality, only impact or visibility
- Implies an available precision that is false
- One citation metric not advised due to caveats present in every metric, more than one increases workload and complexity of KPI system

The Lancaster University Context
Lancaster University Library’s Research Intelligence service was created in 2019 with a 0.5 FTE appointment and has gone from strength to strength, allowing opportunity to collect a staff award for data cleaning that led to an improvement in rankings, and development that has achieved creation of a 1.0 FTE higher graded post. This was accomplished through developing visibility and influence in a number of ways, including conversations with interested academics on service design, advocacy at key committee meetings and high profile supportive work, such as providing citation reports to use with REF environment statements.

Lancaster University, up until very recently, used citation metrics as a key performance indicator (KPI) for research, first appearing in the strategic refresh in 2017. This document details the target as being an overall FWCI of 1.94 and “50th Global,” which refers to a set of 200 chosen institutions and Lancaster’s rank (when ordered by FWCI) within them. The comparator institutions were chosen from the THE rankings, using the top 200 worldwide. Updates on progress towards these targets were given every year by the Planning and Analytics Department.
This approach is currently being phased out and a new and improved KPI and reporting workflow is currently in development, which is not finalised. However, the above was the state of play at the start of the library’s involvement in this area.

The Benefits and Limitations of This Approach

Benefits

- One simple clear cross disciplinary citation metric
- Simultaneously, uses “50th Global” to give a different perspective on this metric
- Suitable for the institution, it’s strengths, culture and goals
- Supports the institution’s efforts to increase world rankings

Limitations

- Only one citation metric is used, which is widely understood to be bad practice
- FWCI can be skewed for lower numbers of documents and biased against multidisciplinary research
- Used as a proxy for research quality with no statement on it’s differentiation as being concerned with visibility
- Includes 1 decimal places, perpetuates false precision

Literature Review

The available literature on the suitability of various citations metrics for the assessment of research quality is vast, and many of the benefits and limitations are widely understood. However, in this specific context, at a strategic level blanket key performance indicator, there is very little available.

If the lens is shifted slightly to look at the motivations behind this practice at Lancaster, which is to increase the institution’s position in world rankings, then there is some specific advice available. Consider this recent blog post: Gadd, 2021, Love DORA Hate Rankings?, London School of Economics which, while it makes a recommendation that universities should avoid setting KPIs based on global university rankings, also states, “…the rankings are so heavily used by those outside of universities that not to participate would amount to financial and reputational suicide.”

This is the conundrum that Lancaster University finds itself in, while acknowledging that this is far from best practice, there is no other choice than to participate. Lancaster has chosen to make this quite explicit, which in itself has some merits in terms of transparency. The cited blog posts states that it would be a very brave position to carry out some of the recommendations, which include not engaging with rankings, and it is likely that the strategic view doesn’t put Lancaster in a position to step out in this way.

This has been the case for some time, as Hazelkorn (2008) states, an institution, “…need[s] to pay attention to… rankings ‘whether it likes it or not.’ “ There are harsh consequences for being less favourably ranked, those mentioned by Hazelkorn include being viewed less favourably by funders, increased risk of merging with another higher ranked institution, negative publicity, wasting time on damage limitation, and increased spending on marketing. This would impact many areas of an institution, particularly the financial consequences, echoing Gadd’s quote above of financial suicide.

Vernon, 2018, emphasises ranking system’s usefulness for marketing purposes, while simultaneously showing that, “No single ranking system provides a comprehensive evaluation of research and academic quality.”

This is the crux of the problem – the importance of marketing to an institution’s success cannot be ignored, while most system’s methodologies are inadequate for making any conclusion about research quality. A KPI focused on citation metrics designed to support success in world rankings could be said to show, “How does our research look in the eyes the world?” rather than, “How good is our research?” This type of reputation management is essential.
Dimzov et al, 2021, detail the importance of librarians involvement in strategic efforts to increase rankings positions, “The efforts by the librarians of the University of Split who added additional affiliation name variants manually have led to an increase in the number of papers attributed to institutions in our sample. We believe this, among other factors, influenced the international ranking of the University of Split.” We would echo this at Lancaster, where we have found our data cleaning efforts have contributed to a rise in THE WUS from 146 in 2019, to 122 in 2022.

2. Research Question

It was necessary, in the absence of literature and frameworks to inform, to take a look at what other institutions were doing in this area in a systematic fashion. Do other institutions have citation metrics as a KPI? To fully answer this question, this was broken down further:

1. Does the institution share their KPIs?
2. Does a citation metric appears as a KPI?
3. What metric and target has been chosen?
4. Any available justification for choosing that?
5. If there is no citation as KPI, what are the related KPIs?
6. Any available justification for choosing those related KPIs?

3. Methodology

Comparison with Other Institution’s Approaches

To narrow down the number of institutions to read the strategic plans of, a list of ‘key comparators’ was devised. This is based on other benchmarking work the Research Intelligence service has completed and encompasses groups that Lancaster University appears in, namely the N8 Research Partnership and Ulrichsen Cluster X, as well as additional ‘frequently requested’ comparator institutions that aren’t present in these lists. Also checked were the Russell Group’s strategic plans, and a general call out was made across various networks to try and catch any other good examples. This gave 41 institutions to look at, listed in Table 1:

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Table 1: Comparator Institutions Chosen

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<td>University of Warwick</td>
</tr>
<tr>
<td>University of York</td>
</tr>
</tbody>
</table>

Information was gathered from public facing web pages. To be clear, this was completed recently in order to inform conference delegates, and the initial scoping work at the beginning of the Research Intelligence service 2 years ago comprised of just focusing on a general call out and examining methodologies of rankings systems.

While strategic plans were very prominent, in some cases it wasn’t simple to search for the KPIs that supported it, and it’s possible that where a return of, “No,” for Question 1 appears, this is because the relevant information couldn’t be found, rather than it wasn’t there. Otherwise, out of scope were citation based KPIs designed at the faculty or school level, those measuring specific initiatives such as sustainability or inclusion, and annual reports that featured citation metrics but without a target, all of which were found in some cases. Just KPIs that supported the institution wide strategic plan were included, which gave a total of 10 universities that had data available in this area.

4. Findings

Universities with Citation Metrics as a strategic level KPI

Three other institutions from the sample were found to have a citation metric as a strategic level key performance indicator with the details of these published online in a similar manner to Lancaster University. The details of what metric has been chosen, along with a quote taken from the plan that gives a glimpse of some of the overarching justification for choosing this particular indicator, are below.
Durham University

Target: Citations per academic staff member need to be top three in the UK by 2027.

Justification: “Deliver a critical mass of world-leading research across all academic departments.”

University of Essex

Target: To be ranked in the top 40 of UK institutions for citations per publication by 2022; and in the top 25 of UK institutions for citations per publication by 2025.

Justification: “In 2025, we will be recognised nationally and globally for the international excellence and world-leading quality, scale and impact of our research.”

University of Liverpool

Target: Achieve top quartile positions in all our units in terms of proportion of world-leading outputs by the end of the next two REF cycles.

Justification: “We will be recognised as a leading research intensive University, with global knowledge leadership… and a national and international profile for our leading research areas.”

Two further institutions state they will use citations but don’t make the details available.

University of Birmingham

Mentions 'step change in citations' but no target available

University of Leeds

States that there will be a citations based bibliometric target that will be confirmed later

Universities with Citation-Related Metrics as a strategic level KPI
Both the University of Essex and University of Liverpool include further related metrics as below.

**University of Essex**

Target: To be ranked in the top 250 of Universities globally, as measured by the Times Higher Education (THE) World University Ranking system by 2022; and in the top 200 by 2025; and for each subject area reported to THE to be in the top 200 of their subject area by 2025.

Justification: “We are an ambitious university, committed to global excellence in research and education.”

**University of Liverpool**

Target: Increase the proportion of highly ranked subject areas and research teams, Achieving a UK top 20 worldwide ranking in a recognized international league table by 2026.

Justification: “We will raise the profile nationally and internationally of our established knowledge leadership.”

While the University of Birmingham also includes additional related metrics, and does detail these.

**University of Birmingham**

Target: Secure a top 100 position in all major international rankings.

Justification: “In 2026 the University of Birmingham will be a recognised ‘rising star’ institution.”

A further 8 institutions include details of related metrics.
University of Manchester

Target: The quality of our research will place us among the top 5 UK universities in the Research Excellence Framework 2027. We will be highly ranked in recognised international reputational league tables.

Justification: “Enhance our reputation as a member of the world’s leading group of universities by communicating the distinctive benefits we bring to the world.”

Imperial College London

Target: 50% of all publications to include international co-authorship by 2023

Justification: “Research which aims to address some of society’s most pressing global challenges.”

Newcastle University

Target: Our broad aim is to achieve a position in the global Top 100 as measured by at least one of the main university rankings.

Justification: “We aim to enhance our position as a world-leading university through education, research and engagement.”

SOAS University of London

Target: Peer-reviewed publications: (a) Total number of peer reviewed outputs; (b) Number of peer reviewed publications that are judged “world leading”

Justification: “Supports strategic aim of producing high quality research that shapes global scholarship and learning. Helps track progress towards the next REF. Tracks level of scholarly output which has been below the requirement in recent years, so preventing us being represented in Times Higher league tables.”

University of Exeter

Target: By the end of 2020, we will be recognised as a world leading university for research and will be consistently ranked within the top 15 UK Higher Education Institutions within the global league tables.

Justification: “Our ambition is to generate research power; to build up our already strong research teams by increasing their numbers and the collaborations we have with other organisations around the world.”

University of Leicester

Target: Raise our standing in national and international research rankings year on year.

Justification: “Transforming our national and international position. We deliver world-class research.”

University of Surrey

Target: Increasing our overall international reputation for research, as judged by internationally regarded benchmarks and league tables. The quality of our research outputs as judged in the University’s annual outputs review process toward a target of 35 per cent deemed 4* in the next Research Excellence Framework (REF).

Justification: “Achieve research activities that are internationally-leading.”

And finally the University of Bath mentions rankings in it’s strategic plan, but does not share details of the target.

University of Bath

Rankings mentioned, no target
5. Conclusions and Applications

Discussion

There was no evidence found of any other institution having FWCI as a strategic target. The 3 other institutions found used Citations per Author, Citations per Publication, and the third describes Citation Percentiles. Interestingly, all 4 (including Lancaster) are using different citation metrics, but are all only using 1 rather than the recommended ‘basket’ approach.

Justifications for the above all focused on being ‘world-leading’ and global recognition, echoing the literature review findings that this is mostly about marketing to the world.

Of the 11 institutions that had related metrics (2 of them were those above that also had a citation target), 9 of them mentioned rankings, with 4 of them being vaguer targets such as being ‘highly ranked’ or just wanting to improve year on year. Those 5 with a specific ranking target were almost all different, both Birmingham and Newcastle have a target of Global Top 100 in any ranking system, with the other 3 selecting Global Top 250 in THE WUR, UK Top 25 in the THE WUR, and UK Top 15 (not clear if this refers to any or every system).

Additional key performance indicators included REF outcome targets, international co-authorship targets and number of research outputs increasing.

Looking at evidence of a basket approach, although no institutions used more than one citation metric, 2 institutions used both a citation metric as a key performance indicator, and a ranking target alongside it, in a similar way that Lancaster currently does. Both Manchester and Surrey mixed REF outcomes with rankings, while SOAS included a mix of increase in scholarly output and increase of how much of that output is ‘world-leading’.

No institutions shared that they were using more than 2 citations based or bibliometric related key performance indicators.

Conclusion

Of the sample selected, a few institutions had the same approach as Lancaster and with the same motivations, and other institutions had very similar approaches. Not every UK institution was analysed, and not every institution analysed can definitely be ruled out as not using these approaches, just that they aren’t shared openly online. Therefore, it is probably a slightly more commonplace practice than these results suggest. While this is true, just 2 institutions chose the same target or metric, Birmingham and Newcastle both have a rankings target of Global Top 100 in any ranking system.

Because the main motivation, as discussed in the literature review and also seen within the justification quotes above, is about marketing and reputation on the ‘world stage’, recommendations might include interventions that support those using league tables to better understand them, alongside current efforts to promote responsible research evaluation to internal stakeholders. Those using league tables include funders, potential students and potential staff, and it is those stakeholders whose ‘rankings literacy’ might be improved.

Perhaps then the importance of rankings may decrease, and this will be reflected in a reduction of citations and rankings based KPIs institutions select as being of critical importance.

Application at Lancaster

The justification for using citation and rankings metrics as key performance indicators is mixed: there are strong external pressures that make their use worthwhile, whereas there are flaws and caveats to this approach that also provide good reasoning for not engaging.

Lancaster is currently updating it’s suite of KPIs, and will retain but improve on it’s current practice. It is likely that FWCI will be dropped and a rankings target chosen, but this is yet to be decided.
From the library’s point of view, we have improved our support of this process as a service. Our initial involvement was instigated by a single request for support from Lancaster’s Planning and Analytics department. Over the past 2 years, the expertise of librarians contributing to the Research Intelligence service was demonstrated and the service developed and grown. This has lead to increased requests for support in this area and increased trust in the advice offered.

The current reporting workflow includes providing citation reports intended to inform decisions at a strategic level and based around current FWCI interest. These are communicated through the Library Director at Research Committee meetings, which happen roughly on a quarterly basis. We are now able to add the additional detail needed that our expertise brings, including:

- highlighting which document sets are particularly small (e.g. from a small department or low indexing in databases) and therefore not at all accurate.
- the limitations of FWCI as a metric, i.e. prone to skewing, roughly defined fields, false precision.
- the suitable metrics available and the benefits of looking at a range of these.
- suggesting how altmetrics and our newly acquired Altmetric database could support.
- highlighting significant changes in the metrics reported on and interpreting these in context.
- advising on the methodologies of rankings systems and changes to how citations are used in these.

All of the above is work instigated and completed by the library, increasing nuance, richness and value to the strategic planning process. Our work at Lancaster University can function as a case study for other librarians, enabling them to also be involved in conversations and workflows at this strategic level. We would recommend a pro-active approach, through collaborating and developing partnerships with stakeholders across the wider institution, and going beyond just providing a service. This is also beyond the traditional notions of what a librarian’s role is, yet sits firmly within the skill set that librarians have.

References


Purpose/Research Question

To help us and others in the research ecosystem understand how best to support real-world decision making, along with learning at university. We asked academics, undergraduates and postgraduates if they thought real world impact is possible in traditional formats? We also asked how they learn and consume information, the challenges with current academic formats, and the best ways to use and present research outside of university.

Link to full report:

https://www.emeraldgrouppublishing.com/sites/default/files/2021-05/Closing%20the%20impact%20gap%20report_0.pdf

Design, methodology or approach

Closing the Impact Gap report is based on two surveys that took place in November and December 2020 and January 2021. The first, carried out on our behalf by OnePoll, targeted 1,000 undergraduates and postgraduates in 10 different countries. The second was a study of 1,500 academic researchers from Emerald’s Literati database, with respondents from over 100 countries worldwide.

Findings & limitations (as applicable)

We found 92% of academics present their research as journal articles, but also identified a strong need for more varied formats that appeal to different learning styles, and that are more in line with the way the world has moved on in terms of how information is consumed.

More research is needed into what specific support would help alter academics learning approaches and widen their research outputs.

Conclusions and how findings have been applied

Policy makers, funders, universities, academics, and publishers share responsibility for making research outputs fit for the future. Emerald have created a roadmap to show our commitment to drive research impact.
Creating a Local Usage Collection System: PySUSHI

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University of North Texas

Introduction
In this paper, we will discuss the design and implementation of a built-in-house usage collection system for electronic resource usage via release 4 and release 5 of the SUSHI protocol, as well as the design and integration of additional modules for the loading of manually downloaded COUNTER reports. The first part will focus on the history and development of the COUNTER standard and SUSHI protocol to motivate the design of an efficient collection mechanism, the second will outline design specifications and needs, then the third and fourth parts of the paper will focus on the design of a usage collection system for release 4 and release 5 of the SUSHI protocol, respectively. The fifth and final part of this paper will focus on the design of a cohesive system for incorporating distinct data files, or “flat files,” that have been obtained without the SUSHI protocol, into the existing usage collection system. References will be made to the design of the PySUSHI system and software library, made available by the University of North Texas Libraries (Hergert, C. and Harker, K., 2019) on Github.

History
Since the early days of electronic resource availability in libraries, librarians have sought to measure and quantify patrons’ usage of those electronic resources, similar to checkout counts for physical materials, but those electronic resources were made available through provider platforms that varied widely in implementation. As a function of these differences, the platforms’ methods of counting resource utilization varied widely as well, making the direct comparison of electronic resources from different platforms an extremely tenuous endeavour.

In 2003, Project COUNTER was formed to standardize a series of metrics, as well as the schema for a finite series of reports that compiled these metrics, for the major categories of digital resources (books, journals, and later multimedia databases). The first iteration of the COUNTER Code of Practice was issued in 2003, with wide adoption by electronic resource vendors across the industry, and then subsequent versions of the standard followed (Pesch, 2007).

The SUSHI protocol was initially released in 2007, and it defines the transmission parameters and schema for automatic transmission of COUNTER-compliant data. With the release of the third iteration of the COUNTER protocol in 2009, SUSHI availability became a requirement for a vendor to be certified as COUNTER-compliant [i]. SUSHI has gone through several methodological changes over time, and most active platforms that currently provide SUSHI access do so via the SUSHI protocols accompanying the COUNTER COP4 and COP5, commonly referred to respectively as “SUSHI 4” and “SUSHI 5”.

Design Requirements and Specifications
Several commercial providers offer subscription-based services that will make the requests to electronic resource providers, parse the server responses, and translate these responses into flat files that can easily be opened with products like Microsoft Excel, and the intent of this home-built system is to emulate the functionality of these services. To that end, the system should have four distinct necessary features, any of which another designer may choose to disregard or exclude based on their own needs: encoding request parameters and making the request to a provider’s SUSHI server, receiving and parsing the server’s response, storing that response data, and then logging a success/failure of the operation.

In the PySUSHI implementation, the Python programming language is used because of its versatile series of libraries that are available and easy to use, including the Requests, PyODBC, Pandas, and LXML libraries. These libraries provide easy HTTP requesting, tabular data manipulation, SQL database accessibility and manipulation, and XML-parsing functionalities, respectively. A SQL database is the natural selection for long-term data storage, based on the easily tabularized nature of time-series data like resource usage.
The SUSHI specifications that accompany the COUNTER COP4 is built on the WSDL SOAP messaging protocol (Pesch, 2007), meaning that the message format will be XML and the transmission will be via HTTP (Mitra and LaFon, 2007). Authentication is obtained using some combination of two login parameters obtained from the provider: the Requestor ID and the Customer ID, which some providers may refer to as a “Customer Reference”. The COUNTER COP4 includes that the IP address of the requesting computer may also be used for authentication, but that is beyond the scope of this paper except to say that this is best done via correspondence with the provider platform’s support team. The authentication parameters for the SUSHI request must be encoded into an XML tree, which will then be transmitted to the SUSHI server via an HTTP request, and the server’s response will consist of either an error/exception message or a data load consisting of the requested report in an XML format. Both responses are necessarily encoded as UTF-8.

The other required parameters for a SUSHI request the report type, start_date, and end_date. Start_date and end_date must both be formatted as “YYYY-MM-DD” and then encoded in the datetime format, with the two start_date prior to the end_date and neither date later than the current date of the request. Other request parameters are available, such as requestor_name, requestor_email, and customer_name, but these are required to be non-mandatory (NISO, 2014).

To request a COUNTER report, the five mandatory request parameters should be written as text fields to nodes titled “End”, “Begin”, “Name”, “CustomerReference”, and “ReportDefinition”. The root node of the tree should be tagged “Envelope”, with one empty child node that is tagged “ReportRequest”, which is a parent to each of the nodes housing a request parameter. This entire tree should be serialized into a string variable starting at the root node, which can then be sent to the SUSHI server’s URL as an HTTP GET or POST request. To make the SUSHI server aware of how to interpret the data in this request, the following headers should also be included with the HTTP request: the content type should be defined as “text/xml”, the charset should be defined as “UTF-8” [ii], and the provided content length should be the byte-length of the XML tree with the authentication and report date and type information.

When a response is received from the SUSHI server, it can be easily converted to a format that can be parsed using any XML-formatting software library such as the LXML library for python, which will then allow assignation of the root locations to individual variables as well as making the nodes’ metadata available via accessor methods. The COUNTER COP4 specifications require that the SUSHI server reply to the client within 120 seconds (Project COUNTER, 2014), and that a “Server Busy” exception will be returned as the response payload when the required computing will require more time. For this reason, the first check that should be run when parsing COUNTER 4 reports in SUSHI format is whether there is a node tagged “exception” or “error” that is a child of the main root node, and either of these is present then the error should be examined, and no further parsing need take place. If neither of these nodes is present, then an array of strings should be created that will house the metadata to be harvested for each resource; sample metadata by their node tags include the resource name, tagged “itemName”, the platform name tagged “ItemPlatform”, a print ISSN number tagged “Print ISSN”, etc. The complete list of these identifiers can be found in Section 3.4 of the SUSHI specifications (NISO, 2014). The server response has several layers of metadata that can be easily traversed by searching the tree for a node with the “ReportItems” tag, which should then be assigned to the root of the search tree. Each child of the new root will be a single resource, with each child of each resource node being either a month of usage or one of several metadata identifiers for that resource such as the print ISSN or DOI.
Once the response has been converted from an XML tree into a tabular format, it can be inserted into a table in the long-term storage database. For this purpose, PySUSHI is designed to house report data based on the type of report, e.g., one table for JR1 reports, one table for DB1 reports, etc.

Logging for COUNTER COP4 reports via SUSHI can achieve the goal of a pass/fail determination largely based on whether either of the exception or error field are populated, because these are both well-defined situations that almost universally indicate that the report request has failed or been queued for processing. If the goal for the application being developed is speed, then full-scope logging can be achieved with an independent logging process that takes the beginning and ending dates of the requested report, as well as the requested report type and the platform name, from the request parameters and create the log entries while the primary process is parsing the SUSHI server response.

**COUNTER COP5**

The COUNTER COP5 and the accompanying SUSHI protocol specifications were released in 2019 and are designed to streamline the process of usage-gathering by addressing the growing number of distinct reports that were added to the COP4 specification over time, as well as to update the SUSHI protocol to incorporate newer technologies (Project COUNTER, 2021). The goal of streamlining the entire protocol was achieved by doing away with the 20+ reports that were available in COP4 and replacing them with just four master reports that can be customized with a series of “attributes”, which are parameters that are URL-encoded into the HTTP request. The second goal of updating the SUSHI protocol include replacing the SOAP/XML messaging protocol with a RESTful SUSHI API that uses JSON for the messaging protocol (Project COUNTER, 2021).

Making requests to a SUSHI server is far easier in COP5, although it can also be more uncertain because more authentication parameters are permitted. The customer reference ID and requestor ID have been retained as the “customer_id” and “requestor_id”, and many providers have kept the values previously assigned to each client for these values from their COP4 SUSHI implementation when they transitioned to COP5, but the COP5 comes with the added “apiKey” authentication parameter. Not all of these authentication parameters are required for all platforms, but the parameters required for any given provider will be noted on that provider’s website where the parameter values are provided. The begin_date and end_date parameters continue to be required for every report requested, and the required format is “YYYY-MM-DD”. The report type is the final required parameter, and it is one of the four master reports ( “TR”, “DR”, “PR”, or “IR”), but the report type is included differently from the dates and authentication parameters; the report type is directly appended to the end of the SUSHI server’s endpoint address to complete the URI (COUNTER Foundation, 2021a). With the URI completed, the authentication parameters and attribute values are URL-encoded and appended to complete the URL, which is then sent to the SUSHI server via an HTTP GET request. Because no headers are required for SUSHI requests under COP5, a request URL can be composed and submitted in the URL bar of a web browser, which is very useful for testing and troubleshooting.

Because the report is encoded as JSON, it can be converted in Python to a dictionary-array structure that accurately emulates JSON hierarchy and indexability, and it does not include the envelope and extraneous metadata overhead that the XML trees in COP4 included. To begin parsing COP5 reports, the same checks for exceptions/errors need to be performed, and these have been combined into just one field called “exceptions” in COP5. The exception messages are no longer well-standardized in COP5, but the a two-part check can be done to determine a report’s suitability for parsing by checking for the presence of an exception field and checking for any usage records in the “Report_Items” sub-dictionary; if there is an exception with no usage records, then the report can be logged definitively as a failure, and if there are usage records with no exception message, then the report can be logged definitively as a success, but when both are present then some attention may be required from an operator. In PySUSHI, this situation is addressed by logging the contents of the exception message to the user’s console and continuing with the usage-gathering, allowing the operator to decide whether to remove that usage from long-term storage based on their interpretation of any data validity concerns.

The JSON tree in COP5 reports can be directly converted to a tabular format using any one of several Python libraries that serve this purpose, but this is not ideal for long-term storage of usage. A more appropriate table design is such that every row
includes usage for one unique resource-metric-month combination, for example, the *Journal of Modern Psychiatry* has a single month for all usage categorized under the unique_item_investigation metric in December of 2020. This design schema removes the issue of expanding the column set of a table, which is not optimal for time-series data collection and makes data collation difficult if a resource switches from one provider platform to another. In the PySUSHI system, one table is used for all reports of a given master report type and its derivative reports, but this causes the tables to increase in size very quickly. For designers who have greater constraints on their available storage space, this may prevent indexing on any more than a single row ID field from being viable; in this case, it is recommended that the specific reports needed be assessed, and that individual tables be created for each derivative report.

Logging successes and failures in COP5 SUSHI is more difficult than logging COP4 SUSHI because there is not a simple binary choice based on the presence of exceptions or errors, and the non-standardized exception messages in COP5 necessitate that the exception message be logged in the case that one is received. This does not preclude the possibility of pre-logging based on metadata used in the request and then populating the success/failure value when the request returns a value, but it can make the task more difficult if the size of the designated log field for potential exception messages is dynamically allocated. For this reason, if storage permits, it is ideal to statically allocate the logging table’s maximum field size to the logged message field.

**Incorporating Flat Files**

When SUSHI is not available, resource providers may still seek to offer COUNTER-compliant usage statistics as downloadable files for a requested date range, most often in a tabular file that can be easily edited in Microsoft Excel. The number of metadata header rows above the column headers in the report definitions of each COUNTER iteration are a deterministic consequence of the other specifications in each COUNTER iteration, therefore a certain number of rows must be ignored when reading in the tabular usage data from the data file [iii].

If the long-term storage database utilizes shortened identifiers for particular resource providers, such as Sierra’s platform codes, it is recommended that these be incorporated into the title of each usage file formulaically, along with the date range, because the identifier may otherwise be very difficult to match with resource names that have spelling errors or differences between the record and the value in the report. The date range is recommended to be included in the title of the report because these reports are not always encoded in standard UTF-8, and some providers have formatting artifacts from their report-generating software that will leave dates with extra characters that may not appear in spreadsheet software, e.g. the date 8/2020 may actually be encoded as “=8/2020”. These extra characters will not bother spreadsheet software, but it they will prevent correct conversion to the datetime format when parsing the report, so it is recommended to begin from the right-side of the header column and overwrite the column titles moving left with the dates in “MM/YYYY” format so that the last month is on the far right and the earlier month is on the far left.

With this formatting corrected, the tabular data imported from the data file can be modified in-memory with a SQL query [iv] that will transform the data from a horizontal structure to a vertical structure that is more appropriate to time-series data, and which will match the schema of the tables used for data acquired via SUSHI.

Logging for data files is more difficult due to the breadth of formatting issues that can arise and the lack of request metadata that benefits SUSHI request logging, but pass/fail logging can be achieved by running the entire data import in a try-pass block, where logging is contingent on whether data can be correctly imported and reformatted in-memory to match the necessary table schemas. If any step in that process fails, the default outcome is that no usage is placed in long-term storage and a failure is logged. This failure can be overwritten after the issues in the report’s formatting have been manually addressed, and when the report is successfully uploaded.

**Conclusion**

While many services are available that will request and parse usage data from a list of provider platforms, it is very possible to build software that will serve these purposes in-house, and for a considerably lower cost. Additional benefits include the
flexibility to add data analysis and transformation modules that may never be available on the commercial usage collection platforms, and the Python language offers a host of options for adding this flexibility through libraries like SciKit, Pandas, and PyODBC.

References


8. Notes


   ii. While the SUSHI documentation specifies that the encoding be UTF-8, this is a detail that does not seem to have been regularly checked when provider platforms were being audited for COUNTER compliance. Some providers have been encountered that do not correctly interpret UTF-8 request data without this being specified.

   iii. The number of ignorable metadata header rows is 7 for COUNTER COP4 and 13 for COP5, which can be observed in the report examples at https://www.projectcounter.org/code-of-practice-sections/usage-reports and https://www.projectcounter.org/code-of-practice-five-sections/4-1-usage-reports respectively.

   iv. Examples of SQL queries that will appropriately transform these horizontally-structured base reports into vertically-structured tables are available in the parsing functions at https://github.com/unt-libraries/PySUSHI/blob/master/Release%202/Counter5pybr.py
D is for Data

A Critical Interrogation of the Basic Building Blocks of Assessment

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Introduction

Data is integral to library assessment - as it is integral to libraries themselves. Data runs through all aspects of libraries - our systems, our resources and collections, and our spaces - and library staff are responsible for collecting, managing, and visualizing that data. As assessment and data practitioners, we have a dual role within these structures: the first is creating and working with data ourselves; the second is helping colleagues and administrators navigate and use the data we have available.

As assessment begins to look more critically at our methods, processes, and conclusions - what we do with data - we wanted to extend this critical inquiry to look at data itself and explore how embedded data processes can also be examined through this critical lens. Data tools and techniques have become more prevalent in academic libraries and assessment, though concerns around data have largely shown up in conversations around student privacy. We hope that this paper can begin to expand the conversation to how we collect, structure, analyze, and use data in assessment and in libraries more broadly.

Purpose

We want to start by situating ourselves in the tradition of critical data studies. Critical data studies “name[s] the types of research that interrogate all forms of potentially depoliticized data science” and the impacts that they have (Iliadis and Russo, 2). The field originally grew from concerns about the increasing prevalence of “big data” in decision making and analysis and accepts that all data, including big data, is not neutral and has biases. As a result, a critical approach to data interrogates how data can, even on small scales, impact the lives and experiences of people (including library users and staff). It emphasizes that data points are only representative of specific, curated facets of people and places and that “[n]umbers are always placeholders for something else” (Lupi) rather than whole representations in and of themselves.

And yet, despite this issue of representation, insufficient or incomplete data points are often used to make decisions on behalf of those who have shared their data. Our Data Bodies, in their Digital Defense Playbook, recognize this issue and explain it in their definition of “data body,” which are “[d]iscrete parts of our whole selves that are collected, stored in databases, the cloud, and other spaces of digitally networked flows, and used to make decisions or determinations about us. They are a manifestation of our relationships with our communities and institutions, including institutions of privilege, oppression, and domination” (Lewis et al, 19).

Institutions with power often rely on imperfect data that only represent these “[d]iscrete parts” of people to make decisions about funding, health, education, and other essential aspects of living. The data they use may misrepresent or erase key parts of people or groups, leading to decisions that, while perhaps well-intentioned, are more harmful than helpful. Libraries are not immune from this problem.

The ways in which data has been structured were largely built on Western values and systems. The metadata that structures data are shaped based on the positionality of the creator of the metadata, which leaves room for exclusivity, invisibility, whitewashing, and erasure. Abigail Echo-Hawk states that “[o]ne of the ways that there is a continuing genocide against American Indians/Alaska Natives is through data. When we are invisible in the data, we no longer exist” (Secaira).

This occurs when data, particularly racial data, are oversimplified into only a handful of single-select categories, or when gender data are forced into a binary system. Practices of data “cleaning,” “normalizing,” “wrangling,” and aggregation pull people, places, and things into higher level categories to allow for easier analysis, including machine analysis, but in doing
so erase all features of the people, places, or things that do not fit within preset data structures. Whether to eliminate personally identifiable information from being revealed in survey data or to more efficiently communicate a pre-established narrative, racial groups are often combined and limited to broad categories in data structures. In addition, anyone existing outside of the predefined boundaries of a demographic data point is defaulted to the underlying white data structures. Beyond this whitening, it is difficult for intersecting identities to be recognized and valued.

For example, the United States Census lumps together “White” as “[a] person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as ‘White’ or report entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian” (U.S. Census Bureau). However, each of the groups defined as “White” in the Census may have very different experiences in the United States. This attempt to simplify racial data ends up whitewashing people of color by forcing them into a general description that may not fully (or at all) capture their experiences. While the consequences of these decisions may not be immediately evident, if and when this data is used to make further decisions on funding, health, and so on, these groups of peoples are made invisible in those conversations that form from this data.

A similar issue occurs in demographic surveys that include an “other” category, especially when there is no room to provide further information. What this says, particularly to already marginalized users, is that we don't care about you or who you are if you don't fit into these predetermined categories. When we do our analysis, you are "other," and your only purpose in providing this information to us is so that we know to separate you from the “normal” population. This is not only an uncomfortable position to ask of our users, but it can also lead to the erasure of multiracial and nonbinary people from our data. With these decisions, we are saying that we do not recognize the complexity of a whole person, we only recognize that the person does not fit within our existing structures.

Some examples of this can be seen in library cataloging. In “Teaching the Radical Catalog,” Emily Drabinski notes that “White as a racial category and marker for domination” does not exist in the Library of Congress Subject Headings and that Subject Headings are “is rooted in historical structures of White supremacy; as such, the catalog presumes White to be the normative term” (198). It is important to note that this structure was not the result of cleaning or normalization, but rather was set up as the default by which all works would be labeled. It is not an attempt to more easily analyze information but is a worldview that is reflected in how information is organized. A similar pattern is evident in how disabilities show up in library classification systems.

In “Stigmatizing Disability: Library Classifications and the Marking and Marginalization of Books about People with Disabilities,” Melissa Adler, Jeffrey T. Huber, and A. Tyler Nix provide example Library of Congress Subject Headings that marginalize people with disabilities. They argue that libraries “are...cultural institutions that reproduce the stigmatization of people with disabilities through bibliographic control techniques that have embedded associations with eugenics” (132). These discrete decisions, made a long time ago, continue to echo and have an impact on library users today.

D'Ignazio and Klein describe how “[c]lassification systems are essential to any working infrastructure...It’s just that once a system is in place, it becomes naturalized as ‘the way things are.’ This means we don’t question how our classification systems are constructed, what values or judgments might be encoded into them, or why they were thought up in the first place” (9). Libraries perpetuate data and classification systems that have roots in largely white and exclusive academic structures that misrepresent, do not fully represent, or overrepresent users based on how their identities align with where power is concentrated.

Although those examples are more specific to cataloging, in assessment, we must take similar care with the language that we use to develop surveys, create interview questions, and in other forms of gathering data. Without an understanding of the history of the demographic categories we adopt and reinforce, we can recreate exclusive and marginalizing structures. As we try to understand the context in which our users access and experience the library, we should try to be aware of the context that our users face in the ways their identities are categorized, compartmentalized, and organized. We want our practice to not just be to ask “do we need to know this information” but also to reflect on the cost and potential harms that inquiry may have on users. In some cases, particularly when we aim to interrogate the status quo as we see in situations like racial and
gender salary gap analysis, the answer may be yes - it is important to collect sensitive information. But in many cases, those of us collecting, storing, analyzing, and making meaning out of data will feel the effects very differently from those who are collected, stored, and analyzed. Particularly if the “need” is to satisfy our own curiosity, it may not be better to not ask at all.

**Approach**

As library assessment has increasingly embraced data tools and techniques, conversations about data ethics have been largely focused on student data and questions of privacy. While we acknowledge the importance of privacy concerns in working with data, we hope to elevate another concern: that the ways in which we collect, structure, analyze, and use data in libraries can be potentially harmful -- or at the least, not representative of the communities we work with -- if we do not put in care and thoughtful consideration into how our pre-existing understandings of how data are and should be structured. Just as assessment practices can be viewed through a critical lens, embedded data processes can also be viewed through this lens.

Deborah Raji, author of the *MIT Technology Review* article “How our data encodes systematic racism,” provides their perspective on how data structures can be harmful when they share how “[d]ata sets so specifically built in and for white spaces represent the constructed reality, not the natural one. To have accuracy calculated in the absence of my lived experience not only offends me, but also puts me in real danger.”

Overwhelmingly white academic libraries, often housed in predominantly white institutions, serve as the foundation for assessment data processes and influence how data are structured, analyzed, and visualized in these spaces. Data created by libraries are a “constructed reality,” but because they borrow facets from the “natural one,” (Raji) they run the risk of appearing like they are more complete and genuine representations than they actually are. When we make decisions based on the data that we collect, we must acknowledge that we may be using data that misrepresent, overrepresent, or erase our users, and that those decisions may ultimately be more harmful than helpful.

A clear example of this problem is explored in Rena Bivens’ study on how Facebook “govern[s] the formation of its users as gendered subjects” and codes gender for primarily monetary and marketing purposes. While users may see a customized, free-text gender option, behind the scenes, that data is ultimately forced into a structure that attempts to fit gender into the same few predefined categories. The “computational re-classification” into a binary for targeted advertisements (893) introduces twofold harm: not only is the data that is collected reshaped and functionally overwritten, but users are misled, and believe that the information that they share about their gender is maintained in its authentic form in Facebook’s back end.

In their discussion of this study in chapter 4 (“What Gets Counted Counts”) of their book, *Data Feminism*, Catherine D’Ignazio and Lauren Klein note that “it’s corporations like Facebook...who have the power to control the terms of data collection” and that “there are limits of those classification systems—and [corporations like Facebook are those] who best know how they could be improved, remade, or in some cases, abolished altogether” (5). While corporations are major influences on how data structures are created and implemented, libraries have an opportunity to reimagine our own structures to be more inclusive and better representative of their users.

When we collect data with token approval - if any at all - and often by a third-party vendor, our users don’t understand what data is collected about them. This extractive process rarely benefits the user directly - while we may aspire to make decisions based on the data that will ultimately benefit the user, this is still a paternalistic model. Our expertise is gained at a cost to users without the option to refuse and without returning the information to the communities we collect it from. These systems also create abstracted representations of our users - and at more of a distance than, for example, sitting down with an interview. This distance, as well as the process automation, make it easy to access and use the data simply because it is available. We can repurpose and remix this data endlessly because it is there, not necessarily because it is the right information for the questions we have or the purpose we are putting it to. However, there are alternative practices, such as Indigenous and participatory methods, that seek to disrupt this model and create a substantive relationship and participant ownership of information.

We’d like to shift now to discussing data literacy - and assessment’s role in supporting colleagues in navigating and using the data for their own decision-making needs. As we facilitate data use and support colleagues and administrators in working
with our data, we can resist naturalizing these systems and share the messiness of the information and the data itself. While there is both temptation and pressure to present clear and definitive answers, sharing the complexity of the processes and structures when we grant access to datasets and data-gathering platforms, develop guidelines for data use, and share suggestions on how to use the data to make decision will help us resist overconfidence in or flattening of our own results.

In *All Data Are Local*, Yanni Loukiss argues that “data are cultural artifacts created by people, and their dutiful machines, at a time, in a place, and with the instruments at hand for audiences that are conditioned to receive them” (2). The context in which data are collected are important in fully understanding the people and places that are behind them. To support this approach, Loukiss suggests referring to public data sets as “data settings” instead (2). Although library data are not always situated in the same space as public data, we propose a similar approach to working with assessment data. Academic libraries data exist in different local contexts with varying user needs and concerns. While colleagues and administrators may seek clear, unambiguous answers to data and statistics questions, additional focus on our local contexts can provide a more robust understanding of the data and environments in which we work.

Data cleaning (also referred to as data preparation or normalization) is a key step of our analysis processes. We clean data to feed into visualization software, protect student identification, and transform from something that is human created into something that is machine-readable. (And also to save our colleagues the work of doing it themselves.) Although documentation may attempt to track this process, it may not make transparent the reasons behind cleaning decisions and the documentation may not be shared with the final product or users of the data.

In “Against Cleaning,” Katie Rawson and Trevor Muñoz explain that “[t]he cleaning paradigm assumes an underlying, ‘correct’ order. However tidy values may look grouped into rows or columns or neatly delimited records, this tidiness privileges the structure of a container rather than the data inside it.” Our assessment data cleaning processes are not unaffected by this problem. The “structure of a container” referenced by Rawson and Muñoz is the same as the structures that set up our catalogs, subject Headings -- and assessment data.

We have a new graduate student on our team and recently taught an introductory lesson on Tableau and data preparation. As we were sharing our processes and answering questions, we realized we were presenting a lot of information as fixed and unambiguous - clean the data X way instead of Y, when in reality it was a set of decisions we had made about how we best interpret the information. We explicitly shifted our focus from data cleaning as a process that could be done right or wrong and instead as a way to make conscious and thoughtful decisions - about the data, the user represented by the data, and the audience for the data. Every step of the cleaning process is a decision that we make, and long before we visualize or analyze it, we can recognize all the choices and systems and people embedded within it.

**Limitations**

We acknowledge that we still have a lot of work to do in this area and that there are many other fields that we should explore. Critical algorithm studies, for example, has been in conversation with many of the issues that we raise here and we hope to continue our research on this topic and draw on related fields.

**Conclusion**

Data sits at the foundation of decision-making in libraries and has turned into a core aspect of library work. We acknowledge and appreciate the discussions around privacy and student data. We also hope to expand these conversations to further interrogate our data structures and practices and reconsider why, how, and for whom we collect data.

We wish to end by providing a series of questions for reflection:

- *Who missing - and who is overrepresented - in our data sets?*
- *Who has access to our data? Who is our imagined audience, and who has the tools to work with the information?*
- *What are the consequences of our decisions to combine different groups of users to provide anonymity or significance? Who do we exclude when we make decisions based for the largest number of users, or for those who feel connected enough to the library to respond to our questions?*
What are the ethical considerations we need to take when using data in our day-to-day work?

What is the impact of our data on our users and staff? How does our data oppress? How can we adopt inclusive, equitable, antiracist data policies?

Although we are only beginning to answer these questions, we hope to draw on Annika Richterich’s “argu[ment] that researchers need to move away from big data-driven approaches, focused merely on techno-methodological innovation, towards data-discursive research foregrounding ethical controversies and risks as well as moral change” (Richterich, 101). While data plays an important role in libraries and assessment, we believe that the ethics and inclusion concerns around our data structures should be at the forefront of conversations about how we collect, analyze, visualize, and share data.

In our continued work on this topic, we hope to center this statement from Raji when they write:

“Technology is not independent of us; it’s created by us, and we have complete control over it.”
References


Design thinking in the organizational development of a 350-years old university library

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Abstract

The purpose of this conference paper is to showcase how the user experience (UX) methodology of design thinking can facilitate organizational change processes in situations of multiple and often conflicting values and opinions in university libraries. The paper also elaborates on the application of design thinking under both normal circumstances and Covid-19 restrictions. The conference paper is based on a comparative analysis of three cases of using design thinking for developing the information desk function at the main library at Lund University in Sweden. The analysis indicates that design thinking concerning experienced problems around the information desk facilitates deeper, shared understanding of the problems and can produce surprisingly quick and simple solutions to previously experienced deadlocks. The methodology has proven useful also under the present pandemic, although Covid-19 imposed limitations on its practical application. The findings suggest that the nonlinear, iterative process of designing and testing prototypes in design thinking can facilitate overcoming political impasses, organizational paralysis and resistance to change. This by helping to understand and challenge the assumptions of different staff and managers, to engage and empower them to contribute, and to provide an environment to experiment and experience potential solutions, without having to make binding decisions on beforehand. This is particularly useful in relation to complex, ill-defined problems.

Introduction

Academic libraries are experiencing needs to change to meet the future needs of their users at the same time as they often embody significant resistance to change (Pinfield et al., 2017). This may be particularly challenging in old universities, whose identities are largely based on traditions and history, where it may feel like implementing innovative ideas clashes with sustaining the traditions (Priestner and Borg, 2016). Facilitating change is further complicated by multiple and often conflicting values and opinions among different groups of people working in the library about what is the best course of action. Instead of continuously developing the organization to meet the needs of the users of the library, little happens as the organization either gets stuck in perpetual debates over what change is needed, or becomes quickly overwhelming by the search for a final ideal solution.

The University Library (UB) at Lund University in Sweden was founded in 1666. It is the central library of a decentralized library organization. In contrast to the other 24 faculty and department libraries, the University Library is both an academic library and a legal deposit library, has a broad range of special collections and around 500 study places. It is located in a building from 1907, which is regarded as one of the most beautiful in the country. The library has, thus, very diverse groups of visitors, spanning from students to tourists, and from researches to private individuals interested in the collections. Moreover, the University Library also provides a range of central services to the library organization as a whole. It is, as such, the largest library at the university, with 100 staff members, covering a broad range of responsibilities. The library has several years of experience of working with UX methods to explore and understand the public space and other areas (e.g Forsberg, 2017).

The information desk is among the most central functions of the University Library and must continuously develop to meet the changing needs of the various groups of visitors. It is also intrinsically linked to most of the other functions at the library,
which means that developing it involves many colleagues with different perspectives and opinions. The information desk is a vivid example of a function remaining more or less in status quo, regardless of substantial attempts to spur change over the years. To attempt to break this virtual impasse, the Section of User Services at the Department of Library Services has applied the user experience (UX) methodology of design thinking to facilitate concrete development in and around the information desk. The purpose of this conference paper is to share the results of these cases to showcase how this particular methodology can facilitate organizational change processes in situations of multiple and often conflicting values and opinions in university libraries. Since most of the cases were at least partly implemented during the Covid-19 situation, the paper also elaborates on the application of design thinking under both normal and extraordinary circumstances.

**Design and approach**

The conference paper is based on a comparative analysis of three cases of using the user experience (UX) method of design thinking to develop the information desk functions at the Lund University Library in Sweden. UX is the result of an interaction between the user, the system and the context, especially relevant to libraries since the focus is primarily on the user and the users’ experience of the library services (Priestner, 2016). It is partly about designing, testing and evaluating prototypes that aim to address specific problems (Arvola, 2021). It is important to note that prototypes are not comprehensive, but work as a filter to focus the attention on certain aspects and ideas (Lim, Stolterman and Tenenberg, 2008). Design thinking is a powerful method for organizational development. It is different from traditional linear problem solving, by allowing explorative and iterative updates of the prototype during interaction with the stakeholders to the problem being addressed (Ideo, 2015). In this way, it is possible to challenge assumptions, get feedback directly from stakeholders and, with the help of a deeper understanding of their needs, reach solutions that were not obvious from the start. The design thinking method was therefore used in the three studied cases.

While the same design thinking method was used in all three cases, slightly different data collection methods were used for them. The first focusing on creating physical space behind the information desk, the second to increase flexible staffing of the information desk, and the third to make the public space around the information desk more easily accessible.

1. **Up or Down**

The space behind the information desk holds the in-house reading books and book trolleys. The purpose of the prototype *Up or Down*, were to free physical space by changing the placement of the books on the shelves from lying down to standing up. The prototype was simply tested by rearranging the books and placing an opinion box with an explanatory sign to our colleagues about our need for their contribution concerning their experience working with this prototype. The sign where placed next to the box and also included an email to enable flexibility to leave opinions when it suited them. We got feedback from most of them that it did not work as it was more difficult to read the ordering tags without moving the books. After changing the ordering tags to address the issue, the feedback was still overwhelmingly negative and the books were reverted to lying down again.

2. **Librarian on call**

During certain periods of the day there is no need to be 2 people staffing the information desk, but there is a need for someone to be close by to be able to quickly assist if needed. The purpose of the prototype *Librarian on call* was to create a more flexible staffing of the information desk to free up time for other duties while maintaining the same level of service. During Covid-19 the available staff became fewer due to health reasons and restrictions on using public transport and the need for flexible staffing arrangements got even more important than before. The prototype started out as a simple workspace nearby with a table, office chair, a computer and a bell, which the colleague at the information desk could ring to alert the one on call when needed. Opinion boxes were placed at the information desk and the on-call workspace, with similar signposting as for the previous case. We also made a survey to be able to identify when during the day they got called out and for what kind of
questions. The feedback on the first prototype described needs for the librarian on call to be able to perform their other duties more efficiently while on-call. The prototype was updated with more options to connect laptops and charge mobile phones, better chairs and more space. The result of the survey suggested changes in the scheduling on the when the Librarian on call was needed, which were implemented. While the updated prototype has been in use for a couple of years, with a gap during part of the Covid-19 situation, it is still under evaluation as several colleagues dislike staffing the information desk alone.

3. Orientation map
As mentioned before, the present library building was constructed in the beginning of the 20th century. Since then, it has been extended several times with the unintended effect of producing a layout that is difficult to navigate. In order to make it easier for our visitors, we introduced the prototype Orientation map, which is in essence a large map placed on a pillar close to the information desk. Opinions, experience and ideas were collected through opinion boxes targeting both staff and visitors. A box was places in the public space together with a sign asking our visitors for opinions and ideas. Another was placed inside the information desk. We wanted to know how if the map worked in practice and what question our colleagues got concerning the map. All signs where placed next to the box and also included an email to enable flexibility to leave opinions when it suited them. After a couple of weeks, we compiled the gathered information and made updates to the prototype. For instance, highlighting the group study rooms with another color on the map, simplifying the map by using less text, using larger text, and changing the lighting of the map. The prototype is still active and we don’t know the final outcome yet.

Findings and analysis
A number of themes arise when analysing the findings of the three cases of applying design thinking to address particular issues experienced in and around the information desk at the University Library in Lund, which help to structure this section. These are (1) engagement, (2) trust and support, (3) old ideas, new entrance and (4) Covid-19.

Engagement
Perhaps the most conspicuous finding concerns the engagement of colleagues in the design thinking process. Regardless of prototype, the method clearly engages and empowers colleagues to contribute, both by trying and submitting feedback about the prototypes themselves, and by suggesting new and inspiring ideas on what to do regarding experienced issues in completely different areas of the library. It was, in other words, not at all difficult to engage the colleagues, as suggested by Wahlgren (2020). This may be explained by the method providing a safe and relatively neutral environment for trying and adapting potential solutions for particular problems experienced in different ways by different people. This more iterative process may therefore be experienced as less threatening than more conventional linear approaches to problem-solving with strictly consecutive phases of investigation, design, decision and implementation. The positive engagement of colleagues may also be explained by the process helping to understand and challenge the assumptions of both staff and managers, which seems to facilitate the formulation of common goals.

Trust and support
Secondly, the findings suggest the importance of trust in both the process and the people facilitating it. Both staff and managers got positively inclined to the process of design thinking as soon as they realized that the suggested solutions to the identified problems were simply prototypes to test and not strict solutions that have already been decided, as in conventional problem-solving. It was therefore a lot less threatening from the beginning, as everybody understood that it was only a prototype (Priestner, 2021). This seems particularly useful in relation to complex, ill-defined problems. The findings also suggest that this crucial trust is largely founded in the active participation of the people who are supposed to benefit from the prototyped change (cf. Wen, 2018). Then, when a prototype was rejected as it proved not to provide enough benefit to justify the change, as in Up or down (Case 1), the trust in the process seemed to increase further. Finally, the findings indicate the importance of support for the process by the management of the organization, as also highlighted by MacDonald (2017). Although being
Positive to UX from the start of our cases, the management of the University Library has more recently officially embraced and committed to this approach. For instance, by stressing it in the organizational planning and investing training workshops for selected staff from all departments.

**Old ideas, new entrance**

The findings demonstrate how design thinking can evoke old ideas that been suggested in the past, without ever being implemented for various reasons. All three prototypes in this paper are based on ideas that have been up for discussion in one way or the other over the years. While the ideas behind the prototypes were not new, it was only when they were framed as prototypes that they got tested by putting them to practice. This is a striking finding indeed, and a main argument for UX in general and design thinking in particular. This by showing how these processes can help stopping issues from either getting stuck in perpetual debates, or becoming overwhelming as the search for final ideal solution tend to spin out of control. Although UX has been suggested a mindset, and not a quick fix (e.g. Friberg, 2020 p:13), it provides opportunities for actually producing quick and visible results that serves to mobilize increased engagement in organizational development. This irrespective of the final outcome of the process in terms of the adoption or rejection of the prototype.

**Covid-19**

Finally, it is worth noting that the prototypes were partly tested during the Covid-19 situation, with implications on prototype testing. While the University Library never closed completely, different restrictions on opening hours, study places, number of visitors allowed, social distancing, etc, were in place during different periods. This had obvious impacts on the three cases concerning interaction with both colleagues and visitors, since less people were around in both categories. Mainly by restricting our choice of data collection methods when testing the prototype **Orientation map** (Case 3) during the Covid-19 restrictions and temporarily stopping the testing of the prototype **Librarian on call** (Case 2). Luckily, the former is still ongoing now when the restrictions are currently being lifted, and the latter will be up and running again shortly.

**Conclusions**

The findings suggest that the nonlinear, iterative process of designing and testing prototypes in design thinking can facilitate overcoming political impasses, organizational paralysis and resistance to change. This by helping to understand and challenge the assumptions of different staff and managers, to engage and empower them to contribute, and to provide an environment to experiment and experience potential solutions, without having to make binding decisions on beforehand. This indicates that design thinking concerning experienced problems facilitates deeper, shared understanding of the problems and can produce surprisingly quick and simple solutions to previously experienced deadlocks.
References:


Introduction

With a variety of pressures on higher education institutions and academic libraries including budget and staffing levels it is vital for libraries to analyze the outcomes of their teaching and learning interventions. Most academic libraries make significant investments towards providing library instruction to students in a variety of forms, including librarian-facilitated instruction or training primary course instructors to deliver information literacy-focused activities, among other options. The goals for library instruction can include helping students achieve success in a specific course or assignment, or higher level goals such as enhancing critical thinking and teaching information literacy skills. Assessment of library instruction is important in order to determine the most effective strategies for teaching information literacy skills and decide how best to distribute limited staffing resources.

By providing library instruction in foundational courses such as first year writing or first year composition, libraries hope that beyond acquiring foundational skills, the students will develop a relationship with the libraries and make continuous use of our services and resources throughout their academic careers. However, we might not always know what kinds of instruction are the most effective in a specific context. What strategies provide students with the best information not only for their current coursework, but that will also potentially encourage library use in future semesters? One challenge of working closely with any curriculum or course is that over time the course goals, outcomes and modalities change and evolve.

Literature review

Large scale student data collection and correlative analysis involving student usage of libraries services and resources is not new. After the 2010 The Value of Academic Libraries: A Comprehensive Research Review and Report, several libraries began to use data to show library impact on student success including pioneering studies done by University of Wollongong in Australia (Cox and Jantti, 2012), Huddersfield University in the United Kingdom (Stone and Ramsden, 2012), and the University of Minnesota in the United States (Soria, Fransen, and Nackerud, 2013). This type of research has been replicated by many different institutions over the last ten years. Sterner’s 2020 review article identified 15 different studies that look at the impact of libraries on grade point averages and there are many other studies that look at other student success indicators such as retention or graduation.

Many of these studies looked specifically at the impact of library instruction on student success measures including the University of Minnesota’s 2013 research finding that course-integrated library instruction in students’ first year of undergraduate study actually negatively correlated with their first-year grade-point average. Later studies, Gaha, Hinnefeld, Pellegrino (2018) and Wright (2021) showed a positive correlation between library instruction and student GPAs. While this paper does not aim to show a direct student success correlation, the previous named student success papers do show a correlation between library use and student success. Therefore, it may be possible to surmise that when increased library engagement correlates with increased library usage, student success may be an additional outcome.

There is, however, very little on how library instruction is a predictor of library use exclusively, especially when exploring usage data. An older study (Knott, 2008) looked at library use before and after in-person library instruction sessions through self-reported survey answers. They found an average increase in library visits by those who had attended a library instruction session, but some populations actually decreased their visits after the session. Another qualitative study (Conway, 2015) reviewed student course portfolios from students who had attended a library session versus those who had not. They found
that “one-shot” library sessions did increase the use of library resources, but did not increase the use of academic journals or the diversity of sources used.

Given that there is little to no previous research looking at library use and online instruction, but there are articles showing correlation between online information literacy modules and student success indicators. (Marino, F., & Shi, Q. (2019) This paper purports to contribute to filling this gap by looking at both the correlation between library instruction and library use, but also the comparison between in-person and online instruction.

Previous research shows that students who used libraries and the library website were more likely to graduate within four years and tended to have higher GPAs (Soria, Fransen & Nackerud, 2014; 2017a; 2017b). The goal of this study is to explore how a particular format of library instruction, i.e. librarian-facilitated instruction, is connected with the students’ long-term pattern of engagement and usage of library resources and services. This study reports preliminary results from an ongoing longitudinal study that we are currently using to make programmatic decisions.

Methods - Context

The University of Minnesota Libraries has a long-standing partnership with the first-year writing program. Over the years, this collaboration has undergone numerous changes, both in terms of logistics and content. In the fall of 2019, the Libraries partnered with approximately 80% of the sections and offered a two-session face-to-face instructional sequence (100 minutes total). The first session focused on refining research questions, generating keywords, and finding sources. The second session emphasized evaluating sources and covered additional strategies for finding and managing sources.

By the fall of 2020 the writing program completed a major redesign of the curriculum. The Libraries were an active participant in the process and developed a new, expanded information literacy curriculum that would be the equivalent of four 50-min sessions. It focused on key concepts from the ACRL Framework for Information Literacy and corresponded to the main writing projects. For example, in the first project when the students work on literacy narratives, the information literacy activity asks them to research the authors of the sample essays and consider their credibility within different contexts (Authority as Constructed and Contextual). The subsequent units focus on Scholarship as Conversation, Research as Strategic Exploration, and Information Creation as a Process. Overall, the curriculum has six information literacy activities, with the inquiry unit having three, and the rest of the units - one each.

Fall 2020 had three major changes to the writing course: switching to fully asynchronous mode, a new curriculum, and an increased number of sections (UMN has changed their policy regarding testing out of the writing course, which significantly increased the number of students taking the course each semester). The goal of the Libraries was to maintain the previous level of involvement, and offer the instructors an opportunity to have a Libraries staff member facilitate any number of the information literacy activities. In order to facilitate this the Libraries team offered training to both the writing instructors and the libraries staff.

For internal programmatic purposes, the Libraries involvement is tracked, with staff recording which activities they facilitate and how much time is spent on them. For the purpose of this study, we focus on sections with librarian-facilitated activities and compare them to the ones where the writing instructor did not collaborate with libraries staff to deliver the information literacy curriculum. The absence of collaboration within a specific section does not mean the absence of information literacy instruction, as the writing instructor could choose to deliver it themselves. In this study we are exploring the effectiveness of instruction per se, only the subsequent patterns of engagement with the libraries.

Study Design

In this project, we use data from 2019 and 2020-2021 academic years (Table 1 summarizes the study design). The data from 2019 serves as a control group and is split into two categories: students who received in-person librarian-facilitated instruction and students who did not. We do not have data on whether the instructors, who chose not to collaborate with libraries’ staff, facilitated the activities themselves, referred the students to libraries’ other services, or fulfilled this course objective in a different way. The 2020-2021 data is split into three categories, based on the level of engagement with the new
information literacy curriculum: no engagement (no activities facilitated by the Libraries’ staff), low (1 activity facilitated), medium (2-3 activities facilitated) and high (4-6 activities facilitated) engagement levels. We are using existing procedures to follow these cohorts of students throughout their university experience and compare patterns of library usage and engagement between the groups.

<table>
<thead>
<tr>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2019</td>
<td>Fall 2020</td>
</tr>
<tr>
<td>Group 1 - received in-person librarian-facilitated instruction</td>
<td>Group 1 - received librarian-facilitated instruction</td>
</tr>
<tr>
<td>a) Low level</td>
<td>a) Low level</td>
</tr>
<tr>
<td>b) Medium level</td>
<td>b) Medium level</td>
</tr>
<tr>
<td>c) High level</td>
<td>c) High level</td>
</tr>
<tr>
<td>Group 2 - did not receive in-person librarian-facilitated instruction</td>
<td>Group 2 - did not receive librarian-facilitated instruction</td>
</tr>
<tr>
<td>Analysed semesters: Fall 2019, Spring 2020, Summer 2020, Fall 2020, Spring 2021</td>
<td>Analysed semesters: Fall 2020, Spring 2021, Summer 2021</td>
</tr>
</tbody>
</table>

*Table 1. Study design*

The current study design has inherent limitations in comparing a pre-pandemic semester with in-person instruction to a pandemic semester with online asynchronous instruction. Moreover, as we look at the Libraries usage over the subsequent semesters, we are analyzing students’ engagement with the Libraries during the pandemic, where their classes and study patterns were severely disrupted.

The study was reviewed by the Institutional Review Board.

**Data Sources**

The data from the project comes from two sources: internal Libraries procedures and the University Data Warehouse. The complete dataset includes Library usage measures, such as the number of checked out books, digital resources, interlibrary loan requests, and submitted reference questions. Students’ names, ID numbers, and titles of the sources they used were not a part of the study.

**Results**

The data analysis was completed separately on the datasets from 2019 and 2020. Below we present the results of the analysis. While the findings show high levels of statistical significance, as measured by the p-values, the effect sizes were small. Because we have previously seen larger effect sizes with specific demographic groups than with large cohorts of students (Gyendina, Fransen & Tomlinson, 2020), a more granular analysis will be completed in the next iteration of the analysis.

The analysis of the data from the fall 2019 cohort showed statistically significant differences in the number of reference questions submitted by students in the summer of 2020 (p-value 0.0002). Students who did not receive librarian-facilitated instruction submitted zero questions, while the students who received the librarian-facilitated instruction submitted 0.005 questions on average. Statistically significant differences in the use of digital sources are observed in the fall of 2019, summer 2020, fall 2020. Table 2 summarizes the differences in access to digital resources over the semesters. It is unclear why the connection does not appear in the spring semester. The sharp decline over the summer semester may be explained by the nature of the summer courses and a potentially reduced workload.
Similarly, there were statistically significant differences in the number of interlibrary loan requests made in summer of 2020 and spring of 2021 (p-values 0.02, 0.01 respectively). Students who did not receive librarian-facilitated instruction submitted an average of 0.005 requests compared to 0.01 from students who received librarian-facilitated instruction. Finally, the loan counts showed statistically significant differences for spring 2020, summer 2020, fall 2020, and spring 2021. Table 3 presents the summary of differences based on type of instruction. The present data does not provide a definitive explanation for the differences in loan counts. However, it is possible that students who received librarian-facilitated instruction are more likely to use online resources.

Overall, the analysis of the 2019 data seems to suggest a very small increase in the students’ levels of engagement with the libraries that is sustained through the following semesters, particularly in the use of digital resources. Of course, it is currently impossible to consider this effect outside of the pandemic context.

The analysis of the 2020 data did not yield similarly robust results, which can be partially explained by the shorter duration of observations and further disruptions to the students’ lives from the pandemic. However, there were statistically significant differences in the number of reference questions in the summer of 2021 (p-value 0.002). The students who received librarian-facilitated instruction submitted zero questions, while students who did not receive it submitted an average of 0.004 questions. It is not clear how to interpret this finding, but one possible explanation is the change in the curriculum that no longer emphasized the ways to contact the Libraries as much as the previous one.

The number of interlibrary loan requests was statistically different in the spring of 2021 (p-value 0.015). The students who did not receive librarian-facilitated instruction submitted an average of 0.067 requests, whereas the students who received librarian-facilitated instruction submitted an average of 0.086 requests. Finally, the digital counts showed statistically significant differences in fall 2020. Table 4 summarizes the differences in the number of digital resources used by students in different categories and Table 5 presents the differences in loan counts, which were statistically different in the spring and summer of 2021.
It appears that the students who received librarian-facilitated instruction were more likely to use digital resources throughout the semester. It is noteworthy that the students who had 2-3 activities facilitated by a library staff member used the highest number of digital resources.

In the analysis of the loan counts from Spring 2021 we see a pattern similar to the one established by the 2019 data: the students who did not have the librarian-facilitated instruction or had the lowest number of activities facilitated by a libraries staff member used more physical resources than their counterparts who had fewer activities facilitated by a libraries instructor. In the Summer of 2021 that pattern changes, and the students who did not have librarian-facilitated instruction are seen using fewer resources. However, it is still the students with one activity facilitated by a libraries staff member who have the highest number of loaned resources. This could be explained by the nature of the summer semester workload.

As mentioned above, the effect sizes for these models were very small, ranging from eta-square of 0.001 to 0.068. In other words, these models explain 1-6.8% of the variation between the students who received different levels of librarian-facilitated instruction. In an educational context where so many factors can impact student behavior and success, a small effect size can still be meaningful. Very small differences in grades and access to resources can translate into major academic and financial consequences. Moreover, these effect sizes represent the averages within the entire class of students, and our previous work showed that looking at students at a more granular level can be more appropriate for accurate understanding of effect sizes.

Discussion

Working with academic courses and partnering on information literacy initiatives are some of the deepest integration libraries are working on. However they must continually evolve as the curriculum changes, leadership roles change, staffing and students change. Libraries must adapt and evolve along with these changes but are often doing so without the ability to analyse the implication of these changes. The depth of integration and the size of the program can have major impacts on staffing and workload of Libraries and impacts on other available services.
and instruction. It also impacts the student learning in that semester and potentially longer term impacts on library and library website usage in subsequent semesters.

At our University this is a large-scale program -- WRIT 1301 is the only course required across all undergraduate colleges. A portion of students do fulfill the requirement for First Year Writing before coming to the University through various testing out options. Even with that, WRIT 1301 has the highest number of sections of any class on campus with 90 sections in Fall of 2020 (1959 students enrolled) and 85 in Spring 2021 (1626 students enrolled).

This study helps to document student library usage following various modes of librarian-facilitated instruction and shows some patterns of sustained engagement with the Libraries. Librarian-facilitated instruction can help students with research and assignments in their current classes, but more research is needed to determine whether or not and how it can promote engagement with libraries in subsequent semesters. This study looked at one large course and analyzed students as one homogenous group (students that took WRIT 1301). It will be important to look at different groups of students in WRIT 1301 at a more granular level to determine if librarian-facilitated instruction had an impact on library engagement. The impact of librarian-facilitated instruction in other classes should also be analyzed. In addition, this study seems to suggest that there is no additional connection between higher levels of libraries involvement in the course and higher levels of subsequent use of Libraries’ resources. Before making programmatic recommendations based on these findings, we plan to conduct additional quantitative research and collaborate with our writing studies partners to conduct a qualitative study comparing the students’ research skills in sections with varying levels of libraries involvement.

Limitations

Fall of 2019 was different than the subsequent semesters since it was our last complete semester before the Covid-19 pandemic. In Fall 2019, students were on campus and the class was primarily taught as an in-person course. Like many campuses, the University of Minnesota shifted to online instruction after an extended spring break in March 2020. In Fall 2020 and Spring 2021, and Summer 2021 WRIT 1301 was only taught asynchronously. These dramatic events impacted our students, staff, and campus as a whole. It is difficult to compare semesters with such differences in conditions.

Another major limitation comes from our assumptions in the treatment of data. We focus on analyzing the ways the libraries involvement in the facilitation of the information literacy curriculum is correlated with students’ use of libraries resources. We plan to follow-up on this study with qualitative research exploring the ways the information literacy activities are facilitated by instructors who choose not to collaborate with the libraries.

Conclusion

Change is an omnipresent factor in any long term program collaboration, from changes in teaching models, staffing and resources to modes of instruction. Based on the findings we will be able to reconsider ways to align our instruction efforts with maximizing long term student engagement. At the same time, these findings point to the need for follow up studies, primarily focusing on qualitative research to supplement, contextualize and deepen our understanding of these issues. Studies that include other classes or librarian-facilitated instruction formats should also be explored, as well as analyzing students in WRIT 1301 at a more granular level. Again, there is a paucity of research that investigates library instruction as a predictor of library use in subsequent semesters or throughout a student’s academic career. We welcome studies from other colleges and universities into this area as we all try to find the most effective strategies for delivering library instruction that will enhance student success and promote lifelong learning.

References

Conway, A. (2015). One-shot library instruction sessions may not increase student use of academic journals or diversity of sources. Evidence Based Library and Information Practice, 10(4), 238–240. https://doi.org/10.18438/B8SS3Z


Development and Validation of Subject Librarian Consultation Competencies

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Brigham Young University

Introduction
A primary responsibility of librarians is to help patrons learn how to access resources through reference desk questions, library instruction, one-on-one consultations, or other methods. Subject librarians (SLs) provide instruction and consultations to faculty and students in specific disciplines. This study focuses on identifying and validating competencies that SLs may use in research consultations with students.

In a research consultation the SL helps students become independent, skilled, knowledgeable researchers (Elmborg, 2002). Fournier and Sikora (2015) had librarians identify concepts that should be taught during these consultations and grouped them into four main themes: conducting background research, finding appropriate keywords, identifying search tools, and conducting primary searches. Other researchers expanded this list to include competencies such as collaboration, flexibility, IT skills, and critical thinking (Corrall, 2015; Jones, 2003; Luo, 2006; Neerputh et al., 2006).

Competencies that facilitate research consultations serve multiple purposes including evaluation and improvement of SL consultations and to inform in-service or professional development activities for new or continuing SLs. This pilot study sought to identify and validate competencies SLs might use in research consultations with students.

Method
The study used three procedures for identifying and validating SL consultation competencies, namely, a literature review, an SL rating, and a student rating.

Literature Review
We conducted a review of library-oriented journals using 10 search terms such as subject librarian interview or reference interviews. Where possible, we chose articles that specifically referred to subject or liaison librarians, but other consultations were also considered, such as reference desk consultations. Our review generated 22 potential competencies along with brief descriptions of each competency (see Appendix).

Using the 22 competencies, we identified how often each competency was mentioned in each article. Some articles mentioned only one competency, while other articles mentioned several competencies. Using the total number of times each competency was mentioned across all articles, we placed competencies into high (over 20), medium (11–20), and low (10 or less) frequencies of mentions across all articles.

Subject Librarian Rating
Six SLs from the Teaching and Learning Division (two from each department) each recorded two online student consultations, with the students’ permission. Each SL reviewed both of their recordings and rated the degree to which each of the 22 competencies was present or wanted in each consultation. A rating of zero indicated that the competency was not present or wanted. A rating of three indicated that a competency was observed or not observed but wanted. After rating their own
consultations, each SL shared the consultation recording with the other SL within their department and an SL outside of their department. Each of these SLs reviewed each recording and rated each consultation competency as previously described. We determined a mean rating for each competency and ordered competencies from highest to lowest.

No identifying information was collected on any SL or the students with whom they consulted. All consultations were conducted online, and only SLs viewed and rated each consultation. This process was conducted over a two-month time frame to allow each SL sufficient time to conduct two student consultations and to complete ratings.

**Student Rating**

Using the 22 competencies, we created competency summary statements for students to rate their research consultation. For example, the Behavior competency’s summary statement was “The subject librarian’s behavior (e.g., posture, facial indications, calm demeanor) indicated that they were listening and interested in what I was saying.” These statements were part of a survey students were invited to complete following a consultation. They rated each competency based on their consultation. The rating scale used NA to indicate if the competency was not applicable to their consultation, or a scale of 1 (did not happen) to 5 (was very evident). Four competency statements were negatively worded to prevent response bias. Ratings for these questions were reversed prior to analysis. The last survey question routed students to a second survey where they could provide their name and identifying information to enter a draw for one of three $10 cash incentives for participating. Using a second survey maintained the respondents’ anonymity.

Following a consultation, SLs sent the invitations in one of two ways – via LibInsight, which sends an automatic follow-up email to the student or manually sending a follow-up email with the survey invitation and link. Both invitation methods used the same script. Once the invitation was sent to students, no further action was required by the SLs. We collected data from October 2020 to May 2021. Using the survey data, we conducted a principal component analysis on responses to determine how competencies related to each other.

**Findings**

We discuss the findings from each research activity in the following sections.

**Literature Review**

In the 35 articles discussing consultations in libraries, we identified 376 identifiers (words or phrases) of positive consultations, which we used to develop the 22 competencies and their respective descriptions. This was an iterative process in which competencies and descriptions were adjusted as similarities and differences were better understood (see Appendix). All competencies focused on SLs’ consultation skills. The total number of identifiers found within each article and the competency category is found in Table 1. Using the frequency of competency mentions within each article, we then ranked the competencies from highest number of mentions to lowest (see Table 2).

Eight competencies were mentioned 20 or more times across all articles. The Professional competency was mentioned the most (34), followed by Behavior (29), Relationships (29), and Communication (28). While the number competency mentions does not necessarily indicate a competency’s importance, but it does reflect discussion about the competency.
Table 1
Total Number of Identifiers Found in All Articles

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<th>Collaboration</th>
<th>Communication</th>
<th>Conclusion</th>
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<td>Weare et al. (2013)</td>
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<td>16</td>
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<td><strong>Total</strong></td>
<td>21</td>
<td>29</td>
<td>15</td>
<td>28</td>
<td>17</td>
<td>11</td>
<td>5</td>
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<td>7</td>
<td>17</td>
<td>29</td>
<td>15</td>
<td>14</td>
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Table 2
Total Competency Mentions in All Articles

<table>
<thead>
<tr>
<th>Article Mentions</th>
<th>Competency</th>
<th>Article Mentions</th>
<th>Competency</th>
</tr>
</thead>
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<tr>
<td>34</td>
<td>Professional</td>
<td>15</td>
<td>Collaboration</td>
</tr>
<tr>
<td>29</td>
<td>Behavior</td>
<td>15</td>
<td>Research Efficacy</td>
</tr>
<tr>
<td>29</td>
<td>Relationships</td>
<td>14</td>
<td>Research Process</td>
</tr>
<tr>
<td>28</td>
<td>Communication</td>
<td>14</td>
<td>Research Protocols</td>
</tr>
<tr>
<td>26</td>
<td>Instruction</td>
<td>11</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>24</td>
<td>Willingness</td>
<td>10</td>
<td>Introduction</td>
</tr>
<tr>
<td>21</td>
<td>Assessment</td>
<td>9</td>
<td>Time Management</td>
</tr>
<tr>
<td>20</td>
<td>Search Tools</td>
<td>8</td>
<td>Search Quality</td>
</tr>
<tr>
<td>17</td>
<td>Conclusion</td>
<td>7</td>
<td>IT Skills</td>
</tr>
<tr>
<td>17</td>
<td>Question Strategies</td>
<td>7</td>
<td>Professional Development</td>
</tr>
<tr>
<td>16</td>
<td>Identification</td>
<td>5</td>
<td>Flexibility</td>
</tr>
</tbody>
</table>

Subject Librarian Rating

Following the SL consultations and review, we calculated each competency’s rating using a scale of 0-3 with zero indicating that the competency was not present and three indicating that the competency was very present or if not present wanted (see Table 3).

Seven competencies had mean ratings of 2.4 out of 3 or higher, with Behavior (2.61) and Research Processes (2.58) ranking the highest. Professional, which had the most article mentions, was rated lowest.

Table 3
Mean Subject Librarian Competency Ratings for All Consultations

<table>
<thead>
<tr>
<th>Rating</th>
<th>Competency</th>
<th>Rating</th>
<th>Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.61</td>
<td>Behavior</td>
<td>2.16</td>
<td>Identification</td>
</tr>
<tr>
<td>2.58</td>
<td>Research Process</td>
<td>2.11</td>
<td>Question Strategies</td>
</tr>
<tr>
<td>2.47</td>
<td>Communication</td>
<td>2.05</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td>2.47</td>
<td>Instruction</td>
<td>2.05</td>
<td>Willingness</td>
</tr>
<tr>
<td>2.47</td>
<td>Research Efficacy</td>
<td>1.95</td>
<td>Research Protocols</td>
</tr>
<tr>
<td>2.47</td>
<td>Introduction</td>
<td>1.74</td>
<td>IT Skills</td>
</tr>
<tr>
<td>2.44</td>
<td>Conclusion</td>
<td>1.68</td>
<td>Collaboration</td>
</tr>
<tr>
<td>2.33</td>
<td>Flexibility</td>
<td>1.53</td>
<td>Assessment</td>
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<tr>
<td>2.32</td>
<td>Relationships</td>
<td>1.22</td>
<td>Time Management</td>
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<td>2.32</td>
<td>Search Quality</td>
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<td>Professional Development</td>
</tr>
<tr>
<td>2.32</td>
<td>Search Tools</td>
<td>0.89</td>
<td>Professional</td>
</tr>
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</table>

Student Rating

We do not know how many survey invitations were sent by SLs, so we were not able to calculate a survey response rate. Two responses were deleted because the age of the student was under 18 or unknown. Only 109 of 257 responses had complete responses for all 22 competencies. We only used these 109 responses in the analysis because we could not determine if the nonresponses were random or not.

Table 4 shows the mean and standard deviation for each competency. Using the scale of 1 (did not happen) to 5 (was very evident), student ratings were skewed, with over half of the competencies having ratings of 4.5 or higher. These ratings indicate high quality consultations from the perspective of students.
Table 4
Mean and Standard Deviation for Each Competency

<table>
<thead>
<tr>
<th>Competency</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>4.94</td>
<td>0.23</td>
</tr>
<tr>
<td>IT Skills</td>
<td>4.88</td>
<td>0.42</td>
</tr>
<tr>
<td>Flexibility</td>
<td>4.86</td>
<td>0.40</td>
</tr>
<tr>
<td>Behavior</td>
<td>4.84</td>
<td>0.41</td>
</tr>
<tr>
<td>Research Efficacy</td>
<td>4.83</td>
<td>0.41</td>
</tr>
<tr>
<td>Research Process</td>
<td>4.81</td>
<td>0.55</td>
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<tr>
<td>Conclusion</td>
<td>4.73</td>
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<tr>
<td>Instruction</td>
<td>4.69</td>
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<tr>
<td>Professional Development</td>
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<td>Collaboration</td>
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<td>1.03</td>
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<tr>
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<td>Critical Thinking</td>
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<tr>
<td>Question Strategies</td>
<td>3.73</td>
<td>1.47</td>
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</table>

We conducted a principal component analysis to determine how the competencies might cluster in factors and the degree to which each competency loaded on the factor. We identified two factors. The first factor focused on the SL’s consultation skills and the second focused on patrons’ needs (see Table 5). All factor loadings are positive, with moderate to strong loadings.

**Factor 1.** SL Consultation Skills competencies emphasize skills SLs may use in a consultation depending on the student’s background and experience. The factor loadings account for 88.3% of the variance found in the analysis.

**Factor 2.** The Student Needs competencies focus on student interaction skills SLs may use. They account for 11.7% of the variance.

Finally, we listed all competencies from highest to lowest values for article mentions, mean ratings, and loadings (see Table 6) to illustrate ranking similarities and differences. Depending on the ranking source, competencies varied in importance. Each type of ranking is not an indication of one competency being more important but serve as a means for self-reflection by SLs in how consultations are conducted and how in-service training is undertaken.
Table 5
Principal Component Analysis Factors with Loadings

<table>
<thead>
<tr>
<th>Competency</th>
<th>Factor 1: SL Consultation Skills</th>
<th>Factor 2: Student Needs</th>
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<tbody>
<tr>
<td>Search Quality</td>
<td>0.744</td>
<td>0.919</td>
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<td>0.421</td>
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Table 6
Competencies Ranked by Type of Analysis

<table>
<thead>
<tr>
<th>Article Mentions</th>
<th>SL Consultation Ratings</th>
<th>Student Mean Ratings</th>
<th>Factor 1: SL Consultation Skills</th>
<th>Factor 2: Student Needs</th>
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</thead>
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<tr>
<td>Professional</td>
<td>Behavior</td>
<td>Professional</td>
<td>Search Quality</td>
<td>Willingness</td>
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<td>Behavior</td>
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<td>Flexibility</td>
<td>Time Management</td>
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<td>Assessment</td>
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<td>Conclusion</td>
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<td>Research Protocols</td>
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</tr>
<tr>
<td>Flexibility</td>
<td>Professional</td>
<td>Question Strategies</td>
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</tr>
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</table>

Limitations
There are several limitations. First, the literature review could be more extensive to identify other competencies or change the frequency with which competencies are mentioned. Second, the review of consultation recordings could involve more SLs. Third,
the student portion could be more inclusive – involving SLs from different institutions, including Special Collections curators – to allow for more comprehensive competencies. Fourth, requiring students’ response prior to entering the incentive draw would improve the number of usable responses. Fifth, all consultations were conducted online, elevating the importance of some competencies (e.g., IT Skills) and limiting others. Finally, asking students to rate the helpfulness of the consultation would enable the competencies to be more predictive rather than just descriptive.

Conclusion
This study identified and validated 22 competencies that SLs might use in a consultation with students. The identified SL research consultation competencies may be used by SLs to help train new SLs and to help SLs assess the quality and efficacy of their consultations, enabling them to identify strong consultation skills and improve weaker skills. The SLs may also use the competencies for in-service presentations and discussions. The net result of each of these efforts would be improved consultations with students.

References


### Appendix: Competencies and Their Descriptions

<table>
<thead>
<tr>
<th>Competency</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>The SL teaches the student how to evaluate accurate, credible, relevant, and appropriate sources.</td>
</tr>
<tr>
<td>Behavior</td>
<td>The SL demonstrates a variety of behavioral characteristics, including posture and facial indications (e.g., nods head, maintains eye contact) indicating that the SL is listening and interested in what the student is saying. The SL remains calm throughout the consultation and uses an appropriate voice tone that fosters a warmth-based environment.</td>
</tr>
<tr>
<td>Collaboration</td>
<td>The consultation is conducted and viewed as a collaboration between the student and the SL. The SL encourages the student to contribute ideas.</td>
</tr>
<tr>
<td>Communication</td>
<td>The SL has strong written and verbal communication skills resulting in effective interactions with clearly presented and organized ideas. Multiple communication methods, absent of jargon and confusing terminology, are used during the consultation. The SL follows up with the student after the consultation to ensure that the student’s needs were met.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>The SL signals a clear end to the consultation and indicates that there will be a follow-up contact. The SL asks if all questions have been answered or if there are additional questions and indicates a willingness to meet with the student again. The SL promotes other library services and resources.</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>The SL uses creativity and different insights to teach the student to see the big picture as they jointly apply critical, analytic, and problem-solving thinking to the research question. This instruction includes referring the student to others for help as needed.</td>
</tr>
<tr>
<td>Flexibility</td>
<td>The SL adjusts to the student’s needs and preferences, including valuing, respecting, and maintaining diversity. The SL is also able to engage with the student when the student’s thinking is messy and ambiguous.</td>
</tr>
<tr>
<td>Identification</td>
<td>The SL determines the needs, background, and experience of the student including the student’s research goals. Background includes the student’s knowledge and experience using research tools and a description of the student’s research without overloading the student with information or focusing too much on processes the SL wants to share instead of what the student needs. This competency also identifies the student’s expectations of the consultation.</td>
</tr>
<tr>
<td>Instruction</td>
<td>The SL uses good instructional methods and treats the consultation as a one-on-one teaching and learning opportunity. The consultation is instructive, logical, simple, and helps the student navigate “the sea of choices.” The SL uses clear examples to illustrate what is taught and can identify whether the student is or is not understanding. The SL teaches the student how to access and use the library and its resources (information is not just given to them).</td>
</tr>
<tr>
<td>Introduction</td>
<td>The SL introduces themselves by name and indicates how to refer to themselves. The SL uses the student’s name and begins with welcoming comments that help to reduce any anxiety the student may have. The SL finds ways to relate to the student and avoid any opinionated responses. The SL’s friendliness is evident and helps to set the student at ease.</td>
</tr>
<tr>
<td>IT Skills</td>
<td>The SL demonstrates the ability to use a variety of technologies to meet the needs of the student.</td>
</tr>
<tr>
<td>Professional</td>
<td>The SL demonstrates the professional standards of the library and other fields of study.</td>
</tr>
<tr>
<td>Professional Development</td>
<td>The SL exhibits the attitude of being both a teacher and a learner. The SL uses a learning theory to guide consultation instruction. The SL learns from each query and interaction and incorporates that learning into future consultations. The SL is willing to compare and contrast best and worst consultations to determine new opportunities for learning and growth. The SL takes calculated risks to improve themselves.</td>
</tr>
<tr>
<td>Question Strategies</td>
<td>The SL uses a variety of questioning strategies, including open questions (probing questions to better understanding the research), closed questions (clarifying questions to narrow the focus of the research), and follow-up questions (rephrasing the student’s questions to confirm understanding). The SL alternates well-phrased, logical questions with listening skills.</td>
</tr>
<tr>
<td>Relationships</td>
<td>The SL engages in relationship-building activities at the start of and throughout the consultation to establish and build trust, respect, and civility. The SL uses etiquette to be approachable, courteous, polite, and sincere. The SL expresses appreciation for the student’s request for help.</td>
</tr>
<tr>
<td>Research Efficacy</td>
<td>The SL displays strong organizational skills throughout the consultation, including describing procedures used, focusing on research support, and teaching research strategies, skills, shortcuts, informal tips, and techniques, all from the perspective of the student—what will be most helpful to the student at their level of need. The SL may need to conduct a background search of the student’s topic prior to the consultation.</td>
</tr>
<tr>
<td>Research Process</td>
<td>The SL teaches and walks the student through the research process, demonstrating traditional and non-traditional search tools (e.g., databases, library catalog, Google) and relating the elements of the search to each other. The consultation includes how to narrow or broaden searches and search terms. The SL brainstorms with the student to identify keywords connected to the subject. Depending on the student’s experience, the consultation may include instruction on advanced search techniques.</td>
</tr>
<tr>
<td>Research Protocols</td>
<td>The SL teaches the student about citation management tools and styles, annotated bibliographies, use compliance (e.g., copyright, plagiarism, accessibility), types of research, and multiple search strategies. The SL’s knowledge of research protocols is manifest through each consultation discussions (e.g., how and when to use databases).</td>
</tr>
<tr>
<td>Search Quality</td>
<td>The SL discusses how effective or accurate the search tools are on the accuracy and efficacy of the resource, including specific and current subject knowledge.</td>
</tr>
<tr>
<td>Search Tools</td>
<td>The SL discusses the level of sources (primary, secondary, tertiary), use of library tools (e.g., databases, open access, traditional resources, Boolean operators, library website, journal access and article download, interlibrary loan), use of library catalog, and their knowledge of the resources and collections.</td>
</tr>
<tr>
<td>Time Management</td>
<td>The SL responds in a prompt and timely manner to information requests. The SL teaches time management skills and tips. The SL is aware of and consults within the time limitations of the student.</td>
</tr>
<tr>
<td>Willingness</td>
<td>The SL balances leading and following in the consultation as they seek to understand and use the student’s information-seeking behaviors. The SL has a desire to understand the student’s point of view and focuses the consultation on the student’s needs. The SL shows interest in and enthusiasm for the student’s research topic. The SL is helpful and encouraging. The SL is aware of the impact of the discipline’s culture on perception and research.</td>
</tr>
</tbody>
</table>
Engaged remotely or remotely engaged
How do academic library workers conduct and assess library engagement during the COVID-19 Pandemic

Janis Shearer and Jen-chien Yu
University Library, University of Illinois, Urbana-Champaign

Introduction
In March 2020, the coronavirus disease 2019 (COVID-19) forced institutions of higher education (IHE) to implement health and safety measures to protect students and employees. Throughout this public health threat, the Centers for Disease Control and Prevention (CDC) and the Public Health Agency of Canada (PHAC) have provided institutions in the United States and Canada with guidance, and in response, IHE developed strategies to help slow the spread of the disease. On March 11, 2020, the World Health Organization (WHO) categorized COVID-19 as a pandemic. The next day, researchers measured significant impacts to in-person programs and events held in academic library spaces, with up to 28% of academic library hours being limited or closed and up to 60% of public events being canceled (Hinchliffe and Wolf-Eisenberg, 2020). Remote work quickly became the norm with limited in-person interaction enforced by social distancing with academic library programs and events similarly situated. Therefore, building the capacity to engage remotely became critical for many academic library workers who implement programs and events.

Purpose/Research question
As we move forward during the COVID-19 Pandemic, what lessons and recommended practices are learned from academic library workers responsible for programs and events? The authors’ institution canceled or postponed planned programs to prevent the spread of COVID-19, which prompted an inquiry into how other institutions were responding. In this study, the authors asked, to what extent were engagement activities and academic library workers impacted by COVID-19? By centering academic library engagement workers and their work, and through developing personas for use in a library setting to understand engagement programs and events, the authors’ work contributes new information for library workers in outreach and engagement.

Literature Review
As scholarly work emerges to discuss libraries responses to the COVID-19 Pandemic, there is little focus on how it has affected academic library engagement via programs or events. While general information has been collected, what is missing are the specific impacts to these programs, events and the staff who do this work.

As research to explore the impacts of COVID-19 develops, initial analyses have predominantly focused on broad response from academic libraries (Hinchliffe and Wolf-Eisenberg, 2020; Heady, Vossler and Weber et al., 2021; Kosciejew, 2020), country specific response (Chisita and Chizoma, 2021; Fasae, 2020; Guo et al., 2020; Harris, 2021; Intahchomphoo and Brown, 2021; Rafiq, 2021; Tammaro, 2020), and case studies of individual library’s responses (Ma, 2020; Mattson, Reed and Raish, 2021). Such research generally summarized building and service access.

After their initial broad response, academic libraries began to evaluate their management of services and policies (Heady, Vossler and Weber, 2021) as well as disaster and emergency planning (Kehnemuyi, 2021). Concurrently, a focus on individual library
services began to emerge and researchers studying operational services such as online instruction (Rafiq et al., 2021) and online reference (Ogunbodede and Wiche, 2021; Tsekea and Chigwada, 2021) shared findings to provide libraries with strategies to adapt their services. While significant data have been studied to understand how COVID-19 has affected academic library users (Bladek, 2021; Chigwada, 2021; Cox and Brewster, 2020; Scoulas, Carillo and Naru, 2021), there is an increased interest by researchers worldwide to discuss and publish findings about library workers affected by the pandemic.

Salvesen and Berg (2021) studied the emotional impact of COVID-19 on individual library workers when academic libraries closed in New Jersey, USA. They found several survey respondents who did “not feel supported by administration” as library restrictions were put in place. Duggins and Hall’s (2021) online survey of Kentucky, USA’s academic librarians found they had the highest level of future employment concerns in comparison with other library types. Rafiq et al. (2021) interviewed university library heads in Pakistan and examined challenges faced by working from home, communication and providing online classes.

In addition, case studies sharing the experiences of academic library workers are also valuable. Mehta and Wang (2020) examined how the abrupt pivot to work from home decreased collaborative and supportive work in Massachusetts, USA. They also noted how these challenges affect their ability to identify and comfortably use tools to engage library users. Chigwada (2021) examined the challenges COVID-19 has imposed on academic library workers in Zimbabwe. Their results found that, of library workers interviewed, a majority had unequal connections to the internet which caused the inability to provide virtual services.

**Design, Methodology or Approach**

The authors of this paper developed a semi-structured interview guide (Appendix I) and conducted one-on-one interviews with twenty-eight library workers who are responsible for engagement events or programs at academic libraries. The participants were recruited via library email list (Appendix II) announcements (Appendix III) sent by the authors. The email lists were hosted and maintained by institutions in the United States and had many subscribers residing in the United States. Recruitment took place during early fall of 2020. As a result, twenty-seven of the participants were academic library workers in the United States and one was a Canadian academic library worker. The interviews were conducted October through December 2020.

The interview questions included the following topics:

- Background information (institutional and library characteristics, also COVID-19 plans),
- Library engagement programs or events the participants or their libraries hosted, and
- How the engagement programs or events have changed due to the COVID-19 Pandemic

The participants were also asked to reflect on their needs for institutional and library support as well as professional development needs as they continue to face challenges during the COVID-19 era. The interviews were conducted via Zoom in voice-only mode. The audio of the interviews were recorded and each lasted approximately one hour. The authors compiled data notes from the interviews and from listening to the audio recordings afterwards. The data notes were used for developing personas.
Personas

Alan Cooper, a software inventor, pioneered the use of personas as a technique for modeling users in the field of interaction design, and described personas as “a precise descriptive model of the user, what he wishes to accomplish, and why” (Cooper and Reimann, 2003). Personas are created based on research and real data collected through observations, interviews, surveys, literature reviews, and other methods. Cooper believed that personas are also a powerful communications tool, and they resolve user-centered design issues such as self-referential design (when designers project their own goals and motivations onto a design).

The personas methodology has been used by library and information science (LIS) researchers to study users of libraries or information systems. A study published by Zaugg and Rackham (2016) identified ten personas from studying undergraduate library users. Sundt and Davis (2017) studied users of an academic library and created six personas that modeled undergraduates, graduate students, faculty, and community users. The present study could not find any research that applies the personas methodology to study library workers.

Why Personas?

While conducting the interviews, the authors individually compiled notes from each interview (data notes), then reviewed and discussed all of the data notes together. The authors discovered information that could be presented quantitatively or qualitatively. Quantitative information, such as the number of universities or colleges that suspended instruction during summer in 2020 or the breakdown of participants’ university type, were compiled and presented in data tables. During the process of coding the data notes and organizing them into themes, the authors reflected on all twenty-eight library workers who were facing uncertainty and worries during the pandemic while dedicated to their work to engage students, faculty, or community members. At this point, the authors recognized the need to center the people doing this work - not the libraries and their COVID-19 responses, or the number of engagement programs and the attendance, but the library workers themselves. The authors then began to focus on coding the challenges and needs of the participants. This approach led the authors to consider methods and techniques commonly used for user experience (UX) practices which guided the decision to apply the personas methodology.

However, conventional personas, often created by UX practitioners to model users or consumers, have fictional demographic information such as gender or age, as well as headshots (stock photos) or personal names. The authors did not collect personal demographic information about the participants due to the concern that the use of fictional names, gender or age might lead to misperception about the personas. For example, if a female label (name or headshot) was used, it might give readers the impression that only female participants could be represented by a particular persona. To that end, the authors decided not to assign fictional names, gender, age, or headshots for the personas presented in this paper.

Results

Participants

The authors interviewed twenty-eight library workers responsible for engagement activities at different types of institutions of higher education. All participants worked for conventional academic libraries whose primary function is to support learning and research with services, collections, and facilities. One participant worked at an online university that offers all programs via distance education. One participant worked at a 2-year community college. While all participants except two worked on campuses that have campus housing, the size of students living on campus varies. Table 1 shows institutional characteristics of the participants’ institutions.
Table 1: Institutional Characteristics

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>27</td>
</tr>
<tr>
<td>Canada</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>University Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>9</td>
</tr>
<tr>
<td>Public</td>
<td>19</td>
</tr>
<tr>
<td>2-year</td>
<td>1</td>
</tr>
<tr>
<td>4-year</td>
<td>27</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Campus Setting</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>21</td>
</tr>
<tr>
<td>Suburb</td>
<td>6</td>
</tr>
<tr>
<td>Town</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Have Campus Housing</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Student Population</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,000-9,999</td>
<td>7</td>
</tr>
<tr>
<td>&gt;10,000</td>
<td>21</td>
</tr>
</tbody>
</table>
In certain regions of the United States and Canada, the number of COVID-19 cases rose at an alarming rate in the beginning of the pandemic. As a result, the IHE in these regions had to suspend their in-person instruction and close their campus facilities much earlier than others. For example, participants who work for universities or colleges in the states of New York and Massachusetts reported more library building closures in summer 2020 than others. Table 2 summarizes the status of instruction and libraries during summer and fall 2020 at the participants’ institutions.

Table 2: Summer and fall 2020 Instruction and Library Status

<table>
<thead>
<tr>
<th>Instruction (Classes)</th>
<th>Summer 2020</th>
<th>Fall 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change compared to the prior academic year</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Remote of alternative course delivery</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>Suspended or canceled</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Don’t know or N/A</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Library Buildings/Facilities</th>
<th>Summer 2020</th>
<th>Fall 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library location(s) open usual hours</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Limited hours and/or number of visitors</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>All library location(s) closed</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Don’t know or N/A</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Library Services</th>
<th>Summer 2020</th>
<th>Fall 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>All library services available as usual</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Limited services and/or number of users</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>All library services suspended</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Don’t know or N/A</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Library Engagement Personas

The authors followed the personas methodology as a way to understand how the participants conduct engagement activities, what they wish to accomplish, and why. The authors developed the following three personas after interviewing twenty-eight participants (Table 3):

- **Instructor (The “Engagement through research services & instruction” Persona).** Instructors are library workers who work at all types of institutions of higher education. Their primary responsibility is to support student learning. They organize learning-focused events and programs such as embedded office hours, research workshops or drop-in library assistance. Their engagement activities usually take place in library spaces, classrooms, student clubs, cultural houses or learning commons.

- **Event Professional (The “Engagement through programming and events” Persona).** Event Professionals are library workers who work at all types of institutions of higher education, many of whom work for medium- or large-sized institutions\(^1\). They are responsible for large library events such as orientation, public performances or speaker series as well as library communication and marketing. They partner with campus units and academic programs as well as the broader community. The programs and events they conduct often take place in event spaces on campus such as auditoriums or exhibit halls.

- **Community Liaison (The “Engagement through non-library partnerships” Persona).** Community Liaisons are library workers who work on large campuses located in cities or large suburbs. They engage partners from all types of community groups: nonprofits organizations, advocacy groups, arts and culture programs, or charities. They organize events and programs in public spaces such as local public libraries, parks, and community centers.

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\(^1\) The Carnegie Classification of Institutions of Higher Education defines an institute’s size (student population) using fall enrollment data. A “medium” 4-year institution has a full-time equivalent (FTE) enrollment of 3,000-9,999 degree-seeking students and a “large” 4-year institution has a FTE enrollment of more than 10,000 students.
Table 3: The Engagement Personas

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Event Professional</th>
<th>Community Liaison</th>
</tr>
</thead>
<tbody>
<tr>
<td>The “Engagement through research services &amp; instruction” Persona</td>
<td>Create outward engaging programs to encourage participation across the campus.</td>
<td>Create an environment where people feel welcome to participate. Their work is about building connections and partnerships in communities, and outside of their libraries.</td>
</tr>
<tr>
<td>Event Professional</td>
<td>The “Engagement through programming &amp; events” Persona</td>
<td></td>
</tr>
<tr>
<td>Community Liaison</td>
<td>The “Engagement through non-library partnerships” Persona</td>
<td></td>
</tr>
</tbody>
</table>

**MOTIVATIONS**
- Create and promote programs based on the needs of the student population and different campus settings.
- Create outward engaging programs to encourage participation across the campus.
- Create an environment where people feel welcome to participate. Their work is about building connections and partnerships in communities, and outside of their libraries.

**PAIN POINTS**
- The pandemic makes it harder for those who utilize high foot traffic areas (e.g., libraries or student unions) to promote engagement events and programs.
- Need colleagues in similar roles such as engagement or public relations to bounce ideas off of or to help with marketing and promotion.
- Certain types of events need a “host” (other than the Event Professionals themselves). To advocate for funding to pay for a “host”, and other non-traditional library expenses (e.g., live transcription or captioning) can be difficult.
- Compete with many other free or affordable local events and programs on campus and in the community.
- Feel that they must do all the work alone, with such feelings intensifying during the pandemic.
- Managers of Community Liaisons sometimes cannot set explicit engagement goals or expectations.

**CORE NEEDS**
- Learn about different ways to get students engaged in the virtual environment (e.g., Zoom).
- Develop ideas on different activities students could do in a breakout room and ideas on how they can build bonds with one another.
- Learn how to assess better
- Learn to do program evaluation
- Desire to be a better facilitator
- Create partnerships with campus groups (e.g., first generation students and indigenous population)
- Require budget and staff
- Learn how to assess better
- Be able to take a class about how to do engagement work
- Create partnership with organizations or groups outside of the university/college
- Assess community needs
- Learn how to assess better
- Be able to take a class about how to do engagement work
- Create partnership with organizations or groups outside of the university/college
- Assess community needs
- Learn how to assess better

**ASSESSMENT PRACTICES**
- Before COVID-19: Record attendance, observe participation during instruction, dialoging (in-person), track usage of materials, use online surveys.
- Currently: Very little - the number of library instruction video views, dialoging (via Zoom).
- Before COVID-19: Record head and gate counts or number of audience, post-event paper/online surveys.
- Currently: Still use online surveys but get fewer responses.
- Before COVID-19: Use post-event surveys, get feedback from collaborators.
- Currently: Sometimes have no assessment, sometimes use online surveys.
Findings

The COVID-19 pandemic has brought many challenges to library engagement and the people who work in this area. The campus facility and library closures and social distancing guidelines led many libraries to cancel their in-person engagement activities or to move them online. However, the pandemic does not only affect in-person engagement activities. Participants who have been conducting engagement activities in the digital realm (e.g., social media marketing and webinars) prior to the pandemic also reported challenges such as Zoom fatigue and worrying about their own and their colleagues’ mental and physical health. While the study did find that most participants felt supported by their institutional and library administrators, they also expressed concerns about the current and future staffing and budget plans as the pandemic drags on. One participant said “...getting mixed messages [from the administration] ‘don’t push yourself’ but also say there isn’t enough engagement with patrons.” The participants shared the following issues that are important to library workers conducting engagement activities during the COVID-19 Pandemic.

How do academic library workers conduct engagement during the COVID-Pandemic?

While most participants reported that while the number of engagement programs or events have decreased during the pandemic, the goals for library engagements mostly remained the same (Table 3, “Motivation”). However, the participants faced different challenges (Table 3, “Pain Points”) when adapting workflows of conducting engagement activities. The participants in the Instructor Persona struggled with engaging the student population. The Instructor (Engagement through research services & instruction) Persona needs to learn different ways to get students engaged in learning (Table 3, “Core Needs”) in the virtual environment. The participants in the Event Professional (Engagement through programming & events) Persona felt it was difficult to coordinate events because most colleagues were working remotely, and there were less student volunteers or student workers (many students went to remote learning and moved home) to help with the events (“Pain Points”). Identifying effective event hosts, masters of ceremony or facilitators for virtual events can be key factors for success. However, advocating for libraries to provide funding for it is difficult (“Pain Point” and “Core Needs”). The participants in the Community Liaison (Engagement through non-library partnership) Persona perhaps struggled the most in terms of having a sense of direction (“Pain Points”). Because in addition to facing pandemic related challenges at their institutions and libraries, this persona faces vast challenges that happen in the community as well.

Why is assessment hard?

“I feel like I’m a glorified event planner sometimes, but I would like to know more about community needs assessment, pedagogical stuff and how to assess better...I feel like I could be doing things better, but I’m not sure what I need to do…”

The Personas help illustrate why assessment is particularly hard for library engagement workers in outreach and engagement. While standard library performance indicators such as number of programs and events, attendance, or user satisfaction exist, they cannot measure the success, if any, of library engagement. The three Engagement Personas serve different target audiences, organize different types of programs in different modalities or physical spaces. The Instructor Persona library workers might consider assessing their engagement activities using methods similar to information literacy type of assessment. However, the Event Professional Persona and the Community Liaison Persona library workers should consider a community needs assessment or a program evaluation.

Everyone wants to grow professionally

“I have no professional training about running events, I just bootstrap it. We do not have a library interest group of people who do programming to share experiences or best practices or anything like that.”

When specifically asked about professional development needs in their position, participants shared examples of access and education necessary to further their work. For those with hybrid or remote components that continued beyond their library’s initial response to COVID-19, development needs included in-depth knowledge on how to incorporate Association of College &
Research Libraries (ACRL) Framework to inform engagement goals, how to use interactive programming, learning a multitude of technologies to engage or connect with students (beyond Zoom), and marketing and promoting online exhibits and remote events. Needs for specialized training in readers advisory, instructional design, and courses to deepen understanding of library collections they work with (e.g., rare books) were also articulated. In addition, an increased knowledge and education in video and media production such as creating instructional and promotional videos is necessary. Several participants also emphasized a vital need for financial support to conduct research and to access educational opportunities.

Need for connection and support

“As someone who is an extrovert, likes people, missing that sense of camaraderie, so missing a lot of these social interactions, morning coffees, lunches, have been missing those interactions. Made inroads with faculty - but they are struggling too.”

As part of our semi-structured interviews, the authors did not specifically ask questions related to networking or connecting with colleagues. Instead, throughout our interviews, the participants from all three Engagement Personas responded with the need for peer support. For instance, connection and support from individual colleagues to “bounce ideas off of” and email lists or group discussions with a focus on engagement, would be appreciated. Participants yearned for opportunities to learn from the ideas and experiences of others doing similar work within public, community college and museum libraries in order to grasp “what is working” and what to avoid.

Limitations & Challenges

Recruitment of participants was limited to library email lists hosted by institutions in the United States. This limited our potential pool because not all library workers use email lists or have access to email lists. Also, our ability to reach academic library workers who were furloughed or laid off due to COVID-19 was limited. These impacts could not be avoided during the recruitment process.

Additionally, limitations to our method and approach exist. There is no established research or analysis framework for studying or understanding library workers and library engagement. However, because knowledge of impact on engagement activities and the staff who do this work is limited, the findings of this study result in new and useful information for library workers in this area.

The authors primarily recruited individuals with engagement as a component of their work. There were several lenses that were unknown until participants were interviewed and shared reflections that went beyond the scope of library engagement work, such as discussion associated with racial unrest related to the murder of George Floyd. A few participants mentioned that they created engagement programs to address racial and social events that took place in summer 2020.

Conclusion

The COVID-19 Pandemic has dramatically affected academic library engagement workers as well as the services they provide. When the authors began this study and set out to analyze how or if COVID-19 made impacts in programs and events, they learned that the impacts extended beyond their original scope and into how workers provide library instruction and develop non-library collaborations. By applying a human-centered approach using personas to study library engagement and the pandemic’s effects - the authors learned that academic libraries can address worker “pain points” by developing resources in support of their “core needs.” It is the authors’ belief that this would improve engagement activities.

The three personas the authors developed, the Instructor (Engagement through research services & instruction) Persona, the Event Professional (Engagement through programming and events) Persona, and the Community Liaison (Engagement through
non-library partnerships) Persona, outline and explain the core needs workers require to improve success in their roles during COVID-19. The uniqueness of using personas methodology is distinct, as we did not locate research applying this methodology to study library workers.

As the authors look forward to future work in the study of engagement activities, validating each persona is a necessary next step. The authors also anticipate exploring public library and community college response to COVID-19’s impact on engagement activities.

Originality and Value

Existing studies on impacts of COVID-19 in academic libraries have predominantly focused on broad responses such as building closures and continuity of library services. Few studies have investigated how the pandemic affected library workers, and none of them discussed library engagement work. By way of personas, the authors of this paper put library workers and their engagement work in the center and created personas to describe the engagement activities they do, how they must adapt during the pandemic, and what they need to be successful.
Appendix I Semi-Structured Interview Guide

Background Information

Briefly describe the university/college and library you work for.

1. Briefly describe the university/college you work for (institutional characteristics such as Carnegie Classification, FTE, private or public, etc.).

2. Briefly describe the library you work for (library characteristics such as the number of branches and service points, number of librarians and staff, etc.).

3. Position Information
   · What is your position title?
   · What kinds of engagement activities do you do?

4. Institutional COVID-19 Plans
   · What best describes the status of classes at your institution?
     **Summer 2020** (choose one)
     [ ] No change compared to the prior academic year
     [ ] Remote or alternative course delivery
     [ ] Suspended or canceled
     [ ] Don't know or N/A

     **Fall 2020** (choose one)
     [ ] No change compared to the prior academic year
     [ ] Remote or alternative course delivery
     [ ] Suspended or canceled
     [ ] Don't know or N/A

   · What best describes the status of library buildings/facilities at your institution?
     **Summer 2020** (choose one)
     [ ] Library location(s) open usual hours
     [ ] Limited hours and/or number of visitors
     [ ] All library location(s) closed
     [ ] Don't know or N/A

     **Fall 2020** (choose one)
     [ ] Library location(s) open usual hours
     [ ] Limited hours and/or number of visitors
     [ ] All library location(s) closed
     [ ] Don't know or N/A
What best describes the status of library services at your institution?

**Summer 2020** (choose one)
- [ ] All library services available as usual
- [ ] Limited services and/or number of users
- [ ] All library services suspended
- [ ] Don't know or N/A

**Fall 2020** (choose one)
- [ ] All library services available as usual
- [ ] Limited services and/or number of users
- [ ] All library services suspended
- [ ] Don't know or N/A

**Library engagement programs/events**

5. What best describes the status of your library engagement (programs/events)? *Programs/events continue as usual, Programs/events have increased, Programs/events have decreased or Program/events have stopped?*
   - *If the programs/events continue as usual, have increased or have decreased* - What are your goals for library engagement during COVID-19? How are they different from before COVID-19?

6. What challenges are you facing in response to COVID-19?
   - *Adapting workflows or job responsibilities, budget, staffing, technology, public health guidelines or other?*

7. What kind of institutional support, if any, have you received specifically for supporting engagement programs and events during COVID-19?

**Best Practices**

8. Are you currently doing engagement (programs/events) remotely? [YES/NO]
   - *If YES* - How do you conduct engagement (programs/events) remotely?
   - *If YES* - How have you had to be creative?

9. How do you provide engagement (programs/events)?
   - Before COVID-19
   - Currently

10. How do you assess engagement (program/events)?
    - Before COVID-19
    - Currently

11. How do you feel about how your library supports engagement (programs/events)?
    - Before COVID-19
12. Do you have any professional development needs for working with engagement (programs/events)?
   - Currently

   - If YES – What are your professional development needs? Working with video conferencing software (e.g. Zoom, GoToMeeting, etc.)? Networking in an online environment? Other?
Appendix II Library Email Lists Used for Recruitment

- American Indian Library Association (AILA),
- American Library Association Spectrum Scholars,
- Asian Pacific American Librarians Association (APALA),
- Association of Research Libraries (ARL) Diversity Program Alumni,
- Black Caucus of the American Library Association (BCALA),
- Chinese American Library Association (CALA),
- Library Marketing and Outreach Interest Group (LMOIG) and,
- National Association to Promote Library & Information Services to Latinos and Spanish Speaking (REFORMA)
Appendix III Email Recruitment Text

Subject: Invitation to participate in a study on academic library engagement during the COVID-19 Pandemic

Dear [first name of participant],

We are writing to invite you to a study on the current practices of academic librarians and library staff who are responsible for engagement activities such as discussions, exhibits and events. The goal of this study is to improve understanding of how or if the COVID-19 Pandemic has impacted how academic librarians and staff who do this work. Would you be willing to participate in a one-hour interview to share your unique experiences and perspective?

If you have any questions about the study, please don’t hesitate to reach out. Thank you so much for your consideration.

Sincerely,

[Names of investigators]
References


Introduction

Organizations face multiple informational challenges that can have a significant impact on their ability to document their business and decision-making processes. To address these concerns and to avoid a fragmented approach to information management (ARMA International, 2017), records managers and archivists should embed their actions within an information governance framework, in cooperation with other professionals (e.g., IT professionals). To ensure a better strategic positioning, they should also develop an evaluation process to demonstrate the added value of records and archives management programs in meeting organizational goals. Evaluation is “a rigorous approach to collecting and analyzing information that aims to make a judgment about a program […] or project to assist in decision-making” (Québec, 2013, p. 9) and should align with strategic planning (Laney, 2017).

Library science has a tradition of using statistics and indicators as shown by various ISO standards (Appleton, 2017). In archival science, these concerns are relatively new with the publication of a first ISO standard (ISO, 2021). The literature documents numerous conceptual issues regarding what constitutes an archive and what archives performance criteria should be (Yakel and Tibbo, 2010; Poll, 2019). These issues are further influenced by cultural differences in the implementation of archival science principles and the current practices of evaluating and measuring performance. To our knowledge, these concerns are not well documented in the archival literature. This paper will provide an overview of performance measurement and evaluation practices in records management and archives in organizations in the province of Québec, Canada. This study uses the Québec integrated perspective of archival science, which provides a continuum between records management and archives for a holistic view of the whole records life cycle.

Conceptual framework

Information governance is a “strategic, cross-disciplinary framework composed of standards, processes, roles, and metrics that hold organizations and individuals accountable for the proper handling of information assets. The framework helps organizations achieve business objectives, facilitates compliance with external requirements, and minimizes risk posed by substandard information-handling practices” (ARMA International, 2018, p. 1). Considered in a participatory approach, information governance implies that organizational actors from complementary disciplinary fields co-construct an information accountability framework through joint decisions. Thus, the standards, processes, rules, etc. put in place “are the result of a constant negotiation between the multiple actors involved. This negotiation, in addition to guiding decisions and actions, facilitates the sharing of responsibility among all the actors involved, each possessing a certain form of power” (Lacroix and St-Arnaud, 2012, p. 26, our translation). Such an information governance approach implies going beyond organizational silos and thus rethinking the organizational culture.
Records managers and archivists, as information content specialists, should be key players in the evaluation process of an information governance program. However, in order to play such a strategic role, they need to be able to change the traditional perception of being custodians of heritage and simply supporting the activities of the organization. This implies broadening their skills to include strategic planning, business process modelling and the evaluation of activities through quantitative and qualitative performance indicators. In addition, they need to be able to adequately analyze the organizational environment in order to address potential obstacles while leveraging available strengths.

In this context, records managers and archivists have gradually become interested in evaluation and performance measurement of their programs, activities and services. The concept of performance is defined by Voyer (2008, p. 111, our translation) as “a value added to an initial state, as the achievement of a minimum required or acceptable outcome or as the reduction of the undesirable. The performance is the articulation between the concepts of relevance, effectiveness, and efficiency (Voyer, 2008; Moran and Morner, 2017). It is primarily a contextual concept and a multi-dimensional construct for which outcomes must be measured from different perspectives (information service users, organizations and partners) (Dugan et al., 2009). In order to better understand the evaluation and performance measurement of records and archives management activities, this study is also based on a conceptual framework, from the management sciences field, developed by Voyer (2008, p. 120, our translation) which identifies six measurable dimensions necessary to draw a portrait of the evaluation and performance of an organization or an activity: “(1) clients, their needs and demands for products and services as well as opportunities for intervention; (2) resources (human, financial, informational and material) and structural conditions, suppliers and partners; (3) processes, activities - the what - and ways of doing - the how; (4) results and achievements; (5) specific clients outcomes and impacts on the organization and the environment; (6) the broader environment (the context, opportunities and external factors).”

It is important to specify that our study uses the integrated archival perspective. “Archival science is the discipline concerned with the principles and practices governing the creation, appraisal, acquisition, classification, description, indexing, dissemination, and preservation of records throughout their life cycle regardless of their medium” (Rousseau and Couture, 1994, p. 34, our translation). In the province of Québec, Canada, “archivists apply the concept of “integrated records and archives”, which sees a continuity between the records created in the context of business activities, and the percentage of those records that will be preserved as “historical archives” (Maurel and Zwarich, 2021, p. 36). This project is part of an integrated perspective of archival science covering both records management and the management of historical archives.

Methodology

This study is based on two complementary pilot research projects. The first research project was conducted in 2017-2019 and aimed to understand the positioning and strategic role of records managers and archivists within their organizations in implementing information governance initiatives. The data were collected using in-depth interviews with 13 records managers, archivists, and IT professionals in Canadian public sector organizations. This project had the following four specific objectives:

1. Describe the responsibilities of records managers and archivists in their organization’s information governance initiatives;
2. Describe the perception of the responsibilities of other organizational actors in these information governance initiatives;
3. Identify the power relations between the different actors involved in information governance initiatives; and
4. Identify the competencies needed for information governance initiatives. The data were analyzed using QDA Miner software.

Based on some results from the previous research project, we started, in 2020 (ongoing), a research project that focuses on the evaluation and performance measurement practices of records managers and archivists within their organizations. So far, six in-depth interviews were conducted with records managers and archivists from Québec’s public sector organizations. The following objectives were identified for this project: (1) Identify evaluation and performance measurement practices in records management and archives activities; (2) Identify similarities and differences of these practices; and (3) identify standardized
performance indicators to measure the activities in records management and archives. The data were analyzed using NVivo software.

**Findings**

The main results are presented based on the objectives of both projects, which focused on the one hand on the issue of organizational power of information governance actors, and on the other hand on transversal competencies needed by archivists in the fields of influence and strategy. Accountability is one of the influencing factors to be mobilized by records managers and archivists as a lever in information governance. It is an enrichment of the responsibilities of records managers and archivists that will enable them to position themselves more strategically within their organizations.

**Strategy and accountability issues**

The project conducted in 2017-2019 highlighted a number of facilitators and barriers to information governance. An important issue is the compliance and accountability requirements of organizations. Such requirements, according to respondents, are factors that should facilitate the work of records managers and archivists. Organizations have obligations to comply with the legal and regulatory framework. One might think that accountability is taken into account in all administrative units of an organization, while the realization of business processes should be closely interwoven with institutional information practices. However, some respondents noted that this is not necessarily the case and pointed to the lack of records management accountability on the part of the organization’s administrative units. Some deplored the fact that there is no legislation that, like access to information, would clearly hold managers accountable to a chief information officer. In the end, archivists do not have sufficient legal leverage. This issue is related to a number of factors, including: (1) the poor understanding of information risks and their impacts by senior management; (2) the lukewarm interest (or lack of interest) of senior management in supporting and resourcing a proactive information governance approach; and (3) a resistance to change and the difficulty in changing the organizational culture (e.g. to change the silo/compartmentalized working culture).

Another issue is the branding of records managers and archivists and the perception that they play a secondary role in organizational activities. However, some respondents argued that their actions are directly linked to the organization’s mandate, and that therefore they have a strategic role. We note their desire to assert a greater, and above all better recognized, decision-making role in the implementation of an information governance program. This implies a broadening of their roles and responsibilities beyond the so-called traditional functions, by adapting mechanisms belonging to other specializations to manage information. These include information governance policy, business process analysis, categorization of information assets, and the development of performance indicators. In addition, the use of standardized assessment methods and tools can better help demonstrate the benefits of archivist-led management projects and ensure that these projects meet the strategic objectives of organizations. These are responsibilities, methods and tools that may be new or less familiar to archivists who must claim them as their own (AAQ, 2014; ARMA International, 2018).

The positioning of records managers and archivists is also related to the perception of their sources of power or influence by other organizational actors. Power is defined as the ability of a person or unit to influence others so that they deliver desired outcomes (Lainey, 2015; Moran and Morner, 2017). When asked how they perceive their sources of influence, respondents in the 2017-2019 study mainly mentioned their professional credibility is based on their expertise and disciplinary skills. According to them, their credibility has an impact on their ability to be good influencers with other organizational actors. However, when asked how they perceive the sources of influence of the organizational actors (units or individuals) with whom they have established partnerships, our respondents mentioned not only their expertise and disciplinary skills, but also factors such as the resources available to these actors to implement projects; the degree of dependence on these actors to carry out projects; their moral weight; their sense of opportunity; their strategic sense; and their credibility, reputation and charisma.
Thus, if records managers and archivists had strong support from senior management, defined performance measurement practices, adequate control mechanisms, and sufficient resources, they would have substantial leverage they currently do not have (or currently do not have enough of). In addition, there is a debate right now in the Québec archival community about the importance to update the Québec Archives Act (Québec, 1983). For many, this law needs to be revised to give more coercive power to records managers and archivists. More formalized requirements and mechanisms, enshrined in the law, would serve as additional levers to better formalize the informational accountability of all managers in organizations.

**Evaluation and performance measurement objectives and practices**

The records managers and archivists who have participated in the research project that started in 2020 have an increasing interest in evaluation and performance measurement practices. They consider that evaluation and performance measuring is an essential function to demonstrate their added value to the activities of their respective organizations. According to them, this function would certainly document, through evidence, their intuition regarding which records management and archives program or project is effective. As a result, all respondents have implemented or are currently implementing evaluation and performance measurement practices. The reasons for such practices varied among respondents. The results show that the primary reason is to ensure the satisfaction of the organization's users and clienteles (n=5). Therefore, the respondents mentioned a continuous concern for the improvement of records and archives management services (n=6). For two respondents, measurement allows for adequate resources management, including the financial resources allocated to records and archives management projects as well as the amount of money invested in human resources. However, half of the respondents mentioned that when developing a new project or activity, they did not necessarily define specific objectives. Therefore, their ability to measure the outcomes of these projects is significantly limited. While three others respondents defined objectives for each project, only two of them made sure that the projects were aligned with the strategic planning of their organizations. The results show that evaluation and performance measurement practices are not widely used for accountability purposes as there is no obligation to provide these kinds of measures and because the practices are not standardized among the records and archives management profession.

**Measures and indicators**

The results from the second research project showed that the measures used by the respondents within their organizations were mainly quantitative measures that focused on records and archives services and collections management such as the time allocated to information retrieval, the budget allocated to records and archives management program, the time spent implementing records and archives management tools (classification plan, retention schedule, electronic records management software, etc.), the number of visitors (physical and online), and the linear meters of records or archives within their fonds. Two participants mentioned the number of training sessions provided to users as well as the number of events documented. Qualitative data were also collected mainly to better understand the perception of users and clienteles regarding the services provided. Thus, the results show that, in accordance with the previous objectives, the indicators are mainly aimed at measuring the level of user satisfaction as well as the management of the records and the archival holdings.

The results also show that the measures are not documented or standardized between organizations. For five respondents, the frequency of data collection is irregular and primarily done for special projects that have a clearly defined beginning and end. The frequency of data collection may be explained by the fact that the data is still mostly collected manually. The results highlight the importance of distinguishing between indicators and statistics as pointed out by one archivist: “These indicators are purely statistical and do not stem from any departmental concern. They are compiled to provide statistical information only”. Another archivist emphasized the importance of setting goals for later measuring the performance of records and
archives management activities: “However, they are only statistics. There are no targets set annually that allow us to see if we are performing adequately”.

**Reporting practices**

The mechanisms for reporting the data collected for evaluation and performance measurement purposes vary. Two records managers and archivists reported disseminating data through meetings with managers in their organization which helped raise awareness of records and archives management issues: “The organization is starting to see the importance of records management”. In addition, three respondents disseminated their activities in the organization's annual report. Some respondents indicated that the annual report is their primary means of communicating the records and archives management mandate and activities. However, the data disseminated in the annual report does not measure the performance of records and archives management activities in relation to the organization's objectives. Also, the data are almost invisible within the annual report and do not seem to have an impact on records and archives management activities. In addition, the annual report is not, according to respondents, widely accessible. Finally, three respondents do not disseminate these results because, according to one of them, “management does not ask for anything” and there is no legal obligation to do so.

**Responsibilities of records managers and archivists**

The results from the second research project show that the respondents felt that records managers and archivists need to play a more prominent role in regard to evaluation and performance measurement activities. One of them mentioned the need to be “more proactive as indicators help confirm mandates and positions” in organizations. They perceived that the credibility of records managers and archivists with other managers depends on the implementation of systematic evaluation and performance measurement practices that are aligned “with the organization's strategic objectives”. All respondents felt that evaluation and performance measurement in records management and archives should be a collaborative effort to "add credibility to the process and add value to the organization's management". According to one respondent, the "managers should be involved in the performance measurement process, including the development of the indicators and the tool to assess performance”. Evaluation and performance measurement must be part of the organization's strategic planning, but in records and archives management, this process is still, according to one respondent, "in its infancy and we have to deal with a change in corporate culture”. All respondents have encountered certain difficulties, in particular the "lack of a qualitative and quantitative performance measurement reference framework” that could be adapted to different organizational contexts.

**Discussion and conclusion**

The results from both research projects demonstrate the complexity for records managers and archivists to play a strategic role within their organization through evaluation and performance measurement practices and highlighted three main challenges: (1) the importance of integrated evaluation in the organization’s business processes and the development of a culture of assessment, (2) the competencies required by records managers and archivists, and (3) how evaluation and performance measurement practices can support advocacy initiatives.

**Culture of assessment in the making**

The research findings suggest a disparity in the terminology used by the respondents. For some of them, “statistics” and “indicators” are seen as synonymous, whereas in the literature a distinction is made between these terms. While "statistics" refers to numerical data, “indicators” provide for the identification of objectives and targets to be achieved in order to measure outcomes (Grimard and Pagé, 2004; Gainor, 2014, Appleton, 2017). The recent publication of ISO24083 - Information and
documentation - International archives statistics will certainly provide a common understanding of the terminology as well as the statistics used to document the archives management activities.

The results also suggest that evaluation and performance measurement of records and archives management activities appears to be poorly integrated into the business processes of organizations. The literature shows that several contextual factors can hinder or facilitate performance measurement in information science such as the type of organization, the responsiveness of the managers, the organizational culture, the time allocated to this activity, and the decision-making processes (Grimard and Pagé, 2004; Gainor, 2014, Appleton, 2017). Even though records managers and archivists are required to document the accountability of their organizations, there are no legal mechanisms that can enforce them to carry out an evaluation and performance measurement of their activities, nor that would require the organization's managers to comply with such an exercise. In addition, records managers and archivists do not have the proper leverage within their organization, sufficient resources, nor the relevant competencies necessary to evaluate and measure the performance of their programs and services. The results demonstrate the importance of teaching these concepts and methods in training programs in records management and archival science.

Strategic competencies for records managers and archivists

The implementation of evaluation and performance measurement practices raises the question of the required competencies to carry out these activities. It seems that records managers and archivists are perceived as having a supporting role rather than a decision-making role and their responsibilities do not sufficiently consider strategy, power and influence. Indeed, their responsibilities are more oriented toward archival functions (i.e. classification, description, indexing, preservation and dissemination) (Zwarich et al., 2016). The respondents of both studies confirmed that records managers and archivists need to emphasize their role in the strategic planning of their organization. Being strategic means that records managers and archivists must be able to analyze the internal and external environment of their organization, to plan their organization’s information strategy as well as the projects that will make the strategy a reality. “The information strategy consists of a plan of what the organization wants to achieve in informational terms, and thus must be linked to the organization's strategy” (Bergeron et al., 2009, p. 189-190, our translation; ARMA International, 2018).

In this context, the development of strategic competencies is required. Among the key strategic competencies identified in the professional and academic literature are cooperation and collaboration as well as negotiation and mediation between various professionals in order to achieve common objectives and consensus; accountability that allows for the sharing of information and the empowerment of each individual; innovation to develop new services and tools in records and archives management; and finally, leadership and communication skills (Zwarich et al., 2016; Smallwood, 2020). It is important for records managers and archivists not to put aside the so-called disciplinary competencies but to complement these by developing, in particular, "process analysis, the translation of business needs into functional requirements, the identification of the different values of records, and legislative knowledge “ (Holgado and Vernusset, 2015, p. 114, our translation).

Advocacy

Considering the difficulties mentioned by some respondents regarding their level of influence, we started exploring the literature on advocacy and awareness to better understand how evaluation and performance measurement practices can contribute to advocacy initiatives conducted by records managers and archivists within their organizations.

There are various levels of advocacy initiatives that can be implemented in different settings and be conducted by records managers and archivists, such as awareness that involves initiatives to share information about archives or archivists; outreach
that refers to a wide range of efforts to tailor services to specific clienteles, and lobbying which is more specific, and aims to conduct activities to influence public officials. In the two research projects that are the subject of this paper, we were mainly interested in inreach (or internal advocacy) that refers to “the activities conducted by an archives within its parent institution to raise awareness and gain support for its programs” (Roe, 2019, p. 10-11). The internal advocacy requires certain actions to be taken such as aligning initiatives with the organization’s strategic goals and orientations; defining the objectives of the proposed initiative or project, and knowing the organization’s stakeholders and their motivations by using tools such as stakeholders analysis (Abram, 2017; Roe, 2019). Most managers are aware of the issue of advocacy to defend the interests of their unit. However, few respondents mentioned using such an approach. The lack of internal advocacy can be a concern for better positioning; positioning and advocacy efforts would benefit from being integrated into a strategic approach. This strategic approach must logically also consider power and influence in relation with other information governance actors: records managers and archivists found that their managers sometimes have limited understanding of the value of records management and archives program and their added value in their organization (Hackman, 2011; Roe, 2019).

In an information governance approach, where records managers and archivists want to assert themselves as key players, an evaluation and performance measurement process can be used as a strategic lever for advocacy. To do this, records managers and archivists need to acquire transversal competencies from different disciplines which are not yet sufficiently included in university-based archival training programs.

References

AAQ (Association des archivistes du Québec) (2014), Archiviste d’aujourd’hui: Guide pratique, Association des archivistes du Québec, Québec, QC.


ARMA International (2018), Information Governance Body of Knowledge, ARMA International, Overland Park, KS.


Lainey, P. (2015), Pouvoir, influence et habiletés politiques dans les organisations, JFD Éditions, Montréal, QC.


Evaluation of public libraries in pandemic Poland

The librarians' concerns

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Abstract
The study aimed to discover concerns of public librarians towards an annual evaluation of the libraries realized by their organizers. The qualitative study was realized between May and July 2020. The questionnaire with open-ended questions concerned the following issues: internal communication and work, external communication, communication with the users, opinions on either positive or negative impact of the COVID-19 pandemic on the libraries, the question of post-pandemic future. A total of 379 questionnaires were analysed. The open coding of the answers was used for data analysis. The respondents often expressed their fears about the reading activities and the indicators of the reception of a library offer, as well as negative emotions concerning the potential limitation of funding for the libraries, and reduction of work posts. However, there were also positive answers concerning the fact, that local authorities and the community did appreciate local public libraries due to their closing in the pandemic lockdown. The librarians' fears can result from the circumstances causing the negative perception of reality, but also from negative experiences of the previous evaluation. The culture of evaluation of the libraries by their founders is often (although not everywhere) negative, focused on the financial aspect only, disregarding the factors beyond the librarians' control. This practice can be related to the limited local budget and the policy towards cultural institutions. We can carefully conclude that the experience of the COVID-19 pandemic is worth considering in lobbying for determining the evaluation rules going beyond economic aspects only, but including also the social impact of the libraries. A culture of support and positive motivation is also needed in the evaluation, finding the potentials to improve the results. Such activities could have been realized on different levels, also by institutions (the National Library) or professional library organizations representing the community on a national level.

Keywords
COVID-19, librarians' concerns, pandemic, post-pandemic evaluation, public libraries

Introduction
The pandemic has been experienced by libraries all over the world. It can be analysed in many aspects and perspectives. Each of them - the perspective of a user, a librarian, an institution, a local community, a professional community on a regional or national scale or larger - is important, worth exploration, description, and conclusions for the future.

Purpose of the study
The study aimed to discover concerns of public librarians towards an annual evaluation of the libraries realized by their organizers. The evaluation for the year 2020 was the first one concerning the pandemic situation. This study is a part of the larger project (Kisilowska, 2021), the purpose of which was to describe the works of public libraries during the first lockdown and afterward.

Literature review
The coronavirus pandemic and lockdown is undoubtedly a crisis, covering health, social, and economic aspects of everyday life. Such circumstances influence libraries as well as any other institution, which is described in the literature mostly concerning consequences of natural disasters, like hurricanes or tornados in the United States (e.g. Jaeger et al., 2007; Zach
McKnight, 2010; Flaherty, 2016; Ghorbanzadeh et al., 2020) or tsunami and destruction of nuclear power station in Japan (e.g. Suzuki & Miura, 2014; Vårheim, 2015). Other examples are texts concerning libraries' functioning in social unrests, like those concerning anti-racist disturbances in the United States (e.g. Foster & Evans, 2016; Chancellor, 2017).

The SARS-CoV-2 pandemic is the first one of a global range and that serious intensity, affecting the global population and all institutions despite their character, libraries included. Their works and reactions have been systematically recorded by different agendas, like IFLA, to document this unique time, but also to learn from these experiences for the future.

The pandemic truly influenced the activity of the libraries and their users. As proved by the national statistics in Poland, the number of library readers decreased by 17.8%, and the number of loans by 24.5% in 2020 as compared to 2019 (GUS, 2021). Online catalogues have already been popular, as the number of public libraries offering this service increased slightly by 2.2%. 51.4% of libraries run their profiles on social media. Thanks to the Internet, as much as 56% of public libraries did not limit their services during the lockdown, among which 46.9% offered ebooks, 26.9% - online registration of new users, and 21.2% - free ordering of scans or digitisation of selected publications (GUS, 2021). Expectedly, the number of events organised by public libraries decreased by 59% as compared to 2019, and those which took place were mostly virtual (15.9 thousand in 2020 vs 0.8 thousand in 2019) (GUS, 2021). However, statistics reveal the working circumstances of public libraries only partially.

Research design and methodology
The nationwide qualitative study was realized between May and July 2020, with the support of the Polish Librarians' Association. It aimed at documentation and description of the situation of Polish librarians and libraries in the coronavirus pandemic, during the first country lockdown in spring 2020. The project focused on librarians' attitudes and emotions rather than on describing the changes in the library works caused by the pandemic. It means - it focused on how the librarians experienced this specific time of work in a crisis, not on facts on numbers concerning for example library statistics.

Therefore although a quantitative research technique was chosen (CAWI questionnaire available to the respondents between May and July 2020, sent by the mailing list of the Polish Librarians Association), it consisted only of open-ended questions, offering freedom of expression concerning suggested topics.

The questionnaire was organised into three parts. The first one considered the lockdown period when the libraries' sites were closed (in Poland - from March 12th until May 4th, 2020), the other - the time when they were allowed to be opened for the public (after May 4th, 2020). However, as the decision on opening depended on the public libraries' organisers, and required acceptance of sanitary authorities, not all of them actually opened after this date. On the contrary, many of them have been returning to a quasi-normal functioning, not before July 2020. Each of these two questionnaire sections consisted of the same 4 questions concerning: internal communication and teamwork, external communication (with other cultural, educational, or local institutions, local authorities, sanitary authorities, publishers or booksellers, the National Library of Poland, etc.), communication with the users, and online library activities on the Internet (social media in particular). The third part of the questionnaire consisted of another two open-ended questions, concerning respondents' opinions on (1) positive or negative consequences of the pandemic for the libraries, and (2) other free comments and/or opinions. Detailed results of this research project were discussed elsewhere (Kisilowska, 2021). In total 379 valid questionnaires from public libraries were returned, mostly from rural areas and cities up to 50 000 inhabitants. The open coding of the answers was used for data analysis.

For this study, the answers to the two last questions were selected: the final part of the questionnaire, concerning the consequences of the coronavirus, and any other respondents' opinions. It is there where the respondents expressed mostly their concerns, opinions, and emotions about the current situation and the future.

Findings
Tables 1 to 4 presents how the respondents answered these two questions in numbers, which reflects their willingness to share with their opinions (number of answers - 356 out of a total of 379, which makes 93.9%), attitudes towards the positive
or negative effects of the pandemic, and the focus of their comments (situation, emotions, relations). Reading these tables, one should remember that respondents answered in different ways, i.e. some of them focused on positives or negatives only, while the others commented on both types of the pandemic’s effects, mentioning one or more effects important for them. Therefore the numbers below may differ from the number of libraries responding in particular categories.

Positive effects of the pandemic

<table>
<thead>
<tr>
<th>Respondents (n=379)</th>
<th>No of answers</th>
<th>Positive effects</th>
<th>Negative effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries in rural areas (n=160)</td>
<td>151</td>
<td>50</td>
<td>131</td>
</tr>
<tr>
<td>Libraries in cities &lt;50K citizens (n=156)</td>
<td>146</td>
<td>72</td>
<td>119</td>
</tr>
<tr>
<td>Libraries in cities 50-100K citizens (n=25)</td>
<td>24</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Libraries in cities 100-500K citizens (n=30)</td>
<td>28</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Libraries in cities &gt;500K citizens (n=8)</td>
<td>7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>356</td>
<td>159</td>
<td>290</td>
</tr>
</tbody>
</table>

Table 1. Positive and negative effects of the pandemic for the libraries

Firstly, let’s see the answer to the questions of perceived or expected effects of the pandemic (Table 1). Not surprisingly, much more respondents expressed their fears or comments concerning negative than positive effects. However, it is worth noting that 41.95% of them indicated positives as well.

Positive effects recognised by the respondents (Table 2) are dominated by online services which have been introduced or developed by particular libraries due to the lockdown and closed premises, to stay in touch with the users. Observed increased interest in ebooks, and in reading the book in general, received also some attention. Among eight main categories of positive effects, there is also one related to evaluation, i.e. appreciation for the libraries. It was mentioned 39 times, which makes 13.4% of all positive effects named by the respondents. However, it is worth noting that this result is supported in other categories - i.e. mentioned in answers to the question of communication with the readers (according to the respondents, they often declared they miss the library and its offer), and in open comments given in the last question (see also below).

Appreciation for the libraries was recognised in two perspectives - from the readers and local community, and the organisers/local authorities. The former one dominates in the answers. The respondents quite often mentioned that the users and local communities realised the role of public libraries when they were closed during the lockdown. Below you can find a few citations illustrating that:

The pandemic taught the readers the importance of libraries in their lives (R-8).

The economic factor could have supported this attitude:

Many people were forced to buy books during the pandemic, therefore we believe that they realised the importance of cultural institutions. The readers returned to us with joy (R-38).
Appreciation included also changes in patterns of library usage, for instance referring to online services:

First of all, the library appeared to be more important than anyone thought. Online training was possible. The readers started ordering the books on the Internet on a massive scale (C-<50K-88).

The readers longed for cultural activities offered in the libraries:

The readers need a library - they long not only for a book but also for cultural activities. It is clearly visible that the library fulfils an important role in our community (C-100-500K-2).

The latter is also supported by other comments concerning observed need for a library as a place of local community integration.

We received quite a lot of evidence that the library is a very important member of local life. People longed for books, as well as other services. There were many visitors after opening. People returned huge amounts of books and borrowed new ones. Now the situation has normalised, and sadly, we observe a decrease in visits. We renewed the purchase of new titles and encourage the readers with that. The interest in e-reading has increased. The codes to ebook and audiobook services sell like hot cakes (C-<50K-46).

As mentioned above, appreciation from the local authorities was mentioned less often, which reflects actual experiences of the librarians.

Certainly, the pandemic drew the attention of the organisers (municipal and community authorities), that the books are the most important for library users, and its superior task is to promote reading, not to organise "picnics". We hope that we would be able to focus on our statutory tasks better than in the last couple of years (C-<50K-130).

Last but not least, just a few respondents mentioned also how the librarians themselves appreciated their work.

The pandemic frozen the world - it influenced each of us, even those not infected. People who were closed in their homes missed the book and contact with other people. That made us - the librarians - realize that we are needed in our communities. We are also convinced that online services are required (C-<50K-133).

The appreciation as a positive effect of the pandemic meets the negative one, namely fear about the job and future of the libraries.

<table>
<thead>
<tr>
<th>Negative effects</th>
<th>Libraries in rural areas (n=160)</th>
<th>Libraries in cities &lt;50K citizens (n=156)</th>
<th>Libraries in cities 50-100K citizens (n=25)</th>
<th>Libraries in cities 100-500K citizens (n=30)</th>
<th>Libraries in cities &gt;500K citizens (n=8)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decrease in reading</td>
<td>98</td>
<td>77</td>
<td>10</td>
<td>13</td>
<td>6</td>
<td>204</td>
</tr>
<tr>
<td>No meetings</td>
<td>30</td>
<td>41</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>81</td>
</tr>
<tr>
<td>Decrease of reading among children and youth</td>
<td>24</td>
<td>25</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>52</td>
</tr>
<tr>
<td>No free access to the bookshelves</td>
<td>13</td>
<td>22</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Lack of contact</td>
<td>13</td>
<td>18</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>37</td>
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<tr>
<td>Fears about the job</td>
<td>10</td>
<td>18</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Readers’ in distance</td>
<td>4</td>
<td>16</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Disturbed working routine</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>195</td>
<td>223</td>
<td>26</td>
<td>22</td>
<td>14</td>
<td>480</td>
</tr>
</tbody>
</table>

Table 3. Negative effects of the pandemic

The worries about an observed or expected decrease in reading activities dominate negative effects of the pandemic (Table 3). Among 8 categories in this section, the fear about the job was also expressed - named 32 times (6,7%). The anxiety about a decrease in reading behaviour and library statistics prevail, which is directly related to no activities realised onsite (no meetings and contact with each other), and specific decrease in reading among children and youth. Again, these fears were also confirmed in open comments in the next section.
The fear about the job and the future of libraries are directly related to decreased reading and statistics. Obviously, there is the aspect of care for readers' development and cultural leisure on the one hand, but on the other - decreased statistics can be interpreted by decision makers as no need for a library at all. Therefore just a couple of examples of the respondents' worries about reading and statistics:

*Decrease in reading is obvious, reading promotion of any kind has stopped, with adverse statistics for the year 2020 as a consequence* (R-77).

Financial problems have been experienced by the libraries almost from the very beginning of lockdown:

*Unfortunately, the pandemic will influence the libraries negatively, either from a financial perspective (local authorities already are in trouble, funding for the libraries will definitely be lower in the following years) and concerning the number of the users (decreasing after opening)* (R-148).

There is a reasoned concern that limited funds reversely influence reading promotion and statistics, with a potential consequence in the evaluation process:

*It seems that the current financial situation of the library, no purchase of new publications, will influence negatively the number of users and reading* (C-<50K-41).

In such a situation, the respondents expressed their fears of job and future of the libraries explicitly:

*There will be long-term consequences, hardly measurable at the moment, however, the paradigm of library functioning will change fundamentally. Keeping a team's motivation on a satisfactory level can be a challenge, as well as an effective and quality realisation of a project. Protection of a job is another question (e.g. reasoning of employing a given number of professionals, if we assume some online services)* (C-<50K-56).

These fears seem to be quite reasonable:

*A lot of bad things happened. Our local authorities automatically decreased significantly the subsidy and fired one librarian (which makes 50% of the team). Another one is a significant decrease in remuneration of the other librarian, with multiplied duties (information searching, applying for external COVID-19-related grants). Purchase of books had been blocked completely until the mid-July, which causes a logistic problem (lack of personnel, too much works to do at the same time by one person). Regular meetings of the reading club are suspended. The readers are dissatisfied with forbidden access to bookshelves* (C-<50K-74).

The perceived effects of lockdown and pandemic are supported by the comments given to the last question in the study.

*Free comments and opinions concerning libraries' situation during and after the SARS-CoV-2 pandemic*

Librarians' concerns of evaluation were also expressed in final comments and opinions. All these answers were categorised into three groups (Table 4): objective observations concerning libraries' situation during and after the pandemic (61.7% of all comments in this section), emotional reactions (40.3%), and comments focused on relations with the readers (43.9%). While answering, respondents offered either all types of answers or only two or one of them, named a few or more elements, therefore they cannot be directly compared to any general numbers given in a general characteristic of the study results.

*Objective observations concerning the situation of the libraries*

Sadly, many comments describing problems and negative aspects of work in the pandemic circumstances were given here. Namely: disorganisation and chaos, no support, fatigue, failed crisis management. Positive opinions suggested expected permanent change in libraries' work, and new skills required in the post-pandemic reality.

Chaos was a very depressing factor:

*I was depressed mostly by information chaos, uncertainty about common sense and intentions of decision makers in ministries, lack of clear guidelines and regulations* (C-<50K-3).
The respondents emphasise no reliable information nor support from superior institutions:

Lack of clear, reliable information from the National Library of Poland or other institutions responsible for reactions to the pandemic crisis influences the libraries' functioning strongly negatively. The readers are dissatisfied with forced limitations. The librarians work in difficult conditions as well, additional budget cuts also influence negatively the libraries' work, decisions, and consequences (C<-50K-65).

<table>
<thead>
<tr>
<th>Respondents (n=379)</th>
<th>No of answers</th>
<th>Situation</th>
<th>Emotions</th>
<th>Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries in rural areas (n=160)</td>
<td>151</td>
<td>87</td>
<td>59</td>
<td>78</td>
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<tr>
<td>Libraries &lt;50K citizens (n=156)</td>
<td>149</td>
<td>98</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>Libraries in cities 50-100K citizens (n=25)</td>
<td>20</td>
<td>10</td>
<td>12</td>
<td>8</td>
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<tr>
<td>Libraries in cities 100-500K citizens (n=30)</td>
<td>27</td>
<td>20</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Libraries in cities &gt;500K citizens (n=8)</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>219</td>
<td>143</td>
<td>156</td>
</tr>
</tbody>
</table>

Table 4. Opinions and comments given freely by the respondents

The librarians experienced great fatigue and lack of support, they work in really hard circumstances:

Unfortunately, we permanently receive no interest nor support from the organiser, the budget for culture is cut in the first place. The future is darkness (C<-50K-99).

They also revealed a lack of crisis management and indispensable management skills:

There was no crisis management. No regular contacts with the librarians, no common activities nor support. The duty of online work was imposed with no hardware or system support. No one asked about available devices or human potential to work online. The agenda was not adapted to the situation, therefore we planned and developed scenarios of onsite workshops, although online work usually requires different means and methods of work. The librarians working with the readers were offered many workshops, but in their duty time, which caused frustration, as they could not attend. A multitude of education offer for our profession was rather scary than enjoying, it revealed how poor is the knowledge of the librarians' work. It is assumed that we have less work, thus can be showered with the offer of any kind of training (C-100-500K-25).

The librarians perceive the pandemic's impact as a permanent change:

Isolation may change permanently the specific of current library activities. Online services can limit interpersonal contacts, and traditional reading, and finally may effect in in-depth organisational changes in cultural institutions in a long-term perspective. With no visitors attending libraries, the risk of their reduction by the organisers appears, as their legal obligations would be realised with minimal input and funds, potential consolidation of institutions and closing of so-called "uneconomic units" (library branches), reduction of library network in cities and counties (C-50-100K-6).

The librarians mentioned also some new skills needed in these new circumstances:

The pandemic revealed that we have to be open to quick decision-making, and changes. We have to react to the needs, to follow the modern world and the users' expectations - therefore we decided to purchase access to Legimi (ebooks and audiobooks platform) and the camera for live streaming in the future (C<-50K-63).

Emotional reactions

Two types of emotions dominated, i.e. fear of potential infection (fear about oneself and/or the family), and joy or content when the library and the librarians appeared to be important members of a local community. However, in such a background the fear and worries about the future of jobs and cultural institutions were also expressed quite often.
General fear of the unknown was also expressed by the respondents, concerning different spheres of their professional and private lives:

*We went through different stages: from fear about the employees, about cut subsidies from local authorities, and now about lack of understanding for the readers, who still (fearing about their health) are afraid of visiting a library (C-<50K-59).*

Quite many respondents mentioned their fear about the job:

*Uncertainty about remuneration and employment stability has appeared – we are not perceived as “essential workers” (C-100-500K-1).*

There are also specific fears about funding in particular:

*The consequences for our library are unpredictable. The organiser does not cut the budget now, however it makes it clear it thinks about it. We feel more and more uncertain, the atmosphere is not optimistic (R-4).*

Besides particular fears and worries about jobs and money, the general anxiety about the future of public libraries was mentioned:

*There was a meeting with library directors in the county already. Generally speaking, there is a lot of anxiety and uncertainty in us, related mostly to the lacking knowledge about the future. We cannot make any plans (not mentioning applications for grants or projects). Chaos and ambiguity in the regulations, increasing expectations to work somehow (besides borrowing the books) cause that we are a bit frustrated. Additionally, there is a perspective of the poor financial status of local authorities, which can be related not only to budget cuts but also employees’ dismissal. The situation is difficult, but it can go worse I am afraid (C-<50K-123).*

**Relations with the library users**

While mentioning relations with the users, the respondents referred to either the joy and pride of being needed and appreciated by the community, or the missing experience by both sides of this relation.

*It is so motivating to be needed and missed:*  
*The readers eagerly expected the library’s opening. They often asked us in a shop or a pharmacy when the library would be opened. It was very kind, and pleasant to hear that we are needed in our community (R-20).*

The librarians also missed their visitors:

*We would like to return to normal work. We are very tired of this “other” activity. We miss interpersonal contact as it was before the pandemic. Our readers miss longer conversations with as either, as well as walking between the bookshelves (C-<50K-132).*

The respondents often expressed their fears about the reading activities and the indicators of the reception of a library offer. They mentioned limited activities, changed project calendars, discontinued financing. They wrote about children, youth, and seniors who disappeared from the library statistics. A decrease of library indicators was discussed in the perspective of an annual evaluation of the reports presented to the supervisors. The respondents expressed negative emotions and fears concerning the potential limitation of funding for the libraries, and reduction of work posts. However, there were also positive answers concerning the fact, that local authorities and the community did appreciate local public libraries due to their closing in the pandemic lockdown.

Considering these findings, the following concerns were expressed by the librarians most often: of the unknown, but inevitably changed future of the libraries, of reading (in an objective statistics perspective, but also individual users and communities they work in), of their jobs and libraries budgets. Although this paper focuses on the concerns and fears, however, it should be mentioned that there were some positive effects of the pandemics indicated by the respondents as well,
including among others efficient introduction of online services and appreciation received from the readers (most often) or organisers (less often).

Conclusions
What do these concerns mean from the evaluation perspective? What conclusions can be drawn from the information given by the respondents? Two perspectives can be formulated here. One question is about what should be evaluated, and the other - how to do it. Consequently - what is the evaluation culture considering public libraries?

Pandemic and lockdown are crises, defining specific and demanding conditions of work, changes in functioning, negative emotions, mental fatigue. They also include the background of personal problems of almost all employees and supervisors. People are generally distrustful about the future.

While (if ever) talking about evaluation, the respondents worried about decreased statistics and budget cut, as if only quantitative and financial evaluations were considered. While such health, social, and economic crisis should result in in-depth evaluation, with a strong qualitative element and reference to serious constraints being faced.

For instance, poor statistics in “traditional” cultural and educational activities, “traditional” reading, in particular, should be analysed in the context of the introduction of online services, communication, increased users’ interest in ebook subscriptions or visits to OPACs. Regarding suspended diversified offers of the libraries, the inability to realisation of external grants should also be considered. A significant increase in librarians’ skills can be expected, as the result of a massive offer of online training, predominantly gladly welcomed by the professionals. Catching up and internal works often reported by the respondents is a strong indication that the librarians do have not enough time to carry out all the duties in times when services are realised in a “normal” way.

In other words, what should be considered in the post-pandemic evaluation of public libraries? Statistics are inevitable and crucial, to monitor the situation with objective data. However, background information and some qualitative data would be reasonable. As background information, I would suggest those concerning legal and economic specific of that time, communication and cooperation with other entities (organisers/local authorities and supervisory, institutions, like the National Library, sanitary authorities, etc.), and the local community a library works for, i.e. social evaluation of its activity. Qualitative data should be received from the professionals, who can share their experiences and opinions, or at least explain, name reasons for atypical or unusual forms of their work and activities offered to the users. Mental or emotional difficulties related to a crisis should not be unmentioned. First and foremost, evaluation of the work during this crisis time should be the occasion to formulate conclusions and recommendations for the potential crisis in the future, which cannot be overestimated.

Another aspect of evaluating the pandemic library work is the culture of evaluation. As proved by the answers received in this project, the librarians' fears result not only from the difficult situation but also from negative experiences of the previous evaluation. The culture of evaluation of the libraries by their founders is often (although not everywhere) negative, focused on the financial aspect only, disregarding the factors beyond the librarians' control. This practice can be related to the limited local budget and the policy towards cultural institutions.

What we already know is that the pandemic truly influenced the activities of public libraries, as described above. We can carefully conclude that the experience of the COVID-19 pandemic is worth considering in lobbying for determining the evaluation rules going beyond economic aspects only, but including also the social impact of the libraries. A culture of support and positive motivation is also needed in the evaluation, finding the potentials to improve the results. Such activities could have been realized on different levels, also by institutions (the National Library of Poland) or professional library organizations representing the community on a national level.

References


The abbreviations should be read as follows: R/C - library located in rural areas or in a city; a digit followed by K - number of citizens in thousands; final digit - order number of the response, e.g. - R-8: library in rural area, questionnaire no 8; M-<50K-108: library in the city with less than 50 thousands citizens - questionnaire no 108.
Extended scrum to facilitate collaboration and openness

Åsa Forsberg, Stina Hallin and Maria Hedberg

Lund University Library

Introduction

In 2017 the IT department at the University library at Lund University (Sweden) started to adapt the open source library system Koha in order to have a library system supporting a complex and decentralized library organization with many different needs. In June 2018 the new library system LUBcat was launched.

The entire IT department, at this time consisting of nine developers and system librarians, was engaged in the development of LUBcat, forming a team who also worked closely with different experts and stakeholders at the faculty libraries. When the development project was initiated in 2017 the team felt the need of a more agile workflow, and decided to use the agile framework scrum.

Scrum

Scrum is an agile iterative framework, originally designed in the 1990s for software developers, and presently used in many contexts and by different professions, such as researchers, analysts etc. The scrum theory is based on empiricism, the idea that knowledge comes from experience and observations, and on lean thinking, to focus on the essentials.

“In a nutshell, Scrum requires a Scrum Master to foster an environment where:

• A Product Owner orders the work for a complex problem into a Product Backlog.
• The Scrum Team turns a selection of the work into an Increment of value during a Sprint.
• The Scrum Team and its stakeholders inspect the results and adjust for the next Sprint.
• Repeat” (Schwaber & Sutherland, 2020)

Key notions in the scrum theory are transparency, inspection and adaptation. The work should be transparent to both team members and stakeholders. Team members should regularly inspect work processes and outcomes, and constantly be prepared to adapt them.

The scrum team consists of developers, product owner and scrum master. The scrum team is self-managing and its members have the skills needed to reach the goals. The developers are responsible for planning each sprint, adhering to a definition of done agreed on, adapting the plan according to the sprint goals and respect each other as professionals. The role of the scrum master is to facilitate for the developers. The product owner is responsible for the product backlog and should give immediate feedback to the developers.

The scrum team works in shorter periods of two to four weeks, sprints (our sprints have mainly lasted two weeks, except during Christmas and Summer, when the sprints have lasted three weeks). Each sprint has one or more goals. The sprint starts with the sprint planning, where the team selects user stories from the project backlog and puts them on the sprint board. A user story describes a functionality to be developed, from a user perspective (for instance “As a student I need to be...
able to queue for course books so that I can borrow them"). The user stories should address the sprint goals. For each user story the team then formulates concrete tasks required to develop a functionality or solve a problem. A sprint can also contain bugs, describing an issue or error that needs to be fixed. The sprint should contain a reasonable amount of user stories and tasks, in order to be able to complete. A larger user story running over several sprints is called an epic user story, and it is always broken down to smaller user stories. A user story is completed when it meets the definition of done that the scrum team has agreed on. During the sprint the team meets in a short daily scrum meeting.

The sprint is concluded with a) a review, where completed user stories are presented and the team and project stakeholders discuss the achieved solutions and how to proceed, and b) a retrospective, where the team reflects on different aspects of this specific sprint, for instance work processes, collaboration, achievement of goals, etc, and decide on improvements, actionable items, which are introduced as soon as possible and preferably in the next sprint.

Introducing a large common scrum organization in the IT team

After the launch of the beta version of LUBcat in June 2018 the team working with the system decreased but it continued working in scrum. When two other projects started, separate scrum teams were created. However, we experienced some difficulties managing several scrum teams in a small department. We also felt a need to improve our work process in general, since some aspects were problematic.

Since we are quite a small department working with many different systems, each person is engaged in several systems. Some projects lacked transparency, only the persons involved knew what was going on. Some projects were vulnerable, only one person being engaged in them. We risked a lack of coordination between projects, leading to bottlenecks.

However, most importantly, we wanted to strengthen a culture of collaboration and learning within and between different projects.

The scrum method had worked very well in the library system project and we therefore started to investigate the possibility to extend our scrum team and processes to include all main projects. We were also inspired by the IT department at the Gothenburg University library who had already started to work in a large common scrum for all their projects.

The team took a decision to introduce an extended common scrum for all our main projects, in the beginning of the Autumn semester 2020. We also decided to evaluate this work form during Spring semester 2021.

With the start of the extended scrum, we kept the original scrum rules, allowing scrum planning, reviews and retrospectives to take time. After a first smaller evaluation we included new elements in order to facilitate working in a common scrum and the retrospectives help us to continuously improve.

Evaluation of the large and common scrum

When we initially decided to work in an extended scrum, we designed it as a test which should be evaluated. Since the start we have continuously evaluated our processes in the retrospective at the end of each two weeks sprint, and made changes according to these evaluations. But we felt the need to do a more overall evaluation in order to understand if we have fulfilled the original purposes with the new working method. This evaluation was made in June 2021 and involved all team members.

We asked the team members to answer a survey. The survey was answered by 9 out of 10 persons. The three main parts of the survey contained closed questions, with the possibility to write a free text comment. Many respondents did write comments.

The first part of the survey concerned the general working condition, if we have an appropriate number of projects in each sprint and if the workload is evenly distributed. A majority of the respondents were satisfied with both these conditions.

The second part of the survey concerned the scrum events in each sprint, planning meetings, reviews and retrospectives. We wanted to know if the team members experienced these as useful. In this section we specifically asked the respondents to elaborate on their answers, which a majority of them did.
Even though a majority of the respondents have given positive answers to the questions in this section, their comments make it obvious that we need to adapt and improve the scrum events, in order to make them more efficient and more meaningful to everybody.

The questions in the third section of the survey were designed to evaluate if the team members experienced that the large common scrum addresses the problems we had identified in our previous work processes. Have the new work processes led to improvements regarding single person dependency of some of the projects? Have we got better processes for sharing experiences and collaborative learning? Are we more systematic when it comes to quality, documentation and usability, and have the team become more flexible?

The answers in this section clearly show that we have not come as far as we have strived for, and that we need to work more actively to address these areas.

In the result it is also evident that a majority of the team members are positive to work in an extended and common scrum, but a couple of team members are very negative.

Discussion

Many of the respondents have given concrete and pertinent ideas and reflections in this section, as well as in the final question, inviting the respondents to give their thoughts about how we can improve the extended scrum. We have analysed all free text answers and found several possibilities to improve and develop our work processes.

In a scrum team the product owner has a very important role. It’s the product owner who makes the prioritizations, and manages the product backlog. The product owner also gives feedback to the work done by the developers, thus making adaptation possible. Many of the projects do not have a designated product owner, or the project owner does not have the time to engage in the scrum team work processes. This is especially the case when the product owner does not belong to the IT department. In this case the product owner could appoint a representative in the team.

It is very important that all projects should have formulated goal/s. Larger projects/projects that run for a longer period could have yearly goals.

We need to work more with the long-term prioritization, and form a group with preferably three persons, in order to have a good overview.

The long-term planning should include overall goals for each project, and goals for the sprints. It’s a good idea to visualise the planning in a good way, and assure that all team members are aware of it. Prioritization and goals should always be discussed in the sprint planning. It’s also important that all team members’ skills are taken into account in the long-term planning, to have a reasonable workload for everybody.

In order to achieve a more systematic approach to quality, documentation and usability, we need to explicitly include this work in the long-term planning.

We need to improve sprint planning, review and retrospective so that they will be meaningful for all participants. We should actively engage all team members to take part in the discussions, regardless of which project they are working with.

An important factor here is the formulation of user stories and tasks. We should formulate user stories carefully, always trying to express the library user or librarian perspective. The descriptions should contain enough details so that everybody can understand them. The task should be concrete and contain enough information, so that everybody can get a notion about what the task is about.

Conclusions

The evaluation and our experiences from the last year show that the extended scrum is a framework that is useful in our department. We have learned that it is quite difficult to gather several projects in one scrum team, but that it gives advantages, and one of the most important ones is that we are actually constantly reflecting on the team work. At this moment we are in the process of concluding the analysis of the evaluation results and formulate recommendations to
improve the extended scrum. The next step is to discuss these recommendations in the scrum team and agree on which to take forward and introduce.

This done, it will be necessary to repeat this process. In the scrum retrospective we have the opportunity to inspect every two weeks how we collaborate and communicate, how we meet goals and solve user stories and tasks. We should also, definitely more seldom but on a regular basis, make more overall evaluations of the methods and frameworks we use.

**Reference**


Findings about our Library Surveys: Universities of Louisville and Kentucky’s User Surveys

Julene L. Jones (University of Kentucky), Anita R. Hall (University of Louisville)

Introduction

Academic libraries survey their employees and users for a variety of reasons, and there are several commercial survey products available on the market to assist with these efforts. Standardized survey instruments such as those created by the Association for Research Libraries (ARL) include LibQUAL+® [1] and ClimateQUAL® [2], the Association of College and Research Libraries’ (ACRL) Project Outcome for Academic Libraries [3], the numerous Ithaka S+R surveys [4], and others are widely used in academic libraries and offer many advantages such as robust development and testing protocols, and the potential to compare data with other institutions who use these instruments. However, many libraries prefer to develop their own instruments for a variety of reasons, from cost to specificity of the desired institutional assessment. The authors are Assessment Librarians at two academic libraries in Kentucky and have used both types of surveys at their institutions. This paper will discuss the benefits and challenges presented by each type of survey and will share considerations for academic libraries who are planning implement surveys for assessment purposes.

Institution and library profiles

The University of Kentucky (UK) and University of Louisville (UofL) are both public, Carnegie classified R1 [5] institutions, separated by about 75 miles in the eastern part of the United States.

UK is the state’s flagship, land-grant institution enrolling approximately 30,000 FTE students, and employing 1,500 FTE faculty and 14,000 additional employees, located in Lexington, Kentucky [6]. The UK Libraries comprise eight libraries across one campus, including a Law Library and a Medical Center Library. Fifty-six librarians and approximately 100 additional employees are employed by the Libraries (2020 data submitted by University of Kentucky Libraries for the IPEDS-Academic Libraries survey).

UofL is the state’s largest metropolitan institution, with 18,650 FTE students and 6,999 employees [7]. The University Libraries at UofL include six libraries across two campuses, with 118 FTE employees, of which 45 are librarians (2020 data submitted to Association of Research Librarians).

Purpose: Types of surveys

While there are endless reasons that academic libraries survey their employees and/or users, two common use cases are user satisfaction with library services and employee perceptions of the libraries’ organizational climate. Academic libraries wish to know how well they are serving their users, and often rely on user feedback to comply with accreditation and funding guidelines as well as accomplishing institutional priorities. Organizational climate surveys are frequently implemented to identify concerns in management practices, equity, or diversity, and may be used to analyze perceptions of library employees versus the perceptions of employees in other units or departments at a given institution.

Surveys are only one of many assessment methods that academic libraries use to obtain feedback about their employees and/or users, and the answer to the question “what type of survey should we do?” may very well be “no survey at all.” Surveys will not be able to address every concern that a library may have, and may serve primarily as a jumping-off point for other types of assessment that explore a topic in more detail, such as focus groups or observational studies. At larger institutions like ours, students and employees often report survey fatigue, due to being surveyed repeatedly about a myriad of
topics. This survey fatigue has only increased during the ongoing COVID-19 pandemic, and continues to be a concern for our assessment efforts.

**Approach: Standardized instruments versus Locally-developed instruments**

*Standardized instruments*

One primary benefit of implementing standardized survey instruments is the resources that have been devoted to their development. In addition to more rigorous development and testing of survey instruments (usually by staff with expertise in these areas), commercial instruments often come packaged with some level of results reporting and data analysis. Their consistent use of relatively well-developed and well-tested questions also typically allows for results comparison over time as well as the benchmarking of results with other libraries or institutions who utilize that instrument, including in the case of LibQUAL+®, benchmarking against other ARL libraries. This data analysis is less common for internal surveys of library employees such as ClimateQUAL®.

Standardized instruments typically do allow a small number of library-submitted questions, although this is often quite limited. Further, given the wider audience for standardized survey instruments, the topics that they cover may not be as granular or versatile as one may wish. Institutions do not have the ability to customize questions or their response types or options for items such as demographic data that may not align with institutional priorities, may not include current terminology, or may conflate equity-focused demographic concepts. Finally, there are often fees associated with implementing standardized surveys which may be prohibitive.

The University of Kentucky Libraries has recently implemented three standardized surveys. First, ARL’s LibQUAL+® instrument has been used many times at the Libraries since its inception in 2001, most recently in 2020. UK Libraries implements LibQUAL+® every four to five years. This is a survey that assesses library service quality as respondent perceptions of library collections and access to them (the construct of Information Control), library customer service (Affect of Service construct), and library spaces (Library as Place). Results of this survey are provided by ARL in terms of minimum, perceived, and desired scores and include significant analysis along with the full set of the institution’s raw data. Results are intended to be interpreted and expressed in terms of not meeting, meeting, or exceeding service adequacy: is the library perceived to be meeting or exceeding the minimum or desired expectations of a given user population on a given item. UK Libraries, like many of the ARL libraries that use LibQUAL+®, has historically scored highly on the Affect of Service and Library as Place items, with the most variation in scores across respondent user groups and time found within the construct of Information Control, or user perceptions of the library collections and their access to them. In 2020, we did not have any items with negative service adequacy scores. The results from LibQUAL+® have consistently been used as part of our institutional accreditation process to demonstrate the adequacy of library resources, services, and facilities.

On the internal side, ARL’s ClimateQUAL® survey instrument was implemented for the first time in 2020 to serve as a baseline for future implementations. We intend to run this survey approximately every four to five years as well. This survey is subtitled an “Organizational Climate and Diversity Assessment,” which describes it well. According to the ClimateQUAL® website [2], this instrument “is an assessment of library employee perceptions concerning (a) their library’s commitment to the principles of diversity; (b) organizational policies and procedures; and (c) employee attitudes.” The null hypothesis for this instrument is that “healthy organizations have increasing levels of diversity among employees which fosters a climate/culture that supports diversity overall.” The twenty-six concepts evaluated in ClimateQUAL® are divided between organizational climate measures such as distributive, procedural, interpersonal, and informational justice; authenticity in leadership; valuing diversity; innovation; teamwork; and psychological safety, to name just a few, as well as organizational attitude measures such as job satisfaction; organizational commitment; organizational withdrawal; and interpersonal- or task-conflict. The survey includes an extensive demographic section.

ClimateQUAL® baseline scores reported by UK Library employees in 2020 indicated concerns with implementing standardized procedures fairly or evenly across the organization, significant organizational withdrawal, and low perceptions of psychological safety and psychological empowerment in the workplace. Notably, UK Libraries scored high on the items “valuing diversity” and climate for diversity in terms of both demographic categories of race and sexual orientation. Unlike
with LibQUAL+®, the full dataset is not returned to the participating libraries, instead, results are returned with preliminary analysis completed, comparing each of the items versus each demographic category, so results are quite lengthy, and in many cases, somewhat inscrutable.

The final standardized survey that UK Libraries uses is actually one of several standardized surveys the larger University deploys: the Willis Towers Watson Employee Engagement instrument, which is locally branded the UK@Work survey. The results have been presented to the Libraries by employee category (faculty versus staff) as well as by Library employees versus employees of other Colleges administered by the Provost. Results of the UK@Work survey have been used by the Libraries to monitor and implement strategies to improve the work/life balance of Library employees. Further, in 2020 we attempted to compare the ClimateQUAL® response data to the Library employees response data from the UK@Work survey.

**Locally-developed instruments**

Locally-developed surveys offer maximum flexibility and customization of survey questions. While it may be more difficult to benchmark results from locally-developed surveys against other institutions’ results, they can be tailored to provide a more accurate measurement of institutional priorities or be customized for more specific assessments, and can offer just as much longitudinal data as standardized surveys in cases where the locally-developed surveys have been in place for many years. Academic libraries may also elect to use survey instruments developed by their associated institutions in order to expand instrument reach, reduce overall survey volume, or compare their performance with that of other campus units. Developing quality surveys, however, is a time-intensive process and libraries may not have staff with the time and / or expertise to write and test survey questions and conduct data analysis (and even where libraries do have these staff resources available, they may wish to prioritize their efforts elsewhere).

The University of Louisville Libraries have been conducting a locally-developed Libraries Benchmark survey (usually) every other year since 2001. The Benchmark survey provides feedback from a sample of students and faculty on library spaces, services, and collections (similar to the focus areas of LibQUAL+®) and this data is used as part of our institutional accreditation process to demonstrate the adequacy of library resources. The libraries generally receive overall positive results on all quantitative metrics in the survey, but a number of free-text comment questions have traditionally provided extremely candid and helpful feedback that has shaped some major library initiatives including building projects and collections enhancements.

While this survey has evolved over time and underwent a major revision in 2021, there has been some consistency in content and structure for the entire lifespan of the survey, and the overall format has been relatively consistent since 2012. This consistency has allowed for longitudinal tracking of improvements on some very specific metrics that would not be available using standardized instruments. This survey is administered in partnership with UofL’s Office of Institutional Effectiveness, and can be connected to our Peoplesoft Campus Information System, which reduces the need to ask demographic questions on the survey. However, this locally-developed survey does not allow for benchmarking against peer institutions, and the demographic information in Peoplesoft is not always as granular as we would like (i.e. category of “Two or More Races” but with no further detail, gender only reflects the respondent’s legal gender).

The Benchmark survey provides valuable general feedback as well as insights about our larger libraries, however some of our libraries do not typically receive very many responses. Our Archives & Special Collections (ASC) in particular is not as well served by the Benchmark survey, as many of their users are not affiliated with the University (such as researchers from other institutions or local community members). We develop further customized surveys for these libraries as needed, but try to follow the same general structure of the Benchmark as well as utilizing some of the same questions for comparison to the larger data set.

UoL libraries also participate in two campus-wide surveys. The first is the S4 or Student Services Satisfaction Survey, a survey of satisfaction with all student services offices on campus. While the libraries are limited to only a few questions on this survey, this instrument does reach the full student body and allows us to ask different, student-focused questions than
the Benchmark without the need for additional surveying of our students. All UofL employees participate in a campus-wide Climate survey developed by the Office of Institutional Effectiveness. This is a large, in-depth survey with two modules that are delivered in alternating years, and it is again connected to the Campus Information System which allows for a breakdown of the data at the unit level, so that the libraries are able to view data for our employees only. The libraries have some specific organizational priorities that are not covered in this larger survey, and an internal climate survey is now in development, but the internal survey will be much shorter and more focused.

UK also implements a locally-developed library satisfaction survey, scheduled alternately to the LibQUAL+® implementations. We have decided to revise the survey for its next implementation in 2022, but the focus and content of the survey over the last thirty years has remained consistent, with the instrument partially mirroring the question design and overall constructs assessed by LibQUAL+®. The objective of this survey has been to assess the individual branches of our library system, their services, collections, resources, customer service, and facilities. Each library branch has been provided with results from respondents who frequently utilize their branch, as well as the perspectives of overall library users. We have also implemented several additional locally-developed assessments, including our bi-annual library website observational studies, which include surveys, which we use for continuous improvement of our libraries’ websites.

Findings: Considerations for Survey Implementation

The following list, while not exhaustive, offers an overview of the types of considerations that may impact a library’s decision when selecting a survey type (or vendor for standardized surveys).

- **Resources:**
  - *Funding availability for commercial products.* While there are some freely-available survey instruments through library professional organizations, many standardized survey instruments are costly. Pricing models vary, but may be based on either the survey population or overall institutional characteristics such as Carnegie classification.
  - *Institutional surveys.* Universities may have existing access to standardized surveys that the library can use at little or no cost. There may also be campus-wide surveys that the library can participate in without the need for an additional survey to be created.
  - *Staff time and expertise for survey development/analysis.* The price tag to implement a standardized survey is not the only cost that needs to be considered. Libraries without dedicated assessment staff may find that they simply do not have the time or expertise available to develop their own survey. Even libraries who do have dedicated assessment staff may choose to prioritize their time for other assessment activities.

- **Library/Institution characteristics:**
  - *Population Size.* Consider the audience you are hoping to reach with your survey - is it in the hundreds? Thousands? Tens of thousands? For very small libraries and institutions, standardized instruments may be excessive, and shorter instruments or other assessment methodologies may be a better choice, especially if anonymity is a concern. Very large institutions may wish to consider sampling only a portion of their employees and/or users if they feel a representative sample can be obtained.
  - *Population demographics.* Libraries and institutions serving unique or specialized populations or employing generally heterogeneous employees may not have their needs met by standardized surveys, or may not find comparison/benchmarking data from other libraries useful.

- **Library/Institutional priorities:**
  - *Survey purpose.* What is the purpose of the survey? Libraries looking to support accreditation or funding requirements may find benchmarking or reviewing longitudinal data against peer institutions useful.
Scope of information needed. Standardized surveys may not be granular enough. Alternatively, locally-developed survey instruments may not be rigorously developed or tested enough to encompass the majority of user experiences.

Data Continuity. Libraries wishing to show improvements or progress towards institutional goals may choose to continue with legacy survey methods. Libraries considering a new type of survey should consider whether data can be mapped from legacy surveys.

Data Security/Privacy. Particularly when collecting information about employees or library users that could be identifiable, some libraries/institutions may not be comfortable with this data being collected by a commercial vendor. Conversely, for a locally-developed survey, it is important to ensure that your library will have the capacity to ensure confidentiality of respondent data.

Distribution methods:

Format. While electronic distribution of surveys has become the standard, some libraries may wish to offer alternate options such as physical survey instruments.

Survey platform. Standardized survey instruments are often delivered through their vendors’ proprietary platforms. For locally-developed surveys, libraries should consider whether they have access to a survey platform that offers the functionality they desire. Free versions of popular platforms may not meet the needs of a larger survey or one soliciting sensitive information.

Data analysis:

Reports and analysis available. Commercial vendors typically provide some level of results reporting with varying levels of analysis. Depending on the platform used, locally-developed surveys may also provide some basic reporting, but often will require more analysis by library personnel.

Access to raw data files. Developing a survey locally will always offer access to complete data files, although many commercial vendors will also provide libraries with their raw data. Is additional analysis of raw data likely to occur?

Conclusions

The University of Kentucky and University of Louisville libraries have discovered insights about our library employees and library users through implementing both standardized and locally-developed surveys, although we have not used every available standardized survey instrument. There is no one-size-fits-all solution for survey implementation, and libraries should weigh the benefits and challenges of both standardized and locally-developed options to suit their specific needs, including availability of resources, institutional or library characteristics, institutional or library objectives of implementing a survey instrument, the method of distribution of the instrument as well as access to the survey data.

Notes

[1] LibQUAL+: https://www.libqual.org/home
[6] University of Kentucky, Institutional Research, Analytics, and Decision Support, Interactive Fact Book,
Quick Facts: https://www.uky.edu/irads/quick-facts, data from fall 2019

[7] University of Louisville, Profile, Facts & Figures: https://louisville.edu/about/profile, data from fall 2020
First-, second- or third hand impact?

Experiences from research of non-users of libraries of various types.

Núria Ferran Ferrer

*University of Barcelona, Faculty of Information and Audiovisual Media*

Małgorzata Kisilowska, Magdalena Paul

*University of Warsaw, Faculty of Journalism, Information and Book Studies*

**Topic of the panel**

Most often we devote our research to library users, and we mention non-users rather in passing. Meanwhile in most cases they constitute a large, if not the majority of the library audience. We believe that by analyzing non-users, barriers to library use and the perceptions of non-users about the impact of libraries, we have a chance to better understand our communities, improve library services and expand the group we work with. We will discuss several studies focusing on non-users, including public, pedagogical and university libraries. We will refer to our studies, as well as literature.

**Format**

- We will start with a very brief and dynamic presentation of our research.
- Then we will discuss the issues mentioned above, referring to our research, literature and, above all, inviting listeners to share their own experiences.
- Free questions and insights from listeners are very welcomed.

**Main statements and points that will be addressed during the panel**

1. *The invisibles* - characteristics of non-users in libraries
   a. Examples from our research and desk research.
   b. Reasons for not using libraries.
   c. What is the bigger picture?
2. Using libraries by proxy and indirect impact of libraries
3. Impact assessment by non-users
   a. How can we study impact if there is no direct contact with the library?
   b. Benefits of having options and the benefits of existence.
   c. How to ask non-users about the impact (potential and actual) of libraries?
4. Third person effect
   a. What does it mean and what are the consequences?
   b. Good for advocacy! Is it good though for librarianship?

5. Methodology of research and analysis of non-users - quantitative methods
   a. example of UX (Spanish public libraries study)
   b. a priori and a posteriori segmentation (Polish cases)

6. How data on non-users and the impact of libraries can help us improve our services
   a. Can / should / must we study the non-users? The value of non-users research.
   b. Shall we catch them all?

Bibliography

Background

New Jersey State Library (NJSL), an affiliate of Thomas Edison State University, engaged in a two-year IMLS grant for public libraries in New Jersey and Pennsylvania, in collaboration with other government and nonprofit organizations, to provide services to citizens returning to their home communities after being paroled or after completing their prison terms. The grant entitled “Reconnecting Returning Citizens with their Communities at Public Libraries” brought together project partners such as the New Jersey State Parole Board, New Jersey Department of Labor and Workforce Development, Long Branch (New Jersey) Public Library, and Free Library of Philadelphia. An Advisory Committee, including representatives from public libraries with experience helping returning citizens in San Francisco, Denver, and Washington, D.C., informed and monitored the project during its two-year duration. The project developed a model process and a toolkit of best practices for libraries to actively assist in the reentry process and meet the needs of this sizeable target population in local communities across the United States.

National Statistics: During the 30-year period from 1980 to 2010, the number of people incarcerated in the U.S. increased fivefold. As state and federal prison populations reached a nationwide peak in 2009, several states and the federal government sought to make reductions through policy changes and reforms in sentencing practice. These efforts substantially increased the number of returning citizens living in communities outside prison. By 2015, the number of people living in communities on parole or probation was more than double the number of people incarcerated in corrections facilities: 4.7 million versus 2.2 million.

The National Institute of Justice notes that, “returning to the community from jail or prison is a complex transition for most offenders, as well as for their families and communities.” Returning citizens may struggle with substance abuse, mental health issues, and the consequences of an incomplete education. They must navigate barriers enacted by law, such as policies excluding felony convicts from public housing. Returning citizens face high odds against successfully reentering society; the national rearrest rate of individuals within three years of their release from prison is 67.8%.

The communities to which they return often do not have the personnel and financial resources necessary to help returning citizens deal with their difficult problems. The availability of specific programs to help returning citizens with the reentry process is dependent upon the priorities of the various municipal, state, and federal departments and agencies involved in the criminal justice system. In some locations, reentry support may only be provided by faith-based or other private social service organizations.

The success or failure of these millions of returning citizens, when taken together, has a tremendous collective impact on the economic and social health of communities across the United States. Returning citizens who successfully obtain employment contribute to their local economies by paying taxes and spending their wages on groceries and other essentials at area stores.


Employed and housed individuals are less likely to participate in illegal activities; public safety is thus improved. If an individual is reconvicted, community resources are again directed to the high cost of imprisonment, which in 2015 averaged $33,274 per inmate annually.

Building on and Scaling up Previous Work in New Jersey: As a state leading the nation in reducing its prison population, New Jersey’s government agencies and nonprofit organizations have focused efforts on the process of reentry. New Jersey State Parole Board convened “Reentry Task Forces” as one means to help address the rate of recidivism (rearrest, reconviction, and/or reincarceration) of individuals released from prison on parole. These county-based Task Forces bring together Parole Officers and any organization with a mission that could help returning citizens succeed in their communities. Area residents are also invited. Task Force members share their observations of the needs of local returning citizens, and brainstorm and coordinate program ideas that help support their success.

The involvement of project partner Long Branch Public Library (LBPL) with the Monmouth County Reentry Task Force (MCRTF) spurred the partnership leading to this Reconnecting Returning Citizens (hereafter known as RRC) proposal. As LBPL librarian prior to her promotion to director, Tonya Garcia helped returning citizens in Long Branch as they came to the library searching for job assistance. Ms. Garcia subsequently developed the “Fresh Start” initiative at LBPL, which incorporated specific classes for returning citizens to learn how to use computers, write resumes, and conduct job searches. Ms. Garcia also contacted local businesses to ask if they were open to hiring the returning citizens coming to the library. Ms. Garcia eventually hosted MCRTF meetings at LBPL which led to introductions with such organizations as the local chapter of the Salvation Army and connecting them with returning citizens coming to the library. The reach of the “Fresh Start” program increased when Ms. Garcia hired social worker David Perez. Mr. Perez meets individually with returning citizens, assesses their needs, provides information, and makes referrals to the appropriate classes offered by LBPL and connects individuals to the organizations and businesses with which LBPL has relationships. During the MCRTF meetings, the State Parole Board witnessed the commitment of LBPL to help returning citizens and recognized that public libraries throughout New Jersey could be partners in this work. Understanding that the needs of returning citizens are great not only in New Jersey (there are 15,000 individuals currently on parole), but also throughout the nation, NJSL started discussions with the State Parole Board about the possibility of partnering on this proposed RRC project in late 2017.

Incorporating other Efforts: New Jersey State Library recognized that public libraries have long provided valuable library services to incarcerated individuals while they are serving their sentences in prison. Knowledge of such prison-based projects and further research confirmed NJSL’s decision to focus on returning citizens, as this is a population not currently well-served across the country. There are just a small number of public libraries (both with and without staff social workers) that have identified returning citizens as a specific population to serve in their communities. During the planning process for this project, LBPL social worker, David Perez, facilitated the introduction of representatives from three libraries who have assisted returning citizens, and helped to secure their agreement to serve on the project’s Advisory Committee. These Advisory Committee members were Rachel Kinnon, Manager of the Jail and Re-entry Service program of San Francisco Public Library; Elissa Hardy, Community Resource Manager at the Denver Public Library (which plans to expand its own services to returning citizens in Denver); and Jean Badalamenti, Health and Human Services Coordinator at DC Public Library. These Advisory Committee members will share their own experiences with returning citizens, provided feedback regarding the progress of the project, and inform the development of the toolkit of best practices.

The RRC project was a National Leadership Grant proposal in the IMLS Community Catalyst category and supports the IMLS agency level goal to Build Capacity. With the goal of supporting returning citizens, a population whose success or failure can significantly impact local communities, this project aims to position public libraries as key collaborators in strengthening the reentry work of government agencies and nonprofit organizations. This collaborative approach builds upon accepted practice as articulated in published reentry resources, that a critical first step in starting a reentry initiative is “encouraging collaboration among stakeholders.” By recognizing, analyzing and testing local conditions for this work at public libraries in urban and rural locations in New Jersey and in the metropolitan area of Philadelphia, the project team developed a model for serving returning citizens through public libraries in diverse communities across the United States.
QualityMetrics as an External Evaluator in “Fresh Start”

This paper examines emerging services and developments in libraries in relation to serving formerly incarcerated populations highlighting lessons learned from the Long Branch Free Public Library (LBFLPL) and the development of an expanded Fresh Start program across the state of New Jersey. The authors conducted the external evaluation of the IMLS funded Fresh Start program aiming to establish library services that support incarcerated people across the state of New Jersey. The purpose of this study is to highlight the lessons learned from the evaluation process.

Our evaluation included interviews with the state agency staff responsible for the program implementation, with the social workers implementing the program, a survey of key stakeholders as well as interviews with the Advisory members and select partners of the program. Outreach and marketing has been a constant challenge and a critical component contributing to the program’s success. Much of the marketing was done through word-of-mouth, as well as through social media. The most effective means for outreach has been the human component of connecting to the community on the ground. After Covid-19 necessitated library closures, getting word out about the program became even more of a challenge. Fresh Start worked with Out Front Media and Intersection to market the program through billboards and bus wraps throughout New Jersey. The Fresh Start team also created a YouTube channel and started posting promotional and informational videos to YouTube and Facebook. Overall, more than 100 people have been serviced under the IMLS Fresh Start program. Fresh Start services are structured such that the focus is on solving the problems that clients come in with rather than setting up ongoing check-ins, meaning that if a Fresh Start client’s problem is resolved in the first meeting, Fresh Start may never hear from that client again. Because of this, the success of the program at LBFLPL has largely been gauged qualitatively with a focus on the quality and impact of known client outcomes rather than quantitative metrics.

The biggest unanticipated hurdle was, of course, Covid-19. The pandemic necessitated substantial changes in approach to both marketing the program and intaking and interacting with clients. Looking to the future, the Fresh Start team hopes to find a way to establish a presence inside of prisons. Getting the word out to current inmates, and potentially even completing the intake process and setting up meetings between social workers and clients while they are still incarcerated, could be an effective way of increasing Fresh Start’s reach while simultaneously improving the program’s ability to set clients up for successful reentry. Beginning the process inside the prison would not only serve to spread awareness of the program amongst a large swath of potential clients, but also allow social workers and clients to start planning for reentry in advance of their release, helping to ensure that they have the resources they need from day one.

QualityMetrics engaged in six key process evaluation activities for the Fresh Start IMLS grant:

A. Review documentation
B. Review project implementation
C. Survey project partners
D. Survey Project Libraries
E. Case Study Descriptions

The external evaluator developed a case study description for the Long Branch NJ Public Library program and interviewed advisory committee members for their programs which resulted in brief case study descriptions for the DC Public Library and the San Francisco Public Library. In this paper we report the case study findings.

The project hired two social workers and a project manager and developed a toolkit and additional resources. The team was able to offer services in New Jersey and also attempted to connect with the Philadelphia Free Library to jumpstart activities after COVID went away even though the Delta COVID variant affected that work as well. In general, libraries need to support these social worker roles in their premises and rely on a flexible work model that allows them to establish relationships in the community and with returning citizens. The toolkit and the resources developed through the grant are available on the Fresh Start website. Interest in this area is growing. ALA has useful web resources in this area and will be publishing its first monograph in this area this fall. Jeanie Austin is the author of the ALA monograph, completed her PhD
dissertation in this area at the University of Illinois at Urbana-Champaign, and published extensive in these areas (see Bibliography).

The Library Locations

Check out our map of participating libraries:

Case Study: Long Branch Free Public Library

Community needs

The Fresh Start program took root in 2007 when Tonya Garcia, a librarian at Long Branch Free Public Library (LBFPL), identified a need for reentry services based on her personal experiences and observations working with the Long Branch community. In particular, she noticed a pattern of job seekers who were visiting the library for assistance finding work or creating resumes and, in the process, would disclose to her that they were previously incarcerated. To meet the specific needs of these community members, Garcia began developing reentry services at LBFPL which included building a relationship with a local halfway house, which began referring its residents to LBFPL for job seeking and other reentry-related assistance.
Alignment and buy in

Buy-in from the community, Board of Trustees, local government, and library staff has been critical to the success of Fresh Start. In particular, if library staff members are not fully invested in the program, that can lead to a less-than-welcoming environment for potential clients, so it is crucial that the library director and other program leaders are able to successfully garner enthusiastic support from their staff, community, and government.

At LBFPL, Fresh Start officially began in 2009 as a series of group workshops on job seeking and computer skills. Because this first iteration of Fresh Start suffered from poor attendance, LBFPL shifted the focus of Fresh Start from group programming to one-on-one meetings, offering program participants up to twelve private training sessions. This more individualized and confidential setup greatly improved community interest and participation.

When Garcia was promoted to director, she was unable to continue the program, and reentry services at LBFPL were put on pause until the library was able to bring on David Perez as the library’s first social worker, first as a part-time student intern and then, in 2017, as the state’s first full-time public library social worker. LBFPL designated a private office space for social work, further solidifying the inviting atmosphere and community trust in the library and Fresh Start program. Buy-in for this relaunch of Fresh Start also came from the Monmouth County Reentry Task Force, a group that involves the New Jersey Department of Parole as well as numerous community partners ranging from local employers to healthcare providers to social services.

Planning and Partnerships

After working out the initial kinks, LBFPL partnered with Monmouth University to update the program website and increase outreach efforts. In 2019, New Jersey State Library received a $628,774 National Leadership Grant from the Institute of Museum and Library Services (IMLS) to build upon the Fresh Start program. The program was expanded to five more libraries across the state of New Jersey--Atlantic City Free Public Library, Cumberland County Library, Newark Public Library, Paterson Free Public Library, and Trenton Free Public Library--and the Free Library of Philadelphia and DC Public Libraries are expected to join as well within the next year.

The Fresh Start Advisory Committee is made up of librarians and social workers from San Francisco Public Library, Denver Public Library, District of Columbia Public Library, and Monmouth University. Additional partners of the project include the New Jersey State Parole Board, New Jersey Department of Labor and Workplace Development, and the Free Library of Philadelphia.

Outreach activities

Outreach and marketing has been a constant challenge and a critical component contributing to the program’s success. Much of the marketing was done through word-of-mouth, as well as through social media. The most effective means for outreach has been the human component of connecting to the community on the ground; Perez has made a point to make sure he is visible in the Long Branch community by hosting and attending community events and festivals, including the annual Long Branch Latino Fest. Interest from local and national media outlets, such as News 12, NPR, and the New York Post, has also provided additional avenues for marketing.

After Covid-19 necessitated library closures, getting word out about the program became even more of a challenge. Fresh Start worked with Out Front Media and Intersection to market the program through billboards and bus wraps throughout New Jersey. The Fresh Start team also created a YouTube channel and started posting promotional and informational videos to YouTube and Facebook.
Outcomes

Because Fresh Start is one of several different programs and services provided by LBFPL’s social worker, quantitative data for the number of clients served and client needs and outcomes are mixed in with those for other programs and unavailable for Fresh Start specifically. Additionally, Fresh Start services are structured such that the focus is on solving the problems that clients come in with rather than setting up on-going check-ins, meaning that if a Fresh Start client’s problem is resolved in the first meeting, Fresh Start may never hear from that client again. Because of this, the success of the program at LBFPL has largely been gauged qualitatively with a focus on the quality and impact of known client outcomes rather than quantitative metrics. By these measures, LBFPL has had an overwhelmingly positive impact, helping numerous clients find employment that pays living wages, as well as building strong connections and support systems throughout the Long Branch community. One notable example of this is an employer Perez connected with who has become an invaluable resource, as they have consistently proven able and willing to work with even the tightest of timelines to accommodate parole requirements and hire formerly incarcerated people in need of employment.

Unanticipated results and lessons learned

The biggest unanticipated hurdle was, of course, Covid-19. The pandemic necessitated substantial changes in approach to both marketing the program and intake and interacting with clients. Library closures posed additional challenges as well, making it more difficult to reach clients and get word out about Fresh Start; while social work is generally considered an essential service, public library social workers have to abide by library closures and restrictions. Alternative meeting spaces had to be identified while libraries were closed and pandemic-necessitated changes, such as mask-wearing and the shift towards more virtual meetings and services rather than in-person, created new challenges for effective communication—masks interfering with communication with deaf clients is one example of this—and placed further emphasis on existing challenges, in particular the digital divide. LBFPL was able to assist some of its community members by providing approximately 15 donated refurbished PCs to households that would otherwise not have had a computer during the pandemic. The impact and reception of the distribution of the donated computers was overwhelmingly positive, and LBFPL is interested in finding ways to continue to bridge the digital divide in the Long Branch community.

An unexpected upside of the challenges brought about by Covid was that the increased difficulty of reaching potential clients pushed the team to try out new means of advertising, some of which, such as the bus wraps and billboards, has proven successful and will be continued beyond the pandemic. Currently, one of the primary goals for Fresh Start is to continue developing innovative ways of getting the word out about the program, and the team plans to achieve this by collaborating with more partners such as Recovery on Wheels, Gangsters Gone Godly, and the New Jersey Judiciary Court System. There is also interest in proactively involving more formerly incarcerated people in the marketing of the program, rather than relying primarily on library staff to make those connections.

Looking to the future, the Fresh Start team hopes to find a way to establish a presence inside of prisons. Getting the word out to current inmates, and potentially even completing the intake process and setting up meetings between social workers and clients while they are still incarcerated, could be an effective way of increasing Fresh Start’s reach while simultaneously improving the program’s ability to set clients up for successful reentry. Beginning the process inside the prison would not only serve to spread awareness of the program amongst a large swath of potential clients, but also allow social workers and clients to start planning for reentry in advance of their release, helping to ensure that they have the resources they need from day one.

Case Study: DC Public Library Program

DC Public Library provides reentry services through its Peer Outreach program for community members experiencing or at risk of homelessness. The program is run by three full-time certified peer specialists who connect with people in the libraries. These specialists have personal experience with homelessness and incarceration, giving them a deep understanding
of customers and their needs, as well as a passion for the work. Although the focus of the program is homelessness, the program provides assistance in a variety of areas including obtaining IDs or other documentation, identifying options for healthcare and substance abuse issues, and seeking housing or employment. Many of those served are formerly incarcerated, and some are just returning to the community and need assistance navigating reentry. Services provided through Peer Outreach are marketed through street outreach, word of mouth, flyers, and in-library announcements.

DC Public Library also manages a library branch inside DC’s jail. The jail branch started as a mobile library, and now has both mobile and walk-in facilities. When library patrons are leaving jail, they are able to sign up for a library card and are provided with information about various services relevant to their reentry. Even as Covid-related restrictions paused the circulation of library materials within the jail, the jail was able to acquire one tablet for each resident, and all the library’s virtual programming throughout the pandemic was uploaded to the tablets. The library has also partnered with the Department of Corrections to provide space and technology so families of incarcerated individuals can make appointments at the public library for video visitation.

As DC Public Library continues to grow and develop reentry services, as well as services for currently incarcerated people, they are interested in developing additional partnerships with relevant non-profits and community organizations, as well as furthering the existing partnership with the Department of Corrections. They are currently working on collaborating with RISE to provide entrepreneurial resources to returning citizens, and other areas of interest for further development include working with the federal prison system to expand the video visitation program so that any DC resident with a family member in any federal prison can participate.

Case Study: San Francisco Public Library Program

San Francisco Public Library began services for incarcerated people with a program that brought volunteers to a juvenile facility. The program started in 2007 and has been enthusiastically received, even by reluctant readers. SFPL’s jail, prison, and reentry services are modelled after New York Public Library’s; in 2018, after New York Public Library’s Ginny Austin reached out as part of a project to find best practices for urban library systems, SFPL began prison services with a reference by mail program, allowing incarcerated people to ask questions or request information and receive a response from a librarian by mail. MLS student interns are largely responsible for responding to these reference inquiries. The program has been popular with people incarcerated not only in California, but also Oregon and Nevada, making it clear that there is a strong demand for this service.

SFPL’s prison services go beyond reference by mail, and include reentry services, video visitation through the library, and providing books, although prison library collections are currently heavily focused on law library resources. In California, prisons have a tablet for each incarcerated individual, so the library also provides electronic resources for use on these tablets. Reentry services center on marketing existing library services and resource that are relevant to formerly incarcerated community members who are navigating reentry and may need assistance finding housing or seeking employment, for example, and the SFPL Main Library also has a social work department with outreach workers who have lived experiences with homelessness and incarceration and are able to combine their first-hand knowledge and social services expertise to provide reentry services and connect patrons with reentry resources.

While the city of San Francisco on the whole has excellent resources for people in reentry, including a supportive local government and numerous non-profit organizations, the SFPL does not currently have the staffing capacity necessary to expand its reentry or prison services. That said, areas that have been identified as potential avenues for growth include
developing a restorative justice program for women, as the currently available program, Resolve to Stop the Violence, is only available to men with no equivalent for women. Similarly, the classes that are currently offered by City College to incarcerated women differ from those offered to men, focusing more on parenting classes rather than business or entrepreneurship classes. The women have expressed an interest in more diverse educational opportunities, so providing additional classes or developing a program to allow both women and men to sign up for any of the classes could be another next step.

**Conclusion**

All in all, the increasing interest in this area is focusing on the need for libraries to serve the underserved and people who are in detention centers, prisons, as well as returning citizens. We believe that a more holistic view of serving people who go to jail is needed and that the services need to be flexible to accommodate a variety of needs. Partnerships between social workers and librarians can offer the flexibility needed but further study and exploration to understand the full impact of these programs is needed.

**Bibliography**


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Bios

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Identifying and Better Serving Latent Patron Subgroups 
through the Use of Clustering Techniques

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To best serve their users, libraries must first know their users. Libraries’ user populations are frequently demographically heterogeneous, comprising a multitude of racial and ethnic identities, classifications (e.g., students/staff/faculty), and other characteristics (citizenship status, employment status, etc.). However, demographic groups are not monolithic: for example, faculty are likely to differ in how they use academic libraries depending on their discipline and tenure status, while male public library users may have different borrowing patterns based on their age, parental status, and occupation. Further, libraries may be interested in better serving user groups based not on their demographic composition but upon less easily discernible attributes such as library perceptions and usage. Examples of such subgroups might include users who visit the library weekly; users unwilling to ask library staff for help; and users who find the library’s discovery layer difficult to operate. Before a library can ask these users for feedback to inform the design of new and improved services—or even know how large these subgroups are—the users must first be identified.

Such latent complexity can make it difficult for libraries to determine how best to serve their users. An individual user, Si-won, is not just a teen but also genderqueer, works a part-time job, doesn’t care for their high school library but loves their public library’s Teen Zone, prefers to visit the library with friends, and feels most comfortable speaking with younger and BIPOC library employees. Si-won’s library use is informed by not just one of their identities, life experiences, and perceptions of libraries, but all of them. While the diversity of user populations is frequently acknowledged by library researchers and workers, this recognition rarely informs librarians’ research methods and service designs.

One particularly effective method of identifying latent user subgroups is to use clustering techniques such as latent profile analysis and cluster analysis to analyse quantitative data. This paper provides an overview of the benefits of such techniques and how they work. A case study follows to demonstrate how clustering techniques might be used in practice by libraries.

Clustering Techniques — An Overview

Clustering techniques “identify unobserved subgroups in a population with a chosen set of indicators” (Nylund-Gibson and Choi, 2018, p. 440). These “indicators” are variables that can be derived from responses to surveys or tests, or from observed data such as number of checkouts or frequency of library visits. Data may be continuous or categorical/dichotomous in nature, with analyses such as latent profile analysis (LPA) and cluster analyses used for the former and analyses such as latent class analysis (LCA) used for the latter. Each of the resulting clusters have distinct profiles: the members of one cluster have score patterns like each other but dissimilar from other clusters (see Figure A below).

If demographic information has been collected, it is additionally possible to describe the demographic composition of each cluster and to compare these demographics across clusters. One-sample tests of proportion may then be used to determine whether each of the resulting groups is demographically representative of the overall population. It may be useful to know, for example, that the users who feel least comfortable asking library staff for help predominantly identify as white and are under the age of 20. Narrative profiles may be developed for each cluster using cluster members’ score means and demographic information. Qualitative methods such as focus groups or interviews might subsequently be used to supplement these narrative profiles with richer, more textured descriptions of cluster members’ library perceptions, attitudes, and behaviours (Geertz, 1973; McMillan, 2021).

Clustering techniques are considered person-centred methods of identifying and defining groups. This contrasts with variable-centred methods such as regression (which predict future outcomes for different groups) and t-tests and ANOVAs (which compare group differences). Variable-centred methods “are focused on the structure of the variables across persons,
rather than the patterns of responding within persons” (Pyburn, 2015, p. 2). Such methods are implicitly deficit-based: participants are often grouped by their high or low levels of a dependent variable (information literacy, library anxiety, etc.). The cut scores used to classify participants into these high and low groups are often arbitrarily decided (Nylund-Gibson and Choi, 2018). Further, variable-centred methods must necessarily focus on known groups to draw comparisons or make predictions using the variables of interest: classes taught by different librarians, different income brackets, etc. Another problematic assumption of variable-centred methods is that the relationship between the independent and dependent variables is assumed to be the same for all members of each known group included in the study. Variable-centred approaches frequently look only at single aspects of participants’ identities at one time—their gender, their race, their class year, etc.—and these methods are therefore limited in their ability to capture and describe complexity within the populations they are applied to. The assumption of homogeneity within known groups (e.g., all students in a particular class, all middle-class persons) is therefore frequently unwarranted in practice.

Person-centred approaches such as clustering techniques, on the other hand, “allow for the identification of complex combinations of characteristics and the exploration of individual differences on a small or large number of variables simultaneously” (Erbacher, 2020). Such methods assume heterogeneity within a population and seek to describe and classify this heterogeneity. On a measure of information literacy, for example, one group might have advanced search skills, moderate source evaluation skills, and weak citation skills. Another group might be strong at identifying source types and have more modest search skills. Person-centred methods therefore “provide a more comprehensive and holistic view of the persons being studied, as well as a more realistic understanding of the multivariate outcomes (i.e., patterns of responses) than variable-centred methods” (Pyburn, 2015, p. 2). Both person-centred and variable-centred methods have their place, depending upon the research question; if seeking to understand people, person-centred methods are most appropriate.

Several considerations ought to be kept in mind when choosing and using clustering techniques. As mentioned earlier, LPA and cluster analysis may be used to cluster participants based upon continuous data while LCA may be used to cluster participants based upon categorical or dichotomous data. LPA and LCA use statistical models while cluster analysis is considered a numerical algorithm. Because cluster analysis is a non-inferential analytical technique, power analyses cannot be conducted to determine a minimum number of participants, but the technique is frequently used with sample sizes of 50 to 300 respondents (Erbacher, 2020). Researchers using cluster analysis should therefore seek to ensure their samples are as representative of their population as possible on key demographic variables, because "any conclusions the researcher ascribes to the larger population from which the sample was obtained must be based on analogy, not on inferential statistics"
(Romesburg, 1984, p. 30). This may require increased recruitment to under-sampled populations as data collection proceeds. Because they are based upon probability models, LPA and LCA are considered more rigorous than cluster analysis. However, they require minimum sample sizes of 300 to 500 participants, which may be infeasible for many library researchers (Tein, Coxe and Cham, 2013).

Despite their utility, clustering techniques are infrequently used by library scholars. A handful of academic librarians have used clustering techniques to develop typologies of college students based upon their library use (Nagata, Toda and Kytöläki, 2007; Karunanayake and Nagata, 2014). In another study, a special librarian used cluster analysis to identify profiles of practicing scientists’ information-seeking behaviour (Palmer, 1991). Library researchers are instead much more likely to use variable-centred approaches to describe extant groups such as students in different disciplines by comparing their library usage with simple frequencies or percentages (Hiller, 2002; Varga-Atkins and Ashcroft, 2004). Clustering techniques may therefore be effectively applied by library scholars and practitioners seeking to add to the body of knowledge about their user populations.

Cluster analysis will be used to group respondents based on their response patterns on a survey comprising four subscales from the Academic Capital Scale (Winkler and Sriram, 2015), three subscales from the AQAK: Library Anxiety Scale for Undergraduates (Anwar et al., 2012), and four demographic questions. This demographic information, including students' race, gender identity, and employment status, will be used to describe the demographic composition of each cluster. Additionally, one-sample tests of proportion will be used to determine whether each cluster’s demographic composition is significantly statistically different from that of the population of first-year first-generation students. Mean scores, standard deviations, and ranges for each library anxiety and academic capital subscale for each cluster will also be calculated and displayed tabularly; see Table A for an example.

These descriptive statistics will be transformed into narrative profiles for each cluster to describe the characteristics of respondents associated with each cluster. As an example, one cluster, which we will call University Navigators, might share low scores on the Trustworthy Information and Navigation of Systems dimensions of the Academic Capital Scale and the Library Staff dimension of the AQAK: Library Anxiety Scale for Undergraduates. These narrative profiles will be supplemented with qualitative data from follow-up interviews. A partial example narrative profile supplemented by qualitative data may be found below.

**Example of a Hypothetical Narrative Profile Supplemented by Qualitative Findings**

Students in the University Navigators profile \((n = 34, \text{ or } 15\% \text{ of respondents})\) indicate a willingness to engage with campus authority figures that is unique among their first-generation peers. Scoring low on the Trustworthy Information dimension of
Table A

University Navigators’ Academic Capital and Library Anxiety Subscale Scores

<table>
<thead>
<tr>
<th>Subscale</th>
<th>M</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern about Costs (ACS)</td>
<td>a</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigation of Systems (ACS)</td>
<td>a</td>
<td></td>
<td></td>
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<tr>
<td>Overcoming Barriers (ACS)</td>
<td>a</td>
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</tr>
<tr>
<td>Trustworthy Information (ACS)</td>
<td>a</td>
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</tr>
<tr>
<td>Library Staff (AQAK)</td>
<td>b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Knowledge (AQAK)</td>
<td>b</td>
<td></td>
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</tr>
<tr>
<td>Library Environment (AQAK)</td>
<td>b</td>
<td></td>
<td></td>
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</table>

a Academic Capital Scale. b AQAK: Library Anxiety Scale for Undergraduates.

The Academic Capital Scale ($M = 22.1$, $SD = 8.1$), these students have identified university employees as being more knowledgeable and better able to answer college-related questions than their friends and family, who are less likely to have attended college. In interviews, these students consistently expressed a desire to succeed academically that outweighed any discomfort they felt about asking questions or for help. One student shared:

Last year [in high school], my Nana usually came with me to the public library while I did my homework and I’d ask her to read over my book reports. My Nana never had to write a 10-page paper, though. So, I couldn’t ask her about my UNIV assignment, I knew I had to ask my professor even though I don’t think he likes me much. And my professor said that the librarian could help me come up with better keywords than he could, and he emailed the librarian so she would help me.

Students in this University Navigator profile often consciously recognized that college employees—whether professors, librarians, or academic support staff—had expertise that their families at home and their friends in college did not have and sought assistance from people they felt were most likely able to answer their question. One student said:

I talked to Dr K [the professor] because I didn’t understand some parts of the assignment. I met with a librarian because I was having trouble finding sources on my topic that were scholarly. And I was afraid of getting in trouble for plagiarizing, so I went to the Writing Centre, too.

Students in this profile also scored low on the Navigation of Systems dimension of the Academic Capital Scale ($M = 67.2$, $SD = 20.1$), suggesting that these students not only trust university employees as sources of knowledge, but of help and advice as well. University Navigators are comfortable displaying vulnerability by requesting support services and resources to succeed academically. Not surprisingly, then, these students also score low on the Library Staff dimension of the AQAK: Library Anxiety Scale for Undergraduates ($M = 156.0$, $SD = 66.5$), indicating these students feel comfortable approaching library staff for help and have found them to be useful and friendly. While University Navigators are unique among the profiles identified by the cluster analysis for these characteristics, they are not unprecedented in the literature: Jack (2016) also described first-generation students exhibiting similar characteristics, most of whom had attended rigorous college-preparatory high schools and had positive, proactive interactions with educational authority figures in that environment.

Members of the University Navigators profile predominantly identified as female (67 percent), white (44 percent) or Black (43 percent), and worked 10 to 19 hours per week (32 percent).
References


Implementing a VPAT Testing Process for E-Resources

Carli Spina
FIT Library

Introduction
With digital materials making up a core component of most libraries’ collections, it is vital that these resources are made accessible to users with disabilities and those who use assistive tools to navigate online content. Many institutions have recognized this issue and worked to develop processes that ensure that library content meets recognized accessibility standards, such as WCAG (the Web Content Accessibility Guidelines) 2.1. These guidelines outline steps that can be taken to design web content in a manner that makes it more accessible.¹ The guidelines provide a recognized standard to guide developers and against which web content can be evaluated, although one cannot guarantee that following the guidelines will ensure that content is fully accessible to all users in all situations. One way that e-resource vendors can share information about the accessibility of their products is using Voluntary Product Accessibility Templates (VPATs).² VPATs provide a standardized way of explaining whether software, a web application, or an e-resource complies with specified accessibility standards, including offering versions that are focused on compliance with WCAG success criteria. Unfortunately, research has also demonstrated that, for a variety of reasons, the VPATs libraries receive from vendors may not always be completely accurate.³ For this reason, libraries have started reviewing the VPATs they receive to confirm that the e-resources are accessible in the ways that this documentation suggests that they are.⁴

In the summer of 2020, the libraries of the State University of New York system formed a Library Accessibility Cohort that undertook the process of not only reviewing the accessibility of e-resources to which SUNY libraries subscribe, but also developing a workflow that could be useful to other libraries undertaking this type of review. Where VPATs were available for resources, this work was primarily focused on reviewing the VPAT for accuracy. The group was intentionally formed with representatives from libraries at a variety of types of institutions, including institutions of varying size and with varied areas of academic focus.⁵ This choice was made in large part with the goal that the resulting documentation would be applicable to libraries that serve a variety of types of academic institutions with varied needs and e-resources subscriptions.

Over the course of the 2020-2021 academic year, the Cohort met regularly, initially to learn about accessibility as a group, including learning from a highly skilled screen reader user about common accessibility issues. The Cohort then applied this knowledge to develop a series of resources that were collected in a publicly shared toolkit.⁶ Central to these resources were forms for two stages of e-resource review. The first form focused on reviewing and evaluating the VPAT itself, and the second form guided users through the process of testing an e-resource for accessibility.⁷ Taken together, these forms offered a picture of not only the accuracy, robustness, and currency of the VPAT that the vendor had provided, but also an overview of accessibility issues that users might encounter in utilizing the underlying e-resource. In addition to these resources, the toolkit also includes information about common workflows related to web accessibility and form emails that can be used to contact vendors regarding both VPATs and accessibility issues, should any arise.

Purpose / research question
The purpose of this project was to determine whether the workflow and documentation created by the Cohort could be translated to other contexts, particularly where the e-resources being reviewed were not standard academic databases, but instead included databases primarily marketed to corporate entities. Building on the work done by the SUNY Library Accessibility Cohort to develop model documentation around the collection and evaluation of Voluntary Product Accessibility Templates (VPATs), we implemented a workflow for requesting VPATs from vendors of specialized e-resources and reviewing these resources and the related VPATs. The research question is whether this process works equally
well for e-resources that are primarily used in visual, corporate, and/or business settings as it does for the more academically focused e-resources that served as the bulk of the e-resources reviewed by the Cohort. By applying the process in this setting, it was possible to test the process’ versatility and identify where it might be possible to further refine the workflow and documentation to increase their applicability to different types of e-resources.

**Design, methodology or approach**

The first step of the methodology was to determine which databases had not already been reviewed through the SUNY-wide review process. Once this was completed, it was clear that there were only a limited number of approximately twenty databases where further work was needed to determine whether accessibility documentation was available. Step two was to reach out to these vendors to inquire whether a VPAT was available for their product and to request the most recent version if it was. This was done using the model emails from the SUNY Library Accessibility Cohort’s toolkit as a starting place to develop a form email specifically for use in this project. Vendor responses were tracked in a shared spreadsheet that linked to any VPATs that vendors shared.

Step three, which took place in conjunction with these first two steps, involved exploring the accessibility information that was publicly available online for each e-resource. A piece of this process was determining whether any other libraries or other institutions had shared a VPAT review for these products. While there are some projects created to share these reviews, such as the Library Accessibility Alliance, at the time this project was conducted, external reviews were not available for the resources included in this project.

Next, for VPATs that were received, the VPAT was evaluated using the process developed by the SUNY Library Accessibility Cohort. This included working through the questions on each of the forms created by the Cohort to not only evaluate the VPAT, but also to see how well the process worked for these specific types of e-resources. Throughout this work, the process itself was also under review to determine whether it was as effective in this particular setting or required refinement. In cases where VPATs were not available for a resource, a separate evaluation will be required to assess the resource’s accessibility.

**Findings & limitations**

The process of applying the workflows and documentation to the specific databases that were part of this project offered a good test of the process. The databases included those focused on a range of topics, including several where data was of central importance and where visual images or video were of central importance. Though both of these types of information had been considered in the creation of the initial workflows and documentation, the initial set of databases tested, by virtue of being selected because they were used at multiple SUNY campuses, were more centered on databases created for and primarily marketed to academic institutions. The e-resources considered here included some resources with an academic focus, but also several that are primarily used in industry, which may bring with it different accessibility priorities and approaches.

It quickly became apparent that the issues that are present in e-resources are similar across types of e-resources and even across the web. Issues such as missing labels and fieldsets in forms and entry fields, structural issues, missing video accessibility features, and absent or inadequate alternative text for images, are problems across multiple platforms and were also seen in at least some e-resources reviewed in the Cohort’s work. Video accessibility can also be a recurring complication across platforms. In particular, audio descriptions, which describe the visual content of videos during natural breaks in the audio track to make them accessible to users who cannot see the video, remain rare when video content is included in e-resources. In this way it is clear that the documentation can be helpful since the concerns and areas where improvements are needed are similar across platforms.

However, even as these similarities emerged, it was clear that there were at least some differences as well. One different challenge highlighted through this process was the difficulty in determining the sufficiency of alternative text (or alt-text) for images. Though often the focus when reviewing alt-text is its presence or absence for any particular image, the nature of that alt-text is also extremely important. The reason for this is that it is rare that there is a single correct version of alt-text for an image; rather, research has shown that alt-text is very context specific. In fact, the best alt-text for an image
changes depending on the context in which the image is being displayed. This is one reason that it is almost impossible to fully automate determining whether the alt-text in a particular database is sufficient. Beyond this, however, it can also require careful review of the image and alt-text together, with consideration of the reasons a user may be using the image to determine whether alt-text makes the database fully accessible and usable with assistive devices. Because many of the e-resources reviewed in this project include a significant number of images that will be used for a variety of projects, ranging from historical research to design inspiration, it became clear that this was a very significant aspect of the review. This suggested that it might be helpful to develop additional instructions and documentation around alt-text evaluation beyond that included in the original project, particularly if the work is being distributed among a larger group of individuals in the future.

Another finding that emerged was that there may be possibilities for streamlining some aspects of this project when implemented by smaller teams. This is particularly noteworthy since most individual campuses will not be able to devote as large a group as the Cohort to this work. Two particular areas of possible change are how the information is reported and the amount of testing done for specific success criteria. With respect to how the information is reported, the Cohort not only filled out the two forms for each item, but also wrote a narrative document about the evaluation of the e-resource that could be shared with others. In a setting where sharing information out with a wider group was not a part of the project goal, the purpose of the narrative report could be adequately met instead by including detailed notes, as needed, when filling out the forms. With respect to the amount of testing done, some questions in the form suggested a minimum number of items to check within each e-resource for a particular success criteria or type of accessibility. In this project, it was found that fewer items could be reviewed in the limited situation where the VPAT provided by the vendor had already conceded that the platform did not meet a success criteria. In those situations, testing was still done, but only to verify the accuracy of the VPAT and not always to the extent suggested in the Cohort documentation.

The main limitation of this process is the relatively small and specialized sample size used. The resources reviewed in this project were limited by vendors that were able to provide VPATs within the timeframe needed for this project. Moreover, the work was limited to resources that specialize in information useful to students and faculty doing research in the creative industries, by virtue of the fact that these are the researchers served by our library. This project would benefit from further exploration at other institutions and one of the Cohort’s goals is that the workflows and documentation they developed will be adopted at other institutions.

Conclusions and application of the results

Ultimately, this process demonstrated that the process developed by the Cohort has applications beyond the initial set of resources tested by the Cohort and suggested that it does offer flexibility when there is a need to refine it for a specific institution’s needs. This will allow for the development of ongoing accessibility testing and VPAT review processes that will help not only in the evaluation of the e-resources to which a library subscribes, but also will aid preparations for assisting disabled library patrons and providing access to accessible content upon request. This process has also allowed the library to have conversations with vendors about accessibility and to learn more about how different vendors approach accessibility, which will also be useful in developing plans to better serve disabled patrons.

5 The author participated as a co-chair of this SUNY Library Accessibility Cohort.


Knowledge is Power BI

How Data Visualisation Helped Inform Services During the Pandemic

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Introduction
This paper outlines the approach taken to develop and launch a dashboard of data visualisations to provide decision makers with rapid information on how well the new approaches to service delivery were working during the Covid-19 pandemic at Liverpool John Moores University (LJMU).

LJMU is a thriving teaching led institution, in the middle of a busy city with over 25,000 staff and students. The institution’s Library Services provides a complete infrastructure for the institution’s teaching and research activities, including provision of spaces, instruction/guidance and learning resources.

When the Covid-19 Pandemic took hold in March 2020, LJMU Library Services for the first time in living memory had to close its buildings completely. Initial efforts were concentrated into bolstering the online offer as much as possible, including switching to online skills delivery, operating a wholly online enquiry service and investing in additional eResources.

In June 2020, it was agreed that the library buildings could reopen, albeit in a very restricted way. In order to do this Library Services had to develop a completely new service offer for building users in order to operate safely and in line with all new Government legislation. This severely restricted the services available from its physical libraries and the number of study spaces available. In order to manage demand and equitably allocate study spaces, new booking rules were introduced. As a result of the UK’s social distancing mandate, study spaces had to be reconfigured and the number available dropped significantly. In addition, users were required to book before they would be allowed entry to the libraries. Access to the book stock was very limited, and available via request only.

Also, in order to ensure suitable space for users with additional needs, several study spaces/rooms were reserved for those who required additional support. These were managed in conjunction with LJMU’s Student Advice and Wellbeing department.

These rules of operation were fairly consistent for the rest of the 2020/21 academic year, although managers had to operate during various local and national lockdowns.

Purpose/Research Question
Given that the new service offer and associated terms of operation were initially ‘educated guesses’, there was a need for timely and comprehensive information about building usage and user behaviours and demographics which was paramount to inform managers as to how well these new operating models were working and make any changes to better suit user needs.

The Team Leader (Business Administration) was tasked with designing a new building usage dashboard to help address this issue.

Design, methodology or approach
Selection of Tools

The requirement for up to date information, the combination of different data sources and the request for customisability suggested that data visualisation software would be the most appropriate method to produce the desired dashboard.

There are several data visualisation tools on the market. Tableau is the market leader in this field, however PowerBI, a Microsoft product is becoming increasingly popular, in no small part due to the fact that it integrates well with other MS...
products, in particular with MS Teams. LJMU has been developing its PowerBI infrastructure and Library Services has been involved with these developments; it had been used to produce various usage reports before the pandemic started. The interactivity and ability to link with live data sources was appreciated by managers, although they had yet to become fully intrinsic to library operations.

Designing the Report

The usage report was designed in several steps. This approach did not follow any one particular methodology, however it was informed by previous work in this field. In addition, the Team Leader (Business Administration), the analyst, has attended several training courses on data visualisation and so has adopted several best practices. The approach used is further outlined below.

1. Identifying the Research Question and Users

Firstly, the research question needed to be articulated. This is an essential step in designing any management information dashboard as it focuses the design and ensures that all visualisations are designed in such a way as to answer that question. Otherwise, there is a great temptation to clutter dashboards with a multitude of visualisations, which can ultimately detract from the dashboard’s primary purpose.

Following consultation with several key stakeholders, including the Director, Associate Director and Library Engagement Manager, it was agreed that the research question would be;

‘Who is using the library and what are typical usage patterns’.

This could then be compared to the new service offer to ensure that it was best fitting student needs, within the extremely challenging circumstances.

It was also helpful at this stage to identify the primary end users. In this case it was primarily aimed at Library Leadership Team, although it was acknowledged that these reports would also have a secondary purpose in communicating library activity levels with other library staff and senior managers from outside the libraries.

2. Data Sources

The next step was to identify suitable data sources that could help address these questions. Given that all users had to book to come into the library, the booking data was the initial starting point as it was readily available, comprehensive and could be cross referenced with other data. Although it would have been preferable to establish a live link between Power BI and the booking system, unfortunately this wasn’t possible at that time due to the technical complexities. As a result, weekly data extracts were used instead. This data included the student ID number which allowed Library Services to also use this to extract additional information about users such as school, faculty, level etc from the institutional data tool WebHub.

In addition to the booking data, the gate count data and the head count data were also identified as suitable data sources. The former was used to compare bookings with actual usage, and the latter helped to create an occupancy measure to review peak usage times. Again, both of these were received as data extracts which did present some challenges when it came to uploading the data to work with PowerBI.

The data itself all had to be cleaned to get it in a suitable format for working in PowerBI. This involved identifying and correcting mistakes; reformatting and restructuring several spreadsheets as the extracts themselves were not compatible with Power BI. This included deleting unnecessary information, formatting columns correctly (dates, times, text etc) and separating out concatenated entries. This was a very manual process and took significant staff resource (see Findings and Limitations for more details).

The data structure was defined before any data was loaded into PowerBI itself. The data structure was important as the data source consisted of extracts which required regular cleaning to get it into an appropriate format. This cleaning had to take a consistent format in order that the refresh function would work successfully.
It is important to note that this report did use personal data. As a result, all data was managed, stored and used in full compliance with GDPR legislation. Sensitive personal data was only available in anonymised, aggregated formats.

3. Designing the Report

The next step was to design the first draft of the report. This design process will vary from analyst to analyst. Some find it helpful to sketch out a basic wireframe before commencing. Others will adopt a more iterative approach, creating visualisations and exploring their value in answering the research question. The Team Leader (Business Administration) primarily adopted the latter approach. This also included selecting appropriate visualisations for the data to best communicate findings to end users.

Visualisations were split into two main areas; patterns of usage and who was using the library. This stage was very iterative, and the analyst experimented with several visualisations and designs before settling on the first draft. This is why establishing the research question at the start of the process was so important as every visualisation was designed so as to answer a particular aspect of it.

3.a Patterns of Usage

The first set of visualisations concentrated on the patterns of usage. This included a simple line graph denoting the total number of bookings per day for each library. This would allow managers to see patterns of usage over time and also to compare both libraries and establish if one were busier than the other. Secondly, a bar graph of number of bookings per timeslot was created. This allowed managers to see what the most popular times for bookings were.

Cards with the total bookings and number of distinct users were also created to allow managers to see at a glance what overall usage levels were.

Finally, a relative occupancy measure was created using the head counts and the number of available seats. This allowed for the creation of a heat map for each week to chart how busy the libraries were becoming. In addition, an advanced gauge chart denoted both maximum and minimum usage levels for each library.

A third set of visualisations reviewed the usage of the ‘Additional Support’ spaces.

3.b Who is Using the Library

In order to address ‘who’ was using the library, a second set of visualisations were created. This primarily used the enhanced resource booker data which had the faculty, school and level of the different users. This allowed the creation of charts to show the different usage levels of different schools and levels.

4. Launch

The reports were launched in November 2020. As PowerBI is a Microsoft product, a link was added to the managers’ team on MS Teams. This allowed managers to always see the most current version of the report. Unfortunately, some managers had issues viewing this live and so regular PDFs also had to be produced in addition.

5. Feedback

This is an essential step in any design process. After the dashboard was launched, key users (including the Associate Director and the Library Engagement Manager) were consulted to ensure that this report met their requirements. This was very much an iterative process between users and analyst, until a final dashboard was agreed.

6. Edits and Additions

Following a request from the Director of Library Services, in January 2021, a further set of visualisations was added to those mentioned above which looked at some further demographic breakdowns of library users. The data was taken from a bespoke tool created in the institutional webhub system which provided a summary of further personal data, including age brackets, ethnicities, gender and widening participation status. As this includes sensitive personal data it was not available at
an individual level, only summarised to comply with GDPR legislation. This data was appropriately restructured and uploaded to PowerBI and a further set of visualisations developed.

Findings & limitations (as applicable)

Findings

Analysis of library users showed that one library was consistently significantly busier than the other. One interesting observation that resulted from analysis of school usage was that overwhelmingly students preferred to go to the library where their subject’s books were based, even though browsing of the book stock was temporarily suspended and loans were extremely low; therefore it was unlikely that access to the book stock was their primary driver when selecting which library to attend.

Secondly, these analyses showed that different schools had different usage patterns. Business students were by far the biggest library users by total numbers, however when the average duration of bookings was reviewed, this showed that Biological and Environmental Sciences had the longest average bookings.

A second finding came from comparing gate count usage to bookings usage. When there were no restrictions placed on bookings, comparison data showed that students were consistently booking seats for full day sessions but were only attending for a fraction of their bookings. As a result, students were reporting that there was no availability, but this was at odds with the occupancy measure that had been created.

This analysis showed that the true issue was to do with booking availability, not actual availability. Interventions therefore sought to address this issue by restricting bookings to four hours and by invalidating bookings should the patron not arrive within 15 minutes of their booking. As a result, many more students could find study spaces and complaints reduced. In addition, promotions concentrated on highlighting available study space at the less busy library which also helped address the problem.

Another impactful finding was in terms of reviewing the demographics of library users. After the Christmas vacation, there was some debate as to whether the libraries should remain open, particularly as usage at that time was relatively low. Analysing who was using the libraries during this period showed that a higher proportion of library users were from Widening Access and Participation backgrounds than the wider LJMU population. The Director of Library Services was able to use this data to successfully advocate that the Library was an essential service to this group of students and therefore should remain open.

Another area where these reports made a successful change to services was in the analysis of Additional Support Spaces. Analysis of usage showed that there was not nearly the demand for these spaces as first anticipated. Given the high demand for study space, several of these spaces were reassigned for general bookings. No complaints were received from this change and the additional study spaces were gratefully received by other students.

More generally, the approach itself is considered a success due to the fact that the resulting report was interactive which allowed the end user to customise their view. This meant that not only could managers use this interoperability to investigate their own stories, it also saved the need to create several different reports for different managers which was a more efficient use of the analyst’s time.

Limitations

The main limitation of this approach was the amount of work required to clean and structure the data so as to be compatible with PowerBI. This required significant staff resource. In addition, it relied heavily on spreadsheets. This was functional but it would have been preferable to be able to connect to a live data source with the data appropriately structured.

The data itself was fairly siloed and therefore was not easily linked. The more the data can be linked, the deeper the level of insight that can be achieved through using data visualisations software.
In addition the report wasn’t live, but only as up to date as the most recent data upload. Again, an automated data link between the dashboard and the live data sources would eliminate the need for these manual uploads and refreshes and ensure that the report was real time.

The complexities of the system and the requisite understanding of data meant that it was very dependent upon the Team Leader (Business Administration), creating a single point of failure should she not have been available at any point.

Sharing the reports encountered some difficulties as it was dependent upon end users having appropriate licences. Some managers were not able to see the live PowerBI reports and therefore had to receive manual PDFs instead. This prevented them from having the full benefit of these reports as they did not have the interactive options in this format. This will be resolved in future endeavours as LJMU has recently purchased an institutional PowerBI licence which will allow all LJMU staff access to these types of reports.

Another limitation was that this approach only considered a limited number of usage metrics. It would have been advantageous to include other building usage data such as PC usage, wifi accesses or in person enquiries. This would all have helped develop better understanding of usage. In addition, no comparison was made with off campus usage, such as downloads, website hits or use of the Virtual Learning Environment. This would have helped provide a wider context as well as ensuring that senior stakeholders were fully aware of the extent of library operations.

Finally, this work was purely quantitative. This research did not include any qualitative analyses to better understand student behaviours/emotional responses, which was a significant limitation during such an emotional period. This was partly addressed when the National Student Survey comments were received in July 2020, however, it wasn’t directly built into this approach.

Conclusions and application of the results

On balance, using data visualisation via PowerBI was a successful approach to evaluating how library spaces were used during the pandemic. It provided managers with a sound evidence base with which to;

- Evaluate and amend the service offer to better meet demand
- Communicate library usage with senior stakeholders
- Better understand the demographics of library users

It also allowed for an overall picture of building usage in one convenient place. Managers particularly appreciated this as they could consult the reports at their own leisure and weren’t overly dependent upon having to ask an analyst for the requisite information. They could also customise them according to their own needs and requirements.

This approach has been accepted as a highly successful one and therefore, this report (and design approach) will form the basis of some future developments.

Future Developments

LJMU Library Services wants to capitalise on this successful approach to using PowerBI to data in other service areas and to develop a wider overarching library dashboard. This is particularly timely as the department has recently opened a brand new library space in a shared building and managers are keen to monitor the usage of this new space, in comparison to the two current libraries.

In addition, the Director is keen to broaden out the scope of activities incorporated in the report to include other library activities such as skills delivery, resource usage and enquiry data. In order to keep the report manageable, it will necessarily not include all of the visualisations mentioned above, and will become higher level; however, the development process will follow the same steps as mentioned above.

In addition, there is a stated ambition to try and automate the link between the reports and the data sources. Currently this has only been possible for a few data sources (where the data is stored in the institutional data warehouse) but there are many
major databases for which extracts are still being used. The more that PowerBI can link to live data the more time the analyst has to analyse, and the less time needed to be spent on data cleaning.

This approach has been very successful at LJMU and Library Services looks forward to developing it further.
Leading While Learning

Reflections from a COVID-19 Research Partnership for Libraries, Museums, and Archives (Panel)

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1. Process for forming stakeholder groups with representatives from three partner organizations, archives, libraries, museums, and allied member organizations.

   - Formation: IMLS forms an Executive Project Steering Committee and three working groups: Scientific, Operations, Communications. Documents charters for each.
   - Formation: OCLC partners with Battelle to conduct bespoke laboratory research; orienting them to operational settings of libraries, archives, and museums; orienting them to “continuous learning” practices
   - Meeting cadence: weekly, then biweekly, for guidance, input, knowledge exchange, discussion of emerging topics
   - Building trust: Shifting members from competitive to collaborative frame of mind
   - Unique challenges: High degree of urgency, speed of decision making, adjusting to continuously evolving information, interpreting scientific research for real-world application.

2. Planning the evaluation strategy

   - Conditions of US government approval and oversight
   - Key outcome was to learn from the experience of building and activating a multi-partner, multisector collaboration in response to an urgent, global crisis
   - Project Phases 1 and 2 built in reflective learning to foster adaptation

3. Gathering formative feedback from committee members about reflective learning process

   - Interviews with members from the committees
   - After Action Review with OCLC project team

4. Gathering feedback from a sample of project’s audience

   - Took longer to disseminate survey and conduct focus groups
   - Alternative sources: committee members, webinar engagement, website contact form
   - Need to assess and make adaptations

5. Lessons learned about equity

   - Conducted Before Action Review with committees
In April, 2020, OCLC undertook a project with the US Institute of Museum and Library Services (IMLS) and Battelle to produce and distribute science-based research to help libraries, archives, and museums make operational decisions with the purpose of mitigating the risk of COVID-19 transmission to staff and visitors. The project was named “REopening Archives, Libraries, and Museums,” or REALM for short. While US-based libraries, archives, and museums are all part of the scope of IMLS programs and funding, the three sectors and the institutions within those sectors are not formally connected or coordinated. The REALM project needed to build and activate a knowledge sharing and communication network that spans across all three sectors. This network would need to continually bring in input from what’s happening across the country and support broad distribution of science-based information that is relevant to cultural institutions in a variety of locations, political jurisdictions, and community settings. The three partner organizations formed a communications working group and built out a mailing list that included contacts at two dozen member associations and 10,000+ individual subscribers from hundreds of individual institutions. IMLS selected key actors in the libraries, archives, and museums (LAM) field who could bring their expertise and on-the-ground experience to the project as a member of either the steering committee, scientific working group, or operations working group.

The emergent nature of the project presented an opportunity for a formative evaluation that provides insights about the functioning and success of the REALM project. To help facilitate these insights Partners for Public Good (PPG) began working as an evaluation and learning partner with the REALM project. The formative evaluation strategy was designed to assess progress in the following areas:

1. communication among OCLC, Battelle, IMLS, Steering Committee, and Working Groups;
2. clarity among those stakeholders about which research questions are in scope and why;
3. the project’s capacity to reach and suitably communicate to a broad spectrum of archives, libraries, and museum staff and their allied organizations;
4. impact of shifting external conditions, such as adjusted public health guidelines or government-issued timelines.

To formulate an assessment, PPG used meeting observations, stakeholder interviews, and an After Action Review (AAR) during the first two phases of the project. The AAR asked the following questions related to actions taken during Phase 1 and the effectiveness of those actions:

- Describe the “action.” What was OCLC trying to do or accomplish?
- Explain why you were trying to do this.
- Describe what actually happened.
- How effective was the action?
- What “evidence” do you have to inform your understanding of how effective the action was?
- What could OCLC do next time to improve the process?

For Phase 3, additional project goals were formulated that look beyond the immediate operational decisions to mitigate risk of COVID-19 transmission to staff and visitors, but also the broader issues of how libraries, museums, and archives can contribute to improved health outcomes in their communities. In preparation for this phase, the project conducted a Before Action Review (BAR) that posed the following questions to the committee and working group members, to encourage reflection on the past and preparing for the future:
• What worked well that we should keep doing?
• What didn’t work well that we should stop doing?
• Imagine failure of this [Phase 3] event or activity. What would that look like? What would the reasons be for the failure?
• What can be done in advance to mitigate the likeliest causes of failure?
• What are some indicators that would show success was achieved for this meeting or event?
Purpose/Research Question

Library Statistics in Switzerland have a history that is as long as it is eventful, and they have undergone a fundamental renewal in the last 4 years. The guiding paradigms of the revision were above all a drastic reduction of the existing variables and the associated workload, orientation towards international standards (e.g. ISO or Counter standards) and the inclusion of as many publicly accessible libraries as possible. With a few, but relevant and well comparable data, a picture of the library landscape in Switzerland should emerge that is as complete as possible; this was the declared goal of all those involved in the revision: The Federal Statistical Office, the Statistics Commission of the professional association Bibliosuisse, various experts and the libraries themselves, which had various opportunities to comment on the planned variables. The first survey of the revised library statistics took place from March to May 2021 on the data of 2020; results and first evaluations can be expected in autumn.

Design, methodology or approach

Descriptive and critical analytical approach, review and evaluation of the revision of Swiss Library Statistics

Conclusions and how findings have been applied

The revision of the Library Statistics was a courageous and, in our opinion, correct step towards modern national statistics in which all publicly accessible libraries can participate - regardless of their type. The goals of the revision were largely achieved and were supported by the libraries from the beginning. Important lessons learned can be drawn, which are very helpful for the further work of the Commission.
Measuring Campus Engagement for Scholarly Communication Services

A Mixed Methods Study of U.S. Public Teaching Institutions

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Introduction

Over the past several decades, new technologies and paradigms have impacted the creation and sharing of work; scholars across all fields have seen changes in research output, publication, and preservation of the scholarly record, as well as emergent publishing models and an emphasis on the measurement of impact. Libraries have broadly defined their efforts to support the research and dissemination lifecycle as “scholarly communication” services. Despite investing significant resources -- personnel, technological investments, and budget -- to develop scholarly communication programs, evaluation of the outcomes and impact of these activities has largely consisted of quantitative measures, like consultation counts, workshop attendance, or repository growth and usage statistics. A more comprehensive or holistic approach to scholarly communication assessment has remained elusive.

The literature indicates a lack of consensus on performance indicators for scholarly communication services. Criteria have ranged widely and have focused on multiple and disparate elements. For the institutional repository (IR), Cassella (2010, pp. 211-219) advocates the application of various perspectives to holistically evaluate its performance. A user perspective provides context on the level of engagement from the targeted community, where important metrics may include the number of researchers who are contributing to the IR, content distribution among disciplines or departments, and download counts. Internal measures could include annual deposits to the IR, availability of items in full-text, and active collections, while the financial perspective determines the cost per deposit and cost per download. Finally, Cassella (2010, pp. 219-220) advocates staffing headcount and associated personnel and training costs as important data points when considering the learning and growth perspective. Even IR data, widely seen as objective and straightforward, may not be easily compared, due to platform differences (Macintyre and Jones, 2016, p. 100) and undercounting (OBrien et al, 2016, p.856).

To ensure capacity to serve new scholarly communication services, many institutions have begun to strategically plan and prepare their organizations and workflows to accommodate these new activities. Brown et al (2018, pp. 340-341) outline the various ways in which University of Queensland Library modified their organizational structure to facilitate expanded researcher services. Leveraging their existing liaison system with employees that had more functional responsibilities, the library was able to increase staffing for their program and establish strong intra-organizational communication channels to deliver research support services. Bjork, Cummings-Sauls and Otto (2019, p. 23) detail how their two libraries transitioned from a full-text institutional repository to including metadata-only records as a method to improve campus awareness of scholarly research, reduce information silos, increase visibility of scholarly research beyond those that were available in full-text, collocate campus publications in one centralized location, and facilitate a comprehensive collection of campus scholarly output. Craft and Harlow (2020, p. pp.178) present their library’s interdepartmental efforts to provide systematic and programmatic training to faculty and students on open access, researcher identity management, scholarship metrics, scholarly communications, research data management, and citation management through the open source program Zotero. A common tenet was that scholarly communication support required awareness and some measure of facility among library employees who interfaced with faculty, staff, and students.

Additionally, outreach and promotion efforts serve vital functions and reflect a maturity of services. Wu et al (2019, p. 14) outline a comprehensive plan for the expansion of their institutional repository services, including significant investments in marketing, promotion, and education of campus stakeholders of the IR’s capabilities. Krier, Premo and Wegmann (2019, pp. 171-172) emphasize the roles that librarians can play as advocates and educators in improving scholarly communication
topics awareness to campus constituents: one-shot instruction to students on varied topics, including information creation, ethical use of information, and the variability of access to information; workshops to faculty on research productivity numbers, copyright, and fair use; and improvements to the library discovery system to signify availability to freely open access materials.

It is clear that academic libraries are actively responding to campus scholarly communication needs through critical investments in institutional repositories, promotion and education of library services and programs, and even in restructuring their organizations to further facilitate this work. Despite these activities and general discussions of metrics and reporting since the inception of institutional repositories, the library community has not put forward national standards or best practices.

Recognizing this gap, Sacramento State University and San José State University sought and were awarded an Institute of Museum and Library Services (IMLS) National Forum grant (LG-35-19-0066-19) to assess scholarly communication programs at “M1: Master's Colleges and Universities -- Larger programs” institutions of higher education in 2019. From 2019-2020, an assortment of library practitioners, campus stakeholders, and assessment experts discussed engagement with scholarly communication programs and the possible evaluative criteria for reporting on their outcomes. This conference proceeding provides the results of the grant’s conducted focus groups, interviews, and national forum on scholarly communication assessment.

**Purpose / research question**

Academic libraries have increasingly and significantly invested in scholarly communication services and programs through the allocation of staffing, resources, and establishing institutional repositories. Despite these expenditures, quantifying and contextualizing the outcomes or impact of these scholarly communication activities continue to be ambiguous and inconsistent.

To better understand the full range of perspectives on the assessment of scholarly communication, librarians, campus stakeholders, and assessment experts participated in focus groups, interviews, or a forum to discuss engagement with library services and programming that support the research lifecycle. Furthermore, participants were asked to identify the metrics that might be used to benchmark growth and development of scholarly communication programs. This paper will present the metrics suggested by these different groups, common themes, and considerations in the assessment process.

**Design, methodology or approach**

Data collection for this IMLS-funded project was composed of three phases with distinctive audiences: 1) focus groups with scholarly communication librarians, 2) individual interviews with non-library campus stakeholders from various offices of research, sponsored programs, or research development and grants support, and 3) an interactive, online National Forum that featured planned presentations and moderated breakout sessions. Participants were recruited to meet the eligibility criteria of being currently or formerly employed at a Carnegie classification of “M1: Master’s Colleges and Universities -- Larger programs” institution of higher education, though there were a few assessment experts whose backgrounds extended beyond the M1 experience.

During Phase I, one in-person and two virtual focus groups were convened and conducted with twenty scholarly communication librarians and practitioners. Participants responded to a short questionnaire listing the variety of scholarly communication services offered at their institutions and rated them in terms of maturity of service and staffing models. A facilitator then led the focus groups to discuss scripted questions using the University of Central Florida (UCF) research lifecycle diagram (see Figure 1) and individual examples compiled during the survey as frameworks. Focus group participants answered the following questions:

- How are the library’s scholarly communication programs and services supporting campus goals?
- Are your library’s assessment efforts addressing scholarly communication?
What are the success metrics for your campus’ scholarly communication services?

Figure 1. University of Central Florida Research Lifecycle Diagram

(https://library.ucf.edu/about/departments/scholarly-communication/overview-research-lifecycle/)

As a second phase of the research, one-on-one interviews with thirteen campus stakeholders were conducted in Zoom using a guided script and the UCF research lifecycle diagram. Campus stakeholders represented administrative personnel who supported research, grant development, and post-award compliance activities. They responded to the following questions for every stage of the UCF lifecycle:

- How is the library providing services to support this stage?
- What are ways in which the library may support this stage?
- What might be some measurable outcomes to that service?
- What evaluative data generated by the library might be particularly useful to you?

In the third phase of the project, the virtual Scholarly Communication Assessment Forum (SCAF) was held; several Phase I focus group participants presented services from their institutions and selected Phase II campus stakeholders served on a panel. Over the course of the two-day forum, forty-three attendees engaged and discussed the myriad of tangibles and intangibles that influence the assessment of scholarly communication services. Again, the UCF research lifecycle diagram was used to frame the conversations. In breakout sessions, SCAF participants were asked to consider:

- How do we measure scholarly communication intangibles?
- How could rubrics enable and facilitate academic libraries’ ability to identify and flexibly respond to their local campus’ needs?
- What elements could appear on an evaluative rubric for scholarly communication development and success?
All phases of the project were recorded. The authors analyzed transcribed interviews, developed a normalized codebook, and determined themes and metrics drawn from the collected qualitative data.

Findings & limitations

Across all phases of the study, participants shared their recommendations for elements that could and should be accounted for when reporting on the success of scholarly communication programs and services. An analysis of the collected qualitative data indicated that suggested metrics and criteria revolved around three thematic areas: Education & outreach, Support for open access, and Impact.

Education & outreach

Education and outreach were the most prominent discussion points among all participant groups. It was generally understood by all scholarly communication librarians, campus stakeholders, and SCAF participants that reaching out to faculty and educating them on evolving trends, their rights, and new software platforms would be foundational to fulfilling any strategic research initiatives.

In the focus groups, the scholarly communication librarians shared a range of services and programs offered at their institutions that largely centered on providing constituent groups with knowledge and information, including group (workshop) and individual instruction (consultations) on authors’ rights, “Where to Publish,” searching funding/grant opportunities databases, and researcher identity management, like ORCID identifiers. Informational pages on these topics that augment workshop instruction were also identified as resources with their pageviews as a potential metric.

To assess workshops and educational consultations, scholarly communication librarians suggested tracking the following elements:

- Number of sessions offered;
- Attendance, knowledge acquisition (via pre- and post-surveys), affect (satisfaction), and confidence in carrying out one’s research agenda, and follow-up requests for more information and their corresponding complexity;
- Presentation topics; and
- Collaboration or cosponsorship with campus partners.

Beyond the immediate assessment of the value of and response to an individual workshop, focus group participants emphasized that the latter two suggested criteria -- presentation topics and collaboration or cosponsorship -- indicated the maturity of programming and the extensiveness of campus relationships. A variety of workshop topics reflects a depth and breadth of librarian expertise, as well as a recognition of that experience and a corresponding faculty/campus need for that rich content. Collaboration or cosponsorship reveal strategic relationships with other campus units that support the research and scholarship enterprise, and that value working with the library. Focus group participants stated that every workshop was an opportunity to reinforce perceptions of librarian expertise and value, and contribute to ongoing collaborative efforts with campus units.

External stakeholders expressed during their individual interviews similar metrics about workshop attendance and user satisfaction (e.g., counts, further requests for consultations, needs met, would attend again or recommend to a colleague). They additionally honed in on the funding database Pivot, and DMPtool for data management plan (DMP) creation. Specifically, external stakeholders wanted to know if faculty were building better searches in Pivot and finding more relevant funding opportunities, and knowing how to respond appropriately to the data management plan requisite to many grant applications. With the ease of use in creating DMPs and a stronger awareness of the funding landscape, external stakeholders suggested higher grant submissions and awards as potential evaluative metrics. These would stem in large part from improved proposals that featured stronger literature reviews, using impactful citations in connecting one’s work to the problem statement, and robust DMPs that the campus could reliably support. External stakeholders expected follow through,
as well, citing the need for faculty to fulfill their DMP responsibilities and ensure that datasets and project output were deposited and preserved.

The external stakeholders also struggled with assessing the short-term and long-term effects of educational and outreach activities. In the short term, external stakeholders sought to collect baseline information on faculty perceptions of feeling supported in what many acknowledge to be a complex process. Some longer term considerations included training the faculty to holistically consider the grant application process and the multi-level approvals required; a metric echoed by external stakeholders was meeting internal and external deadlines for proper proposal routing.

Another educational area of focus for external stakeholders was “Where to Publish” workshops, as they placed a lot of emphasis on faculty’s understanding of which venues would be most appropriate for their work to minimize rejections, maximize acceptance rates, shorten time to publish, and improve dissemination opportunities. Along with these metrics, external stakeholders suggested measuring the quality of the journals where faculty ultimately published their work, tracking citations of the output, and analyzing web analytics and page views.

External stakeholders emphasized that the library was uniquely positioned to assist with establishing learner communities, archiving of unique local content (e.g., student symposia), convening community gatherings to celebrate faculty achievement, and educating faculty and administrators on the value of a campus-wide open access policy. Having a campus-wide open access policy was consistent with advocacy for author rights, ensuring enduring impact on local and global communities, and promoting awareness of faculty scholarship for further cross-pollination, interdepartmental collaboration, and synergies.

Among the SCAF participants, availability of library-supported software programs and the corresponding ability for librarians to support the use of those programs were cited as important assessment metrics. These included databases for literature review, funding opportunities and finding collaborators, citation management, and citation abstracting and indexing to obtain research impact measures. In facilitating the use of these resources, a point of tension was identified in using freely available training materials or creating local educational materials, and the resulting opportunities and savings from one’s selection.

Support for open access

Another major theme from the constituent conversations involved support for open access. Depending on the group consulted, open access was a narrow or wide topic area for action. Among the focus group participants, discussions centered on benchmarking and assessment of the following elements:

- Availability of a campus institutional repository (IR), data repository, or journal hosting capabilities;
- Improved awareness of these services, their associated brands, and corresponding positive associations with the platforms;
- Capability to create faculty author profiles and the associated uptake of this service;
- Higher faculty deposits of both publications and datasets to the IR, and facility with the platform, particularly if faculty are encouraged to self-deposit and self-mediate their works; and
- Greater campus support for open access, including open access journals, open educational resources (OER) creation and adoption, uptake of open access fund programs, and local campus-wide policies on open access.

With open access initiatives, metrics identified for tracking included deposit counts, download counts, distribution of deposits across departments, number of open access journals hosted, types of open access journals hosted and populations served (e.g., undergraduate and graduate student researchers), and OER utilization with its corresponding savings to students.

Some focus group participants were heavily involved in educating their campus constituents about open access to dispel myths about quality and to further efforts on passing an institutional level, Harvard-style open access policy. Participants
acknowledged that their efforts to sustain continuous educational conversations about the scholarly publishing ecosystem were significant investments, but did not lend well to metrics and reporting.

Several focus group participants indicated that their campuses provided institutional support of open access through article processing charges (APC) waivers. In these cases, the metrics identified were dollars expended for the APCs, number of APCs funded, article downloads, and citations of the open access articles.

When referring to open access topics, external stakeholders focused on DMPs and IRs to facilitate compliance with open access/data mandates. With DMP support through a service like DMPtool, faculty could adapt existing templates for use in their own grant applications. An important metric included evaluation of reviewer responses for any mention of deficits or strengths in the data management section. Additionally, external stakeholders emphasized that the number of datasets placed in the repository, in accordance with funder mandates, could be another important metric, as well as their eventual use and access by the global community.

The SCAF participants echoed many of the metrics already identified, including existence of open access mandates, analyses of IR publication and data deposits, download counts, and understanding faculty behaviors through the lens of discipline distribution. SCAF participants emphasized the need to approach metrics with sensitivity to disciplinary scholarly and publication norms, given that they also impact promotion and tenure system valuations. There was some hesitation about how research impact activities could be misconstrued and, ultimately, serve to reinforce biased systems.

Integration with library systems and discovery layers were also cited as important factors to facilitate accessibility, visibility, and findability. SCAF participants emphasized how open access systems and platforms could help in furthering undergraduate and graduate researchers’ understanding of author rights, intellectual property, and the larger scholarly publishing ecosystem. They also expressed how education could help to equalize or surface important conversations between faculty researchers and their students who may be contributing to their research projects.

Impact
Impact was another frequent discussion topic among Phase I, II, and III groups. Among the scholarly communication librarian focus groups, impact was contextualized in the number of items that were available in the IR for downloading (more open-to-read items), the number of downloads in a given time period (as a proxy of demand), and the geographic distribution of those downloads (to demonstrate global and local, community impact). Other metrics expressed as important in the scholarly communication practitioner groups were the number of accessible (American with Disabilities Act of 1990-compliant) documents, and a notable emphasis on education, creation, and adoption of OER. A number of focus group participants cited the tremendous impact that OER could have on changing faculty perceptions and acceptance of open access materials, the sizable student savings that widespread OER adoption could realize, and addressing student equity concerns through free access to course materials.

External stakeholders also emphasized impact, as measured by the quality of grant proposals, the journals to which faculty publish, and the ability for individuals to access research output.

Limitations
In Phase II of our study, external stakeholders were selected from units that represent offices of research, sponsored programs, or grants development and support. Other external stakeholders that represent important functions of the academy, like centers for faculty development or teaching and learning, would likely have resulted in different metrics and areas of emphasis.

Additionally, external stakeholders’ responses may have been tempered by their lack of awareness or reticence in providing success criteria for another unit. Numerous external stakeholders expressed their lack of familiarity with the entire suite of services offered from the library and felt it inappropriate to determine another unit’s priorities.
Conclusions and application of the results

Poor structural supports for reporting

Focus group participants pointed out the inadequacies of library reporting. For example, a scholarly communication librarian would record one presentation in the library’s statistical reporting program for a workshop on the retention of author rights, negotiation during the publishing process, and the application of a Creative Commons license to a work. These activities, though, could be quite impactful in their subsequent application. Faculty could learn about their rights and, through that education, become empowered to request some measure of rights retention from the publisher. In reserving some rights, they could further assign a Creative Commons license to more widely disseminate their work, which could lead to greater visibility, higher readership, and overall impact. A common complaint was that the tally of one presentation in the library’s records was a short-term data point that would ultimately fail to capture the potential long-term effects of that education. This reporting inadequacy is inherent to many of the elements of scholarly publishing and communication, particularly in the areas of improved understanding of author rights, online identity management, data management, and perceptions of open access, where author behaviors take time to manifest, materialize, and yield demonstrable results. Libraries have lacked a comprehensive reporting system that accommodates the delay in these processes.

Moreover, scholarly communication librarians’ efforts in Education & Outreach -- providing workshops, presenting, and having 1:1 consultation meetings -- were generally subsumed by the library’s larger reporting framework of counting. That is, many librarians indicated that their scholarly communication activities were reported in the overall instructional statistics and there was little differentiation between services to students and services to faculty. Scholarly communication librarians cited a lack of awareness of how the scholarly communication metrics might be used programmatically and, consequently, some opted to not collect them at a more granular and information-rich level.

External stakeholder recommendations and areas of tension for libraries

External stakeholders identified areas of need that libraries could consider in their future planning, including preservation of annual reports and the tail-to-end reporting of awarded grants, the deposit of datasets and resultant publications, and the subsequent impact or use by the local and global communities. Additionally, external stakeholders pointed out that there is significant support for funded research, but unfunded research and scholarship are largely absent from conversations. There is a tremendous need to track and learn of all faculty interests, as institutions of higher education seek new and potential opportunities with donors, industry, and other funding agencies. Library efforts in this arena would help to provide a centralized information source on an institution’s activities, content, and reach, which could be used to contextualize the return on investment from structural and formalized assistance, like course releases. Connecting impact to high performers to ensure continued support was highlighted as important; it was recommended that libraries provide databases and education on citation and alternative metrics for faculty.

Librarians who participated in the focus groups and SCAF cautioned against the wholesale adoption of metrics as a proxy of value and importance, particularly when allocating resources and making promotion and tenure decisions. Using metrics in an uninformed manner could weaponize the library’s efforts to the detriment of many faculty. For example, low journal impact or citation numbers do not mean that one’s work is not valuable. Librarians noted that there is tension between the perception of the library as an objective and neutral institution and its adoption and education of systems that are not comprehensive nor always valid.

External stakeholders recommended that libraries be more proactive and engage with faculty first. Recognizing that libraries may be among the first units to learn of new publications (via alerts), there is an opportunity to promote faculty adoption of scholarly communication services and improve campus engagement. External stakeholders expressed some confusion about the discipline-specific liaison librarian system and its ability to meet the challenges of the evolving research enterprise. Finally, external stakeholders recognized that many library services and programs targeted students and that faculty acceptance and use was much lower. Improved promotion and marketing were suggested to ameliorate this phenomenon.
Application of the results

This IMLS-funded grant facilitated the collection of scholarly communication librarian focus group discussions, structured interviews with campus stakeholders, and a national convening on assessment of scholarly communication services and programs. Participants from across the research lifecycle were asked to provide their perspectives on contextualizing and measuring campus engagement with library services. Continued refinement of library scholarly communication services and programs can be achieved through ongoing conversations and collaboration with campus constituencies. This paper brings together suggested metrics and their concurrence among key constituent groups: scholarly communication librarians, external stakeholders, and assessment experts. Further, this paper provides context on how disparate campuses are supporting their local scholarly communication needs, as well as suggestions from external stakeholders on how library services may evolve and develop to support all facets of the institution’s scholarly and research enterprise.

The IMLS-funded white paper and rubrics that were developed from the convening of the SCAF will be disseminated in January 2022. It is highly recommended that those who are interested in applying flexible rubrics to evaluate their scholarly communication services and programs consult these materials when available. Please refer to the program website for updates: https://library.csus.edu/scaf. This project was made possible in part by an Institute of Museum and Library Services (IMLS) National Forum grant (LG-35-19-0066-19).

References


Communication, pp. 1-20 [online]. Available at: https://iastatedigitalpress.com/jlsc/article/12852/galley/12532/view/
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Measuring library consortia performance

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1. Introduction

A framework that enables the evaluation of library consortia –academic, public, or mixed- is useful in the ever-antagonizing world of limited library resources. Publicized evaluation reports could assist libraries to choose when multiple consortia are claiming their attention; or could contribute to the self-assessment for a consortium: if one is seeking to be better, one has to know their strengths and weaknesses. Finally, when deciding to form a new consortium, instead of assuming there is strength in unison, we should be able to calculate what to expect.

There have been former contributions in evaluating consortia or consortia services: using tools like LibQUAL+ (Gatten, 2004; Lee, 2004; Garthwait and Richardson, 2008) and MINES for Libraries (Plum et al., 2010); assessing services, mostly digital material services, either as value-for-money (e.g. ROI or other economic value) or as the quality of service (Melo and Pires, 2012); estimating the economic value of public libraries (Holt and Elliott, 2003; Aabo, 2005; Barron et al., 2005; Ko et al., 2012).

Applying an ISO standard has decisive benefits: easy to apply, world-recognized, an established methodology to make comparisons, a well-known tool that came out of global research. Certain international standards involving library assessment have been produced, such as ISO 16439:2014 “Methods and procedures for assessing the impact of libraries”. The standard, which received a lot of attention from the research community (Poll, 2012; de Jager, 2017; Creaser, 2018), touches upon the methodology and the concepts involved in assessing the impact of libraries. However, it is the ISO11620:2014 “Library performance indicators” that defines specific instruments, namely indicators, to assess the quality of library services. ISO11620 has already been used to measure the performance in individual academic libraries (Ellis et al., 2009; Passonneau, 2013) and public libraries (Eid and Jirjees, 2015).

This paper engages with the question whether we could implement the ISO11620 for collective assessment purposes, meaning to assess a consortium or its services. Do we need new performance indicators or can we adjust some of those already existent in the ISO11620 standard? Moreover, to the best of our knowledge there is no literature published on defining Key Performance Indicators (KPIs) for library consortia. Therefore, this paper attempts to investigate whether a subset of the ISO11620 p.i. could be considered KPIs.

2. The proposed approach

The aims as well as the process for the assessment of a consortium’s performance should be very clear to obtain meaningful and useful findings. In general, there are three approaches to ponder on the evaluation of a consortium:

1. Measure the added value of a consortium over what a single library can offer on its own: for instance, an individual library offers its users a number of subscriptions to databases but by participating in a consortium gains access to more subscriptions; the difference in the numbers of subscriptions denotes the added value of the participation to the consortium.

2. Measure the total value of a single library that participates in a consortium: an individual library offers its users a number of subscriptions to databases, while by participating in a consortium gains access to more subscriptions; the sum of the two numbers of subscriptions denotes the total value of the library.
3. Measure the total value of all the libraries that participate in a consortium. For instance, an individual library offers its users a number of $X$ subscriptions to databases; a second individual library offers its users $Y$ subscriptions to databases, while the consortium offers access to $Z$ subscriptions; the sum of all the numbers denotes the total value of all participating libraries.

2.1 Our approach

The investigation of the suitability of ISO11620 performance indicators (p.i.) to measure a consortium’s performance is described by the following stages: first, determine which services consortia are most likely to offer to their member libraries. We looked into the bibliography and recorded the services mentioned in broader categories. Then, examine whether ISO11620 provides the appropriate indicators to measure the performance of these services. Consecutively, establish what changes -if any- are needed in the definition, or the data collection methodology for the p.i. to be implemented for collective assessment. The bibliographic sources listed by the standard in each indicator were also consulted. Finally, deepen into the concept and practice of Key Performance Indicators (KPIs); we examined whether the ISO11620 p.i. could be applied as KPIs for the assessment of library consortia.

2.2 Consortia services: a concise overview

A 2006 ALA research found that “the most common services and activities of Library Networks, Cooperatives, and Consortia include 5 services: Communication with member libraries, Resource sharing, General professional development, General consulting and technical assistance, and Cooperative purchasing or group discounts” (Davis, 2009). A more recent study of 65 consortia reported a broader spectrum of services offered to their library members (Horton and Provenitz, 2015, fig. 2.1):

1. Training
2. Shared electronic content
3. Group purchasing
4. Physical delivery
5. Consulting
6. Shared integrated library system (ILS)
7. Mediated interlibrary loan for returnable items
8. Cooperative collection development among members
9. Shared digital repository
10. Mediated document delivery of non-returnable items
11. Cooperative digitization services
12. Summer reading program
13. Cooperative off-site Depository (physical)
14. Shared institutional repository


An OCLC’s research in 2012 listed ILL/Resource Sharing/Document Delivery as the most-used service, followed by Shared Online Catalog (group catalog)/Union List, and Cooperative Purchasing. Electronic Content Licensing, Training,
Technology Management Services, and Personal and Leadership Development are the rest of the commonly used services the report cited (OCLC, 2012).

Besides the above-mentioned researches, Machovec referred to “Group purchasing of electronic resources, Shared integrated library systems, Shared discovery and delivery systems, Shared digital repositories services and hosting, Shared print archiving” as the “most common programmatic areas with consortia” (Machovec, 2013).

In other countries we found similar services to be the consortia’s major offer. For example, “most library consortia in China have focused on sharing resources in the areas of cooperative acquisitions and cataloging, reciprocal borrowing services, interlibrary borrowing and online document delivery, centralized staff training, and technological development” (Dong and Zou, 2009).

2.3 Key Performance Indicators for libraries and consortia

With the concept of KPIs widely used, we needed to define what they are and what they offer in assessing performance. As SCONUL clarified, “Key Performance Indicators are financial and non-financial metrics used to quantify objectives to reflect strategic performance of an organization” (SCONUL, 2021).

According to Parmenter (2020, p. 51), KPIs should be developed from the organisation’s critical success factors. Appleton (2017, Ch. 9) also referred to their ties with the organisation’s strategy: “…the organizational or the library strategy and KPIs need to be closely linked to the outcomes that have been identified through the library's strategic planning”. Unlike usage statistics or input-based metrics, “outcome-derived KPIs can be channeled more easily into concrete, actionable insights, resulting in real changes in systems, processes, and services” (Dalton, 2012).

When an organisation defines their KPIs, they often are aligned with key areas, for example those specified in the Balanced Scorecard approach. Appleton (2017, Ch. 9) referred to specific key measurement areas in relation to libraries: “Customer satisfaction, Financial performance, Internal processes, and Employee development and satisfaction”.

We compared the Appleton’s list of KPIs for libraries (Appleton, 2017, Ch. 12) with the ISO11620 p.i.. The indicators in ISO11620 that have the same scope with the indicators in Appleton’s list are candidate to be KPIs. If an indicator can function as KPI for assessing the performance of a library service, then we assume that this indicator could be also a KPI for a consortium.

3. Findings

3.1 Categorisation of consortia services and the ISO11620

We recorded the services mentioned in the bibliography into the following categories:

1. Collaborative Collection Development includes:
   a. Cooperative purchasing (suggested in Davis, 2009; Dong and Zou, 2009; Horton and Provenitz, 2015; OCLC, 2012)
   b. Electronic content licensing (mentioned in OCLC, 2012).
   c. Shared print storage (cited by Horton and Provenitz, 2015; Machovec, 2013).

2. Cooperative Digitization Services (referred by Horton and Provenitz, 2015) applies to consortia that host digitization initiatives.

3. Institutional Repositories (pointed out by Horton and Provenitz, 2015; Machovec, 2013) is mainly a concern of academic libraries consortia and could refer to both software and hardware infrastructure for collecting scholarly content generated by faculty, staff, and students in an institution.
4. **Programs for Users.** A great number of libraries offer programs or training sessions to their patrons. Several consortia organise summer reading campaigns (see Horton and Provenitz, 2015), seniors’ technology education or STEM programs and exhibitions.

5. **Resource Sharing and InterLibrary Loan** refers both to physical delivery of borrowed documents and digital resource sharing. Using different terms, the service is mentioned by Davis, 2009; Dong and Zou, 2009; Horton and Provenitz, 2015; OCLC, 2012.

6. **Shared Integrated Library System and Collaborative Cataloguing** comprises common cataloguing practices and a shared catalogue. This service is listed as cooperative cataloging by Dong and Zou, 2009; as shared integrated library system (ILS) by Horton and Provenitz, 2015 and by Machovec, 2013; as shared online catalog (group catalog)/union list by OCLC, 2012.

7. **Staff Training and Consulting** incorporates consulting, continuing education, and training for library personnel, as referred by Davis, 2009; Dong and Zou, 2009; Horton and Provenitz, 2015; OCLC, 2012.

8. **Consortium Management** comprises:
   a. Technology management services (Dong and Zou, 2009; OCLC, 2012).
   b. Consortia support (Horton and Provenitz, 2015) services.

### 3.2 ISO11620 performance indicators and consortia’s performance assessment

The ISO11620:2014 “Library performance indicators” is in its 3rd edition. It presents 52 p.i. and organises them according to four major areas of measurement, following the Balanced Scorecard approach:

1. Resources, Access, and Infrastructure
2. Use
3. Efficiency
4. Potentials and Development

For each p.i. we suggest whether it can be used to measure the performance for a consortium service (as cited in chapter 3.1). Table 1 exhibits the assignment of the p.i. to the categories of consortia services. Thus, 10 p.i. are suggested for the **Collaborative Collection Development** category of services (see 3.1.1); 7 p.i. could be used for the category of **Consortium Management** services (see 3.1.8); 4 for **Shared Integrated Library System and Collaborative Cataloguing** (3.1.6) and 3 p.i. for **Resource Sharing and Interlibrary Loan** (3.1.5); 2 indicators could be utilized for each of the following services: **Staff Training** (3.1.7), **User Programs** (3.1.4) and **Digitization** (3.1.2); finally, 1 p.i. could be applied for measuring the performance of **Institutional Repositories** (3.1.3).

The standard also includes additional indicators for services that are not mentioned in the categorization resulted by the bibliography overview. These indicators correspond to significant consortia services: the standard demonstrates 3 indicators for **Reference Services**, which could interest consortia that offer Collaborative Virtual Reference Services, and 2 p.i. for **Material Preservation**, a service concerning consortia with Collaborative Preservation Projects; last but not least, 9 p.i. could contribute to assess the **Needs of the Audience and the General Impact of the Consortium**.
Table 1: Consortia services correlated with the appropriate indicators

<table>
<thead>
<tr>
<th>Consortia Services</th>
<th>ISO11620 performance indicators*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collaborative Collection Development</strong></td>
<td></td>
</tr>
<tr>
<td>· Cooperative Purchasing</td>
<td>B.3.1.1 Cost per Collection Use</td>
</tr>
<tr>
<td></td>
<td>B.3.1.2 Acquisition Cost per Collection Use</td>
</tr>
<tr>
<td></td>
<td>B.3.2.1 Median Time of Document Acquisition</td>
</tr>
<tr>
<td></td>
<td>B.3.3.3 Ratio of Acquisition Expenditures to Staff Costs</td>
</tr>
<tr>
<td>· Shared Off-site Storage Facilities</td>
<td>B.1.2.1 Shelving Accuracy</td>
</tr>
<tr>
<td></td>
<td>B.1.2.2 Median Time of Document Retrieval from Closed Stacks</td>
</tr>
<tr>
<td></td>
<td>B.1.3.4 Percentage of Storage Space which has an Appropriate Environment</td>
</tr>
<tr>
<td>· E-resources</td>
<td>B.1.1.3 Percentage of Rejected Accesses</td>
</tr>
<tr>
<td>· E-resources Cooperative Purchasing</td>
<td>B.3.1.3 Cost per Download</td>
</tr>
<tr>
<td></td>
<td>B.4.1.1 Percentage of Expenditure on Information Provision Spent on the Electronic Collection</td>
</tr>
<tr>
<td><strong>Consortium Management</strong></td>
<td></td>
</tr>
<tr>
<td>· Consortium Efficiency</td>
<td>B.3.4.1 Cost per User</td>
</tr>
<tr>
<td>· Consortium Funding</td>
<td>B.4.3.1 Percentage of Library Means Received by Special Grant or Income Generated</td>
</tr>
<tr>
<td></td>
<td>B.4.3.2 Percentage of Institutional Means Allocated to the Library</td>
</tr>
<tr>
<td>· Consortium Human Resources</td>
<td>B.1.4.1 Staff per Capita</td>
</tr>
<tr>
<td></td>
<td>B.3.3.1 User Services Staff as a Percentage of Total Staff</td>
</tr>
<tr>
<td></td>
<td>B.4.2.4 Percentage of Staff in Cooperative Partnerships and Projects</td>
</tr>
<tr>
<td>· Technology Management Services</td>
<td>B.4.2.1 Percentage of Library Staff Providing Electronic Services</td>
</tr>
<tr>
<td><strong>Digitization Services</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B.1.1.4 Number of Documents Digitized per 1.000 Documents in the Collection</td>
</tr>
<tr>
<td></td>
<td>B.2.1.5 Number of Downloads per Document Digitized</td>
</tr>
<tr>
<td><strong>Resource Sharing &amp; I.L.L.</strong></td>
<td></td>
</tr>
<tr>
<td>(for physical &amp; electronic collections)</td>
<td>B.1.2.3 Speed of Interlibrary Lending</td>
</tr>
<tr>
<td></td>
<td>B.1.2.4 Percentage of Successful Interlibrary Loans</td>
</tr>
<tr>
<td></td>
<td>B.3.3.5 Employee Productivity in Lending and Delivery Services</td>
</tr>
<tr>
<td><strong>Institutional Repositories</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B.1.1.5 Percentage of the Owner Institution’s Publications in the Institutional Repository</td>
</tr>
<tr>
<td><strong>Material Preservation</strong></td>
<td></td>
</tr>
<tr>
<td>(Collaborative Preservation Projects)</td>
<td>B.1.2.7 Percentage of the Rare Collection in Stable Condition</td>
</tr>
<tr>
<td></td>
<td>B.1.2.8 Percentage of Rare Materials Needing Conservation/Restoration Treatment that Received Such Treatment</td>
</tr>
<tr>
<td><strong>Shared ILS &amp; Collaborative Cataloguing</strong></td>
<td></td>
</tr>
<tr>
<td>· Cooperative Cataloguing</td>
<td>B.1.2.6 Percentage of Rare Materials Accessible via Web Catalogues</td>
</tr>
<tr>
<td></td>
<td>B.3.2.2 Median Time of Document Processing</td>
</tr>
<tr>
<td></td>
<td>B.3.3.4 Employee Productivity in Media Processing</td>
</tr>
<tr>
<td></td>
<td>B.3.3.6 Staff Costs per Title Catalogued</td>
</tr>
<tr>
<td><strong>Reference Services</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>B.1.2.5 Speed of Reference Transactions</td>
</tr>
<tr>
<td></td>
<td>B.2.4.3 Willingness to Return</td>
</tr>
<tr>
<td></td>
<td>B.3.3.2 Correct Answer Fill Rate</td>
</tr>
</tbody>
</table>
### Staff Training

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Attendance Hours at Formal Training Lessons per Staff Member</td>
<td>B.4.2.2</td>
</tr>
<tr>
<td>Percentage of Staff Time Spent in Training</td>
<td>B.4.2.3</td>
</tr>
</tbody>
</table>

### Programs for Users

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Attendances at Library Events per Capita</td>
<td>B.2.2.4</td>
</tr>
<tr>
<td>Number of User Attendances at Training Lessons per Capita</td>
<td>B.2.2.5</td>
</tr>
</tbody>
</table>

### Needs of the Audience and General Impact of the Consortium

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs of the Audience</td>
<td>Percentage of Required Titles in the Collection</td>
<td>B.1.1.2</td>
</tr>
<tr>
<td></td>
<td>Collection Turnover</td>
<td>B.2.1.1</td>
</tr>
<tr>
<td></td>
<td>Loans per Capita</td>
<td>B.2.1.2</td>
</tr>
<tr>
<td></td>
<td>Percentage of Stock not Used</td>
<td>B.2.1.3</td>
</tr>
<tr>
<td>Needs of the Audience: E-resources</td>
<td>Number of Content Units Downloaded per Capita</td>
<td>B.2.1.4</td>
</tr>
<tr>
<td>General Impact of the Consortium</td>
<td>Percentage of External Users</td>
<td>B.2.2.2</td>
</tr>
<tr>
<td></td>
<td>Percentage of the Total Library Lending to External Users</td>
<td>B.2.2.3</td>
</tr>
<tr>
<td></td>
<td>Percentage of the Target Population Reached</td>
<td>B.2.4.1</td>
</tr>
<tr>
<td></td>
<td>User Satisfaction</td>
<td>B.2.4.2</td>
</tr>
</tbody>
</table>

* The coding (e.g. B.1.1.1, etc.) appearing before each p.i. is the unique number given to the indicator within the ISO11620-2014

### 3.3 Examples of ISO11620 p.i. in consortia environment

We performed an analysis of the indicators under the prism of their suitability to assess consortia; the reduction of the indicators from the single library to the consortium environment entails specific changes in the calculation of each indicator. Due to the qualitative nature of the analysis, the presentation of these changes is indicative rather than exhaustive for all indicators. With this regard, we cite certain indicators that could be applied to measure performance in Cooperative Purchasing and Interlibrary Loan -the two most common services consortia offer-, in a Consortium’s Funding and in displaying the General Impact of the Consortium.

#### 3.3.1 Example 1: an indicator for Cooperative Purchasing

One of the most common services a consortium offers its members is a collaborative collection development program, usually for digital resources. One of four indicators that could be applied to measure the consortium’s performance in cooperative purchasing, B.3.1.2 ‘Acquisition Cost per Collection Use’ assesses “the library costs per collection use and therewith the cost-efficiency of library services” (International Organization for Standardization, 2014a). The method proposed to calculate the indicator is: “the total recurrent expenditure of the library in a full financial year divided by the total number of instances of collection use in the same period” (International Organization for Standardization, 2014a).

A library could apply this indicator to a collection provided by the consortium to assess the cost-efficiency. A second application is when a consortium calculates this indicator for a collection that has purchased. In this case, the consortium’s expenditure and instances of collection use collectively for all library members should be counted.

#### 3.3.2 Example 2: indicators for Interlibrary Loan

Resource Sharing and Interlibrary Loan for physical and electronic collections is as common a service as Cooperative Purchasing. The ISO11620 offers two relative performance indicators, one measuring the speed of interlibrary lending and another calculating the percentage of successful interlibrary loans.

A consortium or a library could assess the speed or the success rate of interlibrary loan for physical documents and of resource sharing for electronic document delivery separately, if they are two different services. The outcome could be used to compare performance between the member libraries or to monitor the service’s efficiency with each passing year.
To calculate the B.1.2.3 ‘Speed of Interlibrary Lending’, divide the total number of hours to complete a specified number of interlibrary loans or electronic document delivery transactions, using the log records of the ILL system, by the number of said loans/transactions. As the standard recommends, sampling, e.g. using a typical week, is possible.

To calculate the B.1.2.4 ‘Percentage of Successful Interlibrary Loans’, divide the number of said loans/transactions by the total of all requests and multiply by 100. The same recommendation for sampling also applies in this instance.

3.3.3 Example 3: indicators for the Consortium’s Funding

The p.i. B.4.3.1 ‘Percentage of Library Means Received by Special Grant or Income Generated’ can be used to assess the consortium’s success in obtaining additional financial resources, while p.i. B.4.3.2 ‘Percentage of Institutional Means Allocated to the Library’ can be applied to measure the importance of the consortium (expressed in monetary units) and the support by the funding institution, in this case, the participating libraries.

To calculate the ‘Percentage of Consortia Means Received by Special Grant or Income Generated’, as the indicator could be renamed, the standard specifies that said means are divided by the overall means and multiplied by 100. The standard provides a definition for ‘means received by special grants’, for ‘income generated’, and for ‘overall means’ that can also be applied for consortia.

To calculate the ‘Percentage of Institutional Means Allocated to the Consortium’, as the indicator could be renamed, the consortium means are divided by the institutional means and multiplied by 100. The institutional means can refer to a single library’s annual funding to assess this library’s support to the consortium; the institutional means can also be calculated collectively, namely for all participating libraries to assess this consortium’s support over a period of time.

3.3.4 Example 4: indicators for the General Impact of the Consortium and Needs of the Audience

To assess the general impact of the consortium, B.2.2.2 ‘Percentage of External Users’ and B.2.2.3 ‘Percentage of the Total Library Lending to External Users’ are ideal. In this case, external users can be considered libraries or agents -that are not members of the consortium- seeking a one-time access to the consortium’s resources or services.

To assess if the consortium fulfills the needs of its audience, B.1.1.2 ‘Percentage of Required Titles in the Collection’ is a great start. This indicator’s objective is “to assess to what extent titles in demand by the users are owned or licensed by the library” and “to assess the fit of the collection to the requirements of the users” (International Organization for Standardization, 2014a). In applying the p.i., the required titles should be owned or licensed by the consortium or could be loaned between the participating libraries. The calculation method suggested in the standard is to compose a list of random requested titles and “record for each title in the sample whether the library owns or has licensed a copy of that title”. In this case, we record ownership/license across each library’s collections.

3.4 Comparing between KPI and ISO11620-2014 p.i.

Following the key areas listed by Appleton (2017, Ch. 9), various p.i. suggested in the standard could be used by a library to assess its performance in a strategic area. For example, ISO11620-2014 performance indicators could act as a measurement of:

- **Customer satisfaction**: B.1.1.1 ‘Required Titles Availability’, B.1.1.2 ‘Percentage of Required Titles in the Collection’, and certainly, B.2.4.2 ‘User Satisfaction’.

- **Financial performance**: B.3.1.1 ‘Cost per Collection Use’, B.3.1.2 ‘Acquisition Cost per Collection Use’, and B.3.1.3 ‘Cost per Download’.

- **Internal processes**: B.1.2.2 ‘Median Time of Document Retrieval from Closed Stacks’ or B.1.2.3 ‘Speed of Interlibrary Lending’.

- **Employee development and satisfaction**: B.4.2.2 ‘Number of Attendance Hours at Formal Training Lessons per Staff Member’ and B.4.2.3 ‘Percentage of Staff Time Spent in Training’.
Appleton (2017, Ch. 12) suggests indicative KPIs for academic and public libraries. We compared the Appleton’s KPIs with the indicators of ISO11620 and the results are shown in Table 2. In the first and third column the indicators of each ‘vocabulary’ are mentioned respectively, while the second column provides (a) the semantic comparison between the scope the corresponding indicators and (b) the areas of measurement in which each ISO11620 p.i. belongs. Actually, only ten of the ISO11620 p.i. could be matched with the Appleton’s KPIs.

Table 2: Comparison between KPI suggested in bibliography and ISO11620 p.i.

<table>
<thead>
<tr>
<th>KPI suggested by Appleton (2017, Ch. 12)</th>
<th>Relationship/Areas of Measurement in ISO</th>
<th>ISO11620-2014 corresponding p.i.</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of PCs available at certain point throughout the day</td>
<td>Narrower than / Resource, Access, and Infrastructure</td>
<td>User Places per Capita (B.1.3.2)</td>
</tr>
<tr>
<td>% reading list items available in the library</td>
<td>Equal / Resource, Access, and Infrastructure</td>
<td>Required Titles Availability (B.1.1.1)</td>
</tr>
<tr>
<td>% reading list items available electronically</td>
<td>Narrower than / Resource, Access, and Infrastructure</td>
<td>Required Titles Availability (B.1.1.1)</td>
</tr>
<tr>
<td>Satisfaction rating in the National Student Survey</td>
<td>Equal / Use</td>
<td>User Satisfaction (B.2.4.2)</td>
</tr>
<tr>
<td>% increase of items placed in the institutional repository</td>
<td>Narrower than / Resource, Access, and Infrastructure</td>
<td>% of the Owner Institution’s Publications in the Institutional Repository (B.1.1.5)</td>
</tr>
<tr>
<td>% increase in number of books digitized</td>
<td>Narrower than / Resource, Access, and Infrastructure</td>
<td>Number of Documents Digitized per 1.000 Documents in the Collection (B.1.1.4)</td>
</tr>
<tr>
<td>% staff who have attended internal training</td>
<td>Related to / Potentials and Development</td>
<td>Number of Attendance Hours at Formal Training Lessons per Staff Member (B.4.2.2)</td>
</tr>
<tr>
<td>Number/% increase of library users satisfied with access and opening hours</td>
<td>Related to / Resource, Access, and Infrastructure</td>
<td>Hours Open Compared to Demand (B.1.3.3)</td>
</tr>
<tr>
<td>Usage statistics of children's collections</td>
<td>Narrower than / Use</td>
<td>Collection Turnover (B.2.1.1)</td>
</tr>
<tr>
<td>Number/% increase in attendance at digital skills workshops</td>
<td>Narrower than / Use</td>
<td>Number of User Attendances at Training Lessons per Capita (B.2.2.5)</td>
</tr>
</tbody>
</table>

KPIs have narrower focus and measure the change rather than the status. For example, KPI ‘Percentage of PCs available at a certain point throughout the day’ is more specific in time and scope than the relevant p.i. B.1.3.2 ‘User Places per Capita’; KPI ‘Percentage of increase in number of books digitized’ focuses on measuring the change and in assessing the progress of a process rather than providing a number as p.i. B.1.1.4 ‘Number of Documents Digitized per 1,000 Documents in the Collection’ offers. These differences underline the characteristics of a KPI: nonfinancial measures, measured frequently, used by the library’s director, indicating corrective measures, influencing outcomes and results, and assigned to a...
specific team. On the other hand, a performance indicator is “not critical to delivering the intended results, but help to align the activity of the service with the library's overall strategy” (Appleton, 2017, Ch. 10).

What is true for libraries is also applicable for consortia. Although ISO11620 indicators could be utilized to assess consortia services, they might not offer the ‘edge’ or the narrow focus to be used as KPIs.

4. Limitations

As far as limitations are concerned, our approach could be confirmed with real-world data; data should be collected with the same methodology (Poll, 2007) in order to be used for comparison purposes between consortia or libraries. A second limitation is that an indicator can contribute in measuring a certain aspect of the offered service; e.g. p.i. B.2.2.5 ‘Number of User Attendances at Training Lessons per Capita’ does not measure the quality of the training session or the change in the attendees’ skills/knowledge but contributes in measuring the performance in User programs.

The facilities of an individual library’s, in general, are not considered to be affected by its participation in a consortium. Moreover, libraries do not usually share spaces or create one for the use of the entire consortium, except for storage facilities. For these reasons, the following p.i. do not apply: B.1.3.1 ‘User Area per Capita’, B.1.3.2 ‘User Places per Capita’, B.1.3.3 ‘Hours Open Compared to Demand’, and B.2.3.1 ‘User Places Occupancy Rate’. Indicators that measure library visits should also not be used (B.2.2.1 ‘Library Visits per Capita’, B.3.4.2 ‘Cost per Library Visit’).

The limitations in the scope of each p.i., are transferred to the consortia that libraries participate. For example, B.1.1.4 ‘Number of Documents Digitized per 1.000 Documents in the Collection’ can be applied in libraries whose tasks include preserving documentary heritage, while B.2.1.1 ‘Collection Turnover’ is useful to libraries with a loan collection. Thus, a consortium will choose which p.i. to apply, according to the services offered, which in turn are dependent on the needs of the library members; their needs are -hopefully- aligned with their scope.

5. Conclusion

We found that ISO11620 p.i. can affirmatively measure the most common services consortia offer to their members: 46 out of 52 performance indicators could be applied for evaluating Collaborative Collection Development, Needs of the Audience and the General impact of the consortium, Consortium management, Collaborative cataloguing, Interlibrary Loan, Staff training, User programs, Digitization, Institutional Repositories, Reference Services, and Material Preservation. Several ISO11620 p.i. might be considered key, although this is heavily dependent on the purpose of the evaluation and the application profile: they could be adapted to narrow focus and calculated more frequently.

Applying an ISO standard has certain benefits one could reap: easy to apply, world-recognized, an established methodology to make comparisons, a well-known tool that came out of global research and consideration, to name a few. To our best knowledge, not many frameworks have been proposed for measuring or comparing the performance of library consortia. The proposed approach could contribute to the discussion on the performance measurement for consortia services and offer assistance in implementing the ISO11620 as a tool that libraries are already familiar with.

6. Bibliography


Barron, D. D. et al. (2005), "The economic impact of public libraries on South Carolina", School of Library and Information Science, College of Mass Communications and Information Studies, University of South Carolina, South Carolina.

Dalton, M. (2012), "Key performance indicators in Irish hospital libraries: developing outcome-based metrics to support advocacy and service delivery", *Evidence Based Library and Information Practice*, Vol. 7 No. 4, pp. 82-95, doi: 10.18438/B8WP5M.


Measuring up: Public libraries discovering their impact in Zimbabwe

Jean Kanengoni

University of Illinois Urbana Champaign

The African Public Library

The current African public library system is a relative newcomer, introduced in 1960s towards the end of the colonial era. The initial enthusiastic reception of these institutions by both the governments and the public can be ascribed to the perception prevailing at that time that libraries would be a remedy to the existing educational problems and a tool in the process of national development (Abdullah 1998). A threefold role was designated to these institutions: to provide information to development agents and agencies, to support formal and informal rural education programs through the provision of materials to both students and teachers, and to serve as centers for community education and cultural activities. Chijioke (1989), Dube (1998), Sturges and Neill (1998), and Tise (2000) concluded that African libraries have failed in their designated mission and are currently not perceived as significant players in the process of national development. Information is viewed as an important factor in development, but African libraries have not been assigned any role in the process. The poor quality of existing information services is often seen as one of the contributing factors to the failure of libraries to achieve their goal. Other factors include outdated and irrelevant materials, lack of facilities, and poor management. Research clearly indicates that existing library services in Africa are not extensively used. Mchombu (1991) recorded that Botswana’s overall percentage of users for all types of library services does not exceed 5%, and only 2% of Tanzania twenty-three million people use libraries. For this reason, governments often withdraw their financial support, which brings about a collapse in library services.

To determine specific reasons for this lack of use, much effort has been put into researching the problems facing libraries and information services on the continent. Although it is difficult to generalize, the same problems have been detected to a varying degree in most African countries:

- Anachronistic and inappropriate colonial public library model,
- Inappropriate library staff training,
- Deficiencies in determining patron information needs,
- Lack of co-operation among agencies involved in library-related work, and
- The failure to create a public library system suitable for the African community (Afolabi 1998; Nawe 1993; Stillwell 1991).

The Public Library in Zimbabwe

There is very little literature on the history of public libraries in colonial Zimbabwe. Stanislaus Made (2000), the first black Zimbabwean University Librarian, has written on the history of libraries in Zimbabwe, including public libraries. His writings are based on Parliament Acts, committee minutes, and correspondences. He identifies the period 1895 – 1927 to be the pioneer years of library establishment in Zimbabwe, with the Bulawayo Public Library (1896) instituted as the first Zimbabwean public library. The first record of a "public library" in Harare (Zimbabwe's capital city, formerly called Salisbury) is a group called the Reading and Recreation Society, which by July 1893 was acting as a subscription public library. The society had a collection of books and newspapers and was recorded as catering for white men only. This collection became known as the Salisbury Public Library in 1896, with a library committee being appointed by the Salisbury Town Committee in 1893. The Queen Victoria Museum and Library was opened in 1903.
Made (2000) states that the other public libraries set up in the pioneer stage are Gweru (1897), Chivhu (1903), Mutare (1904), Kadoma (1917) and Mvuma (1926). According to Made (2000), public libraries reflected three conditions: they were for recreational purpose, they were unable to keep pace with the growth of the community and there was a lack of financial support from the government for the development of public libraries for their communities, including the newly literate black community. The lack of financial support resulted in the development of subscription public libraries in Southern Rhodesia (Zimbabwe’s early colonial name). The 1950 Douglas Varley Report showed that the white settler communities were readers and book-buyers. Made (2000) points out that the first public libraries were found in the white settler communities providing services in a limited geographical area and only for those who could afford it.

The current Zimbabwean public library system is a vestige of British colonialism. It is built on a centralized public library system called the National Library Documentation Services (NLDS). Harare, the capital of Zimbabwe has two complementary public library systems: City of Harare and Harare City Library systems. The City of Harare Library system is managed by the municipality of Harare and the Harare City Library system is an independent non-profit entity managed by a board of management (Chisita, 2011). The City of Harare Library system is found in more densely populated suburbs where marginalized people are likely to live. Harare City Libraries are in the wealthier suburbs of Harare. The second largest city, Bulawayo has its Public Library is designed along the same model, with two public library system based on Zimbabwe’s colonial past.

On April 18th, 2020, public libraries in Zimbabwe celebrated their 40th anniversary as post-colonial African institutions. What has been the impact of an institution built in the colonial era for a colonial community? Has it had any impact on the local community? Has it adjusted to serve the local community, whose roots are that of an oral culture? Are Zimbabwean Public librarians interested in learning about the impact of the services and programs? What is the role of the NLDS in assessing the impact of public libraries in Zimbabwe? The Zimbabwe Library Association (ZimLA) is a professional organization supporting the development of libraries and librarians in Zimbabwe. Does ZimLA have a role in impact assessment? Does it provide support for public librarians to assess the impact of their services and programs? This question leads to another question if Zimbabwean public librarians are assessing their impact, what is the source of their knowledge? Were they trained at the local institutions? Or did they inherit the assessment systems from the former colonial public libraries and library education?

These questions surrounding what we don't know about the Zimbabwe public library and their benefits prompted my research question, goal, sub-questions, and objectives:

**Research Question**

Q: How do Zimbabwean public libraries and their stakeholders determine the impact of their services and programs?

**Goal**

To determine how public libraries and their stakeholders in Zimbabwe understand their impact and use impact assessment.

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ3. How do the public library and its stakeholders in Zimbabwe use impact data?</td>
<td>3. To learn how the public library and its stakeholders in Zimbabwe use impact data.</td>
</tr>
<tr>
<td>RQ4. How do the public library and its stakeholders in Zimbabwe learn about impact assessment and develop their capacity?</td>
<td>4. To determine how the public library and its stakeholders in Zimbabwe learn about impact assessment and develop their capacity.</td>
</tr>
</tbody>
</table>
**Impact assessment in public libraries**

*Definition of impact assessment*

Impact assessment in public libraries is about identifying and evaluating the change brought about by public library services or programs. Impact assessment measures how people have changed over time and what are the significant factors in bringing about this change (Brophy, 2006; Streatfield and Markless, 2009). Collecting evidence of impact about the public library's stakeholders can be accommodated within the public library's annual planning cycle, to capture both short-term and long-term impact. The term impact assessment describes systematic causation or attribution studies (using a rigorous approach to collecting evidence that shows whether and how an intervention is directly responsible for changes or benefits). Impact assessment seeks to answer: "How much better off are patrons because of the public library service or program?" or "Does the public library service or intervention have a different impact on different groups?" and "Did the public library service/program cause the impact?" In conducting an impact assessment, public libraries concentrate on planning to make a difference to:

- Their communities through their services,
- Assessing implementation (what has been put in place) and
- Gathering evidence of benefits that have accrued or changes that have been made since the service/program began.

While public libraries may assume that their services/programs have "contributed" to the changes identified and have "added value" to the individual or community, it is essential to note that there may be other influences involved in bringing about the change. Thus, the public library does not aim to demonstrate a causal relationship.

*Purpose of impact assessment in public libraries*

The purpose of impact assessment is to understand whether services are contributing to community impact. This information enables public librarians to make necessary changes in their programs, seek funding and new partners, and advocate for public libraries by the community. Impact assessment enables public librarians to:

- Assess and improve library services,
- Change organizational culture,
- Market the library,
- Meet the requirements of government performance measures or other standards and
- Gather data to be used in sourcing funding for public library services.

*Public library impact assessment*

Public library impact assessment should be considered as a system that uses inputs to create outputs through processes. Outputs have immediate outcomes that can have longer-term impacts. Impact assessment measures each of these aspects (input, process, output, outcome, and impact). Brophy (2006) illustrated impact assessment to engage five types of measures:

![Impact Assessment Diagram](image-url)
Impact Assessments Programs in US public libraries

Public library impact assessment programs are a new phenomenon in the US, with the first one starting in 2009, and funded by one major organization, the Bill and Melinda Gates Foundation (except for Measure that Matter). The programs were all initiated and implemented by library institutions. These institutions can obtain and manage funds to establish impact assessment, provide training and support to public libraries implementing them. There is not any scholarly literature on them, there is need to research as they are in their infancy. African public libraries may look for the support of their library organizations (such as their library institutions and library schools) to develop, implement, and maintain impact assessment programs.

Below are the four national impact assessment programs initiated for public libraries in the US.

Table 1 Impact assessment tools for public libraries in the United States

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Impact Survey</th>
<th>Edge Initiative</th>
<th>Project Outcome</th>
<th>Measures That Matter (MTM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator</td>
<td>University of Washington (UW) iSchool</td>
<td>Urban Libraries Council (ULC)</td>
<td>Public Library Association (PLA)</td>
<td>Institute of Museum and Library Services (IMLS) and COSLA</td>
</tr>
<tr>
<td>Funder</td>
<td>Bill &amp; Melinda Gates Foundation</td>
<td>Bill &amp; Melinda Gates Foundation</td>
<td>Bill &amp; Melinda Gates Foundation</td>
<td>IMLS</td>
</tr>
<tr>
<td>Year</td>
<td>2009</td>
<td>2011</td>
<td>2015</td>
<td>2016</td>
</tr>
<tr>
<td>Purpose</td>
<td>Gain insight into how patrons use library technology and what they can achieve in their lives as a result.</td>
<td>Assess library technology resources and services to support better patron and community outcomes.</td>
<td>Collect patron outcomes data to understand and share the true impact of library programs and services.</td>
<td>Examine, evaluate, and map the landscape of public library data collection in the United States</td>
</tr>
<tr>
<td>Measures</td>
<td>Patron outcomes from the use of library resources and technology</td>
<td>How libraries maintain and support their technology services</td>
<td>Patron outcomes from library programs and services in 7 service areas</td>
<td>MTM is developing a public library data framework which will include indicators focused on community impacts</td>
</tr>
<tr>
<td>Goal</td>
<td>Communicate the value of the library's technology programs and assets</td>
<td>Prioritize improvements and discuss strategic goals and technology resources with community leaders</td>
<td>Make program/service improvements and communicate the library's value</td>
<td>To study user behaviors at a national level to enable the development of library services that cater to their community needs.</td>
</tr>
<tr>
<td>Comments</td>
<td>Handed over to PLA. No longer working.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The role of assessment in understanding the impact of the public library in post-colonial Africa: the case of Zimbabwe

In researching public library impact assessment, I reached out to public libraries systems in the four major Zimbabwean cities (Harare, Bulawayo, Gweru, and Masvingo) (Kanengoni, 2017). Only two library systems responded to my request for information on how they measure the impact of their services and programs on their communities. Public Library A provided a form they use to measure the output of their services every month. Their output measurement focused on the physical library (building, equipment, and an outdoor area), collection size, number of patrons, and subscription. Public Library B offered and never sent project reports from university students written to complete their studies.

The post-colonial Zimbabwean library is a product of the former colonial masters. The current Zimbabwe public library system is centralized, as per prescription by the British government to ensure colonial ties would not be severed by the independence of the new nations. What is the impact of such a system, with its collection largely from the former colonizers, in the language of the colonizers and served by librarians trained using a colonial library syllabus? Scholarly literature does not show that assessment of the library's impact as part of the colonial library practice. There were no efforts to learn the impact of the public library on the communities served. There are no articles on the role of assessment in understanding the impact of the post-colonial Zimbabwe public library. In conducting my research on the understanding and role of impact in assessing the post-colonial Zimbabwean public library, I intend to fill an existing research gap.

Methodology

Introduction

My research is on how public librarians and their stakeholders understand public library impact assessment and use impact assessment in African public libraries, with Zimbabwe as a case study. To study how Zimbabwe's public librarians and their stakeholders determine the impact of their services and programs, I intend to conduct qualitative research using the following methods: interviews, surveys, focus groups, and document analysis. They will be used to determine how the public librarians and their stakeholders in Zimbabwe:

- Know about public library impact assessment,
- Conduct impact assessment,
- Use impact data, and
- Learn about impact assessment and develop their capacity

I have been able to identify 39 public libraries in Zimbabwe, consisting of 6 stand-alone libraries, and 33 branch libraries housed in 6 public library systems in major cities. The public library systems consist of the following Harare (15), Bulawayo Public (3), Bulawayo Municipal (9), Gweru, Masvingo (4) and Marondera (2) (see Appendix 1). The table is not complete as I am waiting for information from the public libraries in Zimbabwe. The table will need to be completed during data collection. There has been restructuring of the public libraries, as some former subscription public libraries are now part of the city council. These changes will not affect my research methods, as they do not impact the research process, but may instead change the number and specific libraries included in the study.

Due to the small number of public libraries, I will not be sampling the population but will survey and interview all available public library directors, public library managers and government officials in charge of libraries. I intend to conduct surveys as my main form of data collection due to the travel restrictions in place during the COVID-19 pandemic. Zimbabwe has been under a national lockdown since March 2020, public libraries are closed, affecting accessibility of public library stakeholders. ZimLA has agreed to coordinate the distribution and collection of the survey.

Impact Assessment Knowledge Framework

The Impact Assessment Knowledge Framework (see Table 2) will be used to develop questions for the surveys, interviews, and focus groups. Questions will correspond to and aim to answer the research question by addressing the four research sub-questions and objectives. The knowledge framework will also be used to develop guidelines for analyzing the contents of
documents that will be collected to answer the research questions. It is made up of six facets that represent the four areas of the research objectives. The facets correspond to the research objectives as follows:

- **R1**: To learn what the public library and its stakeholders in Zimbabwe know about public library impact assessment.
  - Understanding of impact assessment in public libraries (Facet 1)
  - Purpose of impact assessment (Facet 2)

- **R2**: To learn how the public library and its stakeholders in Zimbabwe conduct impact assessment.
  - Execution of impact assessment (Facet 3)

- **R3**: To learn how the public library and its stakeholders in Zimbabwe use impact data.
  - Result of impact assessment (Facet 4)
  - Application of impact assessment (Facet 5)

- **R4**: To determine how the public library and its stakeholders in Zimbabwe learn about impact assessment and develop their capacity.
  - Capacity building to enable impact assessment (Facet 6)

In the framework, each facet has a purpose (labelled “intention”), a research sub-question, an interview target, and the data source. This framework has guided the development all surveys, interview, and focus group questions as a way of ensuring all aspects of impact assessment under study are addressed. These questions may be reviewed and refined, depending on the result of the pre-test to be held in the US and Zimbabwe.

### Table 2 Impact Assessment Knowledge Framework

<table>
<thead>
<tr>
<th>Facets of Impact Assessment</th>
<th>Intention</th>
<th>Research sub-question</th>
<th>Interview Target</th>
<th>Yes</th>
<th>No</th>
<th>Evidence/Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Purpose</td>
<td>Why do you want to learn the impact of your services and programs?</td>
<td>Why do public libraries want to learn about their impact on their community?</td>
<td>Public Librarians, City Authorities, Library Association Officials</td>
<td>What do you gain through this knowledge? Who gains? Who uses this information?</td>
<td>What are your vision and mission? How do you know if you are achieving them?</td>
<td>Survey Interview Focus Group Documents</td>
</tr>
</tbody>
</table>
### 3. Execution

<table>
<thead>
<tr>
<th>How do you measure the impact of your services and programs?</th>
<th>How do they know their impact?</th>
<th>Public Librarians</th>
<th>How do they measure impact? Methods, tools/technology, frequency, areas of focus, responsibility, training/development, etc.</th>
<th>If they were to measure, how would they do it? Methods, tools/technology, frequency, areas of focus, responsibility, training/development, etc.</th>
<th>Survey Interview Focus Group Documents</th>
</tr>
</thead>
</table>

### 4. Result

<table>
<thead>
<tr>
<th>Do you know the impact of your service and programs?</th>
<th>Do you have proof of the impact of your library?</th>
<th>Public Librarians, City Authoritie s, Library Association Officials</th>
<th>What results have they experienced/observe d?</th>
<th>What results might they experience/observe?</th>
<th>Survey Interview Focus Group Documents</th>
</tr>
</thead>
</table>

### 5. Application

<table>
<thead>
<tr>
<th>When do you use the knowledge of your impact?</th>
<th>What do they do with their knowledge?</th>
<th>Public Librarians, City Authoritie s, Library Association Officials</th>
<th>… and why?</th>
<th>What would they do with their knowledge? And why?</th>
<th>Survey Interview Focus Group Documents</th>
</tr>
</thead>
</table>

### 6. Capacity building

<table>
<thead>
<tr>
<th>Where did you learn how to measure the impact of your services?</th>
<th>What lessons have you learned about the impact of your library to your community?</th>
<th>Public Librarians, City Authoritie s, Library Association Officials</th>
<th>Do you teach impact assessment? How did you learn about impact assessment? How do you keep up with developments in impact assessment? When was the last training or the previous publication you read, and what was its focus?</th>
<th>How do you know what is and how to apply impact assessment?</th>
<th>Survey Interview Focus Group Documents</th>
</tr>
</thead>
</table>

### Implications of the study

The study will add to scholarly knowledge on the role of public libraries and their contributions in the lives of the community. The results of public library impact assessment in Zimbabwe will be shared with other public librarians in Zimbabwe and Africa through library association conferences at national and regional level (SCECSAL and AFLIA conferences). LIS practitioners in public libraries, LIS policy makers, library association representatives and
organizations/professionals working in partnership with African public libraries will be recipients of the results of this research. Public librarians will learn about impact assessment, public libraries conducting impact assessment in Zimbabwe and how to include impact assessment of their own libraries. LIS educators will learn about the value of impact assessment and its value in LIS education. LIS policy makers and government officials will be able to see how they can gain data on public libraries and their impact on the socio-economic development of the country. They will also learn the importance of establishing policy to collect impact assessment of public libraries. Library association representatives will learn the importance of working with public libraries to develop impact assessment systems and advocate for impact assessment. Organizations and professionals working in partnership with African public libraries will be learn the importance of collaborating with public libraries in developing impact assessment tools to assess their services and programs.

References


Mining Library Chats

Sentiment Analysis and Topic Extraction

Ellie Kohler

University Libraries at Virginia Tech, Blacksburg, VA, USA

Introduction

Like many universities and colleges around the world, the University Libraries at Virginia Tech utilize chat virtual reference services to provide real-time online reference services and augment in-person services. Library chat services support distance learners and others who lack the opportunity or desire to physically access the library in person. This became an especially important service during the COVID-19 pandemic where the physical buildings were at various times throughout the calendar year of 2020 either completely closed to library personnel and the public; closed to the public while open to limited library personnel; or only offering limited access to university students, faculty and staff. As reliance on virtual services increased, the amount of library chats also increased by 36 percent over the previous year.

In an effort to better understand patron’s needs and provide more timely and effective answers, libraries have traditionally conducted qualitative research methods to study chats (Logan et al, 2019). Most of the time, a labor-intensive process is used that involves reading and categorizing each individual chat, which makes it difficult to keep up with the growing amount of data that is collected. In the past few years, however, researchers have been using more automated quantitative analysis methods to understand library chat user behavior, including topic modeling. Topic modeling can be defined as a statistical model for discovering “hidden topical patterns of words” in document collections (Koh and Fienup, 2021). Once set up, this method is a rapid and easy tool that handles large volumes of chat transcripts. As libraries move into an environment of data-informed decision-making, it is an opportune time to conduct this kind of large-scale topic analysis and evaluate emerging themes from the chat interactions.

Purpose

This paper shares the approach taken to automate the analysis of library chat transcripts for the calendar year of 2020. There were 3,030 chat transcripts evaluated for sentiment, or the tone of the interaction between library users and library personnel, and categorized into topics. The effort undertaken was mainly exploratory and descriptive, seeking to explore library user behaviour and determine if there were main categories where library assistance was requested. Included in the study were questions of how or whether library COVID-19 protocols impacted chat topics throughout the year. While keeping in mind that any unsupervised algorithmic technique may yield unreliable results, an attempt was made to cross-validate sentiment scores and topics where possible with a variety of methods including user ratings, parallel term-mapping using network analysis, and a discussion and results review with personnel who were responsible for responding to most, if not all, of the chats. This effort was taken to ultimately assist library personnel with anticipating user needs where possible and providing an effective and efficient user experience to students, faculty and community users.

Methodology

Three main TDM (text and data mining) methods were applied to the chat transcripts. The first, sentiment analysis, determined the tone of the interaction between library users and library personnel. This was also cross-referenced with an existing user ratings system, where possible. The second, topic extraction, finds characteristics of text that would indicate main categories that the chats center around. This was validated with cohesion scores. The third, network analysis, was
applied in order to assist with the evaluation topic extraction by generating distance-based term maps, in a type of cross-validation.

**Data Collection**

The library utilizes the Springshare service LibChat to provide chat services. In order to generate the dataset, chat transcripts from January 1, 2020 to December 31, 2020 were exported in CSV format. The calendar date was chosen instead of a fiscal year date range of July 1 to June 30 in order to capture and attempt to understand the effects of the pandemic. Each chat transcript is a separate row. After filtering out empty records, there were 3,030 records of interactions with approximately 625,500 words, averaging 206 words per chat.

**Preprocessing**

Custom Python scripts utilizing regex were used to clean and prepare the dataset. The processing included functions such as replacing names with anonymous identifiers for patron and library staff, replacing actual web links with a “web_link” placeholder, and combining the original initial question of the chat with the rest of the transcript as they were separated in the original dataset. In addition, the scripts removed unnecessary components from each conversation including timestamps, hard returns, new line indicators, and non-ASCII characters.

At this point, the scripts also utilized the Python NLTK Toolkit to remove stopwords. In order to adapt the model to the library setting, and ensure anonymity, a list of customized stopwords were added to the standard English stopwords provided in the NLTK Toolkit. The resulting text was then exported and used in sentiment analysis and topic modelling. For topic modelling, the prepared dataset was tokenized and lemmatized to further prepare the dataset for topic modelling. Because the purpose of this study was exploration, not prediction, a count vectorizer was utilized, which facilitated the removal of words that appeared 1% of the time, or single use words. This assisted the preprocessing by removing unique identifiers from the dataset.

As a note, the terms transcript and chat in this study refer to the entire interaction between the library user and library personnel. In a recent study, Koh and Fienup analysed different topic modelling methods and techniques when used with library chats and found that utilizing the whole interaction produced an increase in the quality of topic outcomes (Koh and Fienup, 2021).

**Topic Modelling**

Once preprocessing was complete, the next step was to run the topic extraction algorithms which included fitting non-negative matrix factorization (NMF), latent dirichlet allocation (LDA), and latent semantic analysis (LSA). The purpose of running all three models was to determine which model created the clearest and most distinct topics based on the given dataset. Utilizing each model, initially 15 general topics were found using up to 6 descriptive words to show the general gist of each topic.

LSA, also known as LSI, or latent semantic index is a mathematical method that attempts to bring out latent relationships within a collection of documents and assumes that words that are close in meaning will occur in similar pieces of text. Rather than looking at each chat isolated from the others it looks at all the texts as a whole and the terms within to identify relationships. The largest drawbacks for using LSA is the need for a large set of documents and vocabulary to get accurate results, and the fact that this model can also be lacking in interpretable embeddings (Brousseau et al, 2021). LDA is an extremely popular topic model to use, as it is the most common probabilistic topic modes used for unsupervised topic extraction, in part because of its consistency and ability to provide “coherent” topics (Chen and Wang, 2019). LDA is similar to LSA in that it assumes that documents are composed of words that help determine the topics and maps documents to a list of topics by assigning each word in the document to different topics, but differs in that it assumes that the distribution of topics in a document and the distribution of words in topics are both Dirichlet distributions. Before running the algorithms, there was an assumption that LDA would end up being the model of choice due to its popularity and prevalence in the literature. The NMF model is a matrix factorization and multivariate analysis technique. Where LDA and LSA allows the topics and words to vary, NMF fixes values for the probably vectors of the multinomials, and thus performs better where the topic probabilities should remain fixed per document (Gan et al, 2021). NMF has a document-term matrix that is
approximately factorized into term-feature and feature-document matrices. Term Weighting with term frequency-inverse document frequency (TF-IDF) was applied to this method to improve the usefulness by giving more weight to the more "important" terms.

After running the models, the results indicated that the model NMF would be the best suited for use in analysis. NMF was chosen in part due to the repeated evenness of distribution of topics. When looking at 13 topics, the distribution of topics across the dataset was most evenly dispersed with NMF, which was a consideration in choosing it as the winning model. The LDA and LSA models, in particular were extremely lopsided. In the LDA model, 2918 of the 3030 chats (96.30%) were in two topics, and the LSA model had 2737 chats (90.33%) in one topic (table 1). To clarify how lopsided the LSA model is, Figure 1 shows a visualization of the LSA model where larger topics are more frequent, topics closer together are more similar, and topics further apart are less similar. The size and overlap of three topics indicate that these topics would not be meaningful. Figure 2 goes on to show how dominant one topic is, where the most representative words for the selected topic is visible. When topic 1 was selected, the figure shows the most representative words for the selected topic, which is a combination measure of how frequent and how discriminant the word is within the topic versus overall.

<table>
<thead>
<tr>
<th>NMF Model Top Words</th>
<th>NMF % distribution</th>
<th>LDA Model Top Words</th>
<th>LDA % distribution</th>
<th>LSA Model Top Words</th>
<th>LSA % distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>help anything find let else know</td>
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</tr>
</tbody>
</table>

Table 1. Topic distribution percentages between NMF, LDA and LSA models

Figure 1. LSA Topics graphed for frequency, similarity and word distribution.
NMF was also chosen due to coherence indicators. Topic coherence was calculated by measuring the degree of semantic similarity between high-scoring words in a topic, and then averaging the scores among topics. This is an aggregate method that allows the comparison of topic models, in that it represents the quality of the complete model, rather than individual topics. In this area too, NMF had the highest coherence score at 0.454 followed by LDA at 0.349, and then LSA at 0.2831. Other factors in determining the model were based on human judgement from subject matter experts and non-experts that determined the interpretability of the topics based on the top six key words in a topic.

To find out the optimal number of topics, many NMF models were ran with different values of topics (k), and the one with the highest coherence score was chosen. In general, choosing ‘k’ that marks the end of a rapid growth of topic coherence usually offers meaningful and interpretable topics. For NMF, topic coherence measure called TC-W2V was utilized. This measure relies on the use of a word embedding model constructed from the corpus. The method used the Gensim implementation of Word2Vec to build a Word2Vec model based on the collection chats. The model with 13 topics had the highest score coherence score of 0.4917.

**Sentiment Analysis**

This project utilized VADER (Valence Aware Dictionary and eSentiment Reasoner), a lexicon and rule-based sentiment analysis tool that is specifically attuned to sentiments expressed in social media. VADER rule-based enhancements include word-order sensitivity for sentiment-laden multi-word phrases, degree modifiers, word-shape amplifiers, punctuation amplifiers, negation polarity switches, or contrastive conjunction sensitivity (Hutto and Gilbert, 2014). Although library chats are not considered social media, the length of the interaction is generally short and contained, as seen in social media. In addition, VADER is more nuanced in complexity than other dictionary-based approaches, which provide only individual words with positive or negative scores.

In order to compute sentiment, this project used the compound sentiment score, which is computed by summing the valence scores of each word in the lexicon, adjusted according to the rules, and then normalized to be between -1 (the most extreme negative) and +1 (the most extreme positive). This compound metric was decided upon as in addition to being one of the most common measures used for sentiment analysis, it is useful for giving a single unidimensional measure of sentiment for a given chat. It can also be described as a normalized, weighted composite score.
The thresholds used for labeling chats as positive, neutral, or negative are as follows:

- positive sentiment: compound score $\geq .20$
- neutral sentiment: compound score $\geq 0$ and $<.20$
- negative sentiment: compound score $<0$.

Since the data skews so extremely positive (median .957, with excess kurtosis 9.34, skewness -2.99) a decision was made to increase the neutral sentiment threshold in order to help provide more distinction.

For context, the typical threshold values for positive, neutral and negative compound scores are as follows:

- positive sentiment: compound score $\geq 0.05$
- neutral sentiment: (compound score $>-0.05$) and (compound score $<0.05$)
- negative sentiment: compound score $\leq -0.05$

It is important to note that a chat with a highly positive sentiment score does not automatically indicate that a question was successfully answered. It can, however, indicate the level of civility in the discourse.

**Network Analysis**

The challenge and ambiguity involved in topic modeling is validation. The very approach of extracting topics from a large collection of documents itself is unsupervised i.e., documents are not labelled prior modeling. Therefore, validating topics obtained from unsupervised approach is a tedious task. Xiaoju Chen and Huajin Wang attempted to address this challenge by constructing distance-based term maps with VOSviewer with the same preprocessed data that was used for their topic modelling (Chen and Wang 2019). This study utilized the same technique. The parameters to create the network analysis were incorporating the association method, which utilized the total number of occurrences in all chats to analyze the most relevant terms that occurred at least 10 times within the dataset to a 60% prevalence. The process used 10 random starts, 10 iterations and a step size of 1.

**Results and Discussion**

When looking at the overall dataset, there were more chats than the previous year, as noted previously. There were marked increases in April and June from previous years, and this was most likely a direct result of physical library closures due to COVID-19 policies, as these are not typically high-volume months for chats. There was also an atypical decrease in the number of chats in March, as this and other institutions were closing and course syllabi with traditional due dates and exams were being changed. Other than these irregularities, the number of chats were distributed throughout the year in accordance with the seasonality and rhythms of the spring, summer and fall semesters.

**Sentiment Analysis**

Sentiment scores for chats were overwhelmingly positive, with an $0.08301$ average sentiment score on a scale of 0 to 1. This extremely positive result (median .957, with excess kurtosis 9.34, skewness -2.99) does not necessarily indicate a question was successfully answered, and instead only indicates the civility in the discourse. Even using an adjusted threshold measure discussed in the Methods section of this paper, there were $2,830$ positive, $70$ neutral and $108$ negative sentiment interactions.

When scores were negative, they fell in the mid-range of the negative range (figure 3). Average VADER compound scores for negative scored chats were $-0.431$. Positive scores were in the high end of the positive range with an average VADER compound score of $0.898$. The average VADER compound score for all neutral sentiment chats was $0.021$, which is at the low end of the adjusted neutral range. Words such as “please”, “thank you” and “thanks” were stopwords removed from the dataset during preprocessing, and were not figured into the sentiment scores.
There may be correlation between the length of a chat and the positivity of the sentiment score (figure 4). The average amount of words in positive sentiment chats is 214.9, almost twice as long as the negative sentiment chats’ average word amount of 124.3. The average word count of neutral chats is a very low 42.5. Upon further analysis, the neutral chat section also contained dropped chats, or chats involving demonstration of how the service works.

The negative chats could essentially be split into two groups. A portion of the negative chats had more to do with the inherent negativity of the subject of research than the tone of the interaction, i.e., a researcher looking for “documentaries related to conflict or violence in El Salvador” with resulting documentary titles and descriptions including the words, “suffer”, “armed conflict” and “murder.” Most of the negative chats involved a lack of or difficulty accessing a resource, about half of which were resolved successfully. Very rarely were there discussions about not having access to research materials that led to actual negative comments like, “I’m really frustrated with Newman library right now.”

One way to assess the veracity of the sentiment analysis was to look at user ratings in chat. Approximately 27% of the evaluated chats were rated by users. The rating scale is a 1-4 scale with 1 being “Bad”, 2 “So-so”, 3 “Good” and 4 considered “Excellent.” The percentage of chats rated good and excellent was 97.27%, with the remaining so-so and bad chats comprising 2.73% of rated chats. This does roughly track with the positive and negative sentiment scores, but a further
analysis reveals that chats that 67% of chats with a rating of 1 received a positive composite VADER score. This could be due to the limited dataset: there were only 6 chats with a 1 rating.

![Figure 5. Comparison of average VADER compound scores and average user ratings](image)

**Topics**

Output from the NMF topic model was presented as the top six keywords for each topic. Table 2 below shows the chat topics with the six keywords along with potential subject labels for each topic. Topic subject labels were generated based on human interpretation of the topics and viewing example chats within each topic. These topics, listed in order of frequency of occurrence are *general research assistance* (361 chats), *ebook and book search* (288 chats), *account and login help* (264 chats), *article search* (263 chats), *library hours* (250 chats), *referrals* (244 chats), *book return* (225 chats), *database search* (221 chats), *book holds and pickup* (213 chats), *access questions and issues* (197 chats), *interlibrary loan* (191 chats), specific web links (159 chats), and *journal access* (132 chats). Of the 13 topics that were generated there were some topics that seemed to have subject overlap, such as *journal access* and *article search*, or *account and login help* and *access questions and issues*. But when the model was ran for 10 topics, the topics that disappeared were most closely correlated with *library hours*, *referrals*, and specific web links, which seem to be absorbed into *general research assistance*.

<table>
<thead>
<tr>
<th>ID</th>
<th>Topic Subject</th>
<th>NMF Model Top Words</th>
<th>Chats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>general research assistance</td>
<td>help anything find let else know</td>
<td>361</td>
</tr>
<tr>
<td>3</td>
<td>account and login help</td>
<td>account login log try page sign</td>
<td>264</td>
</tr>
<tr>
<td>4</td>
<td>article search</td>
<td>article pdf looking full doi access</td>
<td>263</td>
</tr>
<tr>
<td>5</td>
<td>library hours</td>
<td>library open newman check student come</td>
<td>250</td>
</tr>
<tr>
<td>6</td>
<td>referrals</td>
<td>email contact would chat information libr</td>
<td>244</td>
</tr>
<tr>
<td>7</td>
<td>book return</td>
<td>book return due returned checked account</td>
<td>225</td>
</tr>
<tr>
<td>8</td>
<td>database searching</td>
<td>search results database page home peer</td>
<td>221</td>
</tr>
<tr>
<td>9</td>
<td>book holds and pickup</td>
<td>hold place book pick pickup ready</td>
<td>213</td>
</tr>
<tr>
<td>10</td>
<td>access questions and Issues</td>
<td>access alumni database resources online v</td>
<td>197</td>
</tr>
<tr>
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<td>interlibrary loan</td>
<td>request loan interlibrary ill illiad copy</td>
<td>191</td>
</tr>
<tr>
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</tr>
<tr>
<td>13</td>
<td>journal access</td>
<td>journal title journals access name quickl</td>
<td>132</td>
</tr>
</tbody>
</table>

*Table 2. The 13 topics and top keywords associated with each topic discovered by NMF model. Topic subjects were generated based on human interpretation.*

In some instances, the generated topics and their frequency can be related to COVID-related policies. For example, there was a large increase in *book return* in April which can be attributed to library closures and again in August when books were due, which is more in keeping with standard operations. There was an increase in *book holds and pickup* as a result of the contactless checkout service that occurred when the library was open to employees yet still closed to the public in July.
and August. This was a text-based service that fed into the library chats. Some generated topics demonstrated expected behaviors, such as an increase in account and login help at the start of classes in August. Also, interestingly enough, there seemed to be a spike in questions about access questions and issues (especially from alumni members) in April of 2020, which turned out to be an event that resulted from the university removing database privileges to recent graduates. Normally this happens within a month or so of graduation, but for some reason it did not occur until almost 10 months later for Spring 2019 graduates. Although this was not something the University Libraries had control over, library personnel did field many questions.

The longest chats on average were account and login help (294 words), database search (265 words) and ebook and book search (224 words). The shortest average chats were in topic areas of book return (181 words), library hours (158 words) and specific web links (158 words). Because the subject of book holds and pickup had a large portion that were related to the fairly short interaction of the contactless checkout service described above, it is surprising that this topic is in the middle, and not among the shorter conversations.

The topic with the most positive average sentiment was general research assistance (0.9112), and the topic with the least positive average sentiment was access questions and issues (0.7464). While this was still very positive, it does potentially reflect patron frustration at not being able to access library materials.

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**Figure 6.** Specific topics and their average VADER compound scores from highest to lowest.

---

**Network Analysis**

This method was interesting but possibly not as useful for quality assurance as calculating the coherence score. The largest benefit of this method is that the VOSviewer is freely available and is easy to set up and use. It does not require coding knowledge, has a good bit of documentation, and the graphical user interface has many customization options.

The VOSviewer found five topics, with two very large topics (figure 7). The first included the most emphasis on terms: book, day, hold and loan, and the second held the terms: article, database, search and paper. This corresponds very well with the LDA model key word and topic distribution (figure 1), but not as well with the NMF model. Still, it is interesting to see the relationships between the terms. It is also useful here to see the compound terms, such as “physical copy,” “newman library,” “call number,” and “library homepage.” These bigrams were algorithmically generated based on their proximity and frequency in the dataset, and they are very accurate. Future work with topic analysis should include bigrams and trigrams for better results.
Limitations of Findings

One limitation of the finding comes with the relatively small size of the dataset. When hand-coding topics, this would seem like a large dataset, but when it comes to machine learning, the larger the dataset the better. Although the methods described in this project can be useful, any unsupervised learning techniques come with drawbacks. Automated sentiment analysis is a somewhat limited approach, in that sentiment is subjective and extremely dependent on the method or dictionary used to determine sentiment. Dictionary-based approaches like VADER often fail in handling all the complexities of the language, as it does not understand context. Text can contain sarcasm, which is difficult to detect automatically and may skew the results of a sentiment analysis algorithm. Preliminary findings show that interactions have scored overwhelmingly positive, which does not necessarily indicate that a problem was resolved or a question was answered, just that the language used was polite and positive. It was difficult to find meaning in the positive interactions, other than to note that positivity and length of interaction were correlated. If sentiment is to be utilized in a meaningful way, further exploration into methods of sentiment scoring is necessary.

The topic extraction process was more difficult than expected. While the topics themselves were understandable, explanation of the topics and their frequency had to be explained by subject matter experts (library personnel responsible for the chats) or read in from the chats themselves. While this type of in-depth investigation fit the purpose of this study, it does limit the usefulness in automating chat analysis as part of an everyday workflow.

Conclusion

This study detailed the approaches taken by the Virginia Tech University Library Data Analytics Team to automate the assessment of chat transcripts and is part of a greater effort to understand library users and provide the best possible service. The results show that the chats from 2020 fell in to 13 general topics. Although assessing patron satisfaction from the chats may not yet be a possibility, having negative sentiment scoring chats gives library personnel a way to target areas, then investigate and train. Using the results from this study, the library can begin to create a story about the services that chat reference provides. Discussions of the results with User Services began an ongoing conversation about standardizing responses for consistency of message.
References


Monitoring transitional agreements
the challenges and successes of implementing article-level metadata collection

Kate Amos, Bethany Harris and Amy Devenney

JISC

Transitional agreements (TAs) aim to accelerate the transition to Open Access (OA) while also constraining costs by including both the reading of content and publishing of open access articles under one fee. Therefore, TAs require new methods of monitoring and evaluating and new data sets, particularly article-level metadata (ALM), to track agreement’s outputs and therefore it’s value and impact.

Work by the Knowledge Exchange (KE) in 2019 demonstrated the difficulty in monitoring the publication element of TAs due to the lack of consistency in provision of ALM and inefficient workflows between publishers and consortia placing a burden on institutions evaluating a TA’s costs and value. Following the recommendations of the Knowledge Exchange in 2019 to request publishers to provide consistent article-level metadata to monitor agreements, Jisc has implemented a data structure to request publishers to provide data on articles accepted under a Transitional agreement, commencing in 2019. The Knowledge Exchange Monitoring OA group checklist was repurposed into a template which is available on Zenodo (https://zenodo.org/record/3407214#.YWP4A9rMKUl). Using this template, Jisc has requested publishers to provide metadata adhering to the template standard for transitional agreements from 2019 and from 2021 this will include native open access agreements.

This paper details the implemented monthly process with 13 publishers to collect ALM on open access publications under Jisc transitional agreements since 2019 to enable us to monitor and evaluate agreements using metrics such as adjusted cost per download, investment per article, percentage open access increase from pre-TA to current TA agreement year and funder compliance. It will discuss best practices for working with publishers to collect varying degrees of metadata, steps to improve data quality for analysis, the challenges encountered and demonstrate how the data collected has allowed Jisc to effectively monitor and evaluate TAs. The paper will conclude by outlining recommendations which would improve the transparency of the transition to open access.

The format and basis on which article-level metadata is provided to Jisc is essential for us to complete relevant analysis on publishing and costs relating to Jisc agreements. The process of data collection starts from the signing of a new agreement. Jisc’s Licensing Intelligence Team contacts the publisher with the article-level metadata template and discusses with them what can be provided and where this comes from in order to understand the publisher’s internal metadata workflow. The team then agree with the publisher a schedule of reporting that fits with both Jisc’s reporting needs and the publisher’s ability to provide data.

The article-level metadata template aims to collect 32 different elements of publication data. 20 of these fields are mandatory for the publisher to provide; these include fields such as Digital Object Identifier (DOI), Institution, Article Publishing Charge (APC) paid, APC waiver or discount etc. The DOI is use as the unique identifier in the article-level metadata datasets, therefore it is the most important mandatory field as it enables us to link to useful external datasets. The other mandatory fields enable us to measure the value and impact of TA’s across the sector, for example comparing the differences in APC paid across different Jisc Bands of institutions to ensure all different types of institutions (i.e. research led, or teaching led) are receiving value from the agreements.

The ability of a publisher to provide the requested article-level metadata on a regular basis varies between publishers. This is due to their internal workflows and systems, as well as the need for them to often merge many data sources in order to...
provide either only the mandatory fields or all the fields in the ALM template. This can be a complex process for publishers, pulling together publications data from one system and APC data from another and trying to match these up using date field restrictions. Generally, for larger publishers the article-level metadata template can be completed on a monthly, bi-monthly or quarterly basis, however for smaller publishers this tends to be quarterly, bi-annually or annually. We have documented the reporting schedule against our data collection timeline, so we are aware of when to expect data and co-ordinate the work of the team as required. When thinking about reporting schedules it is important to match the frequency of reports to the publication output. For example, if there is a small output then less frequent reports are needed.

The reports are created by Jisc’s contacts at publishers and then emailed as a csv file on the agreed basis to the Licensing Intelligence Team at Jisc. To increase the accuracy of publisher’s reports, as of 2021 we have been able to provide publishers with a list of standardised institution names and persistent identifiers (PIDs). Providing publishers with standardised sources of information as early as possible can aid the cleaning process by saving time and manual effort.

Alongside the article-level metadata template, the assessment questions, and conversations with publishers during the data collection set up allow Jisc to identify and understand the amendments needed during data cleaning for example if funder or APC payment metadata may not be provided by the publisher. Once test data has been received and there is an understanding of the publisher’s own editorial and payment workflow for authors and institutions, Jisc can start planning the required internal data cleaning. Replicable data cleaning workflows using Alteryx have been created for each publisher to allow greater flexibility in the frequency of data reports received and to ensure cleaning at pace.

Once the article-level metadata has been received from a publisher, the Licensing Intelligence Team start the process of cleaning, standardising, and validating the ALM. The main tool used to do this is the data manipulation package Alteryx. This software allows users to create reusable workflows based on algorithms which make decisions about how to clean data. The Alteryx workflows also allow data to be enhanced through downloading relevant data sources such as Crossref through an Application Programming Interface (API) to validate the data. Once the data has been cleaned and meets Jisc’s ALM standards, the data is analysed in the data visualisation software Tableau, where visualisations and metrics are created to demonstrate the value and impact of the Transitional agreements.

To prepare the data for analysis, the article-level metadata is imported into Alteryx. Each of the 32 data fields are cleaned and standardised in turn; Institution names are cross-referenced against lists of subscribers to each agreement, licences are standardised to meet the Creative Commons standards (i.e. CC BY, CC BY-ND etc) (https://creativecommons.org/licenses/ ) and article types are standardised using the COAR 3.0 standard (http://vocabularies.coarepositories.org/documentation/resource_types/#http://purl.org/coar/resource_type/c_93fc).

Alongside cleaning existing fields provided by publishers, four additional fields are added: whether the publisher is a Small Medium Publisher (SMP) and using the DOI and the Crossref API up to 3 funders listed in Crossref. The Crossref API is also used to retrieve any data that may be missing such as license information, article title, journal title, E-ISSN, and publication date. Unpaywall’s API is also used to add in any further missing data that may not be in Crossref.

The cleaned dataset is then analysed in the data visualisation software Tableau. Adding subsequent years of publisher’s data into Tableau enables Jisc to complete year on year analysis and use metrics such as investment per article (IPA) and cost avoidance. Investment per article evaluates the value delivered per article for open access publishing and reading at both a publisher and institutional level, comparable year to year by publisher. Cost avoidance assess the savings made by subscribing to an agreement compared to the cost of APCs on an article-by-article basis. Alongside metrics, other useful visualisations include plotting total APC spend against the number of published articles for each institution, grouped by their Jisc banding. Analysis of journals which attract the most publishing alongside their individual APC charges also provides useful insights on publication patterns. These metrics and data points help Jisc to monitor the value of the agreement and to determine if an agreement is continuing to meet the needs of our members. By pulling the Crossref funder data in, we can also start to understand the proportion of research that is funded, by whom and which groups they are part of I.e., ex-COAF and UKRI. Please see examples of the metrics and visuals created using the data from this project below.

Figure 1: APC Spend by Jisc Band
The box and whisker graph below show the spread of APCs incurred by institutions across each Jisc band. Collecting this APC data has enabled us to gain insights into this publisher e.g., the median APC cost is similar across all bands, ranging from £1,500 to £1,750. There are considerable APC differences across bands; Jisc band 4 institutions have the highest maximum value for APCs of ~£2,750 whilst Jisc band 10 institutions have the lowest minimum value for APCs of ~£1900.

Figure 1: APC Spend by Jisc Band

Figure 2: Investment per Article (IPA)
We can calculate investment per article to assess if the agreement is cost-effective, sustainable and affordable for an institution or the consortia. In this example for Institution X (anonymised), we have been able to calculate the investment per articles across multiple agreements/publishers. We can use investment per article to assess across publishers which agreements are providing better value in terms of publishing. A lower investment per article would show value for money. As you can see, Publisher 1 provides the best value for Institution X across these 3 publishers/agreements.

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</table>

Figure 2: Investment per Article (IPA)

Figure 3: Cost Per Download (CPD) (Publishers Anonymised)
Another useful metric to assess value and impact of an agreement is comparing cost per download across publishers. As part of calculating cost per download we use usage data and calculate cost avoidance using the article level metadata. The visual below shows the cost per download across publishers and the average. This provides an understanding of which publishers are around the average and prompts questions around those with high costs and low usage or low costs and high usage. For example, here the publisher showing the best value has a cost per download of £0.65.
The bar chart below shows the number of open access articles that were published across 8 publishers’, both pre- transitional agreement and one year into the transitional agreement. Across the publishers there is an increase in the number of open access articles published as a result of transitional agreements, demonstrating the value in increasing open access publishing in the first year of the agreement.

The Alteryx workflow below shows the steps needed to clean and standardise the article level metadata from each publisher. The article level metadata is cleaned in the template format and then information from external datasets is added such as Crossref funder information, missing license information and missing article types. Many checks take place to ensure the data meets our reporting requirements before the dataset is finalised to use for analysis.
During this process of data collection, cleaning and analysis there have been five main challenges encountered. Firstly, at the point of data collection we have found that smaller publishers can be unable to provide enough mandatory data fields. Some publishers were limited by the technical capabilities of internal systems for extracting data and so could not provide all recommended field types, which has affected the depth of analysis that can be undertaken. An example of the fields that some publishers have been unable to provide are: date fields (acceptance date, approval date, publishing date) and APC payment information. These are mandatory parts of the data collection and have led to some publisher’s data being excluded from certain areas of analysis.

Secondly, the eligibility of many agreements is based on acceptance or published date, however due to the variation in publisher’s workflows it is difficult to track an article until a unique identifier such as a DOI has been assigned, therefore understanding each publisher’s workflow is critical to understanding and gaining insight from the data.

Another challenge encountered during this exercise has been the extensive data cleaning for institution names, institutional PIDs and funders. Different publishers use different naming conventions for institutions and organisations, and often submit different PIDs along with them (Ringgold ID, Grid ID, ROR). This means there is a largely manual standardisation exercise to ensure an institution name is the same across many publishers. Funder data extracted from Crossref comes from free text fields submitted by the author; therefore, it is a manual effort to standardise common funders such as ex-COAF, UKRI and NIHR funders. There can be many funders per DOI therefore for larger publishers with more data this can take considerable effort.

The fourth challenge was creating meaningful analysis using a broad range of article types and license types provided by publishers. Each publisher has a slightly different method of reporting article types and licenses, which when combined is very difficult to use to create relevant analysis. The team liaised with publishers in order to ascertain their conventions of assigning licenses and article types and then completed research into standardisations of article types and licences. From this research it was decided that using the Creative Commons standardised license types and the COAR article type were the most appropriate standards for our project. This resulted in the dataset having standardised and more meaningful categories of licenses and article types, and as a result the team are working with publishers to aid them in adhering to these standards.

The final challenge revolved around understanding the publishers reporting, specifically understanding the point at which each article is at within the publishing process. For example, has the article been accepted but unpublished, accepted and published, accepted by declined, etc. Some publishers provided duplicate DOI entries in their datasets as the article had been through multiple steps in the publishing process. Due to this, we created an algorithm within the Alteryx workflow that assessed whether there were any duplicate DOIs in the dataset and selected the DOI that was the furthest in the process i.e. It
would ignore the accepted unpublished record, but it would include the accepted published record. This is essential to ensure there isn’t any double counting and we are including the most accurate record for each DOI.

As a result of this project, we have a number of recommendations.

Firstly, we would recommend continued and increased collaborative work between publishers, consortia and libraries to continue improving the quality and standardisation of data across publishers and to ensure efficient dataflows. The process of collecting and cleaning this data has many parts and includes many stakeholders; we would like to ensure the use of ESAC recommendations (https://esac-initiative.org/about/oa-workflows/) which focus on article identification, funding acknowledgment and invoicing.

A second recommendation would be to utilise the OA Switchboard (https://oaspa.org/oa-switchboard/), a service which allows metadata about scholarly publications to be automatically delivered to Jisc from publishers. This would save stakeholders time and would be a central place for queries and data sharing. The third recommendation would be continued collaboration with Crossref in order to understand metadata delivery workflows and improving the adoption of persistent identifiers. This would aid our processes when selecting which Crossref data to use to validate the data from publishers and ensuring we can accurately match our data to Crossref’s. Jisc is in the early phases of setting up a group to meet with Crossref a few times a year in order to address any queries and be aware of any developments that may affect projects within Jisc.

The final recommendation is to encourage the adoption of persistent and sustainable identifiers (such as ROR for institutions, ORCID IDs for authors and funder IDs for funders) are applied as early as possible which capture the intricacies of research organisations and institutions. Persistent identifiers for institutions, funders and publishers are essential in creating meaningful analysis and being able to track this overtime as organisations change is instrumental in producing accurate reporting. This would improve data sharing practices within the scholarly communications community and increase transparency of the transition to open access. All of these recommendations are being pursued by Jisc and have been incorporated into future data collection, cleaning and analysis plans.

This project has highlighted some challenges in collecting, cleaning and analysing article level metadata. The challenges include smaller publishers being less able to provide the mandatory fields in the article-level metadata template due to the technical limitations of internal systems and workflows. Another challenge has been tracking articles where a DOI has not been assigned by the publisher as we lack a unique identifier which we use in validating other information such as author, funder etc. It has also been a manual and time-consuming exercise to comprehensively standardise institution names, institutional IDs and funders across many publishers. Similarly, it has been challenging to create useful analysis using each publisher’s licenses and article types and there was a need to standardize these across all publishers. The final challenge was ensuring each DOI was unique and where there were duplicates, confirming we are using the most up to date publication status.

Despite the challenges identified, this project has produced a number of successes. There is now a better understanding of the impact and value derived from a deal through the use of key metrics, such as percentage increase in open access publishing. Reporting on costs, publishing, and the value of OA publishing through transitional agreements and comparison to previous agreements is quicker and easier with less manual effort. We have more insight on funded output which allows a better understanding of funding implications on transitional agreements. The project has also put us in a position to consider the monthly tracking of output through agreements, where the data allows it, which would allow us to track trends in the metadata and also closely monitor the use of any capped agreements. These successes have been pivotal in allowing us to monitor the transition to Open Access and track the value and impact of Jisc agreements.

References

Observations from Piloting a Global OA eBook Usage Data Trust: Lessons Learned and What’s Next (Panel)

Christina Drummond, Kevin Hawkins, Rebecca Welzenbach, Brian O’Leary

General Topic:
In this panel, Data Trust Program Officer Christina Drummond will join project PIs Kevin Hawkins (University of North Texas Libraries), Rebecca Welzenbach (University of Michigan Library), Cameron Neylon (COARD/COKI), and Brian O’Leary (Book Industry Study Group), will discuss their Andrew W. Mellon funded ebook usage data trust efforts. After describing the usage data trust’s community, goals and research project outputs, observations on the linking and exchange of OA book usage metrics are shared.

Main statements and points:
Overview of the OA eBook Usage Data Trust project community, goals and research outputs

- From its origins in a conversation at the 2015 Triangle Scholarly Communications Institute, the OA eBook Usage (OaEBU) Data Trust effort has grown into an international coalition aiming to develop and pilot a data trust for OA eBook usage data (https://educopia.org/data_trust/).

- Supported by The Andrew W. Mellon Foundation, the project engaged over 100 stakeholders across five continents in its exploration of a usage data trust for OA book data.

- Over the past two years, the effort mapped the OaEBU data supply chain, identifying both the end users of usage data as well as the usage data generators and stakeholders who process or transfer data on to others during the scholarly communications lifecycle (Clarke and Ricci, 2021).

- Facilitated stakeholder interviews and virtual design workshops surfaced diverse use-cases and staff roles interested in OaEBU data across libraries, publishers, and publishing platforms and services (Drummond and Hawkins, 2021).

- This research identified multiple stakeholder value propositions for OaEBU data dashboards or analytics.

- It also surfaced a shared system-wide need to simplify usage data curation, aggregation and management given the time and costs individual institutions allocated when combining COUNTER-compliant reporting alongside other usage data dashboards, and non-COUNTER compliant web-analytics. This reinforced the project’s hypothesis that a “Data Trust” model could benefit those working with usage data by aggregating and processing data upstream according to shared, transparent community norms, thereby generating economies of scale (O’Leary and Hawkins, 2019).

- Simultaneously, Open Access book usage data dashboard proof of concepts and data connectors were developed on open infrastructure to research the data aggregation, normalization, and benchmarking challenges faced by four university presses, one OA publishing network, and one commercial publisher.

- The project has explored governance and sustainability models.

- Informed by a Legal Agenda that summarized relevant data regulation, and the emerging European Data Governance Act in particular, a key decision was made to split off all data dashboard and analytics services from the trusted multi-party data exchange function, thereby allowing the Data Trust to retain neutrality among its diverse stakeholders while avoiding service delivery that could disadvantage or harm participating data providers.
Business model canvases, an environmental scan, and impact-focused service models were then developed to inform the future phase of the OAeBU Data Trust and potential, unaffiliated usage data dashboarding services.

Observations from Project Co-PIs on the usage data supply chain and ongoing challenges

- Brian O’Leary, Executive Director of the Book Industry Study Group, reflects upon the findings from the OA Books Supply Chain Mapping Report prepared by Clarke and Ricci (2021), covering topics such as the unique aspects of OA book usage data compared to journal article usage data, inconsistent OA status markers for titles, and challenges to tracking OA status changes over time.

- Rebecca Welzenbach, Research Impact Librarian at the University of Michigan notes their experience visualizing OA ebook usage data. She will share the difficulties facing publishers and libraries who wish to understand trends across OA and no non-OA titles, and the challenges faced when attempting to generate a single authoritative feed out of its existing metadata channels.

- Cameron Neylon, Professor of Research Communications at Curtin University, summarizes challenges and mitigation strategies for the linking and exchange of OA book usage metrics. The project addressed the lack of a consistent “ground-truth” for usage data by relying on ONIX as the core standard capable of expressing the range of information needed. Yet relying on ONIX introduced limitations, as it is not currently used comprehensively or consistently to signal OA status, link print and digital versions, or mark subject classifications and editions.

- Rebecca Welzenbach notes the intractable problem at the center of this, i.e. the tension between metrics transparency and selective presentation. Publishers choose which usage metrics to make public vs. keep private. When they choose to make everything public, they must offer both context and guidance so the data can be used responsibly. Similarly, publishers currently must decide between publishing overwhelming amounts of data for the sake of transparency and mediating access to ensure training and guidance is available to put the data in context. Considering personas as users becomes important, whether providing data to publishers, authors, funders, libraries, or others, and there’s no real agreement on the “right” way to go about this. Reconciling this complexity remains challenging.

What’s next for the OAeBU Data Trust

- Standards adoption and consistent processing is vital to this data ecosystem’s ability to scale.

- The OAeBU Data Trust’s role in supporting trusted, transparent, and consistent usage data processing across data providers upstream can facilitate downstream implementation by those offering usage data analytics or visualizations.

- Standards must continue to be developed and promoted to help identify and track usage of OA monographs.

- An increase in publishers’ use and maintenance of metadata describing OA works can positively impact this ecosystem, and the OAeBU Data Trust may be in a position to identify areas where action needs to be taken to improve data quality.

References


 Participatory Photography with Indigenous Students Insights into Learning

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Introduction
This paper focuses on the participatory methodologies selected to explore Indigenous students’ lived experiences of learning in academic library spaces. We are librarians and educators in higher-education, and we selected photovoice and photo-elicitation to engage and collaborate with the students as partners and co-researchers. With a lack of research on Indigenous students’ perspectives of learning spaces particularly in academic libraries, we started with the broad question of ‘who am I as a learner’ to guide this study. Informed by Indigenous research methodologies we endeavoured to ensure the authenticity of building relationships, trust, and respect that are described in the series of workshops. There are two iterations of this research and the results presented are preliminary as the study continues. We describe, discuss, and compare photovoice and photo-elicitation methods and the processes utilized. Implications for libraries and librarians include the encouragement that photovoice and photo-elicitation are powerful methods to explore and have the potential to enhance changes in higher education for Indigenous students.

Participatory Photography
Our research focused on Indigenous undergraduate students and their experience with learning spaces. We were intentional about the inclusive principle of “nothing about us without us” (Bridges, 2001) which is ideally applied in this student-centred research leading us to participatory photography approaches. Participatory photography is action-based research designed to illuminate the community of interest. “Visual research methods, specifically photographic methods, have a much larger role to play in describing, interpreting, and understanding library users’ experiences.” (Bedi and Webb, 2017, p. 16). These researchers suggest that together using photographs with interviews assists the researcher in uncovering participants’ experiences. Studies involving Indigenous students and their experience in higher education institutions are relatively sparse. Minthron and Marsh (2016) used a variety of arts-based inquiry methods including photovoice, photo-elicitation, and visual narrative to explore Native American students’ experience of space and place at a US college. Although the library was not the focus, some of the students discussed the Indigenous Nations Library Program that provides study rooms for Native students, and that the space promoted both learning and friendships. However, the students also pointed out that they felt unwelcome in the main library as there is a prominent mural of the conquistadors who conquered New Mexico, “where the brown people in the paintings do not have mouths, eyes, and in some cases, faces” (p. 8). Such a painting is inappropriate and would not be representative of a decolonized library.

We chose methodologies that placed student voices at the centre of the research. Participatory photography methods provide opportunities for students to have their stories and experiences heard by others, through dialogue and conversations focused on photographs. “The ability to speak through photographs, and in turn be heard through those photographs, was central to the idea that the specific concerns and experiences of individuals and groups could be promoted by those whose voice was not heard or present in the policy arena” (Milne and Muir, 2020, p. 284). In our initial study, we used photovoice which involved student co-researchers taking photographs of campus learning spaces. Castleden and Garvin (2016) suggest photovoice is an effective method for working with Indigenous learning spaces as it facilitates “sharing power, fostering trust,
developing a sense of ownership, creating community change and building capacity” (p. 1401). Our study plan was stalled due to the unforeseen circumstances brought on by the Covid-19 pandemic (March 2020). Keeping with the principles of participatory photography we re-conceptualized our methodology to adopt photo-elicitation.

Through photo-elicitation Indigenous students will be interviewed, focusing on researcher-selected photos of library spaces as the means of exploring the students’ experiences. The use of photos during interviews helps to evoke feelings, memories, and thoughts, making the “invisible visible” (Bukowski and Buetow, 2011, p. 739). Both methods give voice and power to the participants, enabling the researcher to listen in a good way which is a hallmark of Indigenous research methodologies, which we discuss further in this paper.

**Research Approaches: Photovoice, Photo-Elicitation, and Indigenous Methodologies**

The terms *photovoice* and *photo-elicitation* along with numerous other terms such as *photo-novella, photo interviewing, photo diary* or *photo narrative* are often used interchangeably. However, for the purposes of our research, we are following the distinction made by Bugos et. al., (2014), who note “that photo-elicitation focuses on the interview process itself, whereas photovoice is a more comprehensive term reflecting an action-oriented research strategy”.

Pollack (2017) provides a comprehensive overview of visual research in library and information science (LIS). Her analysis of visual research methods was based on a systematic and exhaustive search of the literature. She determined that visual methods were either non-participatory or participatory, which is determined by the creator of the image (p. 100). Particularly helpful is her detailed description of the characteristics of each visual method. She suggests that photo-elicitation uses “verbal explanations based on images” (p. 101) whereas photovoice uses “images together with verbal explanation”.

Essentially photo-elicitation uses photos during interviews to direct the discussion and conversation. Photographs may be either participant-generated or taken by the researcher. Photovoice always uses participant-generated photographs. Participants are requested to take photographs that “represent specific aspects of the subject under study” (p. 102).

Both methods can be considered participatory and empowering approaches to research vulnerable and at-risk populations. Photographs can be used to explore participants’ everyday experiences in everyday spaces such as libraries and other places on a post-secondary campus (Minthorn and Marchs, 2016). Both photovoice and photo-elicitation provide a way to see and hear “…through their eyes, and, in their words” (p. 4). The photographs drive the dialogue, providing opportunities for participants to reflect on past experiences, explore ideas, and challenge assumptions. Figure 1 provides an example of two photographs: the first was taken by a participant in our photovoice study, and the second we, as researchers, provided as an example of a library learning space. Included with the photographs is the focus of the discussion questions, which are participant-generated in photovoice, and researcher-generated in photo-elicitation.
Photovoice: Overview

Wang and Burris (1997) introduced the concept of photovoice when they were studying vulnerable poor women in rural China. The researchers believed that “problem-posing education starts with issues that people see as central to their lives” (p. 370). They outlined the three main goals of photovoice: 1) to enable people to record and reflect their community’s strengths and concerns; 2) to promote critical dialogue and knowledge about important community issues through large and small group discussion of photographs; 3) to reach policymakers (p. 370). Therefore, photovoice, a participatory action research method, empowers participants to critically reflect on aspects of their lives, telling their stories through their own photographs. Another strength of photovoice is a “potential catalyst for personal and community change” (Chelberg and Bosman, 2019, p. 41).

Catalini and Minkler (2010) conducted a scoping review of the use of photovoice within public health. They included 37 studies and determined that the studies’ outcomes were situated within three main categories: “(a) enhanced community engagement in action and advocacy, (b) improved understanding of community needs and assets, which in turn could have community or public health benefits, and (c) increased individual empowerment.” (p. 443). The researchers developed the “Photovoice impact model” where training coupled with research and discussion are essential for achieving an outcome.

Today the photovoice literature is peppered with manuals and guides on the method. Our research was guided by Amanda Latz’s Photovoice Research in Education and Beyond, as well as the Photovoice Facilitator’s Guide developed by Rutgers University.

Photovoice is not as simple as a single interview focused on carefully curated photographs. Rather, it is a complex, time-intensive research endeavour that involves eight steps as described by Latz (p. 60):

- Identification of the topic or issue to be explored with participants;
- Invitation which involves participant recruitment;
- Education of participants with respect to the photovoice purpose and method, as well as informed consent, ethics of photography, and photography basics, and how to use the supplied camera;
- Documentation includes prompts for photos such as *Who am I as a learner? Where am I in this space?*;

<table>
<thead>
<tr>
<th>Photovoice: Participant-generated photo</th>
<th>Photo-elicitation: Researcher-generated photo</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Participant-generated photo" /></td>
<td><img src="image2.png" alt="Researcher-generated photo" /></td>
</tr>
</tbody>
</table>

Where am I in this photo? Where are you in this photo?
Who am I as a learner? Who are you as a learner?

*Figure 1: Example of Photos and Question Focus*
Narration involves participants, in a group, discussing their photographs, telling their stories, and giving meaning to the images. Latz states that it is “critical to note that photographs taken during photovoice studies are not data in and of themselves. Rather, they serve as data antecedents, eliciting responses from the participants” (p. 74);

Ideation involves data coding and thematic analysis;

Presentation of photos and narratives as exhibition. Important to share images and stories in a public way;

Confirmation includes a reflection on the process including feedback to participants and community, and lessons learned.

Prior to commencing a photovoice study, there are details that need to be considered. For example, if a particularly sensitive topic is under discussion perhaps including a mental health specialist (or another appropriate expert) as part of the team would be required. Supplies such as cameras, operating instructions, photograph prints, or means to display photos (e.g. computer and projector), flip charts, markers, stickie notes, etc. for individual narratives and group work must be considered. Further, the location and mode (face-to-face, remote) of the photovoice workshops is an important consideration as participants need to feel welcome.

Photo-Elicitation: Overview
In 1957, anthropologist researcher John Collier asked, “How can you apply photographic images to direct research?” (p. 843). He further suggested that photographs have the ability to capture “the emotional currents within situations that are involved in a man’s reactions to his cultural circumstance” (p. 844). Collier then describes two studies where he integrated photographic images as data and evidence where one studied included interviewing in conjunction with photographs. The second experiment involved four participants, two who were interviewed with supporting photographs, and two who were interviewed with verbal questions only. He compared and contrasted the two approaches and suggested that “The pictures elicited longer and more comprehensive interviews but at the same time helped subjects overcome the fatigue and repetition of conventional interviews” (p. 858). Collier used the term “photo-interviewing” to describe his research methodology and noted that there could be a myriad of approaches to photo-interviewing.

Photo-elicitation interviews include open-ended questions focused on photographs that can be researcher-generated, or participant-generated (often referred to as auto-driven). The aim is to uncover participants’ experiences and perspectives, using the photos to guide the interview. The photos themselves are the focus of the interview, with participants discussing what the photography means to them. As well, participants may be asked to sort or rank photos in order of importance, or to group photos thematically. (Torre and Murphy, 2015). Photo-elicitation "promotes better understanding of participant perspective because the use of photographs encourages more detailed responses and deeper reflection, triggers memories, and allows unobtrusive observation of hidden realms." (Torre and Murphy, 2015, p. 13). Often interviews for photo-elicitation studies are conducted one-on-one, with participant and researcher.

Bates et al (2017) provide a guide for conducted photo-elicitation studies. They outline six key steps and practical considerations.

- Epistemological decision where the researchers determine “the nature of the phenomenon” (p. 468) along with determining if the participants will take their own photos, or if the photos will be chosen by the researchers;
- Participant briefing where the participants are informed of the intent of the study, as well as discussions around consent;
- Photo collection for participant-driven photos. If conducting a researcher-driven study, the chosen photos can be shared with the participants prior to the interview so that they have time to consider and reflect upon the photos;
- Interviews can be open-ended for participant-driven studies and semi-structured for researcher-driven studies. For both, the photographs are the stimuli for the conversations;
• Analysis which can take the form of content or thematic analysis, discourse or narrative analysis, or interpretative phenomenological analysis;
• Dissemination is often more in the traditional academic vein and consideration needs to be given to consent and use of participant-generated photos.

Bates et al (2017) suggest that photo-elicitation “offers a contemporary and refreshing alternative to traditional research techniques without compromising rigour” (p. 475). The flexible framework of either participant-generated or researcher-generated photographs is easily adaptable to different epistemological approaches while encouraging active participation in the research process.

Photovoice and Photo-elicitation: Compared

Both photovoice and photo-elicitation methods use photographs as the means of illuminating participants’ experiences. They have parallel purposes of exploring and understanding, as well as empowering. Figure 2 outlines the ways in which we view photovoice and photo-elicitation as similar and contrasting, each with its own strengths and challenges.

Indigenous Methodologies

Guiding research principles: Students as research partners

As researchers, we were explicit that students volunteering for the photovoice study would be partners. Our grant proposal and research ethics application were carefully crafted to identify student participants as co-researchers. As partners, the students’ perspectives and insights were paramount to work towards the same goal (Cullinane and O’Sullivan, 2020). We approached this project with openness and curiosity. Recognizing and exploring our worldviews as different than the participants, we wanted to be as neutral as possible by inviting and welcoming students, working around their timelines, respecting their needs, encouraging, and at the same time, providing guidance to move forward the process (Rix, et. al., 2019).
Situating our research in Indigenous methodologies

We were also guided by the Indigenous research paradigm introduced by Wilson (2008), the concept of relationality. He describes the many facets of relationality with individuals, self, land, cosmos, ideas, and research. He states that “Relationality requires that you know a lot more about me before you can begin to understand my work” (p. 12). As qualitative researchers, we intuitively adopted this approach to build relationships with the student partners and we were excited to discover the term relationality which we readily embraced. We wanted to learn as much as we could about the co-researchers’ experiences that informed their interests with and about learning spaces. Our relationships organically deepened as we explored, and continue to explore, relationality with the students as partners, our academic world and environments, and the research itself. Another key element of Wilson’s paradigm is identifying research “…as ceremony that bring relationships together.” (p 8) Working with Indigenous students as co-researchers provided an opportunity for ceremony which is expanded on in this paper.

Learning and working together to build relationships

An example of how relationality was incorporated into our research is demonstrated in a series of workshops to explore the project, get to know one another, and co-generate a research question with the student partners. Building on Wilson’s (2008) paradigm, we adapted a conceptual framework to support respectful and reciprocal learning (Bartleet, et.al., 2019) as we met together over several weeks. The framework presents three general concepts, 1. ways of being (relationships, reciprocal, dynamics), 2. ways of doing (collaboration, needs, sustainability), and 3. ways of knowing (sitting down, culture, worldviews) which are illustrated in the workshops described. We openly approached the workshops with a flexible agenda for the participants to set the pace and identify their needs to work as co-researchers. A very practical aspect of our meetings involved gifting each participant with a camera and instructions on use. There were general suggestions on where and what to photograph including cautions to avoid people in their photographs, whenever possible, because an additional consent form was required. Overall, the participants had the freedom of their photography choice including location and subject. In addition, it was made explicit that all photographs, recordings, and reflections were owned by the participants. At every step of the way, we were intentional to ensure our actions developed trust, one of the tenants of the framework.

Being: Co-constructing the research question

A significant outcome of one of the early workshops was the co-constructing of the research question. Starting with the proposed general research question ‘who am I as a learner?’ we were able to craft a research proposal that was accepted for grant funding and institutional ethics approval. We took the research question to the Indigenous participants and introduced this as an opportunity to co-construct a meaningful research question. After several discussions, brainstorming, and whiteboard activities, the Indigenous students constructed and agreed on a new research question: How can ethical spaces be created to enhance learning in a good way for Indigenous learners at the University of Calgary? This research question established our working relationship as co-researchers with a common goal.

Doing: Working together in a good way

Perhaps the most significant outcome of relationality was based on an activity to establish our working norms and expectations over the several months we would be together as co-researchers. As a team, we engaged in a discussion and recorded ideas on how we would work together. Two major components were generated during the activity: 1. Collectively we needed to create a safe space, and 2. Respect for each other and the process was foremost.

The Indigenous students gave this the title of ‘working together in a good way’ which included accountability, confidentiality, speaking one at a time, flexibility, identifying and completing tasks, sharing trust, ensuring authenticity, and engaging from head to heart. The phrase ‘working together in a good way’ has been used throughout our collaborative work and presentations and has become embedded in this project. These values are also represented in Wilson’s (2008) book Research is Ceremony in that “A ‘good heart’ guarantees a good motive, and good motives benefit everyone involved” (p. 60).
Knowing: Culture and reflection

Another tenant of the framework (Bartleet, et.al.) is to build and deepen relationships with the notion that it takes time and awareness of the process to understand and reflect. The process progressed with the student partners displaying their photographs and reflective activities to focus on their meanings and perspectives. Additionally, the student partners had identified a desire to invite an Elder to meet with us as part of a ceremony in our journey of learning and discovery which would have supported this tenant of the framework.

Before an Elder could be invited, however, the project came to a complete halt. In March of 2020, Covid-19 was declared a global pandemic, and, within days, the entire University community was working, teaching, and learning from home. As a research team, we were able to continue with the data that had been collected.

Summary

The study that we have undertaken has had many twists and turns. While we intended to use only the photovoice methodology as participatory action-based research and remain focussed on the goal of exploring and understanding how Indigenous undergraduate students experience their learning within informal library spaces and other spaces on campus, we had to re-strategize our methodology to meet the reality brought on by Covid. How could we continue and complete our study and remain faithful to the intent of the study and commitment to the methodology? Through examining our collective experience and data, we concluded that the way forward could still be with the use of photographs and discussion. By changing from student-generated photographs to a series of photographs of the library learning spaces that we had taken pre-Covid (researcher-generated), we would recruit a new group of Indigenous students to comment on the photographs, and to answer the question: “who am I as a learner in these spaces?” We were not able to conduct the final group discussion on the original student photographs and carry the conclusions forward to the community thus not completing the original process.

Moving to photo-elicitation, we would be able to collect data from a new set of Indigenous students on their perception of library spaces. By comparing our original data analysis with the new data set we will be able to build on the conversation and remain true to our study. We recognize the limitations of trying to combine two differently generated data sets; we anticipate that the data from the participant-generated photos and the researcher-generated photos will provide us with a comprehensive commentary from which to draw our conclusions. We are partway through the collection of the second set of data using photo-elicitation. We do not know, as yet, how the two data sets will compare in themes. We will be constructing knowledge as we go along.

What have we found so far? Photovoice is a powerful tool, it brings participants together, removes or flips the power structure, and brings new insights to all participants. It is time-consuming and it is fraught with complexity, but it does yield new learning and new ways of knowing if you are open and listening. Photo-elicitation is another useful approach and while it gives the researcher more control, is just as open to new research and discovery.

Academic librarians in Canada are trying their best to figure out how to Indigenize the library and decolonize their services and spaces. The Truth and Reconciliation Commission of Canada issued a final report with 94 Calls to Action (2015). In response, the Canadian Federation of Library Associations, Truth and Reconciliation Committee issued a report with 10 recommendations (2017). Recommendation #6 states:

Decolonize Libraries and Space by recognizing and supporting Indigenous cultures, languages and knowledges through culturally appropriate space planning, interior design, signage, art installations, territorial acknowledgements of geographic-specific traditional territories and public programming in collaboration with local Indigenous stakeholders.

The mandate is ours to deliver. We need to find the way forward together. What better way is there than working with students as co-researchers and active participants focussed on making change happen? We need to pay attention to the 4 R’s (Respect, Relevance, Reciprocity, Responsibility) to succeed (Kirkness, and Barnhardt 1991). By involving students, listening with respect, ensuring that the process of research and discovery is based on trust and faith, academic libraries will
receive the gift of knowledge. Understanding will be taken forward and change will be implemented. We will learn through the students’ lived experiences and their insight into learning in library spaces.

There is a messiness to this. Not everything can be photographed. Students in the photo-elicitation study will be guided by the choices of the researchers. Important spaces, aspects, or elements may be missed. There will be no group discussion in the end. In an effort to combine photovoice and photo-elicitation iterations and present a cohesiveness of the data, we will endeavour to find a way to discuss our findings with the Indigenous students on campus. It will be the job of the researchers to bring out the knowledge and new ways of knowing. But because we have the previous experience of the photovoice study, and we have grown in our understanding through the relationship building that we have undertaken, we will be better researchers, we will be better listeners, thinkers, and come to more thoughtful conclusions.

**Implications for Practice**

As described and discussed, photovoice and photo-elicitation are student-centred research methodologies that can bring the librarian and the student together as co-researchers. These methodologies are well suited to working with Indigenous students. The academic librarian as researcher has the opportunity through these methodologies to engage in fruitful and informative learning experiences. The student gains a powerful voice, and the librarian gains a new way of knowing. Together they can bring about change.

As a researcher, develop your project with the voice of the student in the forefront. Think about what you do not know and think about how the student can help you learn it. Students are the ones with the experience, and it is the role of the researcher to explore and conceptualize this experience. Photographs offer the focus to be away from the student and allows for revelations through dialogue and for collaborative conversations on student perceptions of their library experience. Both photovoice and photo-elicitation provide a way to see and hear their stories “…through their eyes, and, in their words” (Minthorn and Marchs, 2016, p. 4).

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References


Putting your mahi where your mouth is

Finding sustainable and systemic solutions to improving library assessment

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Abstract

Purpose: Seeking to improve library assessment using a theoretical capability maturity model is all well and good, but how do you put what you learn into practice? That is, keeping in mind that improvements need to be sustainable and systemic; particularly if there are varying levels of capability maturity and limited resourcing. In examining this question this case study, from one University Library, has application across the sector.

Approach: A range of evidence was consulted, including publications on library assessment practice; staff and managers’ perspectives; library project management tools. Reflection, feedback, and iterative practice were applied.

Findings & limitations: Advice from the literature was limited, with a focus on tips and techniques and the assessment of library users. Staff requested less documentation yet more guidance to gain approval for assessment activities and the subsequent recommendations. Managers reported that assessment activities did not fit easily into the existing project framework.

Conclusions and how findings have been applied: An assessment framework was developed to guide staff and boost capability maturity. The framework included four stages, with templates and guidelines, to communicate the activity, build an evidence base, and support decision making. To date, there has been some uptake in applying the framework, or parts thereof. Acknowledging that there is not always a one size fits all approach, patience and persistence are required to embed the application of the framework into practice as a means of improving assessment capability.

Introduction

In Aotearoa / New Zealand when you meet up with someone the conversation can often start with asking one another ‘how are your whānau?’ Loosely translated ‘whānau’ is the Māori term for family; Māori being one of the official languages of Aotearoa / New Zealand. Next in the conversation comes, ‘how is your mahi?’, which translates to ‘how is your work?’ Through this case study I’m sharing my response to the challenge put to me ‘to put your mahi where your mouth is’. I’m sharing my approach and what I learned along the way. I’m sharing the output from my mahi, an Assessment Management Framework (The Framework) designed to support my colleagues in managing and communicating their assessment activities. This Framework aims to provide sustainable and systemic solutions to improving assessment and has application across the library and wider GLAM sector.

To provide context, I work at the University of Otago Library in Dunedin, Aotearoa / New Zealand. My role at the Library is to foster evidence-based decision making and a culture of continuous improvement amongst library staff. This work has extended to managing benchmarking activities across an international network of academic libraries. (Hart & Amos, 2014). Through these benchmarking activities the libraries developed a Library Assessment Capability Maturity Model (LACMM) (Hart & Amos, 2018). The LACMM allows for the self-review of assessment. In comparing what you do with the criteria in the LACMM you can identify how well developed and robust processes actually are. The LACMM acts as a diagnostic tool to help identify a roadmap to improve assessment processes.

The LACMM has five levels of capability maturity. Each level represents a measure of the effectiveness of any specific process from ad-hoc immature processes to repeatable, defined, managed and continuously improved processes. At each level, criteria are provided which need to be fulfilled in order to reach that particular maturity level. Actual activities can be
measured against these criteria to determine the level they align with. Consideration of the criteria in the levels above where activities align provide guidance on where improvement can be made (Hart & Amos, 2018).

The LACMM has four stages, which align with the cycle of assessment (Bakkalbasi, Sundre, & Fulcher, 2012) i.e.:

- **Objectives**: Establishing a clear and shared idea of what is to be achieved from the assessment
- **Methods and data collection**: Identifying what evidence is required and how to collect it
- **Analysis and interpretation**: Describing and making sense of the evidence
- **Use of results**: Communicating and applying evidence to improve services.

Descriptions specific to each stage of the cycle of assessment at each of the levels of maturity are included in the LACMM; as can be seen in the generic version of the model in figure 1, below.

**Library Assessment Capability Maturity Model: Generic**

To assist with applying the LACMM there are additional versions with language specific to different types of assessment activities, i.e.:

- **Data**: user data / survey
- **Discussion**: group interview / focus group
- **Comparison**: benchmarking / case study / standards / best practice.

I need to acknowledge other useful maturity models that have specific relevance to library assessment, e.g.: the Quality Maturity Model (Wilson, 2015) and the Evidence Based Practice Maturity Model (Thorpe & Howlett, 2020).

**Purpose**

Back to the challenge in this context. It was when sharing the publication of the LACMM with my manager that she said to me: ‘seeking to improve library assessment using a theoretical capability maturity model is all well and good, but how do you put what you learn into practice?’ She wasn’t dismissing the LACMM; it has application, it provides a snapshot of assessment practices and helps identify an improvement path. But it doesn’t guide you down that path. She wanted a solution...
that would help apply the LACMM at an operational level for assessment activities in action. The challenge to me was ‘to put your mahi where your mouth is’.

Approach

This challenge required an iterative and reflective approach. I consulted a range of evidence seeking sustainable and systemic solutions to support my colleagues to improve their assessment practices. My colleagues are busy with an operational focus and have limited resourcing. Solutions were needed that were achievable, that weren’t going to burn resources, that were viable and worked for staff across the Library; in different operational units and at different levels of decision making. The solution needed to fit into the way of doing things and over time become embedded into practice. From what Otago library staff had previously undertaken at a micro level, I knew that the culture of assessment and maturity of assessment processes were at varying stages across the Library. To find a solution I needed to put ‘stakeholders at the heart of the assessment’ (Killick & Wilson 2019, p.1) and talk with my colleagues, listen to their needs and gauge what practical support they required. In preparation I undertook an environmental scan to see what potential solutions were out there.

Findings

A scour of the literature turned up the cookbooks, signposts, ‘how to’ manuals, examples of practice and a range of comprehensive books (Wright & White, 2007; Oakleaf, 2010; Farkas, Hinchliffe & Houk, 2015; Mathews, 2015; Showers, 2015; Dobbs, 2017; Killick & Wilson, 2019). All offered great insight but not necessarily in terms of how to manage and improve the maturity of operational assessment activities. Zaugg (2020) does offer a Library Assessment Framework as ‘a road map for how assessment will occur in the library’ (Zaugg 2020, pp. 91). Alas, it operates at a macro level to ‘provide connection to academic library assessments’ and ‘guide assessment plans to ensure that all academic library services, space and resources are assessed fairly and thoroughly’ (Zaugg 2020, pp. 91). I needed something at a micro level to plan, guide, communicate and boost assessment capability at an operational level.

When seeking feedback, senior managers indicated that the existing project management framework was not a good fit for assessment activities. There was no room to include research question(s) and the reports they received were often too detailed. They noted that some activities were protracted beyond what was expected. I ascertained that they did not always have the information they needed to support recommended changes. They lamented how different things could have been if only my guidance had been sought throughout the activity. Operational managers also highlighted issues with the extent of documentation. Some said that there are times when their colleagues all have a different understanding of what the assessment activity is about. They requested more guidance on how to gain approval to undertake assessment activities and to support the subsequent recommendations.

With this feedback in mind I looked to the existing project management framework templates as a guide (of what worked and what didn’t), and with reference to the LACMM, I identified that a solution needed to foster a consistent and managed approach to assessment. It should allow my colleagues to:

- establish a clear and shared understanding of what is to be achieved from the activity
- include methodologies that are reliable and reproducible and that align with the objectives
- independently reach the same conclusions from the data
- provide an audit trail of how the results are attained
- provide sufficient information to demonstrate the need for change
- get approval to make improvements.

Applying reflection and iterative practice I drafted the Framework with five components. It includes an outline, a proposal, a plan, a report and a summary. The outline provides an overview of the process. The latter four components operate as templates with suggested sections and guidance to boost assessment capability, to help tease out key information, and to
provide clear decision making junctures and reporting requirements; with emphasis that the template are flexible and can be adapted to suit particular activities. The design and formatting mirrored the project management framework templates and documentation that my colleagues were already familiar with (Hart, 2021).

Here is an overview of the four templates:

The Proposal is used to seek support. It captures the key information around the assessment. It starts with the issue and gap in existing evidence. It includes the background, briefly explaining the service and what led to the issue. It lists the question(s) the assessment seeks to answer and in turn what information is needed to answer those question(s), how evidence will be gathered and then analysed; and any cost associated with the process. It is important that the methods and analysis align with the aim of the assessment. It needs to show how the evidence collected will be used to address the questions, with a clear idea of what will be achieved. The manager needs to sign off the proposal before further planning is undertaken. In our context at Otago, staff are encouraged to make contact and work with my role as early in the process as possible. I then walk alongside them providing support and advice as required.

The Plan helps to communicate what is going to happen. Details from the proposal can be reused and extended to help clarify and define the assessment. The plan outlines the data sources and collection methods, defines how the data will be analysed and verified, and indicates where the data will be stored. It includes a summary of the key deliverables, when these will be achieved and who will be required. There is scope to include work packages and detail risk mitigation. If the plan is approved it becomes a living document and acts as a guide to the assessment activities. It helps to get things done. If the assessment is significant then it may get classed as a ‘project’ and included in the project register; while still applying the assessment management templates. This provides senior managers with oversight, to monitor progress, lend support and allocate resourcing as required. It can highlight awareness and indicate the priority of the assessment.

The Report communicates how things went and what the options are to improve. It includes details from the plan and provides the evidence. It needs enough information so that others can understand what took place and what was learned from the assessment. It needs to be clear enough that processes are valid, reliable and repeatable. It is set out so that opportunities to improve can be discussed with the manager to determine realistic and achievable recommendations. It includes a link to where the data and documentation are stored. There is a section to include what was learnt from carrying out the assessment, what might be done differently next time, and anything learned that is out of scope but important to share. If the recommendations are rapid business improvements then documentation can end here. If communication is important, or there are policy or resource decisions, then a summary may also be required.

The Summary includes information to demonstrate the need for change. It includes what senior managers need to know to make decisions. Again details can be copied from the report and abridged as required. It should be clear that the methods and analysis aligned with the aim of the assessment. Information included should support the recommendations identified from discussing the report. It provides an evidence trail with links to data and documentation that can be considered if required.

At each stage documentation is shared via the internal content management system. This helps with communicating the assessment activity and over time provides a set of examples and case studies for others to learn from. Metadata for the evidence from each activity is captured in a register so as to make a formal record and build an evidence base.

**How the findings have been applied**

Getting the Framework approved by senior management and included as part of the Library’s wider Quality Framework was straight forward. Embedding the application of the Framework into practice has required patience and persistence.

Library staff were advised of the adoption of the Framework via the senior management’s weekly meeting notes. In these notes staff were referred to a new area on the content management systems specifically for assessment. This area included the Framework outline and templates, examples of previous assessment activities and a place for activities that utilise the templates. Only one of the four library department senior managers took the opportunity to invite me to their team meetings.
to socialise the Framework. The assumption was made that operational managers would make themselves familiar with the Framework, its purpose and application as required.

In reality, my colleagues are getting used to turning to the Framework to plan, guide and communicate assessment activities. Some senior managers are still directing their staff to the project management framework for assessment activities. Subsequently, operational managers have admitted that they are not sure when to use the project or the assessment management framework. Fortunately, I work closely with the Library program manager who provides support for projects, so we have been able to offer direction on these options as required. In some instances senior managers have specified data collection tools before planning has begun and the questions and data requirements have been determined. Some negotiation has been required to shift away from defaulting to the survey or the focus group when other evidence tools could address the need for data. Initially there were a few full reports sent through to senior managers for support with recommendations, when summary documents would have gleaned a better response. There have been instances where I have only been consulted at the beginning of the activity, when the process could have benefited from advice provided throughout. Ultimately there have been no major problems, just patience and persistence required.

There have been positives as well as opportunities to improve the Framework and its application. Those using it have said it is really helpful in terms of providing a step-by-step approach. The good descriptions, guidance, and examples have been appreciated. Some commented that it was overwhelming at first, but once they had taken time to read though, it was not as complex as first thought. Staff have appreciated that the Framework is flexible, where elements specific to each assessment could be included or left out. Senior managers have noted that the Framework has made a difference in guiding staff, setting key deliverables and manageable timeframes, and overall boosting assessment capability. Frustration with the requirement to complete the documentation has been expressed. This has been valid when it became obvious that a rapid business improvement was all that would be required. The lesson here has been that a one sized approach doesn’t fit all. A polished evidence trail is not always needed and people can learn just as well from clear notes.

**Conclusion**

This has been a case study, an account of “putting your mahi where your mouth is”. It required keeping the stakeholder at the heart of the assessment, consulting a range of evidence and applying reflection, feedback and iterative practice. The output was an Assessment Management Framework developed to guide and boost capability maturity. The Framework works for my busy colleagues at different levels of decision making and different levels of assessment capability. It provides a consistent and managed approach to help reduce the risk of burning resources. It fits into their way of doing things. It provides a solution that helps communicate the activity, define decision making junctures and it builds an evidence base with examples to learn from. Acknowledging that there is not a one size fits all approach, patience and persistence are required to embed the application of the Framework into practice as a means of improving assessment capability.

**References**


Abstract
The planned and secure handling of data and its conscious and ethically-reflected use is increasingly important in teaching and research. Preparing students for their roles in actively and responsibly shaping a networked knowledge society is closely linked to the development of competencies in professional and responsible data collection, management, evaluation, and use. Data literacy (data competency) is the core competency of the future, but how can it be taught, and can libraries play a role in this?

This article deals first with the diverse definitions of the term and then, using this information, develops the theoretical basis of the Data Literacy Initiative (DaLI) of the TH Köln, establishing a link to the research data cycle. DaLI considers technical and mathematical-statistical competencies, as well as the ethical, social, and legal aspects of dealing with all phases of data. First, the various components of the DaLI initiative are explained, the basis of which is the DaLI basic module. Based on the contents of this module will be analyzed, which tasks libraries already address in teaching data literacy and which additional requirements libraries will have to meet in the future.

Introduction
Our lives are subject to constant and progressive digitalization. More and more of the essential processes and activities of everyday life and of the world of work take place digitally. The resulting amount of available data is increasing rapidly, opening up great potential but also posing new challenges. The field of research is also becoming increasingly data-intensive (Hey, 2006; Lynch, 2009). Therefore, data literacy, i.e., the ability to collect, critically evaluate, consciously use and visualize data, will become a core competency of the future across all disciplines. Interdisciplinary knowledge of how to deal with data in a planned and secure manner, as well as its conscious and ethically appropriate use, is increasingly important for almost all areas of business and our professional and everyday lives. One example is one's own health data, which is permanently recorded via smartphones and smartwatches.

Research question – What is data literacy, and how can the basics be taught?
The term data literacy encompasses the competencies needed to deal consciously and responsibly with data. Various definitions of data literacy can be found in the literature, and these are presented below.

Johnson's early definition defines data literacy as the ability to process, sort, and filter vast quantities of information, which requires knowing how to search, filter and process, and produce and synthesize it (Johnson, 2012). Later, this definition was adapted from Koltay (2016). The Association of College and Research Libraries (ACRL) also stated eight years ago that, “students, both as users and as future creators of data, should be trained to understand how their choices affect access, reuse, and preservation; libraries are better placed than any other academic unit to carry out that training” (ACRL2013).

Ridsdale et al., (2015) put it as follows: “Data literacy is the ability to deal with data in a planned way and to be able to collect, manage, evaluate and apply it in a critical way in the respective context”. They further break down the skills and competencies named in the literature into five areas of competency. Ridsdale’s definition, combined with the data literacy framework (Schüller et al., 2019), is the basis of the DaLI Project.
Design and approach of the Data Literacy Initiative of TH Köln

The Data Literacy Initiative (DaLI) is developing a modular, interdisciplinary program to anchor data literacy systematically and university-wide in teaching and research at the TH Köln and to initiate dialog with external stakeholders.

The Basic Level of the program offers the conceptual framework of the certificate with the DaLI Basic Module and its accompanying data project along with the DaLI Project Week. The module aims to provide a comprehensive insight into the various core competencies around the data life cycle - beginning with data collection, management, and long-term archiving. All this is done against the background of data ethics and data protection principles. During the DaLI project week, students work in interdisciplinary teams to develop individual aspects of data literacy, using a practical example.

In the Advanced Applications Level, students can choose from the wide range of data-related courses available at the TH Köln, enabling them to deepen their knowledge in various areas.

Students have the opportunity to work in interdisciplinary, data-intensive projects at the Interdisciplinary Project Level.

In addition to the technical and mathematical-statistical content, the ethical, social, and legal aspects of data handling are also taught. DaLI has defined an adapted competency framework based on the Data Literacy Framework (Fig. 1) to meet this requirement.

Figure 1: DaLI competency framework
The DaLI competency framework is oriented towards the Data Literacy Framework, Ridsdale's definition (2015), and the research data life cycle. At the same time, it focuses on data culture, data ethics, and data protection topics.

The breakdown of competencies is presented here in circular form to emphasize the direct reference to the research data lifecycle and to illustrate different entry points. The individual competencies in the outer circle are assigned to seven competency areas in the middle circle. The unique position of Establish data culture should be noted. Since the competencies considered under this label are relevant throughout, they are given mention throughout.

Based on this framework, DaLI is developing a comprehensive teaching concept that contains five key aspects:

1. DaLI virtual course catalogue
2. DaLI basic module
3. DaLI Project week
4. DaLI Lab
5. DaLI certificate

**DaLI virtual course catalogue – what is available?**

This catalog is a university-wide service that brings together existing courses related to data literacy from all faculties (TH Köln, 2021a). The course books of all faculties were searched for data literacy-related keywords, and the lecturers of the involved classes were invited to open their courses across faculties. In this way, all interested students are offered an interdisciplinary selection of courses that impart a wide range of data literacy competencies. The catalog, which remains under construction, has been available since the 2021 summer semester and contains 23 courses taught by 17 teachers from 7 of the 12 faculties of the TH Köln.
Figure 2: The radar graphic shows how strongly each field of competency is represented by the opened courses of the various faculties. It should be noted here that courses may focus on a single area or address several areas of competency. Therefore, the sum of the bars per faculty does not reflect the number of courses per faculty.

DaLI Project Week

The DaLI project (TH Köln 2021b) week is a one-week block event with a preceding two-week e-learning phase which is conducted exclusively digitally and can be attended by students from all faculties.

During the e-learning phase, students are provided with various thematically-structured materials to assist them in the acquisition of the basics of data literacy and the conception and creation of teaching units. These materials provide individualized familiarization with the subject matter according to the level of student need. Reflection questions guiding the e-learning phase are answered in a group setting (TH Köln 2021c). Thus, students first reflect on what they have learned and then engage in discussion with the assessors and the other group members.

During the actual project week, participants work together in small, interdisciplinary teams to agree upon and focus on one aspect of data literacy that is equally important to all participating disciplines. The group develops this single topic independently and prepares it so that it can be made available to other students as a small teaching-learning module.

The DaLI project week was successfully held for the first time in the 2021 summer semester. Thirty-five students from five faculties took part, working together in six interdisciplinary teams. During this week, the students created two videos, a presentation, two quizzes, a concept for a podcast, an information booklet, and a computer game.

The feedback from all those involved, i.e., participants, process facilitators, and evaluators, was consistently positive. Particularly remarkable is the feedback from some participants, which shows how the event succeeded in creating awareness for the importance of data literacy:

“The project week made me realize how important data literacy is in all areas of life, regardless of studies.” (Energy and Building Technology student)

“I became aware that Data Literacy is a much broader field and has its application in every profession.” (Student "Pharmaceutical Chemistry")

“I became aware that we unconsciously absorb, analyze and even reflect on data. Data literacy is an essential core competency, which is also increasing in importance due to digital developments.” (Multilingual Communication Student)

In addition to these testimonials, 72.7% of the participating students stated in their evaluation surveys that they could absolutely imagine that data literacy, as they had learned about it in the project, can be taught through offerings from the university library. 23.3% stated that they could imagine it.

DaLI Lab

This is currently being set up and is intended to make activities visible, bring actors together, and serve as the university's interface for project support, media production, and maker space inside and outside the university. It networks actors from industry and research and offers interested citizens access to the topic through the theme of Citizen Science. The DaLI Lab will be a hybrid platform operating in both digital (online) and analog (presence and encounter) forms and offering both a mobile basis and a fixed point of contact in the library.

DaLI Certificate

The certificate program enables students, regardless of their degree program, to acquire comprehensive skills and competencies in data literacy and obtain a certificate at three different levels. A minor certificate with a total of 13 European Credit Transfer and Accumulation System (ECTS) points, a major certificate with a total of 31 ECTS, and the possibility of
setting a focus of study with a total of 60 ECTS are planned. The participants can freely design the majority of the certificate.

**DaLI Basic Module - what is needed?**

The basic module is designed to give Bachelor students an early insight into the various data competencies and to convey the relevant basics. Using daily, updated, and open environmental data (Federal environmental agency, 2021), supplemented by weather data (Meteostat, 2021), ensures that the accompanying practical project remains an up-to-date component of the basic module. Furthermore, the use of open data also enables the transferability of the course to other contexts and actors.

The concept of the basic module is based on the Data Literacy Framework and provides an overview of the topics of data literacy. It is designed for the duration of a semester, i.e., for 14 semester weeks, divided into eight units (Fig. 3).

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**Figure 3**  **Basic module with open data project and competency areas**

The German Council for Information Infrastructures (RfII) (Rat für Informationsinfrastrukturen, 2019) distinguishes among administrative, research-related, and research activities in (research) data management. This subdivision helps to clarify new tasks for libraries in teaching data literacy. These tasks are mainly in the area of administrative and research-related services and are examined in more detail below. In Figure 3, the corresponding areas are framed in red.

According to the classification of the RfII, the competency fields *Evaluate, interpret, classify data* are research activities that are carried out almost exclusively by scientists in research projects. Libraries tend to play a subordinate role in these areas.

**Findings: Where is the role of libraries?**

Oriented to the DaLI Basic Module and thus also to the Data Literacy Framework of the Higher Education Forum on Digitization (Schueller, 2019), three areas, in particular, can be identified in which libraries can - and should - play an extensive role. By identifying these areas, a joint qualification strategy (which is still lacking in Germany) may also be developed. Starting from the basic module, the areas are *Establishing data culture, Providing data* and *Managing data.*
Libraries and establishing data culture

Under Establishing data culture, key topics are taken up in the basic module: Data Culture, Data Ethics, Data Protection.

Data culture is primarily concerned with creating a basic understanding of data and its variability, as well as an awareness of the significance and importance of handling data correctly. Numerous universities and research institutions have already developed their own recommendations - institutional data policies - for handling data. In addition, there are framework interdisciplinary position papers or policies for various scientific disciplines (Forschungsdaten, 2021a). These guidelines and recommendations should become part of the coursework for scientific studies and writing workshops at every university library. This will lay the groundwork for students and researchers on the topic of dealing with data and will also create awareness that data must be researched, reviewed, and cited in the research process.

Another essential aspect in the context of data culture is Open Data. Students should be made aware of the importance of ensuring that (research) data be publicly available as far as possible, and opening up access to this (research) data for additional, associated research opportunities (Open Science). The Open Knowledge Foundation defines open data as “data that can be freely used, reused and disseminated by anyone - limited at most by obligations to cite the source and the principle of 'share-alike', i.e., to share data only under unmodified copyright usage options. This excludes personal data.” (Open Knowledge Foundation, 2021a). The Full Open Definition (Open Knowledge Foundation 2021b) summarizes the three most important characteristics:

- Availability and open access
- Reuse and sharing
- Universal participation

Research and processing of open and research data could lead to expanding training courses on information literacy, since libraries have long not only made literature available but have also hosted research data and their metadata and offered their own infrastructures, such as repositories, for researchers. In addition, many libraries already provide their own physical spaces for research by setting up real labs and maker spaces. This makes it possible to look beyond one's own subject discipline and promote interdisciplinary cooperation in the area of data (Heinzel et al., 2020; Tiepmar et al., 2018). Even outside of university libraries, all interested parties can thus be given an insight into current research and an interface to Citizen Science can be initiated.

Data ethics is another topic that is part of establishing a data culture. As data becomes increasingly important in everyday life and research and systems make automatic, data-based decisions that impact daily life, data ethics will also become increasingly important. The Data Literacy Framework (Schueller, 2019) sees data ethics of motivation and value as playing a central role in being able to deal with data successfully and confidently in the future. The Data Literacy Charta (Schueller, 2021) goes a bit further. It postulates that data ethics and values contribute significantly to ensuring that the proper means are used to solve problems with the help of data and that the right goals are pursued, so that data make a positive contribution to society and are used responsibly and context-sensitively.

The next topics in Establishing Data Culture, are data protection and copyright law. Libraries can approach the issue of data protection in a similar way to the issue of copyright, which has been a central topic of consultation in libraries for years. Libraries can provide advice and answer questions for standard use cases. For more far-reaching questions, the expertise and guidance of legal professionals who can examine and answer individual cases and more in-depth questions is required. According to Tristam et al., (2015), beyond the technical and informational competencies, a lack of knowledge of the legal framework is described as a greater challenge by researchers, so that this is a major request in the area of publication advice for libraries.
Libraries and data provision

Under providing data, oriented towards the Data Literacy Framework, the tasks of designing, researching, collecting, and formally preparing data could be assumed by libraries.

Data conception deals with research and method design, i.e., with the question of how empirical investigations are conducted, including data collection. Information on the research design of projects and studies can be obtained by libraries, e.g., through the collection of data management plans (DMPs), if these are available. The reading or use of data management plans, which is not yet mandatory in the German research landscape, is extremely useful and helpful for libraries in their communications with researchers. DMPs describe how data is to be handled, not only over the duration of the project but also after the project has ended, and therefore contain numerous design details. In this way, the library can prepare at an early stage for what data (type, quantity, formats, etc.) will be worked with and what needs to be considered for processing and storage (USGS 2021). They form an ideal basis for planning.

In addition, libraries can help ensure data quality is in accordance with the internationally applicable FAIR principles. FAIR stands for the following principles for machine-readable access to data: FAIR - Findable, Accessible, Interoperable, and Reusable. This corresponds to the findability, accessibility, interoperability, and reusability of data (Wilkinson et al., 2016).

The formal preparation of data is the last aspect of providing data to ensure that the data are comprehensible, usable, and have integrity, i.e., are free of errors, thus laying the foundation for data quality. As early as 2013, Giarlo described libraries as possible network nodes -hubs- for data quality and noted that "libraries are well suited to support the data quality process" (Giarlo, 2013). According to Giarlo, data quality and thus trust in data is guaranteed by the following factors: Trust = Authenticity + Understandability + Usability + Integrity. Authenticity is understood in the sense of "good science", understandability in the sense of good documentation or good metadata, and usability is seen - similar to the FAIR principles - as accessibility. Integrity refers to the correctness, completeness, and consistency of the data.

Managing libraries and data

In the area of data management, there are also some tasks that libraries can take on. Data management is the least clear-cut term in the definitions of data literacy. Depending on the definition, it can include very different process steps (Ludwig and Thiemann, 2020; Grillenberger, 2019). This model includes organizing, converting, maintaining, and archiving data.

In 2018, the Australian National Data Service (ANDS 2018) outlined five areas of a Data Management Framework, which are broadly defined as:

1. institutional policies and standardized procedures
2. consultation and support services
3. IT infrastructure (including repositories)
4. metadata management
5. research data management (incl. long-term archiving)

In the area of (library) data organization, data management plans (DMPs), which have previously been mentioned, are also of great importance, as they describe the organization of data not only during the entire project period but also after the project has ended. They thus also provide valuable data for the maintenance and long-term archiving of data. Although, as with all project planning, it must be expected that changes and adjustments will occur during the course of the project, DMPs help libraries plan for what lies ahead in the area of processing research data.

Cremer et al., (2019) also define metadata and research data management as core library tasks, since the formal description of data has always been an original library field. They see standards in data labeling, format validation, and other standardization measures as an information science competency. They also see a parallel to classical publishing, where libraries also take over metadata allocation and classification. Metadata assignment, i.e., the creation of structured data information, is divided into two areas: bibliographic or administrative data and content-describing or subject-specific data (Forschungsdaten, 2021b). Bibliographic data are often assigned by libraries, while researchers assign content-descriptive
Metadata is a prerequisite for finding the data in the Semantic Web or as information for search engines. Standardized procedures are recommended, which apply to the entire organization and for which special services are offered by the library. At the same time, a corresponding IT infrastructure needs to be established in the library. Koltay stated five years ago that it “is important for the library profession to take this challenge seriously and acquire the skills needed to provide effective data literacy education, irrespective of the fact that its competencies extend beyond the knowledge and skills of a typical librarian or a faculty member” (Koltay, 2016).

Long-term archiving or sustainable access to research data is a crucial aspect that must be considered early in the project. Libraries thus enable proof of the research process, and its results and (at the end of the research data cycle) make the data available for subsequent use. This is an infrastructure task of libraries and considered part of research data management. A prerequisite for long-term archiving is guaranteeing the above-mentioned data quality or comprehensive data maintenance, also known as data curation, which precedes archiving (data preservation).

Conclusions

Generic aspects of data culture, data collection, and data management offer new fields of work for libraries. A whole series of tasks that fall naturally into the previous tasks of libraries can be derived from data literacy topics. The realization of these tasks leads to broader access to data and research results and supports researchers in proving their research and their results. The reuse of data makes new intra- and interdisciplinary research easier and perhaps even possible in the first place.

Close cooperation between libraries and researchers is necessary to gain an understanding of the projects, the data, and the results and thus be better able to support researchers, e.g., in later, ideally discipline-specific publication advice. Cooperation and communication with researchers are the critical success factors for these tasks. Standardized qualification requirements are needed for students who, as future researchers, should know and internalize this role of the libraries. Additionally, there is a need for new training and further education programs for librarians (data librarian/data steward / etc.) as well as IT specialists in libraries who can dedicate themselves to these new tasks with proven knowledge. In an international comparison, there is great potential for development here in the German library sector.

References


Introduction
In 2020, the Public Library Association (PLA), a division of the American Library Association (ALA), collaborated with the American Institutes of Research to conduct a survey to better understand current and emerging technology in public library systems across the United States. The survey sample of 2,494 libraries was designed to be representative of U.S. public libraries as a whole by region, government/legal structure, and locale [1]. The results capture access and barriers to providing technology devices, programs, and services. While significant differences exist among city, suburban, and town/rural libraries, survey results show how libraries of all sizes continue to serve as hubs for digital equity in their communities. The findings are particularly relevant as the COVID-19 pandemic exposed persistent digital divides. This paper focuses on the survey results related to technology infrastructure and the implications for libraries’ work to advance digital equity (Public Library Association, 2020).

Digital Inequities
The National Digital Inclusion Alliance defines digital equity as “a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy.” (National Digital Inclusion Alliance, n.d.). That capacity encompasses both technology infrastructures (such as broadband access) and skills. It is difficult to build the latter without the former. According to the U.S. Census Bureau’s American Community Survey, an estimated 10 percent of households do not have a computing device of any kind (including smartphones) and 17 percent do not have an internet subscription of any type (U.S. Census Bureau, n.d.). Low-income households are much more likely to lack a computer or internet connection (Figure 1).
Across the U.S., the digital divide also varies significantly by geography, with rural areas much more likely to lack internet access, especially high-speed access. The map below (Figure 2) shows the percentage of households without internet by county in the continental United States (U.S. Census Bureau, n.d.). This map relies on Americans reporting their connection type to the Census Bureau. The Federal Communications Commission’s own map purports to show providers and available speeds, but it is very unreliable because companies claim their coverage is greater than in actuality (Federal Communications Commission, n.d.; Tibken, 2021). Wireless coverage offered by mobile phone providers is similarly problematic and over-promised.

This boils down to a patchwork of coverage that excludes segments of the population based on geography and income. While this paper focuses on the United States, similar patterns can be seen worldwide (World Bank, n.d.).

**Technology Infrastructure & Resources**

Libraries step in to meet these needs in their communities. U.S. public libraries provide a range of technology resources inside library buildings and, increasingly, extending beyond their grounds. The survey included questions about on-site technology, circulating technology (i.e., devices available for patrons to check out), and technology-enabled services or resources (e.g., e-books and online job resources). During the COVID-19 pandemic when libraries were forced to close to the public due to health and safety guidelines, many boosted their Wi-Fi signals to extend further and made technology available for check out (ALA, 2020; Goek, 2021). Overall, half of all libraries (50.1%) provide some technology for use outside the library. Figure 3 shows that circulating internet hotspots is the most common of these, provided by more than half of city libraries (51.8%), nearly half of suburban libraries (47.4%) and more than a quarter of town/rural libraries (25.5%).
In rural areas, cellular data coverage for hotspots is more likely to be unreliable, so lending these devices may be inadequate to meet patron needs. Technology available in the library becomes critical. The survey considered technology infrastructure to include everything from library websites as enablers of access to library “virtual branches,” to subscribed broadband and public Wi-Fi to computers and firewalls. While most of this infrastructure is invisible to the public and to policymakers, it is essential to fulfilling libraries’ digital equity promise. As one example, one in four town/rural libraries report that broadband limitations impede their offerings of digital content. Poor broadband capacity impacts both the number of devices that can be supported for simultaneous use, and the type of applications that may be fully enabled. Streaming media, virtual classrooms, and telehealth, for instance, demand high quality and faster internet speeds.

Public Wi-Fi access is ubiquitous across all library types (98.4% offer wireless internet for patrons). Most noteworthy is that 64.7% of all libraries report fiber optic connections. This technology uses light signals to send data, making it faster, more reliable, and generally more flexible for future upgrades. In the 2014 Digital Inclusion Survey, roughly 44% of library outlets reported this was the case (ALA, 2014). While not directly comparable, the 2020 data is directionally promising and also consistent relative to the gap between city (83.8% with fiber), suburban (71.7%) and town/rural libraries (60.6%).

Libraries themselves often face challenges when it comes to maintaining and upgrading their technology infrastructure. More than one third (34%) of public libraries cannot afford the cost of increasing bandwidth, while for 43.2% of town and rural libraries, a faster speed is not available.
Most libraries (84%) report their internet speeds on public computers are sufficient “often” (as opposed to rarely, or sometimes), with town/rural libraries reporting the least sufficiency. Eighteen percent of town/rural libraries report speeds are sometimes (15.3%) or rarely (2.7%) sufficient for patrons. Wi-Fi speeds “often” meet patrons’ needs for 79.2% of libraries overall.

**Digital Literacy Training**

As well as access, libraries provide training in computer skills and internet use. Training can take the form of formal programs or classes and/or informal or point-of-use training on technology and related skills. Overall, 88.3% of libraries offer some type of programming or training for patrons on digital literacy skills. It is much more likely to be informal, meaning one-one-one technology help provided by a library staff member or volunteer upon patron request. Almost 85% of libraries provide some type of informal training, while only 42% provide formal programs or classes in the same areas.

Like physical infrastructure, the capacity for libraries to offer training varies by locale. The difference between city and town/rural libraries is less than 15% for training on general computer skills, general internet use, safe online practices, videoconferencing technologies, and website development. The difference is largest in the area coding/computer programming, which is offered by 65.1% of city libraries, but only 22% of town/rural libraries. Among both suburban and town/rural libraries, the most common type of formal programs or classes are in computer software (e.g., word processing, presentation), while the most common informal point-of-use training is in general computer skills (e.g., how to use a mouse and keyboard). Among city libraries, the most common type of formal program/class is in coding/computer programming, while the most common informal training is in general internet use (e.g., web searching).
Figure 5: Formal or informal digital literacy training.
When asked about the greatest challenges that the library faces in providing digital literacy assistance or training, respondents identified personnel, finances, infrastructure, community characteristics, and COVID-19. Staff challenges include a lack of time or expertise. Funding and infrastructure for training are related, as libraries may lack the funds to purchase the necessary equipment or software. COVID-19 has limited how libraries can assist users with technology, without the ability for staff to sit “elbow to elbow” with patrons to walk them through what they need. Often virtual trainings cannot reach people who require help to access the virtual training: the people who quite possibly most need it are those who cannot reach it. Demographics factor into this, as communities with high proportions of rural, elderly, or poor residents may be most at risk of falling further behind in the digital divide.

**Conclusion**

The results of PLA’s 2020 Public Library Technology Survey suggest that supporting broadband adoption as infrastructure and supporting libraries as social infrastructure should go hand in hand. Libraries play a crucial role in work towards digital equity: for everyone to participate in a shared digital future, fast, affordable broadband infrastructure and technology-related training and support are needed for libraries and the communities they serve. Read more in PLA’s 2020 Public Library Technology Survey Summary Report, available from: https://www.ala.org/pla/sites/ala.org.pla/files/content/data/PLA-2020-Technology-Survey-Summary-Report.pdf.

**References**


**Notes**

[1] Locale indicates the level of urbanization of a given location. For the purposes of this survey, libraries were divided into three categories: city, suburban, and town/rural.
The Caliper Library Profile

A Tool for Integrating Library Data into Institutional Learning Analytics

Megan Oakleaf
Syracuse University

Ken Varnum
University of Michigan

Steve McCann
OCLC

Libraries and Learning Analytics

Libraries are increasingly engaged in learning analytics—the use of institutional-level systems that centralize individual-level student learning data in a record store and serve as a unified source for research into factors driving student success. As libraries increasingly explore the contribution of library data to institutional learning analytics efforts, the technical challenge of combining disparate library data sources into a standard format can be daunting.

This panel will focus on the recent development of a library profile for Caliper, an interoperability standard used to label learning data and provide the means for capturing, presenting, and conveying learning activities to centralized data stores in order to facilitate the analysis, visualization, and increased awareness of student learning behaviors. Caliper standardizes learning data, enabling data from disparate systems to be ingested and combined to allow educators and researchers to expand their understanding of student experiences and improve, design, or redesign student support for achievement of learning outcomes. The Caliper standard includes a number of metric profiles that model learning activities; each profile provides a domain-specific set of terms and concepts that describe student interactions using a shared format and vocabulary.

The Caliper Library Profile, newly developed through a project funded by the Institute of Museum and Library Services in order to address several problems created by libraries’ complex infrastructure and content environments, is available in draft form at https://www.imsglobal.org/spec/caliper-library/v1p2 and is free to use by any institution, library, or system vendor.

The Caliper Library Profile significantly enhances the technical ability of libraries to contribute data to institutional learning analytics efforts while ensuring that individual libraries can control the collection and use of library data in alignment with their values, ethics, and standards, as well as library and institutional policies and practices.

Discussion Questions

- What is Caliper and how was the Caliper Library Profile developed?
- How can the Caliper Library Profile facilitate inclusion of library data into institutional or consortial data repositories?
- What decisions might libraries need to make in order to use the Caliper Library Profile and what educational, ethical, and technical considerations should be included in that decision-making?
- How can libraries apply confidentiality filters to their data to meet their and institutional needs?
• What questions might the inclusion of library data in institutional data repositories help librarians answer about library services, resources, facilities, and student support?

• How does this type of library assessment close gaps left by other assessment methods, particularly in the context of understanding the whole student, surfacing experiences of minoritized students, and observing student needs when students aren’t physically present in library facilities?

Format

This panel will be structured around three micropapers, followed by audience polling and open dialogue around three audience-directed questions and freeform discussion.

• What connections are you making between your work and this topic?

• What opportunities does library learning analytics inspire you to think about?

• What concerns does library learning analytics raise for you? Active blockers?

• What might you suggest happens next in this work?
The Evolution and Impact of Library Data

Selena Killick
The Open University

Introduction

As long as there have been libraries, there have been library statistics. It is a powerful tool in our quest to both prove our value and improve our services. Our data collection practices have consequences which can be both positive and negative for our services and our users. Often the consequences of our practices are unknown and unpredictable. This paper provides an overview of approaches to data collection within the profession and considers some of the effects measurement has had on libraries. Trends in library data measurement practices based on published works over the past three decades are presented along with projections on future trends in library data measurement. Real life examples of library data measurement practices are outlined based on the author’s experiences within the sector, with specific case studies from The Open University in the United Kingdom. The purpose of this paper is to explore some of the key data practices from the past thirty years and discuss some of their unintended consequences to inform data collection practices of the future.

Introduction to The Open University

The Open University (OU) is the UK’s largest academic institution dedicated to distance learning, with over 210,000 current students across the whole of the UK and Ireland. The University was first established in 1969 with a mission to open up education for all. The OU was purposely designed as a distance learning provider and students study predominantly online. Over 32,000 OU students have a declared disability. The University does not require students to declare a disability, but it does use this information if the student requires any necessary learning adjustments. As such, the OU is the largest provider of higher education for people with disabilities; accessibility of information and learning materials is business critical.

The OU does have a physical library based at the Milton Keynes campus; however customers primarily use online services. 100% of the journal collections and around 80% of the books are electronic. The online library attracts half a million unique users and over 10 million page views per annum. The library helpdesk is available via webchat 24/7/365 where the Library staff provide help and support to customers in partnership with SpringShare LibChat. Last year, the Library delivered over 150 live training session via Adobe Connect to over 8,500 students. Working with academic colleagues, the library staff embed library resources and Digital and Information Literacy (DIL) skills materials into modules and qualifications, providing a seamless educational experience (Parker, 2003). 91% of OU students study a module with embedded skills and/or library materials each year. The online delivery model provides the University with large amounts of data, which is explored at The OU in line with the University’s Ethical Use of Student Data for Learning Analytics Policy (The Open University, 2014). Research has found that students who use library resources and attend library tutorials get better results (Nurse et al., 2018), (Killick et al., 2018).

Methodology

Literature in the fields of library performance measurement, library assessment and library data collection practices were reviewed to identify commonalities in practices, focussed primarily on the UK academic library context. The findings were evaluated by theme and have been grouped into four decades of data collection practices:

- 1990s: Performance Indicators
- 2000s: Benchmarking
- 2010s: Value and Impact
- 2020s: Data Intelligence

For each decade the findings outline sector practices and some of their consequences. These are also illustrated by practice case studies from the author.
Findings

100 years of unintended consequences

Data within libraries is not a new phenomenon. As far back as the 18th century, the Bodleian Library was collecting reader statistics (Killick and Wilson, 2019). In 1919, the University Grants Committee was established by the Government with a remit to allocate funds to universities, including their libraries (Jones, 1986). To support governmental oversight, standardised university statistics were developed covering a wider range of university provision. For libraries, data collected primarily focused on the size of the library collection (e.g. how many books) and the expenditure (e.g. the library budget). When the committee disbanded in 1989 (Shattock, 1994), the Society of College, National and University Libraries (SCONUL) commenced collecting the standardised SCONUL statistics still reported to this day (Creaser, 2009). Although the statistics collected have evolved as our libraries have (Barclay et al., 2012), the size of our collections and our library expenditure is still a key metric we use as a proxy of our quality.

Our consistent datasets tell the story of library evolution. Exploring the past thirty years of book stock statistics we see year-on-year growth in SCONUL libraries from 1993 to 2006 (table 1). The number of books in libraries plateaus around 2007 as we enter the global great recession and library budgets come under pressure. By 2013 we start to see a decline in book stock in our collections, as shifts to electronic publishing and pressure on space for study become more prevalent. As copyright libraries form part of this dataset with their continued book stock growth, the decline is likely to be more pronounced than the data suggests.

Table 1: Total catalogued book stock in all UK SCONUL member libraries, 1993 - 2018

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL CATALOGUED BOOK STOCK</th>
<th>DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>93-94</td>
<td>74,406,571</td>
<td></td>
</tr>
<tr>
<td>94-95</td>
<td>77,002,215</td>
<td>3%</td>
</tr>
<tr>
<td>95-96</td>
<td>80,155,532</td>
<td>4%</td>
</tr>
<tr>
<td>96-97</td>
<td>89,888,557</td>
<td>12%</td>
</tr>
<tr>
<td>97-98</td>
<td>93,878,080</td>
<td>4%</td>
</tr>
<tr>
<td>98-99</td>
<td>97,282,099</td>
<td>4%</td>
</tr>
<tr>
<td>99-00</td>
<td>99,890,543</td>
<td>3%</td>
</tr>
<tr>
<td>00-01</td>
<td>101,187,179</td>
<td>1%</td>
</tr>
<tr>
<td>01-02</td>
<td>104,967,926</td>
<td>4%</td>
</tr>
<tr>
<td>02-03</td>
<td>105,922,015</td>
<td>1%</td>
</tr>
<tr>
<td>03-04</td>
<td>108,148,685</td>
<td>2%</td>
</tr>
<tr>
<td>04-05</td>
<td>109,649,524</td>
<td>1%</td>
</tr>
<tr>
<td>05-06</td>
<td>112,933,304</td>
<td>3%</td>
</tr>
<tr>
<td>06-07</td>
<td>113,213,034</td>
<td>0%</td>
</tr>
<tr>
<td>07-08</td>
<td>112,970,398</td>
<td>0%</td>
</tr>
<tr>
<td>08-09</td>
<td>112,820,493</td>
<td>0%</td>
</tr>
<tr>
<td>09-10</td>
<td>111,326,969</td>
<td>-1%</td>
</tr>
<tr>
<td>10-11</td>
<td>113,154,811</td>
<td>2%</td>
</tr>
<tr>
<td>11-12</td>
<td>111,546,485</td>
<td>-1%</td>
</tr>
<tr>
<td>12-13</td>
<td>111,658,764</td>
<td>0%</td>
</tr>
<tr>
<td>13-14</td>
<td>109,386,683</td>
<td>-2%</td>
</tr>
<tr>
<td>14-15</td>
<td>108,455,142</td>
<td>-1%</td>
</tr>
<tr>
<td>15-16</td>
<td>106,568,682</td>
<td>-2%</td>
</tr>
<tr>
<td>16-17</td>
<td>102,571,268</td>
<td>-4%</td>
</tr>
<tr>
<td>17-18</td>
<td>100,804,223</td>
<td>-2%</td>
</tr>
</tbody>
</table>
What we count has consequences and data has impacts in ways which we cannot always envisage, at times to our own detriment. In the 1920s, faced with an expanding market of academic journals, and their associated costs, libraries started to look for a way to rationalise their subscriptions. Librarians started to look at which journals were most used by readers and ultimately the most cited, prioritising those with higher citations for inclusion in their collections. In turn these developed into the Journal Impact Factors we use today (Gingras, 2016). The academic community is rewarded in terms of career progression (and research funding through the Research Excellence Framework) when published in journals with high impact factors. Publishers in turn are able to charge a premium for titles with high impact factors. Our desire to rationalise our collections in order to reduce our expenditure on journals has resulted in journals with high impact factors dominating academic publishing, and our budgets.

**1990s: Performance Indicators**

The performance indicators era of the 1990s focused heavily on input and output measures. A key driver for this within the UK higher education sector was the Jarratt report which recommended to university vice-chancellors that a range of performance indicators should be developed to monitor university efficiency (Johnes and Taylor, 1990). Shortly after the report was published, a series of performance indicators were recommended including ‘library stock availability’ (Johnes and Taylor, 1990) although this received limited attention from the joint Committee of Vice-Chancellors and Principals (CVCP) / Universities Funding Council (UFC) (Follett, 1993). The Follett report reviewing library provision on behalf of the UK funding councils went onto recommend that a standard series of performance indicators should be developed for university libraries, and that library administrators should use performance indicators as part of their internal management processes (Follett, 1993).

Our focus in data collection moved from input measures (e.g. size of collections and budgets), to efficiency measures. A proxy for efficiency was a series of derived ratios of our input measures represented as output measures. Common examples included stock circulation, calculated by dividing the number of books in a loanable collection by the number of loans in a year. Staff efficiency was derived by dividing the number of enquiries per staff member. The efficiency of the library budget was evaluated by a ‘cost per loan’ calculation, dividing the cost of the library collection by the number of loans in a period.

Performance indicators were not without consequence. It was possible to pervert the stock circulation statistics by reducing library collections to just stock that had high loan statistics. To improve the metric, book collections were weeded and reduced in favour of popular titles. But what is the purpose of a library? Are you there to guarantee knowledge for the future? Or are you there to ensure that the statistics look good to your paymasters? If we consider that Oakland was defining quality at the same period as meeting the customer’s requirements (Beckford, 2009), how did our performance indicators measure the quality of the service we were offering to the person seeking a rare book title in our libraries?

**2000s: Benchmarking**

With the development of wide-spread internet use in the 2000s and the ease of data collection and sharing, benchmarking performance became increasingly commonplace. Within libraries, everything started to have an ‘e’ added, whether that was the content provided through our eJournals, eBooks and eResources, or the methods and tools used to manage and evaluate them via eMetrics and eSurveys.

The E-measures project, led by Conyers and the Evidence Based team, introduced a range of new metrics to the SCONUL Statistics dataset in response to the electronic evolution (Conyers, 2004). The development of COUNTER compliant eJournal statistics provided a trusted, consistent way to see the number of times each packaged journal title had been accessed (Brophy, 2006). The Joint Information Systems Committee (JISC) started to explore the possibility to use usage statistics to inform national negotiations for eJournal packages within the NESLi2 initiative (Bevan et al., 2005).

With easy access to standardised usage statistics, we started to benchmark our eJournal collections against each other within our individual library contexts. Our output measures evolved from cost per loan to cost per download. Journal titles were
evaluated against one another to identify which provided the best ‘value for money’ based on cost per download, and we agonised over the ‘long tail’ of journal titles in the deal with low usage (Killick, 2013).

Our measurement behaviour here also had consequences. Cost per download analysis naturally favoured journals with a large, broad readership and disciplines where the university had higher populations studying that area. Titles offered by smaller publishers in niche fields with fewer students within the university were viewed as being low-demand, attracting a higher cost per download. Again, this causes us to question the purpose of the library. If a journal title costs £5,000 per year, and receives one article access in the year, is it a waste of money for the library? What if that one access enabled a £15m research project to succeed? What if that one access was crucial in informing the development of a Covid vaccine? Is the £5,000 a useful investment then?

Alongside evaluating our collections, we also sought to benchmark our customer satisfaction. The ease of distribution and analysis of online surveys, and the desire to move away from efficiency measurement saw the development of LibQUAL+ (Cook and Heath, 2001). The team at Texas A&M University worked with the Association of Research Libraries to develop the standardised library quality survey, which has been used by thousands of libraries worldwide – including over 70 SCONUL members over the years (Killick and Town, 2012). The survey provides respondents with the option to rate the library in terms of minimum and desired service levels, alongside perceived performance for 22 standard questions. Questions focus on three dimensions of library service – the support provided by staff, the library collection and ease of access to information, and the physical library space. With the same questions being used by all participants, libraries had the opportunity to evaluate their performance against that of their peers and sector benchmarks.

In 2005, the National Student Survey (NSS) was introduced, providing the first mandated student satisfaction survey for UK Higher Education aimed at final year undergraduates (Richardson et al., 2007). Covering all aspects of the education experience for students, one question was presented covering the library offer: ‘the library services and resources are good enough for my needs’ (Killick and Wilson, 2019). Unlike LibQUAL+, whose data was only visible to library administrators, the NSS results provided the public with a league table of university performance (Richardson et al., 2007). The visibility of the results led to universities viewing the NSS results as business critical. For library administrators, league tables seemed to benefit those at the top for promotional reasons, and those at the bottom who were able to leverage the results to unlock funding (Stanley, 2009).

But are we looking to prove, or improve? Standardised surveys do not account for different forms of service provision tailored to local objectives (Creaser, 2006). The Open University’s embedded library strategy, where content and Digital and Information Literacy (DIL) skills were seamlessly woven into learning materials, meant that the Library was an invisible partner to the students. This approach is pedagogically sound and it met student learning needs; why should the student care that it is the Library providing their skills materials and online reading list resources? But when the NSS revealed that 20% of OU students perceived that they did not have a library, by answering ‘not applicable’ to the library NSS question, the Library had to change its strategy. The visibility of the Library in the students’ learning became increasingly important. Learning materials were rewritten to emphasise that skills materials and resources were being created and delivered by the Library. Online information architecture projects were created to improve Library visibility. Library marketing strategies were developed to inform students of its vital role in their education. As a result of this strategy, the number of students answering ‘not applicable’ to the library NSS question has reduced to 2%, and satisfaction scores have increased. These actions have been done to prove the value of the Library, not necessarily to improve the student experience.

2010s: Value and Impact

In the Value and Impact Era of the 2010s, we started to see data break out of silos, linking student attainment with library datasets. Several global projects looking at correlation data emerged, with the University of Huddersfield pioneering this work in the UK (White and Stone, 2010). Positive correlations between library use and student success were found, and we started to explore if there was a statistically significant correlation between library activity data and student attainment in university libraries (Stone et al., 2011).
Technology had enabled us to link a variety of different activity datasets with student attainment results. Over the past 10 years, we have seen a variety of studies seeking to identify the relationship between students’ access to electronic resources, borrowing of print books, visits to the library building, and attendance at training sessions; all linked to student attainment (Killick et al., 2018; Nurse et al., 2018; Soria et al., 2013).

One of the drivers for doing this is to evidence to senior stakeholders the impact the library has on the university endeavour. Within any context, the library is always responsible to its parent organisation and competing for funding. You may have a Vice Chancellor who intrinsically knows the complexities of libraries and the value they offer the organisation, without the need for any evidence to be shown to prove this. Chances are, however, in a world where resources are scarce and are needed by many, your ability to show evidence of impact is going to be highly valuable.

Again, this is not without consequence. Issues of data ethics and privacy have been challenging librarians during the past decade (Asher, 2017). Within library learning analytics, large datasets where individuals are not identifiable have been used to evaluate the impact of the library on students in line with data ethics policies (Killick et al., 2018; Nurse et al., 2018). With aspirations for improving equality, diversity and inclusivity in higher education, using mass datasets to inform service improvements negates the needs of the individual, and we run the risk of continuing to exclude rather than include. The datasets are primarily used to prove, rather than to improve.

2020s: Data Intelligence

Looking ahead, as we enter an era of data intelligence, we have more data available to us than ever before which we use to improve our services.

At The Open University, the Library uses a Customer Relationship Management (CRM) system to manage all enquiries received at the helpdesk. These are categorised by the Library staff by on the nature of the enquiry, combined with the customer record and the contact route (e.g. webchat, email, telephone, in-person). The Library team can analyse the enquiries data to design targeted support for the courses which contact the Library helpdesk the most. They can also identify the most frequent areas of enquiry across all courses, informing proactive support materials and training sessions. It can also highlight where the Library needs to improve its services to meet the needs of individual students.

The Library also uses the CRM data to forecast workload for the year ahead. Based on average handling times for enquiries by each contact route, forecasts are created detailing the amount of time needed by the team to answer the anticipated enquiries. Forecasts are designed for every day of the year, as the number of enquiries fluctuate by the day of the week and the week in the year. The helpdesk does have a minimum staffing level which is always maintained, however, through forecasting, the team are able to predict when to increase the staffing level across the year. This enables the Library to ensure staffing levels are right, providing responses to students which meet the service level agreement, and freeing up staff for other work at other times of the year.

The OU Library has more data on its customers than ever before. It has more opportunities to use that data to improve the services it provides; and to prove its value. There are still many unanswered questions data could inform. Do Library group live training sessions result in a reduction in Library enquiries? Are Library embedded skills materials having a positive impact on student success? Do courses with larger amounts of Library content and skills embedded in them have greater student satisfaction? Does providing Library content and embedded skills development reduce attainment gaps?

[But] management through data alone is dangerous. If we are defining quality as meeting or exceeding customer satisfaction with the product or service, data alone is no indicator of quality. Deming (2000) in his Seven Deadly Diseases of Management discussed the risk of ‘management by use only of visible figures, with little or no consideration of figures that are unknown or unknowable’. He recognised the intangible aspects of services, and that what can be measured is only a ‘trivial part of the gain’ of an organisation (Beckford, 2009).

Which is where our professional expertise comes in. This is something we all have in our libraries but rarely discuss. Our biggest asset, and most valuable resource, is the library team. We enable and empower our users to become information literate. We collaborate and innovate our services, continually exploring more possibilities to preserve and unlock
knowledge. We offer our universities unique professional expertise about knowledge and information management, digital capabilities and asset preservation and reuse. Generally, library professionals like to quietly get on with the job in an unassuming manner, but if we do not shout about our expertise, value, and impact, who will? Using data to prove our value, and communicating it as a loud librarian (Killick and Wilson, 2019) is essential to our success and survival; providing we are mindful of the consequences of our actions.

Conclusion

Libraries have always used data and will always continue to do so. It is a powerful tool in our quest to both prove our value and improve our services. Our data practices have evolved in line with societal thinking and sector practice, from counting the size of library collections to the library learning analytics of today. What we measure matters and the consequences of our use of the data cannot always be predicted. Ensuring we continue to use data in a safe, ethical manner to support our service objectives is vital. We must also acknowledge that not everything can be counted: some key strengths and value offered by our libraries will be unknown, and will remain unknowable.

References


**Author Biography:**

Selena Killick presents, publishes, and provides consultancy services to libraries on an international basis on using assessment methods to inform library strategy and improve service delivery. Her research focus has been on library performance measurement and assessment since 2003. She is the co-author of *Putting Library Assessment Data to Work*, and is a member of the Library Performance Measurement Conference Board. She is the Associate Director within Library Services at The Open University, UK. Her remit includes leading the development and delivery of strategies for the Library to meet the needs of the OU community.

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Conceptual work on the nationwide initiative of researching the social impact of public libraries was undertaken in 2016 as part of the ‘Performance Analysis for Libraries’ programme of the Polish Librarians’ Association. As part of this program, a research framework based on library statistics, library performance indicators, and user satisfaction was successfully implemented in Poland (https://afb.sbp.pl/). In 2021, we entered the project phase and we would like to share its effects. The social impact research programme of Polish public libraries will be presented as a ‘good practice’. We described the context of the programme in the current research activities of ‘Performance Analysis for Libraries’; development of a methodological framework and research organization scheme. The programme is ongoing and its design phase is scheduled for 2021, a pilot in 2022, and then we plan the implementation.

Introduction

There are about 8,000 public libraries in Poland. They play very important and diverse roles but are often overlooked and underestimated in social discourse. In addition, the Covid-19 epidemic has significantly affected how public libraries operate. Thus, understanding the functioning of these libraries in the social and economic environment is crucial to study their impact on local environments and the benefits that users get by coming into contact with their services and their various social activities.

In Poland, these issues are still under-researched. In 2019, a pioneering, large-scale study of public libraries’ social and economic impact in Poland was launched as part of the Performance Analysis for Libraries (PAL) project. The main objective of the actions carried out in 2021, which we describe here, is to develop a methodology and a research tool that we intend to use when conducting such research on a local and national scale.

The actions carried out in 2021, which we describe here, were mainly aimed to develop methodological assumptions for research on the social and economic impact of public libraries in Poland. We developed a research tool (a standard questionnaire form), a sampling scheme, and a
research organization plan. With our activities, we emphasized the involvement of public librarians and the promotion of impact research in the library community.

The text discusses the context for the operation of libraries in Poland and their current problems resulting from the temporary closing due to lockdowns. We present the history of the Performance Analysis for Libraries project as the genesis of our recent work. We discuss our experiences in setting up a new research project, the adapted methodology, and the research tool.

The developed tool will be available to libraries to analyse the intrinsic value of the institution in their environment, justify the necessity of its existence, and oppose closure or downsizing. From a general, national perspective, it will be possible to check the strength of the library impact on the users, but also on non-users, and identify "white spots" on the library social impact map. The concept developed by us can be used by libraries of other types in Poland (scientific, pedagogical) and public libraries in other countries.

The context of the public libraries' functioning in Poland

Compared to other European countries, the network of public libraries in Poland is quite extensive. In 2020, there were 7782 public libraries, of which 5169 were library branches. The libraries were running 873 branches for children and youth and 867 library points. Interestingly, as many as 65% of the institutions operate in rural areas. On average, there were 632 readers per public library [1].

The year 2020 was extraordinary. The epidemic and the related restrictions hugely impacted the functioning of libraries. The number of readers fell by as much as 17.8% year-to-year and amounted to almost 5 million. A decline was also observed in the number of loans, from 102.7 million books and 3.7 million special collections in 2019 to 77.5 million books and 2.4 million special collections in 2020.

In terms of age, the largest group of readers in public libraries included people aged 25-44 (1.3 million). Employed people were the majority of active borrowers (39.0% of the total number of readers), followed by students (34.9%).

Nevertheless, we observed a slight increase in readership levels. 42% of respondents confirmed to have read at least one book in whole or in excerpts during the 12 months preceding the survey. It's the best result in six years. It represents an increase of 3% over the year and 5% over two years (Chymkowski & Zasadzka, 2021).

In 2020, libraries organised 59% fewer events than in the previous year. Due to restrictions, libraries launched many more virtual events. An increase in such events from 0.8 thousand in 2019 to 15.9 thousand in 2020 was observed. In addition, public libraries are expanding their offers to include access to licensed online collections, i.e., electronic books and journals, databases, and other electronic collections. Two thousand three hundred forty-three public libraries offered access to electronic materials - 332 more than the previous year. Websites and social media profiles facilitated contact with library users during lockdowns. 51.4% of libraries had accounts on social networks (an increase of almost 5% compared to 2019). They kept in touch with users by publishing information about current events, services and organising live online meetings [2].

Another source of information on public libraries (besides Statistics Poland and reports of the National Library) is the Performance Analysis for Public Libraries (PAPL) run by The Polish Librarians Association in cooperation with the Conference of Directors of Provincial Public Libraries. 98.9% of establishments participated in the survey on the functionality of public libraries in 2021 (which gathered data for 2020). The survey covered public libraries and branches: 18 regional and municipal libraries, 35 county libraries, 324 municipal commune libraries, 623 urban-rural commune libraries, and 1508 rural commune libraries [3].
Performance Analysis for Public Libraries data has shown that in 2020, the median of real-life visits to a library declined by 41% compared to the previous year. In contrast, as much as a 51% increase in the median number of virtual visits per capita was recorded.

In addition to traditional library services, libraries are expanding their offers to include online services. Thanks to the Performance Analysis for Public Libraries, we know that interactive online training sessions increased by over 44% year-to-year. Interactive online training on the library's website included library training for users (library and information resources instructions), as well as other training: developed and delivered by library staff, external service providers paid by the library, or obtained through projects and made available to authorised users through the library website [4].

Research on library impact in Poland

The research on the impact of public libraries in Poland on a large scale and using standardized methods and tools originated in the "Strategy of the Polish Librarians Association" adopted in 2010. One of its specific goals was to initiate the development and dissemination of existing standards in the field of librarianship. A team consisting of representatives of academic, public, and pedagogical libraries was set up to implement it. The team's work got formalised in 2013 by launching the Performance Analysis for Libraries project [5] by the Polish Librarians Association, consisting of such sub-projects as Performance Analysis for Research Libraries, Performance Analysis for Public Libraries, Performance Analysis for Pedagogical Libraries. As a result of these activities, the following work has been carried out since:

- development of a national set of indicators for public and pedagogical libraries based on the international standards ISO 2789 and 11620 [6],
- development of a standard questionnaire for surveying user satisfaction,
- development and implementation of applications for data collection, processing, and analysis (library statistics, performance indicators),
- translation of ISO international standards on library statistics, performance indicators, and library impact and value (11620, 2789, 16439).

Since 2013, the performance of public and pedagogical libraries has been subject to systematic surveys, and since 2002 these surveys also include research libraries based on standardised sets of indicators. User satisfaction surveys have occasionally been conducted based on a standard survey questionnaire on a national and regional scale. Seeing the potential of the collected data, the developed materials, and the new competencies of the participants in the PAL project, efforts were made to study the impact and value of libraries. The translation of ISO 16439:2014(en) Information and documentation - Methods and procedures for assessing the impact of libraries in 2019 provided a significant impetus for this work. Under the PAL project, Lidia Derfert-Wolf (2018) also analysed impact research methods and practices worldwide. In 2016-2017, the "Conceptualisation of research into public libraries' social and economic impact" and the "Research report on public libraries' social and economic impact" were drafted. They included general recommendations, the most important of which are:

1. Efforts should be made to develop and provide detail for the methodological basis and develop methods, techniques, and tools to study the impact of public libraries to conduct it at the supra-local level, covering the entire Poland. Such a national survey should also aim to develop tools for impact studies in individual libraries, groups of libraries with similar characteristics, or all public libraries in a province.

2. Areas of library activities to be surveyed should be selected based on previous consultations. However, it would still be advisable to include in the research those impact components that describe the less known and prominent roles of public libraries, e.g., information education, the process of lifelong learning, digital inclusion, implementation of social programmes supporting social inclusion and cohesion and in the study of the economic value of libraries.
3. Research should be preceded by revising the statistical data collected and the functional indicators calculated in the Performance Analysis for Libraries project regarding their suitability for the impact study.

4. The following stage of the research process would include developing a survey questionnaire for studying the impact of libraries in each study at different scales (local, regional, etc.) and verifying it in pilot studies.

5. Employees of public libraries in Poland should obtain appropriate training and support materials to ensure data collection, analysis, and interpretation consistency.

6. Due to its scope and range, the postulated research requires a complex, multi-stage organisation and adequate financial resources. In Polish reality, this can only be ensured by public funding and the auspices of the Ministry of Culture and National Heritage. As a result of the actions described above, after getting another subsidy from the Ministry of Culture and National Heritage, a pioneering, large-scale study of public libraries' social and economic impact in Poland was launched as part of the Performance Analysis for Libraries project. This initiative results from previous work carried out under PAL. With library functionality surveys and satisfaction surveys, social impact studies will provide a comprehensive assessment of the quality of public libraries in Poland.

Research aims & research questions

The actions carried out in 2021, which we present in this text, aimed to develop methodological assumptions for studying the impact of libraries in Poland. We also worked to develop a research tool (standard survey questionnaire), sampling scheme for the pilot, and research organization model. Additionally, to boost interest in social impact research among cultural institutions, another aim was to promote the idea of library impact research among librarians.

The team posed the following main research questions:

1. What are the areas of impact of Polish public libraries?
2. How strong is the Polish public libraries impact in particular areas of users' lives?

For a fuller understanding of users’ needs and motivations and the likely reasons for weaker or stronger impact, we also decided to ask about the benefits of contact with public libraries and the library-related activities performed by respondents in the last 12 months. These four research problems were reflected in the same number of sections in the questionnaire.

Design & methodology

We launched the project in March 2021. The first step, undertaken between April and May, included desk research and analysis of existing materials and studies and the development of initial methodological assumptions and a research concept based on these. The research tool was developed between September and October.

Desk research and analysis of existing research

We analysed research conducted in Poland on public libraries' social and economic impact, and we explored the research tools used there. For many years, Polish public libraries or institutions interested in their development have attempted to study the impact of library services on individuals or entire communities, but most often as part of larger projects. The Information Society Development Foundation (ISDF) has particular merit in this respect. Between 2009-2015 ISDF implemented the Library Development Programme (LDP), the Polish version of the Bill and Melinda Gates Foundation's Global Libraries programme. In 2012, quantitative and qualitative research was...
conducted in places covered by the LDP to show what has changed in libraries and what benefits they bring to the residents of small towns and villages (Giza-Poleszczuk et al., 2012). Several other evaluations related to the impact study were also conducted under LDP; examples include:

- What we do in libraries and what we gain from it. Report from a survey among the residents of villages and towns up to 20,000 inhabitants, June 2012,
- What do we do with computers in the library, and what do we gain out of it? January 2012,
- The image and use of public libraries, May 2011 (http://programrozwojubibliotek.org/raporty-badawcze-ewaluacja-programu/).

The doctoral dissertation of Magdalena Paul (2019), which describes research in the Mazovian region, contributes more general research on the impact of public libraries. The value of library services, or the financial resources they would have to spend without the library, can be shown with the so-called 'savings calculators' that keep popping up on the websites of many public libraries in Poland (e.g., https://mgbpkorsze.pl/kalkulator-oszczednosci).

We also analysed library impact studies conducted abroad, focusing on public libraries, including research methodologies and tools. Academic articles and reports from the United Kingdom, Italy, Spain, Australia, the United States, the Netherlands, Finland, Norway, South Korea, Canada were analysed (see bibliography). Based on a critical literature review and analysis, we identified 28 life aspects that public libraries can influence. Then, we classified them into eight basic categories, which we will discuss further in the text.

Desk research included examining theoretical models of a modern public library as well, such as a participatory library, library 2.0, multicultural library, library versus other institutions. We also discussed libraries of housing associations, their method of studying the impact, and their possible applications for the PLA. European Commission’s assumptions concerning the vision for libraries were also taken into account.

Methodological assumptions and the study concept

In our theoretical assumptions, we refer to the relational concept of culture. It differs from perceiving culture in institutional categories and specific patterns of passive recipients’ behaviour. For instance, Marek Krajewski points out that traditional readership surveys record "a decline in the number of books read by Poles, but are unfit for recording the transformations that reading practices have undergone with the advent of mobile phones, the web, and ebooks, or how the relationships between publishers, booksellers, and readers, as well as between the latter and authors, have changed in recent decades." (Krajewski, 2013, p. 22). In the relational concept, participation in culture is active. "Participation" is equivalent to creation, perception, and interpretation, but above all, to co-creating the collective, influencing it through one’s actions or mere presence in it (Krajewski, 2013, p. 22). As Krajewski continues, participation in culture "is a process in the effect of which the elements constituting a given community transform (author’s emphasis)." Each act of participation changes the status, meaning, the functioning rules of the elements of a social whole. He provides an example so close to our library practice - reading a book. Reading a book transforms the reader, but it also changes something in the cultural status of the publication (it becomes a frequently read book, maybe even a bestseller), its author (he becomes a widely read writer), and the publisher (producing hits), etc. (Krajewski, 2013, p. 24-25). The relational concept of culture values every day and the mundane. In the context of our study - a conversation, small gestures of librarians, a small help that library statistics would not even register. This approach abandons thinking of culture as a practice detached from social reality, a culture being unique and festive, in which only the elites can participate following rigid rules (Krajewski, 2012, p. 25-26).

In the spirit of the relational concept of culture, we have also adopted an expansive and inclusive definition of library impact. The definition comes from ISO 16439:2014 - difference or change in an individual or group resulting from the contact with library services. Social impact, in
turn, is understood as the influence of a library's existence and services on the population in the surrounding community or on society in general. Based on this standard, we assume that it may cover the following areas:

- social life, including social inclusion, social ties,
- access to information and education, including free access to information, free access to the Internet, education and lifelong learning,
- local culture and identity,
- cultural diversity,
- community development, e.g., awareness of environmental, health, transport, personal well-being issues,
- individual well-being,
- preservation of cultural heritage.

Library impact studies can be divided into two groups according to their main focus:

- outcomes, impact, the value of particular programmes or services - they answer the question of how the programme or service has changed the target group,
- overall benefits from using the library in specific areas of life (Serola and Vakkari, 2012, p. 37).

Sharon Markless and David Streatfield present a slightly different division. They distinguished between the micro-impact of a specific library and the macro-impact that a library-information system exerts on the socio-economic environment (Markless and Streatfield, 2013, p. 26).

With all these theoretical, methodological, and practical findings in mind, we developed a concept based on two pillars:

1. Four research phases:
   a. conceptual and methodological (implemented in 2021),
   b. research tool pilot - qualitative evaluation of the questionnaire (cognitive interview) and medium-range piloting in selected public libraries,
   c. the nationwide pilot of the study on the social and economic impact of public libraries,
   d. the phase of implementation of local research by libraries willing to participate in the research project.

2. Due to the differences in the activities of public libraries of different levels and operating in different territories, we decided that the research tool would be modular. Libraries involved in a survey on the impact on their local community will adjust the tool to their needs by choosing particular thematic modules. We assume that the study will be carried out by public libraries of different levels (regional, county, city, commune, etc.) and libraries combined with other institutions.

Cooperation with the community and research promotion

The project involved close collaboration with the public library community. For this reason, in addition to specialists in library efficiency and impact studies, the team included expert practitioners representing public libraries at two levels. The representative of a regional library shared her experience of working with local entities and served as a contact person for accessing statistical data. In turn, a representative of a communal library ensured that the perspective of the most significant part of public libraries, i.e., small libraries located in rural municipalities, was considered.

Because social and economic impact research is a relatively new trend in Polish libraries, we felt it was essential to promote the research and the project. We also presented it to a broader audience of public librarians at subsequent project stages and consulted the developed results with them. On 23 and 25 June 2021, we conducted three focus group interviews with directors of libraries.
of different types, instructors in local libraries, and practitioners and experts on the functioning of contemporary libraries. A total of 17 people, varied by gender, age, and seniority, from libraries of different sizes located in smaller towns and bigger cities and from different regions, participated in the study. The focus groups were designed to analyse in-depth issues such as:

- changes in public libraries resulting from the COVID-19 pandemic and their potential relevance to library impact studies,
- evidence for the social and economic impact of public libraries,
- areas of public libraries’ impact,
- attitudes to researching the social and economic impact of public libraries.

We recorded the focus group interviews and took extensive research notes from them. The data obtained in this way was used for construing the research questionnaire.

On 13 September 2021, our team representative presented the findings and further research plans at the PAL seminar entitled From library statistics to research on the impact and value of libraries. This was a free, online seminar attended by approximately 250 librarians.

A public webinar for librarians interested in impact research has also been scheduled for 16 November. We will present the survey questionnaire there and collect feedback on it. We are also planning a short training session on conducting surveys in libraries to empower potential future partners for the pilot and local surveys.

Why do we put so much emphasis on working with the public library community and promoting the research? We believe that without hearing the voice of those who work with library users daily and know their needs best, we will not create a usable and theoretically pertinent research tool.

The research tool

The central part of the questionnaire (without preliminary questions and personal data) consists of four main questions. They cover:

1. Activities performed by the respondent in public libraries in the 12 months preceding the survey. Twelve months were chosen as a research period because previous analyses show that about half of library users are regular users, and the other half are occasional users (that come to a library a couple of times a year or even less often).

First, the respondents are asked about using so-called traditional library services, i.e., collections (including electronic versions of books and journals and multimedia), various devices (e.g., computers, printers), and the Internet. Users are also asked whether they have received assistance from staff in using services and equipment. Next, they are asked about library-related activities, mainly in education, social life, and cultural events.

2. Subjective assessment of the significance of the impact of public libraries on different life areas. As already mentioned, the literature review allowed us to identify the most commonly studied areas of the social impact of public libraries. This information was then verified during the focus interviews. This is how we distinguished eight essential areas of life potentially impacted by all Polish public libraries:

- education,
- social integration
- leisure opportunities,
- childcare,
- professional activity,
- interest in local history and culture,
- health,
- solving everyday problems.
In this part of the questionnaire, we only investigate the perceived significance of such an impact on the respondents’ living areas. This part of the questionnaire is inspired by the concept of Servqual service quality assessment.

3. Assessments of benefits resulting from contacts with public libraries in the areas mentioned above - in-depth analysis. Based on the subject literature and the librarians’ statements recorded during the focus group interviews, we created a catalogue of 45 potential benefits arising from the use of public libraries in education, social integration, leisure opportunities, childcare, professional activity, interest in local history and culture, and health. The first four (education, social integration, leisure time, parenting) are included in the main body of questions due to their more significant popularity in the other studies worldwide and, above all, being widely represented by activities of Polish public libraries. The remaining three categories (professional activity, cultural heritage, health) are also important; however, they constitute slightly less popular libraries’ influence areas. Therefore, we decided to create a separate research module for each of them, and libraries will freely select the appropriate modules depending on their characteristics and services. The questionnaire lists several benefits for each category, which the library users are asked to rate on a Likert scale.

4. In the assessment of the impact of public libraries on everyday life, the respondent is asked to assess which of the public institutions (commune office, social welfare centre, local competence centre, and public library) they would turn to solve selected everyday life problems such as access to public offices and online services, personal finance management, online shopping, household, maintenance, and environmental concerns.

When preparing the questionnaire for the mid-range pilot, we added to the tool additional questions on such issues as:

5. The feeling of missing library services and library space when they were closed due to COVID-19. We adopt a counterfactual perspective, frequent in social and economic impact studies. We ask respondents what they missed during the temporary Covid-related library closure? Various options were presented, e.g., the opportunity to come to the library, free access to shelves, participation in cultural events on-site. There is also an option to write in your answer, and we anticipate that the free comments can be critical in assessing the impact of libraries.

6. Negative impact of public libraries. The issue seems important given that we define impact as the broad, long-term, positive, and negative outcomes of contact with libraries. There is a question worth asking here: Do you think using libraries can have any negative consequences? The respondent is asked for a free response.

The personal data section includes questions about the sociodemographic characteristics of the respondents.

**Findings & limitations**

Our study was mainly designed to provide research on social impact areas in public libraries in Poland and a survey questionnaire. Based on subject literature, reports from research on the social and economic impact of libraries worldwide, and focus interviews conducted among librarians working in public libraries in Poland, we identified the most critical areas and issues related to social impact research in Polish public libraries at various levels. An extensive questionnaire was developed. We decided to run a study at two levels - locally through the libraries and nationwide. This concept is reflected in the structure of the questionnaire and its modular nature. Public libraries will use selected parts if they wish to research their impact in selected areas.

Limitations in our research are due to the very nature of quantitative research and the applied research tool, i.e., a questionnaire. It mainly includes lack of opportunities for in-depth analysis and making the respondents’ answers more specific, lack of personal contact with the respondents, reluctance to fill in the questionnaires, boredom, and lack of attentiveness.
**Conclusions and application of the results**

The library’s impact appears to be a vibrant field of research and a potentially significant data resource. Depending on the institution’s activities, its impact can manifest itself in dozens of different areas of life, from the culture-forming role to professional, social, and self-developmental benefits. By looking at an institution’s activities through the language of benefits, instead of, for example, a satisfaction measure, we can see the genuinely profound value added by the library to the lives of users.

When selecting the methods used, we need to look at them from both a local level and a much broader, regional, provincial, or even national level. Individual libraries may use impact studies to analyse their actual value, often to justify their mere existence, resist closure, or danger of limitation of activities. Impact studies can be very motivational, both in terms of providing impetus for action and a sound assessment of the work of a given institution. In a more comprehensive, e.g., nationwide, perspective, it will be possible to check the power of the impact of libraries on the users and non-users. The reverse analysis will allow examination of areas of lack of impact so that libraries become aware of the thematic gaps in their activities and could see which of their activities fail to make an impact.


Notes


Too many data? Library statistics from 1974 to 2021?

Roswitha Poll

Introduction

Mayor to local librarian: “I see in your report that you had 850,000 loans last year. Sounds good, but in our partner town the library had 1 million, and they don’t come up to our population.”

Librarian: “I know, but that’s not comparable. They count all renewals as new loans, which makes their numbers go up by about 30 %.”

Mayor: “Then why don’t you standardise your counting, so that one can compare?”

Standardising their statistics - that is what libraries have tried to do since the 19th century, first on a national, then on an international basis. Though many individual libraries had already earlier tried to count their collections, especially their rare books and manuscripts, collective counting based on a common agreement and defined data categories started only in the 19th century.

Usually, finding statistics on that all libraries could agree would be a time-consuming process. In the United States, the categories for statistics of public libraries were discussed in the American Library Association since 1877, until in 1914 the Council of the Association approved and recommended a set of categories that formed the basic authority for collecting library statistics over the next 30 years (Krikelas, 1966).

One of the first sets of national library statistics was published in Germany 1901/02 by the Association of German Librarians (Verein Deutscher Bibliothekare). It started with only 29 participating libraries and 79 statistical data (Wickert, 1986).

Library statistics began of course with the count of collections, but towards the end of the 19th century other categories such as data of use and users came in (Thompson, 1951).

Development of international library statistics

In the 1960ies, international organizations began to tackle the issue of library statistics. Working groups of ISO (International Organization for Standardization) and IFLA (International Federation of Library Associations and Institutions) joined in conferences 1966 and 1967 in order to produce a standard for library statistics. They were supported by UNESCO (United Nations Educational, Scientific and Cultural Organization) and financed by the Council on Library Resources (CRL).

The first standard was published in 1974: ISO 2789, International library statistics. It offered 13 statistical data, defined and described on 4 pages (!). Evidently, it had been rather difficult to reach consensus on a set of data. In 1970, UNESCO recommended the new standard to all member states for their periodical reports, with the still valid reason:

“Convinced that library statistics provide essential information on the influence of each type of library and thus facilitate the planning of library development,

Convinced that it is highly desirable for the national authorities responsible for collecting and communicating library statistics to be guided by certain standards in the matter of definitions, classifications and presentation, in order to improve the international comparability of such statistics,”
The first revision of the standard took an immense time; the second edition appeared not until 1991. After that the standard has been revised in shorter intervals, due to rapid changes in library tasks, resources, and services (2003, 2006, 2013, and a Draft International Standard 2021).

The changes in ISO 2789: overview

When looking at the different editions of the standard, what strikes one first is the continuous increase of definitions and therewith of pages:

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<th>pages</th>
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<th>use</th>
<th>funding expenditure, staff</th>
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The first two editions dealt mainly with the collections, with the addition of two categories for lending services: users and active borrowers. In the second edition, the library shows more differentiation: cartographic and graphic documents, audio-visual documents, and newspapers come in. There is even a first definition for electronic documents!!

Electronic document

Document in machine-readable form.

NOTE Includes published data files and application software; may be recorded on paper, magnetic, optical or other media that are designed to be processed by a computer or related device.

The numbers show a clear jump from the second to the third edition. In 2003, many types of electronic documents had found entrance in libraries, and all types of usage, not only loans, are now defined: user training, reference service, renewals and reservations, in-house use some categories of electronic usage. Evidently, the bias had changed from collection-centred to more user-centred statistics.

The third edition 2003: E-services and new structure

The traditional view of libraries changed dramatically in the third edition 2003. The revision started already in 1998 in a meeting in Athens, where John Sumson, well known already in library statistics, proposed a new structure for the standard: annexes, which allowed a more flexible handling of new or difficult topics. However, all three annexes were meant to be normative.

Annex A Measuring the use of electronic library services
This was certainly the most important innovation. In addition to counting electronic documents, the aim was now to count the use of all library services that could be called “electronic”. Those were at that time:

- Electronic collection,
- Online catalogue,
- Library’s website,
- Electronic document delivery,
- Online reference services,
- User training on electronic services
- and Internet access offered via the library.

COUNTER code of practice was published at the same time as the 3rd edition of ISO 2789, so it could not be taken as model for the standard. However, measures for digital use had already been developed and tested in many libraries. The annex identified four core measures:

- Sessions,
- Documents downloaded,
- Records downloaded,
- Virtual visits.

The last-mentioned category was especially useful at that time, as physical library visits seemed to decrease, and libraries wanted to show that virtual visits would more than make up for that. Additional measures for electronic use were session time, rejected sessions, searches and Internet sessions via library computers.

Annex B Recommended categories for further statistical analysis

This annex has indeed proved extremely valuable for attaining consensus in the international working group about statistics to add to the standard. Libraries differ greatly as to their tasks, clientele, collections and services. A number of categories in ISO 2789 are only relevant for some types of libraries and may be quite uninteresting to others.

Nevertheless, the ISO working group was convinced that these less-used data should also be defined in the standard. If libraries wanted to collect them, they should be instigated to use the standardized definitions and data collection methods, so that results would be comparable over time and between libraries.

Annex B serves two purposes:

1. Differentiations of statistics counted already in the main part of the standard that would not be thought relevant by all libraries. Examples: contents of reference questions, modes of acquisition, types of new cataloguing records.
2. Data that usually occur only in some types of libraries. Examples: government documents, story-telling events.

Annex C Grossing up

This last annex was added for help in compiling national or other aggregated statistics and describes simple methods for dealing with incomplete data from the libraries.

The edition 2003 introduced also a new clause in the definitions and counting methods: access and facilities (seats, building, workstations, opening hours). This stressed the new role of the library as learning and meeting place.
Several statistics in the standard had proved difficult to collect for all libraries, even if they were deemed really important, because libraries had either not the technical equipment or the necessary staff for the counting. Therefore, the possibility of sampling was introduced.

Example: For counting visits or reference questions, it can be sufficient to take two or more samples of “normal” weeks over the year and gross up.

As the volume of the standard had increased considerably by all these innovations, an alphabetical index was added for the first time.

The next – fourth - edition, following quickly in 2006, brought only minor changes, e.g., statistics of external users (outside the population to be served) and of professional education in the library. The most interesting new issue was probably the assessment of staff time spent on the different service areas: user services, media processing, electronic services, administration, and all other. The idea came from cost accounting that in the meantime had been tested in several libraries.

The fifth edition 2013: focus on social services

After that, it needed again 7 years for the next, the fifth edition 2013. Again, there are relevant modifications and additions:

- Since electronic services had in the meantime become routine, the annex about counting use of electronic services was integrated in the main standard.
- The revision included the presence of libraries on social networks and the quickly growing services for mobile devices.
- There was a new clause in definitions and counting procedures for “management” (cooperation, projects, publishing, preservation and digitization, research activity of library staff).
- The most important innovation was probably the issue of services for users “with special needs”. This formulation, chosen after long discussion, describes users that because of physical and health impairment, economic disadvantage, cultural difference (e.g., non-native speakers, new arrivals), educational background, or other circumstances require special library services. These services had been growing considerably during the previous ten years, above all in public libraries, so that reliable data about resources spent for and use of the services were needed.
- As the standard had again grown as to size and contents, it was deemed expedient to make the whole topic better understandable for outsiders, especially for stakeholders. A new chapter was added in the introductory part of the standard, describing the current tasks of libraries.

A short concise set of statistics? The project 2004

The growing number of categories in ISO 2789 and in many national statistics had frequently led to the question, whether for international comparison it would not be necessary to choose a short, concise “core set” of data that could and would be collected everywhere.

This coincided with an imperative necessity seen by IFLA. When in 2004 reliable worldwide library data were needed for the World Summit on the Information Society, the IFLA president addressed the IFLA Section Statistics and Evaluation with the wish for “robust” and simply-to-collect statistics. A study analysing the available international library statistics (IFLA, 2003) had already shown that for many regions and several library types there were no data at all, and that the two most important sources for library data had ceased publication:

- LIBECON2000, a project of the European Commission, collecting library statistics from 29 European countries, stopped 2001 (Sumsion et al., 2003).
UNESCO had been collecting library statistics worldwide, based on the recommendations of 1970. The last UNESCO yearbook with library statistics appeared in 1999, as the dataset from 1970 was not deemed any more adequate to the current situation of libraries.

The IFLA Section joined forces with the UNESCO Institute for Statistics in Montreal, that would be eligible for collecting uniform international library statistics in its department “Science, Culture and Communication Statistics”. The third partner was the ISO group working on ISO 2789 that would be responsible for standardized definitions and data collection procedures. IFLA’s main interest was to show the general importance of libraries for society, while the UNESCO Institute for Statistics focused on the library’s role for information literacy in a country. UNESCO also stressed the importance of adjusting the new statistics to the possibilities of data collection in developing countries (Ellis et al., 2009).

Though with ISO 2789 the project had a solid basis and certainly enough material for choosing an appropriate set of data, the conflicting wishes made the task difficult. The data were expected to

- cover the full range of traditional and digital library services,
- show libraries’ role in and impact on society and culture,
- further comparison on a national and international basis,
- yield plausible results for reporting and promotion,
- and, most important, the data set should contain only a limited number of measures, that could be supposed to be available in all countries.

Work started in January 2006 with a meeting in Montreal. It was decided to restrict the project to public and academic libraries, as nobody deemed it possible to get complete data for school libraries or special libraries. The meeting produced a first list of possible measures that were discussed over some time in ISO and IFLA groups.

The final data set – listing only 23 measures(!) - was then tested in Latin America and the Caribbean. The first difficulty was to find out which institutions in a country were collecting library statistics: a national statistics unit, various ministries, or the national library. Usually, different institutions were responsible for public and academic libraries. A questionnaire was prepared in English and Spanish and sent out in July 2007 to the countries. Data collection and analysis took place during the second half of 2007 and early 2008. The response rate from 41 countries was 63 %, with a much higher rate for public libraries than for academic libraries. The main problem was to get data for electronic library services, while statistics for the number of loans or of volumes in the collection proved to be well established in libraries. But apparently, libraries were quite willing to collect additional data for the new services.

With the experiences of the survey, the data set was again modified and finally presented on an IFLA post-conference 2008 in Montreal. Everybody was hopeful, and IFLA already recommended the new model statistics to be collected in all countries (IFLA, 2010). But the UNESCO Institute could not get the necessary resources for a continuous world-wide data collection, and therefore there are still no reliable international library statistics.

The new edition of ISO 2789: the draft 2021

While the standard had been steadily growing, including more and more services and activities, a demand for more “meaningful measures” came up, for showing not only quantity, but quality of library services, and especially for proving the benefits of libraries for users and society. Quality or key indicators, elaborate satisfaction surveys and instruments for impact assessment were developed – and standardized: ISO 11620:2013, Library performance indicators (new edition in preparation); ISO 16439: 2014, Methods and procedures for assessing the impact of libraries; ISO 21248: 2019, Quality assessment for national libraries.
For the analysis and interpretation of such qualitative data, the underlying hard statistics remain crucial: collections and services, number of users and cases of use, staff time and financial resources spent, space and facilities, etc. Satisfaction with library services, benefits derived from library use can be assessed via surveys, interviews etc. The library will then know whether users profited and were satisfied. But it should also know: How many visits, teaching lessons, reference answers, or loans influenced those benefits? What resources, what staff time went into those services?

In planning the sixth edition of ISO 2789, the trend was to give – if possible – more meaning, more background, to the simple counts, to show not only how much had been done, but also why and how.

The work for the sixth edition started in June 2020, online of course. It was decided to keep more or less the same structure, but to add a new annex for the difficult topic of how to count the use of digital services: Methods and problems of measuring digital usage. This annex is informative, not yet normative, and describes new technics of collecting and analysing digital usage data and the many technical and legal problems connected with the counting. It is interesting, that again, as in the edition of 2003, an annex is deemed useful for the measuring of digital use.

The most relevant additions are probably those that concern users’ activities when visiting libraries. Physical – and more recently also virtual visits – have been counted for a long time. Now the aim is to get a deeper insight into what people are doing when visiting. This might help to see what users want and what libraries should offer. Two such differentiations are offered for counting:

1. How long do visitors stay in the library during their (physical) visits? The standard describes several methods for assessing the duration of the visits: Counts via detectors, checking visitors’ WiFi devices, Bluetooth tracking, registration at entries and exits. If none of these methods seems possible (or legally permitted), exit surveys could be used for getting an estimate of the “visit time”. The count is restricted to the physical visits.

2. What do they do during the visit? There are quite a number of examples where libraries have tried to find out about user activities during visits: by observation, by technical methods, or by surveying. The standard offers prototype questionnaires, both for physical and virtual visits, that each give options of activities.

Both counting proposals are placed in the convenient Annex B: Recommended categories for further statistical analysis. The annex is still the receptacle for all statistics that might not be suitable, feasible or acceptable for the greater number of libraries. Some more new statistics have also been placed there for libraries to test and perhaps adopt:

- Contents of digital preservation repositories,
- Publishing activities of libraries,
- Services for schools,
- Services for researchers (e.g. help in open access publishing or in managing big data)

An attempt to insert statistics for EDI issues (equity, diversity, inclusion) was not very successful, as libraries describe their efforts in this sector, but do not yet seem to count. But the topic will be followed up.

The DIS (Draft International Standard) of the sixth edition is on voting until the end of 2021. The final standard will hopefully be published in 2022.

What use has an international standard for library statistics?

Comparison of statistical results between individual libraries or between groups of libraries will never be possible, if the data and the data collection methods have not been defined and fixed carefully. This is not only valid for those statistical data that are in widespread use in national library statistics, but also for the more specific data that maybe only a small number of libraries will use. If they collect their data in the same well-defined way, they will be able to compare results and exchange their experience.
However, correct, reliable and comparable data are not the only criterion for good and useful library statistics. Timeliness of delivery is another crucial issue. Especially the quality of national library statistics depends on the correct and timely delivery by each library and on careful editing to detect errors and misunderstandings.

Reliable, comparable statistical data are essential for demonstrating the value of libraries. Libraries have many stakeholders, among them policy makers and funders. Good, plausible data, complemented and illustrated by “stories”, can influence the political and financial prospects of libraries. They can help to create a good opinion of libraries’ efficiency, cost-effectiveness and especially of their influence on literacy and information literacy, education and culture.

Probably all librarians will agree on the previously mentioned. And ISO 2789 is evidently seen as indispensable for attaining such “good” statistics on a regional or national level. In 2018, ISO asked the member states of Subcommittee 8 (Information and documentation), whether a revision should be started for ISO 2789. As usual in such voting, the following questions were put to the members:

- Has this International Standard been adopted or is it intended to be adopted in the future as a national standard or other publication in your country? 17 members answered with yes. All had adopted the identical ISO 2789, not a modified version.
- 11 countries said no.
- If this International Standard has not been nationally adopted, is it applied or used in your country without national adoption or are products/processes/services used in your country based on this standard? To this question, 4 more countries answered yes.

Thus from 28 countries that voted, 21 used the standard. Though members of the ISO Subcommittee 8 have probably a higher interest in standards than other countries, this shows the great influence of ISO 2789 on national statistics.

But there is still the question, whether an extract of the most relevant categories in ISO 2789 might not be more effective for attaining the goal of uniform comparable library statistics worldwide. The idealistic notion has always been to develop a set of statistics that should on the one side cover all activities and resources of all types of libraries, and on the other side be as short and easy to use as possible. Such a panacea has not yet been found. It has been tried once in the “Global Statistics” project and failed. Whether another project could have better success will probably depend less on the selected statistics than on an institution that might guarantee the follow-up.

ISO 2789 sees its task not in prescribing specific data, but in giving guidance to the library and information services community on the collection and reporting of statistics. The aim is to provide “definitions and counting procedures for all types of resources and services that libraries offer to their users” (ISO/DIS 2789, 2021): an ambitious goal, that implies adding more and more items in each edition. During each revision of ISO 2789, it has been tried to counteract this by finding categories that would not be needed any more - usually without result. Libraries’ tasks and activities are widening, not narrowing. The International Standard still follows the goal of covering as much of library issues as possible, so that the use of standardised definitions and methods may lead to comparable results over time and between countries.
References
(All electronic sources were last accessed Oct. 16, 2021)


IFLA (2010), *Library statistics manifesto*, available at: https://repository.ifla.org/handle/123456789/1557


ISO 16439: 2014, *Information and documentation - Methods and procedures for assessing the impact of libraries*

ISO 21248: 2019, *Information and documentation - Quality assessment for national libraries*


ISO/TR 14873: 2013, *Information and documentation - Statistics and quality issues for web archiving*


Thompson, Lawrence S. (1951), “History of the measurement of library service”, *The Library Quarterly* 21,2, pp. 94 – 106.


The Covid pandemic brought about dramatic changes to Library operations. We have established new ways of working in response to the situation. Many of these are changes in how we engage with technology. There has been a huge shift for many staff from physical to digital ways of working. We took the decision to explore these changes with staff in an inclusive and non-judgmental way with the intention of using the data to support staff and aid us with our strategic planning.

Methodology

We carried out eleven focus groups with Library staff to investigate the changes that the pandemic had made to our work practices. We established a working group with representation from all parts of the Library. The focus groups were organised around function and all Library staff were assigned to at least one group relevant to their areas of work. Working group members worked in pairs (outside of their own team) and chose their preferred focus group to facilitate (avoiding where possible their own area of work). We ensured everyone understood the role of the facilitator, especially with the extra challenge of carrying these out over Zoom early on in the pandemic when Zoom still felt like a new tool.

This devolved approach created some challenges with the organisation of the groups and the communication. Some staff were accidentally missed off lists, some had a clear idea what the purpose of the exercise was, and others did not. Most staff appreciated the opportunity to discuss the issues within focus groups but some did not welcome it at all. Some were willing to take part but only wanted to attend one group, even though other groups were relevant to their area of work. We recognised that the pandemic affected people differently and that some staff may have felt more resilient than others and potentially more able to engage in this reflective activity. We therefore left it with the group facilitators to organise their groups in the way they felt most appropriate.

Building on the work of the focus groups, we formed a new Digital task & finish group with staff from across the Library. The purpose of this group was to do a deep dive into the results of the focus groups and to coordinate and develop the recommendations that came out of those groups. The Digital task & finish group sought to represent all Library staff and to gather more feedback. This was to ensure that any recommendations the group made were built on the strengths and experiences of colleagues and not top-down or exclusive to the Digital task & finish group members.

Focus group questions

There were several areas that we decided to explore. In response to the pandemic, we had rapidly deployed digital solutions in an effort to create and maintain a safe environment within the Library for both staff and students. We wanted to explore the flexibility that has been needed, with both our systems and our services, to enable us to respond to the changing requirements and needs of our academic community. We also wanted to explore the idea of the ‘paperless office’ and what that meant for our working practices with so many staff working from home.

Another area that we were keen to explore was the shift from print to digital content and the way that we had to pivot our services in order to respond to the changing demands of students and academics across the institution. We have had to communicate and collaborate in new ways, both within the Library, with other parts of the University and externally. For this and for many other areas of our work, we have had to develop our digital capabilities.

To explore all of these topics, we used the following questions to structure our focus groups:

- Have you developed new workflows?
How have communications changed within your team, between teams and across sections?

What issues have you experienced with split-site working?

How has your access to training and professional development changed?

Findings

The results of the focus groups have provided us with both opportunities and challenges; they have given us insights into the experience of Library staff throughout this pandemic. The focus groups provided an opportunity to reflect on this and to take stock of where we are now with ‘digital’ and also, where we want to be.

A recurring theme was the sense of having been brought together as staff took on new responsibilities:

“A big change is that we were a bubble of a department but now we are more involved with other departments. It is really nice as we now feel more connected to the rest of the Library, as we work more closely with them and communicate with them more frequently.”

With the closure of the Library building, staff who had not previously been involved with answering enquiries via our virtual chat service were brought into working on that service. A virtual staff helpdesk was set up on Microsoft Teams to support the call handlers. This created a sense of connection at a time when colleagues were not seeing each other in person, and only occasionally on a screen.

The findings revealed changes to how we work internally, necessitated by remote working. There was a huge shift to digital through nearly all our work processes as documentation and administrative resources were updated and relocated to Box folders. The move from local drives to collaborative file storage (mainly Box) prompted better file management practice, including consistency with file naming.

The importance of having up to date training materials was also raised by the focus groups. Some staff had joined the Library during the pandemic. A completely different approach was required for induction and training since everything had to be delivered virtually. Staff felt the loss of the ease that comes from being able to ask ‘quick questions’ when you are physically situated in an office with colleagues. Some staff noted that MS Teams chat had begun to replace the ‘quick question’ scenario.

The results of the focus groups also pointed to changes with our externally facing work. Early on in the pandemic, it could be difficult to ‘find’ people and emailing could sometimes feel like cold calling:

“Tutors who we have been dealing with for years have just disappeared and it could be that they don’t understand what we are offering online”.

Whilst requests for teaching sessions decreased, Library staff felt that they had successfully navigated the shift to remote asynchronous delivery and had received positive feedback from both students and academic staff.

Conversely, staff noted improved attendance at online training and events. Seminars that typically attracted between 30 and 40 attendees in previous years found they had bookings of over 100 people, including a much larger proportion of external attendees.

Staff participating in the focus groups frequently mentioned the importance of communication, both internal and external. It was noted that whilst the more collaborative work in some areas had created a sense of connectedness (e.g. the Library Chat service), there was alongside this a feeling of working in silos. It was felt that better communication was needed so that staff knew what was happening in different parts of the Library.

External communication was also highlighted as great efforts were put into engaging with our academic community through our news channels, our social media platforms, and our website. More Library staff got involved with this and their experiments with different formats (such as Instagram Live for interactive online tours) were rewarded with increased engagement.
Staff surveys

The Digital task & finish group was formed to work with the findings of the focus groups. This involved surveying staff on some of the areas that were highlighted in the focus groups but where more detail was required to move forward and included surveys about communications, training and file management. For example, in order to drill down further, the survey about communications asked colleagues to list the different channels they now used to share work-related information and then to score how useful they found that channel. They were also invited to give feedback on any other aspects of staff communication.

Amongst other things, the survey focusing on communications found that 50% more staff used Microsoft Teams for work meetings than Zoom, and that 75% of staff who responded used a Teams channel for work-related ‘Chat’. Staff were also asked to score these channels for the purposes of internal communication. On average, Teams scored more highly than Zoom. Using this insight, we have gradually moved more of our communications to Teams. This has included the creation of a Team for all staff working on our physical and digital frontlines (our information desk and instant messaging service respectively), to support each other in handling enquiries and sharing relevant information.

Being clear about what we were trying to achieve and involving staff in this journey, allowed us to ask questions that may not have been possible without the trust gained through the focus groups. For example, before organising future training in the areas identified by the focus groups, we surveyed staff who had not attended a recent Box training event asking why this may have been. It was not compulsory to answer, completely anonymous and in no way intended to be accusatory. The goal was simply to find out how we could make staff training more accessible and more widely available, before booking in more sessions.

For example, 25% of staff who responded to the training survey said that conflicting appointments stopped them attending. 25% said that they were planning on watching the recording later, and 40% replied that they already knew about the topic and didn’t require further training. As a result, we now try to explain more accurately, what the sessions will include so that staff who think that the training will not necessarily help them, can actually see if this is the case. We also run multiple training sessions on a particular topic and make sure that we record for staff who want to watch later, along with adding recordings to a dedicated staff training page on our staff intranet.

The intranet has been developed in response to staff feedback from the focus groups and this has led to increased usage: in September 2021, following the development, there were 2,151 page views, up from the monthly average of 1,600 views. The external facing Library website has also been developed to make it easier for students, academic colleagues, and Library staff to use. Indeed the Digital task & finish group survey focusing on communications found that more Library staff were using the external website than the intranet and that they scored the external website more highly. As both fulfil different purposes, a direct comparison cannot be made, but it did give us greater insight into what sort of information staff were looking for online. More commonly, this was external facing information that they could share in support of users, as typified by one member of staff who responded “it's [the website] been really clear and up to date in conveying information over the past year so has helped a lot when I've been on Olark [our chat service]”.

Reflections

We have been using the focus group and survey data to inform our decision-making. We have used it to dig deeper into staff concerns to make sure we understand them fully. Using this approach, we have tried to bring all staff into the decision-making process in an attempt to meet their needs more fully. We have done this alongside our strategic objective of pivoting to digital in all areas of our service.

The focus group and survey results reassured us that Library staff have an appetite for doing things differently. The shift to digital touched all areas of the Library and staff are keen to develop further the new ways of working brought about by the necessity of responding to the pandemic.
The devolved approach, with having their peers as facilitators, worked well for making this a whole-library initiative and less of an imposition. The task & finish has completed its work so we are now moving to the next phase with the formation of a new Library working group to help us to move towards a ‘whole team’ approach.
Using Innovative Cultural Information Processing to Assess an Academic Library Web Presence

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University of Florida

Introduction

In Spring 2020, the George A. Smathers Libraries (Libraries) at the University of Florida (UF) underwent a major web migration to enhance the user’s experience with a comprehensive user-centered, accessible website that resides with just one web platform. Unlike incremental or agile web development changes with ongoing improvements over time, the Libraries’ existing system was based on a compilation of multiple legacy technology platforms that rarely included regular updates.

The migration to the WordPress platform was the first major change to the website in a decade. Because of the technical debt (i.e., the increased cost of change due to a lack of maintenance and upkeep, requiring a much higher cost to implement a technological solution) and the limitations of the old system, the Libraries’ web design community could not be productively engaged in web updates. The implementation of the new website was hastened by the closure of on-campus classes due to the COVID pandemic. After the initial release of the new website, anecdotal information and user feedback from various service points indicated more data was needed to develop solutions to known navigation issues and identify additional pain points.

In September 2020, a usability committee (UC) with members from various Libraries’ units, was assembled to develop an overall user-experience assessment, focusing on usability testing of the Libraries’ main website. The UC collected quantitative and qualitative data and, together with a student worker usability team (SWUT), informed future work on the overall web ecosystem. The SWUT piloted the usability testing protocol that was later conducted with external stakeholders; asynchronously tested the site’s search box; and conducted a card sorting exercise to determine the best placement of content within the newly designed information architecture. The UC conducted remote user testing with university stakeholders that included faculty, undergraduate and graduate students.

Purpose

According to the International Organization for Standardization (2018), “Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use.” A website is usable if users can successfully achieve their goals without difficulty and feel satisfied with their experience. It is critical that users can easily find the information they need on the Libraries’ website.

There are various methods for website evaluation including usability testing, focus groups, card sorting, and interviews, all of which can be conducted remotely with adequate technology. These methods can be used at various stages of development and conducted iteratively to ensure a user-centered design (U.S. General Services Administration (GSA) n.d.c). Usability testing, the primary method used by the UC, typically involves observing representative users as they complete scenario-based tasks on the existing website. Through this evaluation method, problems can be identified, recommendations can be made, and the website can be improved.

The UC approached the project by adopting a user-first approach following practices based on capacious humanities and generous thinking. Bethany Nowviskie describes capacious humanities in “On Capacity and Care” as an approach taken by the technologist or researcher with an understanding of a project’s “history and possible futures broadly,” organizing a team “to work effectively, simultaneously, and in deep empathy and interconnection with other fields and disciplines, across
multiple, varied scales” (2015). The UC also worked from the theories present in Generous Thinking, as explained by Kathleen Fitzpatrick, where the work of critique is to build up and improve, instead of to take down (2021).

The UC approached the website evaluation in support of users, with a view toward developing a usability/user experience community of practice (CoP) within the Libraries. “Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2011, p. 1) or in this case, an ongoing basis. Further, the learning can be an incidental outcome of the member engagement, rather than the reason for the CoP’s formation. CoP’s typically exhibit three key characteristics including a 1) shared domain of interest and a sense of community emanating from building relationships while members learn from one another; 2) establishment of a joint enterprise and, 3) a practice or repertoire of resources resulting from their engagement as practitioners (Kim, 2015).

CoPs differ from project teams, which are focused on project goals and deliverables, and differ from communities of interest, which are focused on information sharing and where members are not necessarily practitioners and do not necessarily have expertise in the shared area. For a CoP, the community evolves practice together, with individual work developing as integrated and aligned with the community. Group efforts produce new knowledge that can empower participation on the part of wider stakeholders and users.

The CoP was a by-product of the organizational culture in which collaborative engagement has become a strong underlying organizing principle for the Libraries. The lifecycle of a CoP includes inquiry, design, prototyping, launching, growing, and sustaining. (Keith, Smith & Taylor, 2017). The work of the UC jumpstarted the CoP and laid the foundation for ongoing development, as the group modeled engagement and served as liaisons and experts to engage the larger CoP. Usability testing of the website demanded an acknowledgement of the mutual interest of diverse stakeholders, both internal and external, in the user experience of the Libraries’ website. Establishing the committee’s scope of work was a key factor which ensured that all concerns would be considered from multiple viewpoints resulting in the broadest possible user-centric outcomes.

The committee focused on the issues of user navigation of and satisfaction with the Libraries’ main pages, while considering the interdependencies of the branch or support unit pages that users are directed to. And because the branch and support unit pages are independent sites, there is an innate uniqueness to each that the committee sought to understand. In this paper, the UC describes three considerations for delivering a successful outcome to this project with a view toward sustainable group work informed by a CoP approach:

1. In what ways can usability testing be implemented in a remote environment?
2. What methods optimally engage library student workers in rapid response usability testing?
3. How can usability testing be deployed as part of a larger process of socio-cultural changes?

This paper describes the methods used to address each of these considerations and the next steps taken for future user experience needs.

**Study Design and Methods**

The project phases included an environmental scan of peer and other academic institutions; informal discussions with key internal stakeholders such as the Web Design team and employees providing chat reference; pilot testing of instruments with a team of student workers; and 15 users recruited campus wide that included five undergraduate students, five graduate students, and five faculty/instructional staff (Table 1). We also provide a summary describing unintended positive outcomes.
Table 1. Data Collection Details

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</tr>
<tr>
<td>Ask A Librarian Transcript Analysis</td>
<td>Both internal and external</td>
<td>1470 transcripts</td>
</tr>
<tr>
<td>AAL Interviews</td>
<td>Internal</td>
<td>8 library workers</td>
</tr>
<tr>
<td>Pilot usability tests</td>
<td>External</td>
<td>4 SWUT members</td>
</tr>
<tr>
<td>Usability testing with talk-aloud protocol</td>
<td>External</td>
<td>5 each faculty, graduate, and undergraduate students</td>
</tr>
<tr>
<td>Site search task</td>
<td>External</td>
<td>4 SWUT members</td>
</tr>
<tr>
<td>Card sorting protocol testing</td>
<td>External</td>
<td>4 SWUT members</td>
</tr>
</tbody>
</table>

Internal Stakeholders and Anecdotal Information

The UC organizing charge was developed to create activities that respond to anecdotal information gathered from branch librarians, analysis of Ask-A-Librarian (AAL) chat transcripts, an environmental scan of peer university websites and newly collected data from usability testing of both internal and external testers. The outcomes desired included actionable findings for immediate use by the Libraries Technology Services web design team to consider and for identification of a practical methodology that units/branches can use for future testing of their own sites.

The Libraries’ Assessment Department began regularly analyzing AAL chat transcripts recorded for each inquiry answered by a UF library worker in March 2020 when the UF campus moved all coursework to remote and distance learning formats. When the Fall 2020 semester began, the AAL service experienced an increase in queries revolving around access to the Libraries’ electronic resources and other services. In addition to a discussion provided by the assistant dean outlining the concerns of the various branch chairs and a review of the chat transcript analysis, the UC interviewed two web design administrators who were involved in the web migration and six AAL library workers and, to understand their experiences creating and using the new website, respectively.

These internal stakeholder interviews were conducted to understand the nature of the inquiries coming into the AAL platform relative to the Libraries’ web migration, but more importantly, to assess the AAL workers’ information needs for better serving students and faculty with this changed resource. These conversations along with the anecdotal information led to development of the usability testing instruments piloted by the SWUT.

Usability Testing in a Remote Environment

The UC began by creating a usability testing plan that included goals, participants, equipment, method, metrics, and roles (GSA n.d.a). Usability testing typically includes five participants, but we determined that the varying needs of undergraduate students, graduate students, and faculty would justify testing three distinct user groups (GSA n.d.b). For example, an undergraduate student would typically use the library website to reserve a group study room, while a faculty member may use the website to request course reserves.

Collectively the UC identified typical tasks for each user group that could be used to design task scenarios. By dividing the writing of task scenarios between members and then reviewing them as a group, the UC was able to ensure that the tasks
themselves were goal driven and would not add unnecessary complexity or lead the participants. To assist note takers and the final analysis, the UC also identified the potential paths to complete each task.

The UC’s usability testing protocol was approved as exempt by the University of Florida (UF) Institutional Review Board, pilot tested by SWUT members, and revised accordingly. Participant recruitment aimed at three main library user groups: undergraduate students, graduate students, and faculty. Recruitment messages led potential participants to complete a survey indicating their availability, user group, and contact information; they were also informed that all participants would receive a $10 gift card. The UC successfully recruited five undergraduate students, five graduate students, and five faculty members.

Usability testing sessions took place via Zoom, with one participant, one facilitator and at least one note-taker. The facilitator used a detailed script to ensure consistency across participants; additionally, the same facilitator led all sessions for a particular user group (i.e. one facilitator led all undergraduate sessions, a different facilitator led all graduate student sessions, a third facilitator led all faculty sessions). Participants shared their screen while completing a series of 11-12 scenario-based tasks using the Libraries’ website. Most tasks were common across all three user groups, but some were unique to a particular group or used with two groups only (e.g., graduate students and faculty). Participants were asked to think aloud as they completed the tasks, providing further context to their navigation decisions. After completing the tasks, participants were asked a series of questions that allowed them to evaluate their experience using the website and provide insights on potential improvements. The note-taker used a survey to identify navigation paths, time to completion, ease of completion, and any additional notes for each task, as well as responses to the post-task questions. The task and follow-up question portions of each session were video recorded to supplement the notes taken in real-time.

Recordings and session notes were stored and accessed via a private channel in Microsoft Teams to ensure secure access by only the research team. Each facilitator shared insights from their sessions informally with the full UC during weekly meetings, and the team analyzed the aggregated data and developed recommendations for a report to Libraries’ administration.

Engaging Student Library Workers

The UC wanted to leverage current library student employees in the usability testing process. This led to the creation of the SWUT. A recruitment email was distributed to all library student supervisors asking them to share this opportunity with their student workers. Four students from different departments in the library volunteered to serve as members of SWUT for the semester. The SWUT averaged one usability-related assignment per month and were compensated for this work which fell outside of their regular duties. Most assignments were asynchronous and distributed via email so team members could complete them virtually. One of the UC members served as the SWUT coordinator and point of communication, creating and distributing the assignments.

The first assignment completed by this team was to test usability instruments developed by the UC. This was an opportunity to work through the protocols in their entirety with the target user, allowing for refinements to tasks, facilitator script, and technological aspects (Zoom, recording, etc.). The SWUT were then asked a series of debriefing questions regarding the instructions, the tasks, the video component, and any other feedback. As a result of this initial student feedback, several changes were made to the original instruments, including updating the wording of some tasks for improved clarity.

Once usability testing began, the UC noted that several participants employed the website’s search box during the tasks. To further explore and test the functionality of the search box, the SWUT team members each collected data using the various scenarios taken from the usability testing tasks. For each scenario they were asked to take screenshots for each search attempt showing both their search strategy and search results. This data along with data from usability testing confirmed an issue with the search box functionality, where data presented using TablePress was not being indexed in the campus web theme; this affected all campus websites (not just the libraries’) using the theme. The error was corrected shortly after discovery.
The SWUT also completed an online card sort activity to ascertain where students might expect to locate certain information within the top menu bar. In the card sort activity, which used Qualtrics, team members were asked to move each menu item into the most appropriate menu out of seven menu choices. The purpose of this was to pilot this technique of data collection, so that something similar could be employed with a wide audience of users allowing for a larger body of evidence to make decisions.

**Findings**

*Usability Testing in a Remote Environment*

The usability testing illuminated several critical issues with the Libraries’ website functionality requiring immediate attention, revealed several minor issues that were managed during the UC’s ongoing work, and yielded 16 recommendations for later improvements. Recommendations centered on providing more prominent access points for key links (e.g., hours, off campus access), clarifying and consistently using terminology, consolidating information on similar topics (e.g., computers and printing), and streamlining the layout.

The fact that the Libraries’ web presence comprises separate websites for each branch, support unit and administrative departments - rather than occupying pages on the main Libraries’ website – created confusion among several test participants. While there are many links connecting these various sites, navigation across them is not seamless, particularly when trying to return to the main Libraries’ homepage from another unit’s website. While some users embraced or were oblivious to this decentralized model, others did not intuitively understand or critiqued the inconsistencies in organization when they had navigated to a separate site. Participants also struggled to complete tasks related to the key services of borrowing, interlibrary loan, and course reserves; this information is housed on a separate unit website rather than the main Libraries’ website.

The UC’s full report to Libraries administration included detailed findings for each scenario indicating ease of use and time on task, navigation path to a correct response, and any resulting recommendations for improvements to the website. Table 2 summarizes sample documentation for a task that was easily completed and a task that was completed with difficulty. These technical findings set a direction for improvements to the Libraries’ website; additional findings about the process of performing usability testing in a remote environment are more generalizable to other libraries.

### Table 2. Sample of Task Documentation

<table>
<thead>
<tr>
<th>Scenario 3: Off Campus Access</th>
<th>Scenario 7: Ask A Librarian</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td>Faculty</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Ease of completion</strong></td>
<td>Successful</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td><strong>Findings</strong></td>
<td>4 unique paths</td>
</tr>
<tr>
<td><strong>Time to task</strong></td>
<td>Between 9 seconds to 3:20 minutes</td>
</tr>
<tr>
<td><strong>First click</strong></td>
<td>Find (5); Using the Libraries (4); My Accounts (2); One Search (2); Other (2)</td>
</tr>
<tr>
<td><strong>Recommendations</strong></td>
<td>Add off-campus access button to body of the main page and place in a prominent location.</td>
</tr>
</tbody>
</table>

Conducting the usability testing remotely required the use of various platforms and software including Teams, Zoom, Microsoft Forms and Qualtrics. At the beginning of the project, notetakers used a Microsoft Forms document to record task completion time and general impressions during the sessions. After a few sessions, the notetakers instead used a Word
document format or in some cases, handwritten notes. The Microsoft Forms document did not allow for note takers to edit their notes for an already completed task. Additionally, it proved challenging to manage an online form and a Zoom meeting while also timing the task on a different device.

Participants were familiar with the Zoom platform and note takers were able to record the sessions and re-watch as needed without relying on transcripts. Note takers could also revisit the recording to capture additional notes or record task completion times they may have missed during the actual session. Additionally, note takers were able to unobtrusively communicate with the session facilitator using the chat feature. This allowed for a second perspective – if the note taker noticed interesting behavior from the participant – that they could convey to the facilitator who could inquire further about the behavior without interrupting the session.

However, the chat feature occasionally presented difficulties for participants. In addition to being provided verbal instructions, participants were given links and tasks in the chat but to access the chat, the participant had to minimize the web browser they were sharing. This caused the participant to view the website with a hamburger menu instead of the full menu tabs usually displayed across the width of the webpage. Asking the participant to share their screen also presented some challenges. In one case the user was unable to locate the button she had been asked to find because the Zoom video was blocking it from view.

Individual participant devices, while introducing more variables to the testing process, also revealed issues that would not have been discovered in a traditional, in-person laboratory setting. In some cases, participants struggled to use the hamburger menu. Some users by default did not have their browser set to full screen, which caused them to begin attempting the tasks in the unfamiliar hamburger mode and added a layer of difficulty to the tasks.

After the participant exited the Zoom session, the note taker and facilitator debriefed and shared notes and impressions. This review period created a collaborative environment and sharing of different perspectives on the participant’s completion of a task.

Engaging Student Library Workers

One limitation of the SWUT was that the student workers were employed by the Libraries and thus had a greater familiarity with the library website than other students. However, having this group allowed for quick iterative testing of webpage-related issues outside of formalized usability testing activities. Thus, having this established group resulted in a more effective and efficient usability testing process overall. For example, beta testing our protocol with the SWUT was invaluable to both usability facilitators and note takers.

This work resulted in a refined script and important technical changes that ensured usability sessions would run seamlessly and preserve our study participants’ anonymity. This testing alerted the UC to the fact that Zoom was recording the participant’s voice, face, and screen. We made quick modifications in Zoom recording settings ensuring only the capture of the participant’s screen and voice. A tangential benefit was that the SWUT allowed us to employ students remotely during the COVID shutdown. This provided employment and income for students whose work in the library is normally tied to our physical services and collections, thus supporting our broader student community.

Usability Committee Processes: Building a Community of Practice

The UC was comprised of individuals from a variety of library roles. It included employees in public-facing librarian roles, those whose job responsibilities are primarily behind the scenes like acquisitions and assessment, and those whose roles are public-facing but anonymous, including the Social Media Specialist.
The UC included a range of job ranks within the libraries, including tenured faculty, junior faculty, and staff, with experience in the Libraries spanning from less than one to more than ten years. In keeping with our goal of building a CoP, time and space in meetings were created to discuss approaches to the project rooted in our respective job experiences, perspectives on web design, and institutional memory.

The weekly meetings constituted a substantial time commitment but contributed to our ability to meet deadlines and allowed discussion of iterative changes made during the testing process. Members shared problems and solutions, contacts, specific branch or unit knowledge and offered opportunities to share stories from the testing that illuminated aspects of users’ experiences.

Since the testing process was segmented by stakeholder (e.g., undergraduate, graduate, faculty member), findings occasionally aligned with these different stakeholders such as the use of branch websites by graduate students and faculty members versus much more exclusive use of the main Libraries’ pages by undergraduate students.

<table>
<thead>
<tr>
<th>Library Role</th>
<th>CoP Role</th>
<th>Years of Service/ Rank</th>
<th>Team Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Technology Senior Director</td>
<td>IT Expert, Systems Expert</td>
<td>10+ Faculty Tenured</td>
<td>Technical expert, Web team project expert, library leadership role</td>
</tr>
<tr>
<td>Unit Head, Library Branch</td>
<td>Branch leadership, assessment experience</td>
<td>10+ Faculty Tenured</td>
<td>Branch services resource, assessment experience, library leadership role, navigating IRB, test facilitator</td>
</tr>
<tr>
<td>Asst. Unit Head, Library Branch</td>
<td>Branch leadership, assessment experience, research methods leadership</td>
<td>10+ Faculty Tenured</td>
<td>Branch services resource, assessment and usability testing experience, library leadership role, test facilitator</td>
</tr>
<tr>
<td>Assessment-User Experience Program Director</td>
<td>Committee Chair, assessment experience, usability testing experience, research methods experience</td>
<td>5-9 Faculty Tenure accruing</td>
<td>Committee organizer and facilitator, assessment and usability testing experience, navigating IRB and human subjects payments, notetaker</td>
</tr>
<tr>
<td>Instruction &amp; Outreach Librarian</td>
<td>Usability testing experience, Accessibility expert</td>
<td>2-4 Faculty Tenure accruing</td>
<td>Assessment and usability testing experience, navigating human subjects payments, test facilitator</td>
</tr>
<tr>
<td>Social Media Specialist</td>
<td>Student perspectives expert, communication expert</td>
<td>2-4 Staff</td>
<td>Communications consultant for student perspectives and library communications</td>
</tr>
<tr>
<td>Electronic Resources Specialist</td>
<td>Branch/unit knowledge, Acquisitions expertise</td>
<td>Less than 2 Staff</td>
<td>Unobtrusive observer and test notetaker, committee report contributor</td>
</tr>
<tr>
<td>Assessment Program Specialist</td>
<td>Data management and documentation</td>
<td>Less than 2 Staff</td>
<td>Data manager, committee activity documentation, unobtrusive observer, and test notetaker</td>
</tr>
<tr>
<td>Student Success Librarian</td>
<td>Student perspectives and outreach expert</td>
<td>Less than 2 Faculty Tenure accruing</td>
<td>Unobtrusive observer and test notetaker</td>
</tr>
<tr>
<td>Assistant Dean of Assessment &amp; Student Success</td>
<td>Deans’ leadership and communication, Branch leadership, assessment experience</td>
<td>10+ Faculty Tenured</td>
<td>Ex officio, committee sponsoring dean</td>
</tr>
</tbody>
</table>
Discussion and Conclusions

Usability Testing in a Remote Environment

By using a collaborative platform, the task members were able to share resources, ask questions, and contribute to various aspects of the work. The UC also met weekly to foster collaboration, allow discussion, and create a sense of shared responsibility in the project.

Prominent issues were brought to the larger UC for review and potential immediate action. The debrief was also an opportunity to share ideas and recommendations for the website within the immediate context of one participant’s experience as well as the context of past sessions that the note taker and facilitator had each attended. This collaboration encouraged a more holistic and detailed analysis of the sessions than may have occurred with a single person acting as note taker and facilitator.

For the project duration, the UC worked remotely using a combination of personal tools and those provided by the university. Because of its integration with the more extensive Microsoft OneDrive Suite and its university-approved security status for sensitive data storage, the UC used Microsoft Teams for file storage and asynchronous team chatting. While Teams has its limitations, using a dedicated space that encouraged informal chat communications mimicked more informal, “watercooler” chats. Using Teams contributed to quicker responses than traditional email communication and prevented messages from being "lost" in overly full inboxes.

The use of Zoom presented benefits - available for remote use, secure platform, provides documentation - and challenges such as lack of control over user device and display. The UC considered the challenges minor compared to the flexibility Zoom provides for remote testing as the benefit of observing participants using the website as they would on their own devices helped identify issues that were specific to the user’s browser or device.

When considering the development of a consistent style across websites, the distinct difference in usage between the stakeholders indicated that one style may not fit all stakeholders’ needs. Given the implications of the changes involved across the many unique branch/unit websites, many changes were forwarded as recommendations to the Libraries’ leadership teams.

Engaging Student Library Workers

Creating a formalized SWUT can be beneficial to the process of usability testing in that there is always an internal resource available to contribute. The SWUT also provided effective piloting of instruments and methods and allowed the UC to examine other remote and virtual protocols before using them in the more complex context of external stakeholders.

Team Processes and Building a Community of Practice

By embracing a practice from capacious humanities in which a committee charter was drafted prior to work beginning, the UC was able to avoid fatigue associated with care for all participants but lack of ability to solve all the challenges within the scope of the current project. This helped the team articulate a purpose, the bounds of the work and the desired outcomes with associated timelines.

Over the past decade, CoP development for the Libraries’ website was stifled due to technical debt. To be sustainable, digital resources must have ongoing engagement with members of the CoP who work together as part of their practice in using/maintaining the digital resource; and, in the process, who also work to evolve the digital resource, recruit and onboard new community members, and integrate the digital resource into existing and new workflows. The UC approached the website to surface and correct problems in support of users, and to do so in a manner that built up both the website and the community of contributors and internal users for the website for their ability to contribute.

After the completion of this website usability testing project, the Usability Committee transitioned into a usability task force (UTF) that will convene for specific projects when needed. With the intense time demand of a project making real-time changes immediately following a testing procedure, the group engagement works better in a time-limited, outcome-based membership and releases the members to focus on other priorities when not involved in testing. Many of the prior members
of the UC joined the Advisory Assessment Committee (AAC) for which the overall purpose is to support the implementation of the broader library assessment program and will join future task force projects as available.

The results of this initial project proved a need for continued focus on the design of the website based on user experience. The AAC applied for an internally funded library grant, which will support optimization of the unit-level sites, through a rigorous process of content analysis both as part of usability work and in concert with other usability work. The UTF will reconvene to support this usability testing and guide the creation of scalable best practices for use by branches and other support units to examine and maintain their own websites.

In addition to the changes resulting from this usability work and next phase work on the Libraries’ website, the Libraries are currently undergoing an age of migrations. The UC represents diverse backgrounds and roles in the libraries and serves as a microcosm of library workers concerned about public facing information. While the representation of the different units between administration, branches/collections and technical support service units were equal, there was a significant disparity in representation on the UC by Libraries’ staff and represents an opportunity for change (Table 3).

Table 3. Representation of

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Staff</th>
<th>Student Workers</th>
<th>Administrative Departments</th>
<th>Branches/ Collections</th>
<th>Technical Support Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usability Team¹</td>
<td>64%</td>
<td>27%</td>
<td>9%</td>
<td>24%</td>
<td>44%</td>
</tr>
<tr>
<td>Libraries²</td>
<td>26%</td>
<td>57%</td>
<td>14%</td>
<td>25%</td>
<td>42%</td>
</tr>
</tbody>
</table>

1. Usability Team includes all UC members and the SWUT
2. Libraries percentages of faculty/staff

Conclusion

In 2020-2021, the Libraries undertook three major migrations: the website, the catalog, and the UF Digital Collections. Each of these updates had been long-delayed, with over eight years since a website system update and over 15 years for the catalog and the digital collections. Additionally, deployment of new systems had been delayed such as ArchivesSpace for Finding Aids and new systems of critical need for public services like Controlled Digital Lending. The work of usability testing for the website brought the community of practice together for the important work of improving web resources for immediate website need and ongoing work with the other migrations.

References


Using Return-on-Investment to Tell a Story of Library Value and Library Values

Scott W. H. Young        Hannah McKelvey
Montana State University  Montana State University

Introduction
The value of an academic library has traditionally been self-evident, as the library has traditionally served to underpin a university’s research and learning mission. The library’s role is often felt indirectly or abstractly, as when a faculty member accesses a journal article online that generates a research insight that in turn leads to a publication. Recently libraries have felt the pressure to shift their value from the self-evident to the evident, and to prove their worth in more concrete and direct terms such as dollars spent and dollars saved. This is especially relevant for library collections. The exorbitant rates of scholarly information resources, such as online journal articles and eBook titles and chapters, makes them unobtainable to individual users unless access is provided by their library (Edwards and Shulenburger, 2003). This has led to a need for libraries to justify their budgets to university administrators and continually advocate against budget cuts. Yet it can be challenging to place an exact dollar amount on an intangible academic experience.

In this paper, we describe an approach for responding to this challenge. We conducted a return-on-investment (ROI) analysis to measure and demonstrate the impact of information access provided by subscriptions, expressed as a dollars-saved metric. The assessment didn’t conclude with the financial measure. In presenting our study to library and university administrators, we contextualized the ROI results within a framework of library values: the dollars-saved measure is not an expression of the exact financial value of library collections, but rather it represents the symbolic value of information access that the library uniquely provides and inherently holds as a professional value. This approach recognizes both the tangible and the intangible—the library’s value and also our values. In linking financial value with professional values, we can position extrinsic evidence of the library’s value as an expression of the library’s intrinsic values.

Research Motivation: Telling a Story of Value and Values
In 2009, the president of the Association of College and Research Libraries (ACRL) framed that year’s focus of ACRL as a response to the question, “What is our value and who values us?” (Goetsch, 2009). In the face of increased competition for diminishing resources, the president of ACRL remarked, “Demands increase for proving our worth and justifying our existence, resulting in efforts on many of our campuses to demonstrate the value of higher education. In turn, we are being asked how libraries and librarians contribute to that value. How will we respond?” In the decade since this statement, library value studies have become a key area of library assessment practice, motivated by the perceived need for libraries to prove value to external stakeholders such as university administration and state boards of regents in order to receive financial resources (Hufford, 2013; Oakleaf and Kyrillidou, 2016; Murray and Ireland, 2018). New assessment practices have been developed and applied with an eye toward value, because “traditional measures of library success no longer resonate with university leaders, causing academic librarians to seek new methods of determining and demonstrating library value to student success.” (Murray, 2015). The stakes of assessment are continued financial resources for the library, which in turn compels library value to be expressed in direct financial terms (Bourg, 2013). The turn toward expressing library value as a business metric has been situated within a broader neoliberal movement toward accountability and quantifiability (Gregory and Higgins, 2017).
From this perspective, library assessment is concerned less with designing services or collections that can fulfill library professional values, and more with demonstrating the worth of those services or collections in a way that would resonate with external, market-oriented audiences so that the library can continue to receive financial resources. This uneasy balance of library value and library values was acknowledged by Oakleaf (2010, p. 21): “some authors warn that financial values do not mesh easily with the values of higher education.” Oakleaf spoke of a persistent tension—on the one hand, the financial system that often motivates assessment, and on the other, the educational system that produces the work being assessed. Nicolson (2017) has argued that market-oriented metrics that seek concrete, quantifiable measures are not suitable for measuring student learning, information exchange, and other abstract educational outcomes. Furthermore, arguments that situate library services in a dollars-and-cents context can undermine the position of the library as inherently valuable to a learning and research institution (Drabinski and Walter, 2016). Libraries have not been designed to generate direct revenue streams to support their operations, therefore assessments involving financial measures do not speak to the strength or purpose of a library, and cost-benefit assessments can be problematic for studying libraries (Urquhart and Turner, 2016). Seale (2016) has further developed the argument that neoliberal structures are antithetical to the missions of both higher education and libraries. Importantly, Seale (2013) underscores that library values are not represented in assessments that focus on efficiency and economic value.

As a response to the tension between values and value, a potential resolution has been developed whereby library values can be the demonstration of library value. In this model, unique library values are re-centered in library practice and form the basis for value and impact studies. Along these lines, Bourg (2013) has called for practitioners to “re-inject the core values of libraries and of our parent institutions into our work and our decision-making.” This idea has been operationalized by the “Value Scorecard,” a strategic planning and assessment framework that positions values and value as intertwined, and encourages a vision of library value that accommodates immediate economic outcomes but also goes further in surfacing the more deeply-rooted values of libraries. The Values Scorecard is premised on the idea that library values themselves generate value (Town, 2011; Town and Kyrillidou, 2013; Town, 2015, 2018). The realization of values becomes the goal of the library; demonstrating the realization of values becomes the demonstration of the library’s value.

This ongoing discussion around value assessment forms the background of the study presented in this paper. Conflicting priorities produce a grey area in which the assessment practitioner works to find a balance among financial and educational ideas of value and values. The study presented here is situated within this grey area. We have attempted to develop an assessment that attends both to the financial and the symbolic value of a library’s collections budget. As libraries face constant decreases to their materials budgets, it remains important that the role they play in removing barriers to information access is understood, and the value of access to library users is transparent. Using online journal and eBook subscription statistics, including usage and financial data, we conducted a return-on-investment (ROI) analysis to demonstrate the value of these subscriptions to our campus community through the lens of library professional values.

**Study Design and Findings**

The rationale and procedures for ROI studies involving library collections is well established (Tenopir, 2010; Pan et al., 2013; Falloon, 2020). We will only briefly describe the particulars of our approach. For our analysis, we identified our largest journal and eBook providers, and we gathered yearly subscription costs and COUNTER usage reports. We used this data to create formulas to calculate three assessment measures for each provider:

- Pay-per-view (PPV): the one-time cost to access a book chapter or journal article set by the publisher without a library subscription.
- Cost-per-Unique Item Request (CPU): the one-time cost to access an eBook title or chapter, or a journal article with a library subscription.
- Return-on-investment (ROI): the difference between PPV and CPU, minus the library subscription cost.

Using this approach, we found that in 2019 and 2020, the cumulative ROI for electronic journals and eBooks was over $21 million, with 705,000+ unique article downloads and 55,000+ unique eBook uses. While these findings show a monetary
ROI, the dollar expressions do not represent actual dollars that the MSU community would have spent purchasing access to resources.

For this study, it’s important to note that we are cognizant that cost-per-use metrics have been criticized for over-valuing library subscriptions: “Cost per use fails to take into consideration variability in the nature of usage—not all usage is equal, not all usage has equal value” (Kendrick, 2019). However, Goertzen (2017, p. 13) writes that most requests for collections data stem from library administrators wanting “evidence for collection development activities that support expressed information needs, justify expenditures, or project annual increases in preparation for a new fiscal year.” These types of requests from library and university administrators require libraries to rely on imperfect metrics that do not fully represent library value or values. Our study is twofold in trying to address this: it is a values-driven approach that provides quantitative data to administrators to fulfill their requirements along with an accompanying narrative that aligns the data with library values.

We reframed both the usage and financial measures as a demonstration of the library’s role in removing barriers to information access for users that are not prepared to pay for access to single articles or eBook titles and chapters. The value expression is ultimately not focused on the dollar amount, the number of items accessed, or the realization of savings to the community, but rather on the realization of the library’s professional value of access. The ability of the library to express our professional value of access is thus our expression of value to the university.

Translating Results: From Extrinsic to Intrinsic

In presenting our analysis to external stakeholders, we carefully positioned the results to represent less of the dollar value and more symbolic values. First, we speak of the library’s value to campus as rooted in our professional value of access; from this principled foundation, the story is told using financial terms that resonate with university administration—the sheer scale of subscription costs and savings powerfully symbolizes the information barrier that the library removes. As Urquhart (2015, p. 99) states in reflecting on the “slippery” concept of intrinsic library value: “Library and information services cannot, however, ignore value as funders, policymakers and consumers are constantly making comparisons and judgements about the value of the services and information products available.” At the same time, libraries hold deeply-rooted values, and from those values spring our value. Instead of focusing only on one or the other—intrinsic values or extrinsic value—we have attempted to concretize our abstract value of access using terms that we know resonate with university administration—dollars-and-cents. This shifts an initial return-on-investment value conversation more toward our inherent strengths and values, an approach that might be described as return-on-values.

Externally, we’ve refined these results so as to craft a message that answers the question of library value for administrators across campus. Our message in sum: the campus community uses thousands of articles and book chapters provided by the library every year, and that usage is increasing. The library negotiates a discounted rate for access to articles and book chapters, and then makes those resources available, passing savings along to the community that amounts cumulatively to millions of dollars each year. Our campus community doesn’t have millions of dollars to spend on the information that they need—but by applying library resources to electronic journal and eBook subscriptions, the library performs a critical service by removing expensive barriers to information, therefore helping the university achieve its mission. And the final turn: the library’s long-held value of access means that library staff, services, and collections are designed to bring that value to life for the campus community. The library’s access value is invaluable to the university. When the university invests in the library, and those financial resources are applied toward the realization of information access, the campus community can produce knowledge and the university’s research and teaching missions can be fulfilled.

We know that library value can be abstract and not always easy to define for non-library stakeholders. By framing library value in a context that is readily understood by external audiences—the budget and the university’s mission—we can help translate the work of the library for external audiences in a way that still speaks to the strengths of our values. We meet the expectations of our parent entity using the terminology of financial value that is understood at those higher levels. And we
also keep firmly rooted in our own deeply-held values of access. In connecting those points on the map, we expand and clarify the landscape of our work and our value.

The last ten years of library value studies shows that ROI and other financial measures will persist in our assessment cultures as library and university administrators expect an economic accounting of library operations. In meeting these expectations, libraries don’t necessarily need to reconfigure our services, products, and collections so as to fit—perhaps incompatibly—into ROI paradigms that don’t fully speak to the purpose of libraries. We can use the language and structure of ROI and turn those figures back to our strengths by reframing the financial measures as operating in support of library values. In essence, library values are used to explain the ROI data—not as a precise statement of earnings, but as a symbolic statement of values.

**Conclusion: Our Values Are Our Value**

This paper describes an assessment involving ROI for library collections. The ROI study produced a dollars-saved result. The financial measure is ultimately presented to library and university administration not as a precise economic figure, but rather as a symbolic representation of the library value of access. This assessment has been applied in different areas. Internally, results have been used in vendor negotiations, informing cancellations and new acquisitions, and improving the discoverability of resources—all in support of enhancing the access value. Externally, the results craft a message that answers the question of library value for administrators across campus. Our community is using thousands of articles and book chapters provided by the library. The list price of these items makes them out of reach for most people. By making these items available through library subscriptions and discovery, the university’s collections investment translates into savings passed along to the community that amounts cumulatively to millions of dollars each year. The dollar savings is then presented as a powerful symbolic expression of the impact to the university made possible by the library’s core value and purpose of information access. This approach can be replicated or adapted by other libraries to answer the question of library value for external audiences in a way that still represents intrinsic library values.

**References**


UX and usability studies at a distance

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Library Services – The Open University

Introduction

The Open University is an entirely distance learning university, where only our Postgraduate Research Students and staff are on campus, and all our other students are scattered widely across the United Kingdom and Europe. When I first started carrying out usability studies over a decade ago it seemed as though my only option was to invite students to come to our campus, which very much limited who could attend and made it difficult to ensure that a range of student characteristics were represented.

With the encouragement and support of managers and colleagues I began running usability interviews remotely instead, meaning that students could be located anywhere providing they had an internet connection and could spare an hour or so to talk to me. When people are in a familiar environment and using their own equipment, they are better able to focus on what is or isn’t working well about the website they are testing, rather than being distracted by unfamiliar equipment and surroundings. They may also feel less conscious of being observed and behave more naturally.

From usability testing the library website I went on to gathering user requirements for other tools such as our discovery service, and working to understand what students expected of the library’s services, training and content. After attending the first couple of UXLibs (User Experience in Libraries) conferences, I started to adapt some of the techniques intended for face-to-face settings which I had learnt about there to be used with remote participants to understand their experience and expectations of a digital rather than physical library offering.

Setting up a remote UX study

As with any kind of UX study it’s helpful to make a research plan, so that you know what you’re trying to get out of your study. This then helps to identify which methods and techniques will be suitable, and who your participants need to be.

For interviews or other methods that require an hour or so of the participants’ time, we find it helpful to use a survey to recruit participants. That way they can indicate when they can be available, and that they’ve understood the privacy implications. If you have more people signing up than you need, their survey responses can be used to select candidates who meet your research needs. You can also take the opportunity to ask a few questions of a wider group of people before the more in-depth conversations with the smaller group. If the person who will be conducting interviews or moderating other activities can do the recruitment communication that helps to build up rapport with the participants ahead of the activity.

Whichever method you choose, it can be a good idea to run a trial session with colleagues, or a short pilot with a smaller number of participants just to check that everything is set up well and the methodology is getting the outputs you were hoping for.

For those methods that do require more time we recommend over-recruiting by 20% to allow for the attrition of people finding they can’t make it after all.

We do offer small incentives, in the form of £10 or £20 retailer gift cards, but we don’t pay people for their time. We treat the gift cards as a thank you, and only offer them if the activity is going to take thirty minutes or more of someone’s time. We also explain what else they may gain from the experience, so such as a better understanding of the library and the opportunity to influence our services and interfaces. We always tell them what we’ve learned from the activity they participated in and what we’re going to do as a result.

Recruiting participants

At The Open University Library we set up a Student Panel in 2012, to ensure we have a pool of volunteers to recruit from. Every six months we send an invitation to a representative sample of students from across the university and usually between 100 and 500 people sign up to be on the panel, giving us a rotating roster of about 600-800 potential participants.

By signing up they are agreeing to be invited to take part in up to four studies during their year of membership of the panel.
In return we keep them informed about studies we’ve carried out, what we’ve learned from them and what we’re going to do differently as a result. Our panel members also tell us that they learn more about what the library has to offer and how best to use the library by being on the panel and taking part in our studies.

We are able to do this because The Open University has a Student Survey team who are able to use the data the university holds about our student body to identify a sample of students we can send our invitation to. We ask for a list of students who are representative of our current student population. This means they are made up of the same proportions of people with different demographic characteristics and studying across the range of different subject areas as the whole student body. Since 2019 we have asked them to skew the sample a little to over-represent smaller segments of our student body, such as students who have declared a disability and those in under-represented racial groups. The Survey Team will also only select students who haven’t already been invited to participate in other research.

Invitations to join our student panel, or to take part in our studies, are usually sent by email in our case, but have been posted on our library website or on Student Association forums in some instances.

When we first created the panel we were concerned that it would reduce the likelihood of hearing from people who didn’t already use the library, and comprise mostly people who already thought well of our services. Instead, we have found that we do get a number of students joining each year who are on courses which don’t push them towards using library resources, and who therefore have no experience of using our services. Our panel members are able to tell us or show us what is not working well for them, and observation methods like usability testing help to identify pain points even when participants are talking favourably about our services and blaming themselves for not being able to find what they need.

If you are not able to set up your own student panel, you could try recruiting from your student workforce, if you have one, or asking your teaching librarians to share the opportunity to participate in the research during their online classes, or asking the students’ association to help you spread the word.

We have also conducted user experience research with members of university staff because they are also customers of the library. At the Open University our Human Resources department can provide lists of staff who demonstrate particular demographic characteristics on request, as long as the research has been signed off by the Staff Research committee. Depending on the purpose of the study we might ask for staff who are primarily researchers rather than teaching staff, or non-academic professional staff in particular departments or with particular roles. We have also simply put invitations up on the university intranet or staff forums and been able to attract sufficient numbers of participants for small studies. We are not able to offer incentives to staff members because under UK law that would become part of their taxable income.

**Informed consent**

When recruiting your participants tell them who you are, what the study is about and how it will benefit them and others like them. Make it clear what risks there are, if any, and at what point they can or can’t opt out. Tell them to what extent their personal information will be used and how. Be clear, but also leave yourself space to be able to share your findings. Will the aggregated data be published anonymously? Will it be used internally to your department or organisation, or externally, or both? Make sure you know the data protection legislation for your country and tell participants how you will comply with it, e.g. how long data will be retained.

Always ask permission to record interviews and explain how the recording will be used. When writing the consent form make sure to consider whether the data will only be used for your own analysis of the study, or whether you will need to be able to show excerpts from the recordings when presenting or publishing your findings. Be careful not to write the consent in such a way that you prevent yourself from being able to show anyone the evidence behind your findings.

If your organisation has a body which governs research ethics they will be able to advise exactly what you need consent for and how to manage your data. They may also be able to provide template wording for consent forms.

A thoughtfully written consent form will also give your participants confidence that they understand what you will do with their data.
Facilitating remote studies

Whenever I conduct interviews, I invite other Library staff to observe. This has the advantage that they can help me take notes but also allows them to see for themselves the value of UX observations and that the feedback they hear from students during enquiries is not necessarily fully representative of the broader student population.

When conducting interviews and usability studies remotely, making sure your participants feel comfortable with the technology they will be using to take part gives them more head space to focus on the interview or usability tasks. Wherever possible use technology that at least some of your participants may already be familiar with.

For example, Skype can be used for screen-sharing and for recording interviews. It may not be the optimum tool for the purpose, but many people will have encountered it prior to you asking them to take part in your study, so it will be reasonably familiar. In our case the university uses Adobe Connect to run online tutorials so many of our students are familiar with that and fairly comfortable with using it. We’ve found it effective for interviews where we need the participants to share their screens with us, where our previous tutorial software hadn’t handled screen sharing well at all.

I haven’t used Zoom, but it does allow recording, and doesn’t display participant’s names in the recording which could be advantageous if you want to share the recordings beyond the team conducting the study.

We have also used TeamViewer, which is software created for providing remote technical support. It has everything you need for remote interviews and observation: audio chat, typed chat, screen-sharing and recording. It doesn’t require the participant to sign up for anything and can be run without having to be installed on their computer. However, you do have to carefully explain how to use it and it might be a new and unfamiliar tool to many research participants.

To run remote interviews you will need technology which is available to your participants that is capable of:

- Recording
- Audio chat
- Text chat
- Screen-sharing (for usability interviews and touchstone tours)

Test your chosen tool with a colleague before using it with participants, and if possible have one of you working from home. People’s home internet connection may not be as reliable or have as much bandwidth as your network on campus.

Assume it’s the first time your users will be encountering this technology and give them clear step-by-step instructions, and perhaps a check list of what they need in place to take part. I also recommend having their phone number to hand as you start the interview so that you can check on them if they’re late and may be struggling to connect. Make sure you are sufficiently familiar with the technology to provide technical support if required.

Sometimes when facing persistent technical problems you may have to improvise a little so that you can progress with the interview. For example, I’ve sometimes had to give up on the audio chat and conduct the entire interview by text chat due to technical problems or the participant having a very slow internet connection. It’s not ideal, unless you have a participant who finds text chat preferable to audio, but it’s better than not speaking to that participant at all, especially when they’ve made the effort to turn up.

Make a checklist for yourself to run through as you start and finish the interview. The checklist should cover both the things you want to remember to say to each participant and actions you need to remember to take. This will help you introduce the activity to each participant in a consistent way, so that you remember to ask them to think out loud during a usability interview for example, and so that you remember to start the recording!

I recommend giving yourself time to have a break between interviews. Concentrating simultaneously on asking the right questions, listening to the participant, operating the technology you’re using and supporting the participant with technical difficulties can be tiring, and if you’re going to conduct each interview consistently you need a chance to rest a little between
participants, and give yourself time to stay hydrated. You’ll be at your best as a facilitator or interviewer if you are feeling refreshed and comfortable.

Always thank the participant for their time at the end of the interview, check if they have any questions for you, and remind them that you’ll be sending them a gift card.

**Interviews**

Interviews can give a much more in-depth idea of people’s perceptions than a survey, and even though you’ll speak to fewer people there’s a good chance that if they tell you about something that’s not working well for them they won’t be the only one of your customers to feel that way. There is plenty of literature on how to conduct user experience interviews, and when to use structured or unstructured interviews.

The difference with doing them remotely is that you won’t be able to read your participant’s body language, and they may not be able to see you nod or smile encouragingly. As the interviewer you will have to verbalise your encouragement to keep talking, rather than simply nodding or looking interested, and you may have to ask people how they feel more often to make up for the lack of non-verbal cues. Keep your camera on if possible, and ask the participant to do the same.

Even in remote interviews you can still use intentional silence to prompt the participant to dig deeper and give more detail, as long as the participant can see you’re still there and that the silence isn’t due to a lost connection.

**Usability interviews**

Some of you may be familiar with running usability interviews in person. The important thing about usability interviews is that they give you an opportunity to observe the real behaviour of your users.

The advantage of doing these interviews remotely, besides broadening the pool of potential participants, is that people are in their own environment, where they feel at ease. User behaviour is likely to be less natural in lab conditions, when someone is conscious of being observed and using unfamiliar equipment. If the participant is more comfortable and relaxed you may see more natural behaviour.

It’s helpful to the participant if as well as reading each task to them out loud, you routinely copy and paste it into the text chat so that they can refer back to what it is that you’ve asked them to do as they’re working through it. Particularly when the task resembles an activity they might do as part of a course assignment, this resembles going back to check the details of the assignment.

**Touchstone tours**

Another way to explore the experience of online environments is to adapt ‘touchstone tours’, a technique developed for observing users in physical environments. In a usability interview you would typically provide participants with a pre-determined set of tasks to complete and you would learn whether your website or system supports that particular set of tasks. In a touchstone tour you simply ask individual participants to show you how they use the library’s online environment. You’re still using screen sharing as you would in a usability interview, but you don’t provide them with a starting point or objective, so you get to see what route they take to find your library website or search tool, which part of it they choose to go to first and which parts they ignore. They will describe the reasons they would normally come to the online library, which can help generate tasks for usability interviews.

When I used this method I asked the participant to “Pretend I’m a fellow OU student who has told you that I’ve never used the library, and you’ve kindly offered to show me how you use it in your studies.” This may not have been the best wording because in some cases I think I got a library induction or tour rather than a view of how that student uses the library, but even so we learned a lot from the touchstone tours that we wouldn’t have learned from usability testing, where the tester often provides the scenarios.

I didn’t give the participants a particular URL or web page to start from, I left it up to them to “go to the library” by their usual preferred path, which allowed me to see the different routes they took to get there.
Asynchronous usability studies

If it’s difficult to recruit people to take part in usability testing at times that are mutually convenient, or difficult to commit sufficient staff time to conducting one-to-one interviews, there are tools available for carrying out the tests asynchronously. You lose the opportunity to ask follow-up questions based on the actions you’ve observed, but people’s behaviour may be even more natural if they’re not conscious that you’re watching what they’re doing.

These asynchronous online usability testing tools allow you to set tasks and track your users’ every click as they complete it on your live website. These require you to add some tracking code to your website, a bit like website analytics, and can cause web pages to load a little more slowly, so approach them with some caution and test them before starting your study. If you can use them without a negative impact on your live website they can supply a neat heat map of where your users clicked for each task, and illustrate how people move through your site and what they aren’t able to find.

For smaller changes or those that can’t easily be made on a live site a different set of tools can be helpful. Much like a survey, these activities can be completed in 10 to 20 minutes, at any time that is convenient to the participant and doesn’t require your presence. They can also be paired with survey-style questions, depending on the aim of your study.

First click-testing lets you give participants a task to do on a screenshot or mock-up of a page. The system records their first click and moves them on to the next task. This is helpful for testing whether terminology is meaningful and can act as a substitute for a/b testing if you’re not able to do that on your site or system. For example, we’ve used this to test potential adjustments to terminology in our discovery tool, Primo.

Figure: Screenshot of first click testing results

If you’re planning changes to your site navigation then Tree Testing can be a useful tool. You can just input the proposed navigation without any page content or design and set tasks for participants to do. This is a great way of testing whether your proposed site menus are grouped in a way that makes sense to your users, and whether your page titles have strong enough ‘information scent’ to guide users to the right place.
Diary studies

My only attempt at running a diary study was not very successful, in that the people who volunteered to take part didn’t actually record their experiences or send their notes back. However, since then a member of my team, Caroline Barratt, has run several successful diary studies and we’ve found them to be a useful methodology for understanding student experiences of our online training sessions and digital and information literacy skills activities. Diary studies have worked best for us when they were for a limited set of tasks rather than something we were asking participants to complete over a long period.

Diary studies give you both quantitative and qualitative data, allowing you to form a well-rounded picture of the user experience. They allow you to tell compelling stories, and add vivid detail about behaviour and attitudes. However, they do have to be carefully managed and it can still be difficult to get a response situated right in the moment as it disrupts the flow of behaviour to stop and record what you are thinking and how you are feeling.

Share what you’ve learned

No matter how you conduct your user experience research, it’s important to tell your managers and stakeholders what you’ve learned and work with them to decide how your findings can be used to improve the user experience. Then be sure to communicate back to your participants what you’ve learned and what’s being done as a result. Your students and other stakeholders will appreciate knowing that they’ve been heard and that they’ve been able to contribute to services being improved for themselves and others. They’re more likely to come back and participate again, and tell people they know that it’s worth doing, if you tell them the results of their input.

Conclusion

UX studies can successfully be carried out remotely and can be more inclusive for people with limited mobility or those who live at a distance from your site.
There is a growing body of literature about how to conduct user experience research remotely, and in my experience it is just as effective and rewarding as conducting it in person.

Conducting remote user experience studies requires some commitment of staff time, but isn’t expensive and isn’t as intimidating as it might seem at first. I have found that having data from UX studies makes decision making about service design much easier and quicker. It makes such a difference that other teams in the library are now regularly asking for UX studies to help their service design and decision making as well. We also have other departments in the university coming to ask us how to conduct their own studies, and have seen an increase in student voice activity over the last several years.

Students who have participated in our studies tell us that, in addition to contributing to improved services and systems, they are learning more about what the library has to offer through their participation in UX studies.

References


Who still checks stuff out?: A look at physical circulation during the COVID-19 pandemic

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Author Note
Individuals can access the visualizations found in this paper as well as the underlying data at https://tabsoft.co/2YYylZ1.

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Introduction
University of North Texas (UNT) Libraries serves the University of North Texas in Denton, Texas. UNT is a Tier 1 Research university with an annual budget of $735 million that served 40,653 undergraduate and graduate students during the 2020-2021 school year (University of North Texas, 2021). UNT Libraries has four locations spread across campus as well as a remote storage facility and an off-campus office space.

UNT reacted to the COVID-19 pandemic starting in March 2020. Student housing was reduced to around 20%, and the university shifted many of the classes from in-person to online. All branches of the library closed, except for the main location, Willis Library, which remained open, albeit with limited hours. These changes continued through the summer of 2020 into the fall semester of 2020, when one additional location was re-opened. By the fall of 2021, most classes resumed their in-person format, and all library branches re-opened with hours similar to those offered before the COVID-19 pandemic.

The closing of locations, changes in library policies, health safety precautions, and the reduction of students living in university residential housing led to a sharp decrease in the circulation of physical materials during the months of March and April 2020. While circulation had been declining for nearly a decade, the pandemic accelerated this decline, dropping from 24,504 items circulated in April 2019 to only 335 items in April 2020. Given these increased barriers to access, we wondered how monograph usage changed during the pandemic and whether those changes indicate permanent shifts.

Knowing the who and what were affected most by the pandemic could provide insight into the possible future of physical circulation, informing collection development priorities. In addition, we examined eBook usage for concurrent and sustaining increases.

In this study, we analyzed circulation by item type, patron type, patron major, and item subject as well as eBook usage by item subject to determine the long- and short-term effects of the pandemic on the circulation of physical items and electronic monographs.

Literature Search
All libraries have been affected in some way by the pandemic. Hoffert (2021) found that public library circulation declined 25.7% (Hoffert, 2021). No comparable studies of academic library circulation could be found at this time, however. It has been established that subject disciplines tend to have different preferences for print or electronic resources, and while for some of these disciplines, this difference is negligible, for other disciplines, there is a distinct preference (Yuan, Van Ballegooie & Robertson, 2018). This preference could have affected the adaptability of certain disciplines to restricted access to physical materials. Different patron classifications such as undergraduate, graduate, or faculty, also affect the rate at which patrons use the library (Nackerud et al., 2013). They found that a smaller portion of undergraduate students use library resources than students in graduate or professional programs.
Methodology

Data collection

Circulation data for UNT Libraries is collected and stored on a monthly basis from Sierra ILS reports. This study focuses on circulation data from September 2018 to August 2021 as this is the time period places the beginning of the effects of the COVID-19 pandemic on UNT in the center of a three-year timeframe, and corresponds with fiscal years 2019 through 2021.

In this study, the number of circulations by patron class, patron major, item type, and item subject were analyzed. Item subject was assigned based on call number ranges, and that subject is assigned to subject-based collections based on the UNT Libraries’ Conspectus mapping. These collections roughly align with the university academic programs. Because of the large number of categories, each category such as patron class, patron major, item type, and subject were further consolidated into broader categories.

Usage data for eBooks is more limited as it is collected on a semi-annual basis. The most recent eBook usage at the time of writing is from June 2021, so the examined period of eBook usage was September 2018 to June 2021. Usage of eBooks is collected via vendor reports, and while most reports conform to the COUNTER standard, some vendor reports must be manually mapped to COUNTER metrics. It should be noted that the COUNTER standard experienced major changes in the transition from version R4 to version R5 that occurred in January 2019 (Bull, Beh, 2018). Because eBook usage is summarized at the institutional level and not the individual user level, eBook usage was studied by item subject only.

Relative circulation and usage

Circulation has been declining for UNT Libraries since FY 2015. This means that looking at absolute circulation, nearly all subdivisions of circulation have also declined. In order to adjust for the effect of this decline, as well as the seasonal differences in circulation, we used relative circulation for each category within each month. For example, for relative circulation of patron classification each month, we examined the percentage of checkouts made by graduate students.

Analysis

The rate of reversion was calculated for each subcategory within circulation and eBooks. This was done using the process outlined by Fabozzi and Markowitz (2011, p. 145-146). This process was used to create an initial ranking of subcategories within each analysis category for both circulation and eBooks. Linear regression was also performed on the relative circulation for the given time period to determine the long-term trend of usage. The period of April to June 2020 (Q2 2020) was then analyzed to determine if the relative circulation for each category increased, decreased, or remained neutral during that period.

Findings

Absolute usage and circulation

Circulation of physical materials fell drastically in the second quartile (Q2) (April, May, and June) 2020. Compared to Q2 2019, there was a 96.57% decrease from 44,928 circulations in Q2 2019 to 1,541 total circulations in Q2 2020. This has since recovered somewhat, but the circulation for FY 2021 is still well below FY 2019 with 50,959 total checkouts in FY 2021 compared to FY 2019 seeing 224,319 checkouts. eBook usage, on the other hand, nearly doubled from 86,111 total item requests in Q2 2019 to 169,953 total item requests in Q2 2020.

Circulation by item type

Compared to other kinds of items, book circulation increased greatly from previous quarters during the second and third quarters of 2020. While this has decreased since, this usage has not reverted to the pre-pandemic mean. In fact, books accounted for 18.48% of all circulation in FY 2019, but in FY 2021 accounted for 37.92% of all circulation. This likely occurred due to the decline in checkouts of materials with shorter checkout periods that carried with them an increased fear of viral contamination.
The relative circulation for reserves decreased drastically during Q2 2020, and while it has been increasing with an average of 3.90% for FY 2021, it is still far from the pre-pandemic average of 21.61% for FY 2019. This has likely occurred due to both a change in collection development policy that increased the preference for electronic versions, and the hesitancy to loan short-term items that could potentially be shared by multiple people in a short time span. Other item type categories such as audio-visual materials, equipment, games, and computer hardware decreased in Q2 2020, but have largely recovered. Interestingly, the usage of the UNT Libraries makerspace, The Spark, which is located within the Willis Library, remained relatively constant as a percentage of all checkouts throughout the pandemic.

Prior to the pandemic, checkouts from undergraduate students exceeded that of graduate students (77% vs. 12% respectively in FY2019). From April to July 2020, graduate students made up a higher portion of checkouts despite representing less than 20% of the student population. Undergraduate circulation has since recovered somewhat to accounting for 58% of all...
checkouts in FY 2021 compared to 29% for graduate students, but it remains, as a percentage of total circulation, smaller than it was before the pandemic. Other patron classifications such as faculty and administration did increase as a portion of circulation during the pandemic, but they have largely returned to their pre-pandemic rates.

Figure 3. Relative circulation by patron classification with relative circulation by faculty highlighted to demonstrate the temporary increase in relative circulation and the strong mean reversion of faculty circulation.

Circulation by patron major

Looking at circulation by patron major, music majors accounted for a large portion of circulation during the pandemic. In fact, in April and May 2020, music majors were responsible for 42.99% and 51.21% of all circulation, respectively. While this has since decreased, and for FY 2021, music accounted for 13.6% of circulations on average, this is still nearly double than the average of 7.76% for FY 2019. This likely occurred, at least in part, because of UNT’s music program having a devoted music library that is housed within Willis Library which is semi-independent with its own policies.

History is another patron major that increased during the pandemic to an average of 5.33% in FY 2021, but has not reverted to its pre-pandemic average of 1.94% in FY 2019. The spike in usage in April and May 2020 was far less dramatic than that of music, but the magnitude of the long-term increase was greater. Interestingly, the proportion of checkouts by library staff increased from an average of 3.13% in FY 2019 to 7.86% in FY 2021; this change has yet reverted to normal.

Other patron major such as business, social services, and interdisciplinary studies decreased during Q2 2020 and have not recovered since. The most dramatic of these is business which accounted for 12.39% of checkouts in FY 2019 and has not recovered since its Q2 2020 decline, accounting for 9.55% of circulation in FY 2021.

There were patron major categories that declined in Q2 2020, but have since reverted to their pre-pandemic mean. Patron major categories that experienced this change in relative circulation were engineering, mathematics and science, education, and theatre and visual arts. Engineering is the strongest example of this usage pattern, with the relative circulation bottoming out at 0.90% in April 2020, but has returned to hovering around the overall average of 12.43%.

Finally, there were patron major categories that were largely unaffected by the pandemic and continued to circulate at about the same rates before, during, and after Q2 2020. These include language, linguistics and literature; philosophy and religion; journalism and media; and social sciences. The share of checkouts made by these majors has remained relatively stable throughout the studied period, although the pandemic did increase the instability of the relative circulation of each category. Library and information science was also relatively unaffected and increased at about the same rate both before and after Q2 2020.
Circulation by subject collection

Looking instead at the subject matter of the items checked out instead of the departmental affiliation of the person checking out the materials, history and music performed similarly for item subject as they did by patron major. Relative circulation for items assigned to the music collection peaked in May 2020, making up 23.53% of all checkouts. This is far greater than the average relative circulation for music items in FY 2019 of 7.45%. Furthermore, while the relative circulation for the music collection has since decreased from its peak in May 2020, the average relative circulation for FY 2021 for the music collection was 10.32%, still above the pre-pandemic average. History followed a similar pattern, peaking in April 2020 with a relative circulation of 11.58%, and has increased from 3.33% average relative circulation in FY 2019 to 6.09% in FY 2021.

There were also subject categories that decreased during Q2 2020 and have not recovered since. These include business, engineering, and mathematics and science. Business exemplifies this pattern well falling to a minimum of 0.35% in May 2020, and overall falling from 8.83% in FY 2019 to 6.89% of relative circulation in FY 2021. One possible reason for the long-term decline in the circulation of business is that the branch housing the largest number of open stacks for business resources was closed until the summer of 2021. However, while this could explain the long-term decline in the relative circulation of business items, it does not explain the decline for math and science or engineering books.

There were some subject categories that decreased in Q2 2020, but have since reverted to their pre-pandemic average relative circulation. Subject categories that fell into this usage pattern were education, engineering, theatre and visual arts, library and information science, and philosophy and religion. There were also subject categories that increased in Q2 2020, but have since reverted. These include journalism and media and language, linguistics and literature.

eBook usage by subject collection

Overall, eBook usage was mostly unaffected by the pandemic with the relative circulation of eBooks by subject lacking the major disruptions that can be found in circulation from the same time period. This can be seen in Figure 4 where the disturbance in relative usage in Q2 2020 is nowhere near as drastic as those shifts seen in Figures 1 through 3 above.

![Figure 4. Relative usage of eBooks by subject. Note the lack of significant disturbance in early 2020.](image)

The distribution of usage by subject for eBooks and print monographs for some subjects was vastly different. The most extreme example of this was for music monographs. Music circulation of physical items accounted for 8.08% of all circulation whereas it accounted for only 0.67% of eBook usage. History, mathematics and science, and interdisciplinary subjects also represented a larger portion of circulation than eBook usage. Business eBook usage is a good representative of the reverse of this trend; 25.91% of all eBook usage is for business monographs whereas they make up only 8.57% of physical circulation. The collection category of philosophy and religion also follows this trend, making up 2.28% of eBook usage and only 1.42% of print circulation.
Limitations

It should be noted that individuals have reacted differently to the COVID-19 pandemic. Reactions have ranged from extreme caution to refusal to accept that the existence of the pandemic. This variety could have affected the results of this study as, at least in the United States, these reactions are heavily correlated with political affiliation (Kerr, Panagopoulos & van der Linden, 2021). These differences could have influenced the usage patterns of patrons from different departmental affiliations, classifications, age groups, and political leanings. While departmental affiliation and patron classification were able to be explored in this study, age group and political leaning were outside of the scope of this study.

There were some limitations on the data that was able to be obtained for the purposes of this study. Due to privacy and ethical concerns, the circulation record of an individual patron is unavailable. The Sierra ILS for UNT Libraries only allows this data to be exported in aggregate at this time. While this level of privacy is important for the purposes of intellectual freedom and patron privacy, it does limit the types of analyses that can be completed on this data, and this data cannot currently be connected to university demographics and academic achievement information.

Conclusions

So, is circulation returning to “normal” or a “new normal”? Some circulation categories have already returned to pre-pandemic norms, some are more slowly returning, and others have seen a long-term shift. For example, for patron classifications, there has been a long-term and potentially permanent increase in the percentage of checkout made by graduate students and a potentially permanent decrease in the relative circulation of undergraduate students. On the other hand, the share of checkouts made by faculty members increased during Q2 2020, but has reverted to the pre-pandemic norm. However, this is for relative circulation and not absolute circulation. While absolute circulation has recovered somewhat, it has not returned to pre-pandemic levels, and for now, this decline appears to be permanent.

This could have implications for monographs purchasing. For subjects such as history and music, physical formats could be still be prioritized whereas for subjects such as business, electronic formatting could be prioritized. Similarly, for resources aimed at research or higher-level study could be prioritized for physical formats, whereas more general topic books and other monographs that would be typically used by undergraduate students could be prioritized for electronic purchase.

Many classes at UNT before the pandemic were already offered remotely, and while it is still unclear how the share of online and in-person classes will balance out, it is clear that there have been long-term shifts that will affect both purchasing and usage of library resources going forward.

References


Hoffert, B. 2021, Circ Disrupted, MSI Information Services, New York.


University of North Texas 2021, Fact Sheet - Fall 2020.

We’re All Online Students Now

Using Participatory Design to meet the needs of students at the University of Washington Libraries

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Introduction

In 2019-20, the University of Washington (UW) Libraries developed a participatory design project to understand the needs of students enrolled in online programs at the University and to partner with these students to design potential solutions to the challenges they experienced. This paper explores the background to this project in the context of the growing number of UW students in online programs, how the Libraries team adapted participatory design activities to a fully online environment, the results from the project, and reflections on challenges and successes in this work.

This project was in development before the onset of the COVID-19 pandemic. However, with the University’s response to the pandemic being a move to fully remote teaching and learning starting in March 2020, what began as a project to understand the needs of a subsection of our student population took on a new urgency and focus. As one of our student partners noted, “We’re all online students now.”

This paper is co-written by UW Libraries staff, who facilitate the participatory design process, and the online student partners who engaged in it. While the various voices are, for the most part, woven throughout the paper into a common shared voice, we also included first-person accounts from students in their own words. (see Appendix)

Purpose and Background

The University of Washington is a large, research-intensive university in the Pacific Northwest region of the United States. While still primarily focused on in-person instruction for undergraduate and graduate students, the number of students enrolled in online-only programs has continued to grow steadily in recent years. The UW currently has 17 fully online degree programs, administered through Professional & Continuing Education, some of which offer cohort-based models of synchronous and asynchronous education, but some provide much less community structure. In 2014, the University established a fully online Integrated Social Sciences (ISS) degree program, signaling an important institutional investment in accessible online education. The University hired instructional designers and grew from 12 to 17 fully online degree programs plus numerous certificate programs. While programs like ISS are online asynchronous and group-paced, meaning common deadlines and timeframes, some students expressed feeling disconnected and isolated from the University and their peers, and had a more difficult time accessing campus forms of academic support.

In response to this isolation, in 2016 the University appointed additional funding to the ISS program in order to hire a dedicated librarian. This librarian (one of this paper’s authors) joined the Libraries Instructional Design Team known as LibID, which is also funded by Professional & Continuing Education. LibID is charged with identifying and addressing the needs of prospective and current students in the UW’s online degree programs. This team enhances the Libraries’ ability to support these students by providing instructional services for subject librarians who work with these programs, and by collaborating with librarians to develop innovative services and tools for face-to-face, hybrid, and online instructional efforts. One student participant noted about the asynchronous experience:

I was accepted into the University of Washington’s Integrated Social Sciences degree completion program. I was stoked! Except for one thing: the program is all online and asynchronous. Which meant that I would be going through the program entirely from my living room couch.
Before the pandemic this type of program was not talked about. How could it be possible to take college classes without ever leaving your house? Would it be just as difficult as "regular" classes? What about the diploma, would it be a “real” diploma? These are all questions I was asked when talking about the ISS degree program. No one ever asked about the social aspect.

The UW ISS program was overall wonderful. I loved my classes, and my advisor was helpful and supportive. But we had no cohort system, so I had no shared experience with other students. And while the online orientation included information about how to access library resources online, once I completed that module, I was unable to access it again.

In the ISS program we had a dedicated librarian, Reed Garber-Pearson, whose assistance I solicited more than once. Reed was helpful and kind, and aside from Canvas and my advisor, the only constant from quarter to quarter. However, despite the growth of online and hybrid programs in recent years, many Libraries’ services and resources are still primarily designed for on-campus students. Examples include campus-only based counseling and health services, an intramural gym and public transportation covered by student activity fees, and a writing center with limited online appointments. Within the Libraries, many programs outside of LibID are built for on-campus students with occasional options for Zoom participation. The Libraries prioritizes purchasing resources that are electronically available and is increasingly using Zoom for staff meeting and student programs, but the majority of our services and programs are still contingent upon students’ physical proximity to campus. In the past, the UW Libraries often first designed services for an in-person environment and then modified them to include online students.

This project—undertaken by a team of people from various library departments and groups including LibID, Assessment, Information Technology Services, Interlibrary Loan, Undergraduate Student Success, and graduate student employees—aimed to place the needs of online-only students at the center of developing new services and resources for this student group. While participatory design was a new approach, many of the partners involved in this project had already been exploring the needs of online students and experimenting with new ways to meaningfully include distance students as co-creators for some time before the launch of this initiative.

Between 2017-2019, LibID established a paid student advisory board (SAB) to facilitate direct communication between the Libraries and fee-based program students, some of whom were online. Through the SAB, the team heard about how the Libraries could improve services and resources to better support these students’ particular research and information needs. While LibID learned a great deal, it was challenging to use that feedback to make active changes, and in retrospect, it found that the most useful portion of the SAB was the community-building aspect. For example, the most prescient activity was one where students consulted with their subject librarian and then reported out to other students in their programs. One librarian commented that they had been trying to make connections with that particular program for years and now had a forum for communication. Because LibID was unable to take direct action on student input, the goals of the SAB were not fully met and that model for gathering student feedback was not continued. Communication and community were important elements of the SAB and these were reframed for this participatory design project.

While LibID was engaged in this work, the Libraries Assessment program was also exploring models that would enable us to partner with students not only to understand their needs through methods such as interviews and surveys, but to co-create solutions along with them. Since 2016, the Libraries has run a series of Design Thinking projects focused on transfer students and graduate students and was interested in exploring co-creative methods further with participatory design approaches. Participatory design is a methodology that centers equity, inclusion, social justice, power and expertise sharing between students and staff. This approach emphasizes co-designing projects and solutions in close collaboration with students and institutional partners; it places an emphasis on designing services with, not simply for, students. In Summer 2019, the UW Libraries ran a 2-day workshop, facilitated by experts in Participatory Design in Libraries, to raise awareness and build organizational capacity for this work. This project, along with an in-person project focused on first-generation university students, emerged from that workshop.
Design and Methodology

Participatory design as a methodology seeks to build questions and solutions collaboratively with users and participants, rather than pre-designing. Participatory design research has focused on different areas in waves over the past twenty or so years but has always concentrated heavily on the development of new technologies. Within our field, the most relevant project we researched used participatory design with library patrons to develop more relevant e-services (Constantine et al., 2014). While they primarily conducted in-person workshops, they also attempted to incorporate users virtually through online conferences and blog postings. We were interested in this approach for our own project in order to maximize our time with students to not only build a product or rethink a process that can be used by students online, but also to make a cultural shift in how we think about and approach design. Involving users in the design process allows for more useful and targeted tools and processes they can take ownership over.

The first step in the project was to assemble a cross-departmental team to design online activities, select technologies, recruit students, and develop payment logistics. We spent an entire quarter testing technologies and looking through design thinking and participatory design activities, then creating templates and trying out the activities at various meetings. The resulting product was an Activities Index organized along a design arc: stage one is open, stage two is investigate, and stage three is evaluate. While we tested a host of different technologies to aid synchronous online collaboration, we chose to use Google Slides and Docs for the free cost, simplicity of use, and wide range of ability. We also incorporated other tools, such as Padlet and AutoDraw, which we linked in our weekly slides in order to complete specific activities.

Students were recruited from online-only programs, with four graduate and two undergraduate students participating. Students were paid $50 per two-hour session and we added an additional 11th session at the end for group reflection. We had three staff facilitators who rotated with two co-facilitators each week. Two staff observers/notetakers also rotated weekly.

The staff designing the project had previous participatory design experience from a project for undergraduate first-generation college students that met on campus, so we had an idea of the types of activities that worked well together, as well as an understanding of the flow for involving students in ideation. We also worked with Scott Young and Hailey Fargo, who facilitated an in-person participatory design project with students at the University of Montana, and shared design and activity resources (Young and Brownnotter, 2018). A number of sites and collaboratives [1-5] that share design activities were incredibly useful in our process. What we found, though, was a large gap in design activities for a completely online audience. Some of the activities lent themselves well to an online contest, but many did not. For example, many of the activities involve the use of iterative sticky notes on a shared surface, and this ability to all share the responsibility of creating ideas, adding them to notes in a shared space and moving them around is important to the design. These kinds of synchronous co-working spaces do exist online but often have a steep learning curve, are expensive, and may not work as we expect them to while in the same room. This meant that we had to rethink many of the activities and design with the remote setting in mind first, instead of adapting as an afterthought. The Activities Index was a way for facilitators and designers to mix and match activities based on arising needs and prosses with students. Each activity was designed with a template, a placement in the design arc, and a set of notes for facilitation.

All of our activities were designed to create opportunities for students and library staff facilitators to get to know each other (through icebreaker and reflective activities) and to create welcoming spaces where students could honestly express their challenges, questions, and concerns. In the words of one of our student participants and co-authors:

[Participating in the project] presented an opportunity to elevate the voices and experiences of online students so that the online resources of the Library could be utilized more effectively. This also presented a unique forum to meet some of the esteemed librarians on campus to potentially advance my understanding of the art of research so that I could prepare myself for my own capstone report in the coming year. I felt a strong feeling of gratitude that the problems that we as online students experienced were noticed and our librarians sought to understand how to address them.

When I began the study, it was a testament to the benefit of socialization – something that we lacked (and was further exacerbated by the beginning of the pandemic). Each week, our librarians presented more activities that
provoked the mind and encouraged us to think outside of our normal structured line of thinking. Through these activities, we were able to speak openly and honestly not only about our needs, but our ideas! Many of the members came from various academic backgrounds and unique personalities. The combination of all of the students involved helped to provide rich conversations that brought us closer to one another through empathy. This quality of empathy enabled us to collaborate over the months of our work to settle on new innovative strategies for expanding the Library’s resources to online students.

To organize each week’s activities and to include students in the shared workspace, we created a weekly set of slides in a shared Google Drive. This meant that students and facilitators could add to the slides, which became part of the platform for collaboration. For example, for solo activities we assigned a working slide to each participant then shared out. Collaboration in small groups would similarly happen through the slides and Zoom breakout rooms. For the most part, we chose to pursue activities that did not require additional technologies, and if they did, were simple and free. Activities that had elements of solo and small group collaboration were particularly successful. Below we have provided an overview of one activity for each piece of the design arc.

Design Arc: Open

- The Is/Is Not activity, designed by Hailley Fargo of Northern Kentucky University, is a quick opener to take a temperature check on associations with the library and to find common themes. While this activity would normally be done collaboratively on large pieces of paper with sticky notes, the online version was designed in a Google slide. In breakout rooms, students organized word associations about the library into four quadrants: The Library Is, Is Not, Does Not Apply, and Torn.

![Figure 1: Quadrant with each section labelled: Is, Is Not, Does Not Apply, and Torn. Various adjectives populate each quadrant.](image)

Design Arc: Investigate

- Remix a Wish, another activity created by Hailley Fargo of Northern Kentucky University, is designed to promote collaboration through movement of sticky notes. In a virtual environment, we opted to use Padlet, free web-based software for collaborative movement of text and images. The goal of this activity is to break away from typical thinking and get inspiration from unexpected associations. It’s great for brainstorming. Participants ideate regular wishes (wishes that seem doable and standard), whimsical wishes (those that are grand and seemingly far-fetched),
then combine elements of each to create a mixed wish. All the wishes pertain to library services and resources or being an online student.

**Figure 2:** Four columns are labelled: Regular Wishes, Whimsical Wishes, Mixed Wishes and Activity Instructions. Under each column are rows of wishes. For example, “questions and answer forum” and “monthly online subscription boxes.” The last column contains a row of activity instructions.

**Design Arc: Evaluate**

- Build Your Own Vehicle [6] is designed to reflect on the elements that build a situation, a company, or an idea, in this case the UW Libraries. It also helps to build a better understanding of the relationships between the most important elements that make up the UW Libraries. In the activity, participants think about a chosen vehicle as a metaphor for the library and label the various parts of the vehicle with how they experience it—that is, who is driving the vehicle? What does it run on? And so on. The facilitator reads a set of prompts while the participants create their own vehicle, either drawing on their own sheet of paper or using a free program called AutoDraw.
The elements that made for a successful activity were about appropriate design with software and the level of engagement students could participate in. Some activities ended up having a long and complicated explanation and how-to, others necessitated new software that took time to explain and adjust to. In the end, simple activities that mixed a think-pair-share model were ideal for virtual synchronous collaboration.

Findings and Actions
Over the course of the project, a number of key themes emerged from the activities and discussions. First and foremost, students noted the challenges in creating community in the online environment and expressed feelings of being isolated and disconnected. While this was certainly an issue that emerged for wider populations of students during the COVID-19 pandemic, the students in the online programs experienced this regularly as part of their degree programs even before the pandemic. During the ideation process students continued to return to ideas for projects that involved being able to connect with other students synchronously while online. Some of these ideas included social events to learn more about the UW Libraries, a more interactive virtual reference chat system (including a mascot icon that you can speak with), or online community spaces where students could study together or communicate with each other. While some ideas that students shared were libraries-specific, many were services with the express intention of making community and could be applicable to many areas across campus, with the Libraries being the connector.

Another key theme identified by students highlighted the vast universe of information and resources students needed to navigate through. Students expressed that they were often overwhelmed by the options and resources available to them and navigating the Libraries (and UW) was daunting. Students noted challenges in knowing what services and resources are offered by the Libraries and how to take advantage of them. One key idea students had to address this was a video made for and by online students that could help connect students more effectively with resources and people who could help them.

As one of our co-authors and student partners noted:

When I began my graduate studies at the University of Washington, I began without meeting a single teacher – everything was online. Almost a decade had passed since I completed my undergraduate studies and most of the
research tools and tricks had faded into memory, presenting a challenge moving forward – how would I conduct effective research to attain my degree? After the first year of school, my classmates and I had completed multiple research papers and commented on how difficult it was to access the library resources. We began the program with no introduction to the online system so we were left to explore the vast resources available on our own. As pursuers of knowledge, we were able to navigate adequately, yet we lacked the personal guidance of a librarian to help delve into our topics further. Furthermore, when accessing the library resources, we also did not know what questions to ask because we did not understand the full extent that the online network provided. To put it simply – we did not even know who or how to ask for help.

Finally, students had mixed perceptions of the inclusiveness of the UW Libraries, with particular questions about accessibility issues for online Libraries’ services and resources. For the students in this project, this provided evidence that the Libraries did not center online students in their service design and creation processes and that the needs of students interacting with the Libraries online were not always taken fully into consideration.

Eventually, the students selected the video idea to move forward on co-designing in greater depth. However, the information we gained through this work supported a number of projects throughout the UW Libraries system, including:

- A redesigned Libraries website to make it easier to navigate and center virtual resources and services.
- An online scavenger hunt that brought 250 students together to learn about key resources that online students mentioned as being most important for their work.
- A number of online videos and tutorials, including an undergraduate research tutorial, created to support students engaging in research projects.
- A staff development program called “What You Should Know” designed to help Libraries’ staff develop skills to build community online.
- A series of open online study sessions hosted during finals week.

This project also resulted in Libraries’ staff being able to share participatory activities and methods with the wider UW campus community. One of the authors facilitated workshops for faculty through the University’s Center for Teaching & Learning about the tools used in the project, highlighting how they could be used in classrooms to build community among students during the period of remote teaching and learning. The Center for Teaching & Learning, as well as individual faculty members, have since incorporated design activities into their classroom and workshop spaces.

Reflections

One of the key lessons learned from this participatory design project was related to scoping. We began by trying to get a broad sense of online student experiences and needs, and we intentionally avoided scoping our activities specifically around the library. Previous projects had pointed to the importance of asking broader questions rather than starting with the library, as creative ideas were often limited by what students thought the library was or what it could do for them. Our goal was to understand student needs and co-design authentic library solutions backwards from those needs without limiting ourselves to the services and resources currently provided by the UW Libraries. However, as the project progressed, it was challenging to move from those general needs (such as a feeling of isolation and a set need for community) to what was actionable with the Libraries purview. In addition, many of the ideas students had—even when scoped specifically to things the Libraries could do—also required cross-departmental approaches and the buy-in of colleagues for implementation (e.g. re-branding our chat reference service with the university mascot). Despite having a cross-departmental team on the project, there were still many things that were outside of what any of us could implement as part of our day-to-day work. As a result of these challenges, we spent a significantly greater amount of time on scoping than we had intended, leaving less time for prototyping and gathering feedback on specific prototyped ideas. At the end of the project, the team had a set of student-generated ideas but was unsure of how to realize some of them.
While we shared feedback with stakeholders across the Libraries, the institutional and systemic barriers to implementing changes is a major hurdle in all the projects mentioned in this paper, including participatory design. We did not have full control over how the information was getting used and changes were often dependent upon leadership and colleagues, so implementation consistently fell through. If embarking on your own design project with students, it is important to identify barriers early on, such as budget, leadership, values, institutional communication, decision-making, etc.

For future projects, we would initially scope more narrowly (library, research and study support) and spend more intentional time getting from broad needs to focused library solutions. We would consider bringing in Libraries stakeholders involved in solutions to directly interact with students through activities. This would have helped student participants and staff facilitators to share an understanding of shaping recommendations and what is possible to change in the Libraries. It is important to have the right people involved at different stages of the project so that others can help with institutional barriers and making changes.

We also found that our aspirations for equity and power sharing between library staff and student participants did not always match up to reality. Ultimately, the goal is to incorporate student voices consistently and intentionally in Libraries’ work and consistently partner with students in the co-design of services, spaces, and resources. However, this requires a significant shift in organizational culture where we can view students fully as experts in their own experiences and commit to acting on their ideas. Staff struggled to find a balance between being participants and thinking along with students and being activity facilitators. Staff took part in some activities with students while in others we only observed. Ultimately, even when participating “equally” staff were aware of the power differences and felt we could not actually participate in the same way students were. In future projects, we would be more transparent about this difference with students through reflection and conversation.

While implementation of feedback and ideas was a challenge in participatory design, our intentional reframing of the project to be centered in getting to know students authentically helped to make if feel successful. Particularly during a time when the COVID-19 pandemic was just beginning, the group had a routine and regularity of meeting together once a week. Facilitative staff noted how grounding and joyful it was to connect fully with fewer time constraints, and similarly students commented that the human connection and communication was the most worthwhile aspect of the project. This project felt like a protective bubble amongst a lot of chaos. The unknown felt anticipated and easeful amongst all the unknowns in the institution and in public health. As one student partner noted:

When reviewing my experience throughout this study, it shows the strength of collaboration as well as direct engagement with the students. Many students, like me, seek opportunities to learn and collaborate on projects together – for that is how we learn best! As one that oftentimes gains his ideas and concepts through group discussions, I personally benefited from this study. I took the information that I gained and shared it with my classmates when appropriate which was met with utmost gratitude. I also discussed the experience with my academic advisor so that she could improve the online experience by creating an entire Library tab that would introduce students to the resources available. This may still take time to develop, but it has been expedited due to this study and my involvement. This study has reinforced my idea of community as working together is our strength. When we work together, we can attain greater heights and improve the experience for generations to come. As we look to the future, we can anticipate that online students will only continue to increase in number, so the work that we engaged in this past year will help keep this work on a continual path of progression and adaptation so that the Library can achieve its primary goal – to connect students to knowledge!

Another student participant wrote:

The reality [of the project] was so much more than Amazon gift cards [form of payment]. By the end of the second week, I felt almost guilty for accepting them. (But not guilty enough to refuse them.) By the end of the third week, I forgot that we didn’t have a stated goal. The pandemic had just hit, and the participatory design project was the one thing that kept me centered. Every week I logged into zoom, looking forward to seeing everyone, wondering what the next exercise would be. The reality of the changes we were making didn’t hit me until months later, when
Reed emailed to let us know how many of our ideas had been made reality, and how many students – students who never meant to be online students but were forced into it by the pandemic – had been touched (virtually) by our proposals. We started without a stated goal, and ended with not only a goal, but a whole bunch of workable ideas for making the UW library easier to access and use online. Not only was it effective (way more than I ever anticipated), but on the participation side it was fun.

As universities and libraries of all types reopen and resume in-person services, the authors hope that this project will help us all question the default centering of in-person user needs and continue to consider the needs of online students as well. This is even more important given that many of our on-campus students engage with the library online too and designing with online students in mind can benefit students who study in all formats. This can enable us to move from a framework of online versus in-person students to understanding and meeting the online needs of all students.

Endnotes


3. Gray, D., Brown, Sunni, & Macanufo, James, (2010), Gamestorming: A playbook for innovators, rulebreakers, and changemakers (First ed.)m O’Reilly, Beijing; Boston; Farnham; Sebastopol; Tokyo, https://gamestorming.com/


References


Appendix: Students Own Words

Online Student Cara Phillips:

By the time I got divorced I had attempted – and failed – to get my bachelor’s at 5 different schools. This time was different because I had three little people depending on me. But the schools where I applied didn’t think it looked so different for me – I still had all those failures on my transcripts.

I was accepted into the University of Washington’s Integrated Social Sciences degree completion program. I was stoked! Except for one thing: the program is all online and asynchronous. Which meant that I would be going through the program entirely from my living room couch.

Before the pandemic this type of program was not talked about. How could it be possible to take college classes without ever leaving your house? Would it be just as difficult as “regular” classes? What about the diploma, would it be a “real” diploma? These are all questions I was asked when talking about the ISS degree program. No one ever asked about the social aspect.

The UW ISS program was overall wonderful. I loved my classes, and my advisor was helpful and supportive. But we had no cohort system, so I had no shared experience with other students. And while the online orientation included information about how to access library resources online, once I completed that module, I was unable to access it again.

In the ISS program we had a dedicated librarian, Reed Garber-Pearson, whose assistance I solicited more than once. Reed was helpful and kind, and aside from Canvas and my advisor, the only constant from quarter to quarter. So, when Reed sent out an email asking for participants and offering Amazon gift cards, I immediately sent a response. And promptly forgot about it.

Months later I received another email from Reed, asking if I was still interested. I had to search my email history to figure out what I had gotten myself into. And there was the prospect of those tantalizing Amazon gift cards… Heck yeah, I was interested. And maybe I would finally figure out how to effectively utilize the online library research tools.

The reality was so much more than Amazon gift cards. By the end of the second week, I felt almost guilty for accepting them. (But not guilty enough to refuse them.) By the end of the third week, I forgot that we didn’t have a stated goal. The pandemic had just hit, and the participatory design project was the one thing that kept me centered. Every week I logged into zoom, looking forward to seeing everyone, wondering what the next exercise would be. The reality of the changes we were making didn’t hit me until months later, when Reed emailed to let us know how many of our ideas had been made reality, and how many students – students who never meant to be online students but were forced into it by the pandemic – had been touched (virtually) by our proposals. We started without a stated goal, and ended with not only a goal, but a whole bunch of workable ideas for making the UW library easier to access and use online.

I am hopeful that the presentation of this paper at the LibPMC conference will encourage more people to utilize the participatory design model. Not only was it effective (way more than I ever anticipated), but on the participation side it was fun.

I never did figure out what the different search databases were for and how to use them. Now I don’t have to: there’s a FAQ for that.

Online Student Derek Flora:

When I began my graduate studies at the University of Washington, I began without meeting a single teacher – everything was online. Almost a decade had passed since I completed my undergraduate studies and most of the
research tools and tricks had faded into memory, presenting a challenge moving forward – how would I conduct effective research to attain my degree?

After the first year of school, my classmates and I had completed multiple research papers and commented on how difficult it was to access the library resources. We began the program with no introduction to the online system so we were left to explore the vast resources available on our own. As pursuers of knowledge, we were able to navigate adequately, yet we lacked the personal guidance of a librarian to help delve into our topics further. Furthermore, when accessing the library resources, we also did not know what questions to ask because we did not understand the full extent that the online network provided. To put it simply – we did not even know who or how to ask for help.

Soon thereafter, I was approached by the Library team to participate in a study regarding the online offerings of the Libraries at the University. This presented an opportunity to elevate the voices and experiences of online students so that the online resources of the Library could be utilized more effectively. This also presented a unique forum to meet some of the esteemed librarians on campus to potentially advance my understanding of the art of research so that I could prepare myself for my own capstone report in the coming year. I felt a strong feeling of gratitude that the problems that we as online students experienced were noticed and our librarians sought to understand how to address them.

When I began the study, it was a testament to the benefit of socialization – something that we lacked (and was further exacerbated by the beginning of the pandemic). Each week, our librarians presented more activities that provoked the mind and encouraged us to think outside of our normal structured line of thinking. Through these activities, we were able to speak openly and honestly not only about our needs, but our ideas! Many of the members came from various academic backgrounds and unique personalities. The combination of all of the students involved helped to provide rich conversations that brought us closer to one another through empathy. This quality of empathy enabled us to collaborate over the months of our work to settle on new innovative strategies for expanding the Library’s resources to online students. One of the most impactful strategies for my own academic career was learning how to use the ‘Ask Us’ function (which opens up an online chat with librarians to help you with the question du jour) as well as Boolean search options – two functions that I benefited greatly from when preparing for my capstone! These two functions are some of the tools that would have helped me immensely at the onset of my degree because they challenged me to think in new ways of how to seek the information I was looking for. For example, when I was preparing my research regarding urban design and equity, I acknowledged that ‘equity’ as a concept is difficult to define within an urban planning context, as equality can translate differently to different people. When I asked a librarian to assist me in finding more information about the definition of ‘equity’ within this context, they connected me to a librarian within the urban planning library that sent me tons of articles that I could peruse at my leisure – what a useful tool!

When reviewing my experience throughout this study, it shows the strength of collaboration as well as direct engagement with the students. Many students, like me, seek opportunities to learn and collaborate on projects together – for that is how we learn best! As one that oftentimes gains his ideas and concepts through group discussions, I personally benefited from this study. I took the information that I gained and shared it with my classmates when appropriate which was met with utmost gratitude. I also discussed the experience with my academic advisor so that she could improve the online experience by creating an entire Library tab that would introduce students to the resources available. This may still take time to develop, but it has been expedited due to this study and my involvement. This study has reinforced my idea of community as working together is our strength. When we work together, we can attain greater heights and improve the experience for generations to come. As we look to the future, we can anticipate that online students will only continue to increase in number, so the work that we engaged in this past year will help keep this work on a continual path of progression and adaptation so that the Library can achieve its primary goal – to connect students to knowledge!
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