

» “Libraries are necessary gardens, unsurpassed at growing excitement.”

– J. PATRICK LEWIS, PLEASE BURY ME IN THE LIBRARY

# Strategic Library™



Issue 42 // September 15, 2017

## Information Seeking Behaviors

» **New Study Highlights the Need to Go Beyond Traditional Library Discovery Tools**

BY RUTH PICKERING

**L**ibraries today, especially academic libraries, are challenged by rapidly changing user behaviors and increasing competition for user engagement from new technologies both inside and outside of the library. For librarians on the front lines of research and learning processes, it's a battle to stay relevant in a world where almost every research project for undergraduates starts with a Google search and a visit to Wikipedia.

Ever-increasing speed of access to the Internet has given faculty and students alike greater access to information than at any time in history, but intelligent tools to help these researchers navigate this information effectively are just starting to emerge. Libraries are actively exploring and adopting

new knowledge discovery approaches to support their students and faculty, but it's still a new world. So, how can librarians help both novice and expert researchers find the path to the knowledge they seek?

### COMMISSIONING A STUDY OF INFORMATION SEEKING BEHAVIORS

Earlier this year, my colleagues and I at Yewno – engineers and data scientists developing a new knowledge discovery product called Yewno Discover that visually maps semantic, AI-driven connections between concepts – commissioned a study with the Library Consulting Network (LCN). The purpose of the study was to better understand *information seeking behaviors* and discovery needs in the way people research and learn in higher education and to get insights into research needs that are not currently met

### OUR STORIES TRANSFORMING OUR LIBRARIES

*The York County Library System*

### DOING TECHNOLOGY

*A teaching collaboration between Fresno State and Fresno County Public Library*

### SIGNAGE BY DESIGN

*A Design-Thinking Approach to Library User Experience*



by traditional library search technologies.

The scope of the work included an environmental scan of academic literature and a primary research study across 12 universities with a broad range of end user types. The interview data and results from the primary research study were analyzed by LCN and common challenges and needs across the range of end users compiled. Follow-up sessions were then conducted with several volunteer interviewees (across a broad range of research fields, institutions, and end user types) to assess whether using the product Yewno Discover catalyzed new benefits for them in learning and knowledge discovery that resolved some of the challenges they had described in the primary research study.

This article will review the LCN environmental scan, outline the methodology of the exploratory study and highlight study results.

### ENVIRONMENTAL SCAN

Library Consulting Network (LCN) is a leading library consulting firm led by experienced librarians and associated industry professionals in the US and UK who work closely with publisher, vendor, and library partners to develop best practices in information management and discovery.

Academic information seeking behavior studies are typically broken down by the research level of the user – undergraduate student, graduate student and faculty – as well as by the disciplinary focus of the researcher, e.g., humanities, social sciences, and sciences or even more specific fields of study such as medicine, music or art. In its environmental scan, LCN started with the classic information seeking behavior study from 1993 by David Ellis on the information-seeking patterns of academic researchers to provide context for the primary research study to follow.<sup>1</sup> Here's how LCN sets the stage in their report:

"David Ellis' classic information seeking behavior studies outlines a set of behavioral models that described specific actions



taken by researcher disciplinary focus with academics in the social sciences, sciences, and humanities exhibiting some similar and some unique information seeking behaviors.

For social scientists, his model includes the following actions:

- starting (identification of a key paper to commence the search);
- chaining (following up references to a paper or following up book advertisements from the journal consulted);
- browsing (to identify relevant journal sources);
- extracting (working through material in relevant sources);
- monitoring (maintaining awareness of developments in an area through regularly following particular sources);
- differentiating (employing differences in the nature of the source materials to filter material).

For scientists, both medical and natural sciences researchers, his model included the following actions: starting, chaining, browsing, differentiating, monitoring, and extracting. Then new actions such as:

- initial familiarization (activities undertaken at the earliest stages of information seeking);
- chasing (following up citation links between material);
- source prioritization (ranking sources based on perceptions of their relative importance);
- maintaining awareness (activities in-

involved in keeping up-to-date);

- locating (activities engaged in to actually find the information);
- verifying (checking that information is correct);
- ending (characteristics of information seeking at the end of a project).

For humanists, particularly in English Literature, his model included the following actions: starting; chaining; monitoring; And three unique actions:

- surveying (familiarization with the literature of the area);
- selection and sifting (deciding which references to follow up on and which to cite);
- assembly and dissemination (drawing together material for publication and dissemination)."

Of course, a lot has changed since 1993. The original Ellis study was based on print materials, which may not even be a rest stop on the research path of the modern online-focused researcher. LCN's scan goes on to consider new elements brought into play by online resources as outlined by Lokman, Meho and Helen Tibbo in 2003<sup>2</sup> when they updated the model for social scientists by incorporating the concepts of accessing, networking with others working on similar topics, verifying, and information managing.

Now fast forward to 2013 and the ubiquitous presence of the Internet and consider the Project Information Literacy studies led by principal investigator Alison Head on student information seeking.<sup>3</sup> For academic librarians considering the research proclivities and needs of undergraduates, the following list of research difficulties reported to Head and her colleagues by college freshman (as summarized in the LCN report) has a familiar ring.

"Some of the applicable results that students reported include:

- difficulties with starting research;

An advertisement for the 'eReader Carrier' by A. Rifkin Co. The ad features a blue padded zipper bag and a black e-reader device. The text describes the product as a 'Durable padded zipper bag protects from damage' and highlights that it is 'Now in 2 sizes!' and 'Ideal for lending Nook®, Kindle or iPad!'. The company name 'A. RIFKIN Co.' is prominently displayed, along with 'Established 1992'. A 'Learn More' button is located in the bottom right corner.

**eReader Carrier**

Durable padded zipper bag protects from damage

**A. RIFKIN Co.**  
Established 1992

Now in 2 sizes!  
Ideal for lending Nook®, Kindle or iPad!

[Learn More](#)

- determining the nature and scope of what was required;
- uncertainties with concluding and assessing the quality of their research;
- maintaining risk-averse known strategies focused on course readings, Google, library
- databases, and Wikipedia;
- utilizing online scholarly research databases for conducting research due to perceived credibility, comprehensiveness, and to meet instructors' expectations;
- under-utilizing librarians and over-reliance on instructors for research assistance and coaching;
- following instructors' directions to consult print resources and browse shelves, to the exclusion of more advanced methods such as librarian consultations, selection of non-standard resources, or exploration of innovative research methods."

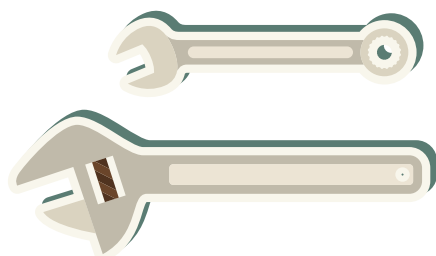
In today's mobile-friendly research environment, even 2013 is receding quickly in the rearview mirror. Consider the research power of a smart phone. Instant access to relevant data makes the concept of "satisficing" more relevant to the search process than ever. How do we know when we've gone deep enough or found the most recent and relevant information on a topic? LCN's review of the work by Prahha, et.al. for OCLC Research seems very relevant to our research into information seeking behavior and research needs.<sup>4</sup> Referring to this study, the LCN researchers note:

"The authors cite definitions of satisficing as a decision-making process that leads individuals to decide that they have met their desired goals rather than pursuing the perfect approach. When they satisfice, they compare the benefits of obtaining more information against the additional cost and effort of continuing to search. As information seekers, they satisfice by choosing a solution that produces an outcome that is known or expected to not be optimal but that is good enough (for various reasons). Users may satisfice their need for information based on what they are able to find and thus stop looking for more information, including ending prematurely if the information systems are difficult or unusable. Of note, the authors discovered the following factors that led to satisficing for both students and faculty academic researchers:

- requirements are met;
- time constraints are limited;
- coverage of material for publication is

- verified by colleagues or reviewers;
- trustworthy information was located;
- a representative sample of sources was gathered;
- current information was located;
- cutting edge material was located;
- exhaustive search was performed;
- exhaustive collection of information sources was discovered."

The LCN environmental scan provided context for a deeper dive into current academic research practices. Looking forward,



how can new research applications help students and faculty navigate a new, dynamic, ever-changing research environment? The primary study that LCN undertook next was designed to identify gaps and challenges encountered in the research process.

#### **INFORMATION SEEKING EXPLORATORY STUDY**

LCN undertook this exploratory study in the spring of 2017 to delve into the lives of academic researchers to identify practices and preferences of the information seeing process. The study examined how participants come to an understanding of what information discovery tools to use, how they find out about new ones, how they approach new research areas, and how they develop or adopt new research techniques.

The study included 15 participants: 8 were undergraduate students, 5 were graduate students and 2 were researchers/instructors. The group was comprised of 7 students studying in medical fields and incorporated participants from sociology, computer engineering, physics, history, political science and business/marketing participants.

Study questions were broken down into the following areas:

- Beginning the Research Process
- Frequently-Used Resources
- The Resources They Chose
- Chaining
- Satisficing
- Other Sources & Social Media
- Keeping Up-To-Date

- New Topics of Research
- Changing Hypothesis
- Alternative Sources for Acquiring Information
- Barriers to Information Access
- Rating Resources

LCN placed study participants in one of three categories: undergraduate student, graduate student, and researcher/instructor: "Information seeking is an easily overwhelming task for undergraduates. With looser search terms and wider casted nets, students are looking through a lot of content to find what feels relevant to the assignment and legitimate to their perceived standard. Graduate students both cast wide nets and dive deeply into discipline-specific resources. They are honing their information seeking skills all the time by creating better strategies and learning from peers and experts. Researchers are experts and very confident with their information sources though, like most other participants, lack the time to do more exploring."

#### **HIGHLIGHTS OF THE STUDY**

Some of the more interesting findings of the research are summarized here. For those interested in delving deeper into the study, the full text of the LCN report is available here: [Information Seeking Exploratory Study, July 2017](#)

#### **Beginning the Research Process**

For undergraduates, regardless of field of study, Google and Wikipedia were their primary starting points. Graduate students were also Google users, but included Google Scholar in the mix, along with discipline-specific resources. Researchers rely on other experts in their fields, targeted publications and conferences, and their own knowledge to get started.

#### **The Resources They Chose**

Undergraduates commented on user interfaces, credibility, comprehensiveness and usefulness of resources. Speed of access and ease of use were important factors – students gravitated to resources that could be evaluated quickly. In terms of credibility of a source, its presence in a library database or .gov website were reassuring.

#### **Chaining**

The undergraduates in the study often used multiple browser tabs (over 30 in one case) to keep track of the resources that they have found. They often took "haphazard" trails

in their research and worried about losing time by pursuing tangents, noting that time spent in Google moving from source to source can be “an endless hole.” They relied on sampling of information to get a sense of the most fruitful avenues to pursue. LCN notes: “A tool that can assist in that process – allow students to build a more refined search – with qualified or reputable search results would be of great value as students move from one resource to another.” Graduate students are more confident in their research ability and have developed strategies like starting with review articles and chaining references from those reviews.

### Satisficing

The graduate student responses were most interesting in this area. They noted several ways of evaluating when they had reached the end of their search including repetitive results, publications older than five to ten years, and running out of time to do any more.

### Other Sources (including Social Media)

Two undergraduates noted that social media was critical to their field of study, including “identifying rising trends and trending topics” impacting research and staying up to date on current topics. Graduate students and researchers are relying more on colleagues, peers and experts, but also look to social media and more traditional media to stay current.

### Barriers to Information Access

This was an especially hot topic for undergraduates, who worry about the trustworthiness of resources and how to effectively sift through a “glut” of results. Managing their time around the research process is a key concern. Graduate students and researchers share some of the same issues, although focusing more on the time it takes to keep up with new developments. These latter two groups worry about their research becoming outdated and often feel stymied by paywall issues.

### Rating Resources

LCN asked the study participants to rate the importance of various sources in information gathering on a scale of 1 to 5, with 5 the most important. The sources listed were:

- Print resources (books, articles, etc.)
- E-resources (ebooks, online journals, etc.)
- Google or Google Scholar
- Library databases
- Social media

Resources	Researcher	Graduate	Undergraduate
Print resources (books, articles, etc.)	3.3	1.8	3.8
E-resources (ebooks, online journals, etc.)	5.0	4.8	4.5
Google or Google Scholar	2.8	4.6	3.6
Library databases	3.3	3.4	4.3
Social Media	1.0	1.8	1.9
Academic Networks (ResearchGate, Academia.edu)	2.8	2.8	2.1
Other online resources (listservs, blogs, etc.)	3.0	3.0	2.4
Colleagues	5.0	3.6	3.5
Librarians	3.5	3.4	1.8

Average Response by Information Seeker Type (5.0 is high)

- Academic networks (ResearchGate, Academia.edu)
- Other online resources (listservs, blogs, etc.)
- Colleagues
- Librarians

All three groups – undergraduates, graduate students, and researchers – rated E-resources as the most important information gathering source and social media as the least important. Researchers also gave “Colleagues” a 5 rating. Undergrads rated library databases highly (4.3), but rated librarians the least important (1.8). Researchers (3.5) and graduate students (3.4) rated librarians more highly. Graduate students rated Google or Google Scholar at 4.6 – significantly higher than researchers (2.8) or undergraduates (3.6). Complete results are summarized in the table below.

### FOLLOW-UP INTERVIEWS BASED ON ACCESS TO YEWNO DISCOVER

LCN’s research and the participants’ responses in follow-up interviews based on access to Yewno Discover highlight that the needs of these users go far beyond traditional library discovery tools’ objectives to provide a researcher with relevant scholarly articles. More experienced researcher participants commented on the benefits to cross-disciplinary research opportunities and of uncovering and understanding new connections--specifically with respect to teaching. One participant shared that he could find real-life applications for his lectures to motivate students to understand how the difficult theories taught in class apply to their personal lives and connect to the more popular topics in the industry.

### CONCLUSION

With the rapid advance of internet, web, and mobile technologies, the information seeking behavior of today’s user is changing and will require new library practices, tools and

systems. The LCN study was undertaken to contribute to the ongoing conversation in the academic library community about new research and learning solutions and trends. Better understanding end user needs in order to offer more value to users and content partners will provide libraries with the opportunity to continue to be active, valued partners within the greater academic community. ■

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### ENDNOTES

- 1 Ellis, David (1993). Modeling the information-seeking patterns of academic researchers: A grounded theory approach. *The Library Quarterly*, 63(4): 469-486. Available: <http://www.journals.uchicago.edu/doi/abs/10.1086/602622>
- 2 (See Meho, Lokman & Helen Tibbo (2003). Modeling the Information-Seeking Behavior of Social Scientists: Ellis’s Study Revisited. *Journal of the American Society for Information Science and Technology*, 54(6): 570-587. Available: <http://hdl.handle.net/10150/105662>)
- 3 (See Head, Alison J. (2013). Project Information Literacy: What Can Be Learned About the Information-Seeking Behavior of Today’s College Students? (April 10, 2013). Invited Paper, Association of College and Research Librarians Conference. Available at SSRN: <https://ssrn.com/abstract=2281511>)
- 4 (See Prabha, Chandra, Lynn Silipigni Connaway, Lawrence Olszewski, and Lillie R. Jenkins (2007). What is Enough? Satisficing Information Needs. *Journal of Documentation*, 63(1): 74-89. Available: <http://www.oclc.org/research/publications/archive/2007/prabha-satisficing.pdf>)

# Our Stories Transforming Our Libraries

» The York County  
Library System

BY MINA EDMONDSON AND DEBORAH  
EICHER-CATT

**T**hese narratives chronicle the authors' journeys to collaborate and discover the transformative impact that stories have on library culture and library staff. This study describes a research collaboration between York County Libraries and Penn State York. In Phase I, we collected stories from library staff as the library system was being challenged to reimagine public libraries for the future. The major themes and types of organizational stories identified in the initial narrative project were presented during a county-wide all-staff in-service training. The library District Consultant (first author) and the Penn State professor (second author) then facilitated a workshop designed to lead staff in their exploration of these topics and generate a written record of their storytelling/discussions. This data became the basis for Phase II of the project and allowed the system to strategically assess its evolving culture and identity.

## MINA'S STORY

Having worked in public libraries for nearly 20 years, I have witnessed and been affected by many shifts in the library community. I recognized as I moved from support staff into leadership that it can be difficult to communicate nuances in policies and procedures clearly and consistently to all staff members. Not all attempts at communication are accurately received, because of barriers in the workplace. Differ-

ing staff needs and motivations, experience levels and knowledge of societal change can prevent the message from being received. Creating and communicating vision during times of profound change can prove even more challenging, especially when new concepts and uncertainty are involved.

In 2008, funding for public libraries in Pennsylvania was cut drastically. As a result, many programs, services and even hours were reduced. In York County, the number of holds available to library members was greatly reduced. I recall a conversation I had with a concerned library staff member at the front desk.

"How can we stop providing materials that people want? They will just stop using the library," the staff person asked with aggravation.

"We are not reducing the resources available to our patrons, but are requiring them to wait longer for some popular materials," I responded. "With cuts in our ability to purchase new materials, we need to reduce the numbers of duplicate items purchased, and are making access to these materials more freely available to all members."

"But that's not fair to our regular users, homeschool families, seniors and shut-ins" he replied, obviously not satisfied with my answer.

I explained that a strategic decision had been made and our responsibility was to support that decision. "We want our users to experience the reality of what reducing funding to libraries means

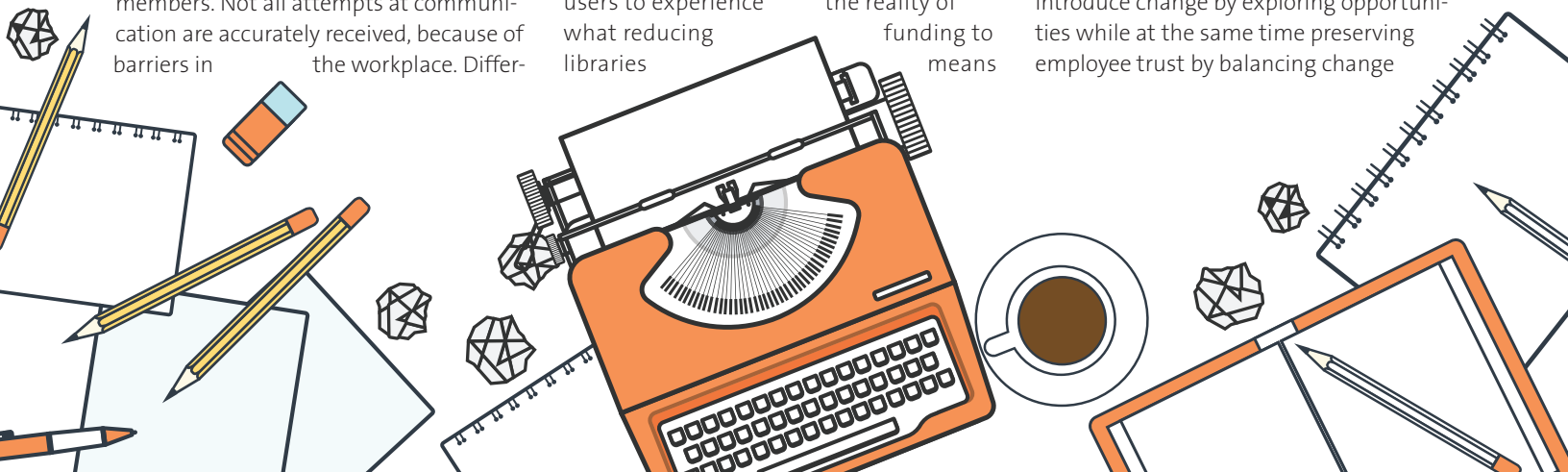
to them as individuals. We want them to experience the impact of losing libraries and what library services mean to the community."

"But people are mad and complaining to me!" he said, again in an irritated tone.

I could see that the impact of this change was clearly hitting our staff. I calmly reiterated the message, "Your task at the desk is to hear the complaint and then help refocus that anger on the politicians in Harrisburg, not at the library system. That is why we have prepared talking points for every staff member. It is also why we have provided a mechanism to help library users contact their state representatives to express their concern."

As the above vignette illustrates, the change of policy and procedure required education and a change in communication patterns for the front line staff. Building the scaffolding necessary to enable staff to successfully shift patterns of thinking and modify entrenched actions requires time and a clear message. I learned that the strategic planning process for the library system can serve as that scaffolding.

I personally enjoy the strategic planning process and see its value. My voice, combined with other entrepreneurial and visionary leaders, can create amazing possibilities. Leadership, especially during strategic planning, has the ability to focus on opportunities rather than problems. Leaders can introduce change by exploring opportunities while at the same time preserving employee trust by balancing change



and continuity (Drucker, Senge, Hesselbein, & Peter F. Drucker Foundation, 2001). I have worked at all levels within the library. I understand the needs of typical library users. As district consultant, I have the vital role of balancing the needs of different libraries and communities in the system and to help manage that change process.

In 2011, one of the key issues addressed in the York County Library System long-range strategic plan was what will librarians do in the future, and how do we prepare our libraries for that role? Included in that plan were the objectives of helping our staff fully understand the five literacies as presented by PA Forward--a statewide initiative of the Pennsylvania Library Association and launching a countywide education program on the five literacies. This is a major conceptual change, as it requires moving the idea of libraries from being book repositories to being community institutions that empower each community member's personal growth while simultaneously elevating the quality of life for all Pennsylvanians. The five literacies on which PA Forward focuses are Basic Literacy, Information Literacy, Civic and Social Literacy, Health Literacy, and Financial Literacy (Pennsylvania Library Association, 2016).

In 2012, York County began exposing library leadership to concepts regarding the *Library of the Future* as delineated in the strategic plan process (Weber, 2011). At an open forum attended primarily by library leaders and system board members, Jamie LaRue, then-director of the Douglas County Libraries in Colorado, discussed the role of e-books in libraries, weeding collections to provide what users want, and getting librarians out of the building and into their communities. A few months later, Garry Golden, professional futurist, offered his insight into future trends, and how libraries can be prepared to meet the changes forecast in his talk. His audience consisted of library directors, board members, and leadership from across the county. Finally, Joan Frye Williams, a nationally-known library consultant, shared her thinking at a staff in-service training. In her talk, Williams indicated that libraries will move from being "agencies of information" to becoming "facilitators of transformation" for people throughout their lives.

System leadership had been gathering information about these change processes, incorporating them into our thought patterns, and creating a shared vision for



the future of York County Libraries. We as individual library leaders chose to 'catch the vision,' remove conceptual and material boundaries, and create the dynamic needed to change (Senge, 2004, p. 43). The heart of building shared vision, after all, "is the task of designing and evolving ongoing processes in which people at every level of the organization, in every role, can speak from the heart about what really matters to them and be heard" (Senge, Kleiner, Roberts, Ross, & Smith, 1994, p. 299). The challenge remained to design training and communication to share our vision with library staff.

Now I was excited. I love change! I love a challenge! When I am presented with new ideas and possibilities, I tend to change from being an introvert, sitting on the sidelines and absorbing information and concepts, into a cheerleader. When asked during the strategic planning process, "Can you help communicate the *Library of the Future* to library staff?" I quickly realized that I could. Because I can identify each of those staff members with myself at different points in my career, I felt I understood their needs to understand and to be invited into the process of creating the *Library of the Future*. I responded, "Yes, I think I can." At that point I was given leadership of the strategic goal of preparing our staff to see and support the library as a learning place and information resource for life transitions, as well as the strategic objective to describe the library as a "learning place" and develop a program of learning for the *Library of the Future*.

It is interesting now to note that in 2012, as a precursor to the *Library of the Future* strategic planning process, library staff members across York County were surveyed to assess their current attitudes, values and beliefs about the library culture (Weber, 2013). Survey results indicated that staff members clearly believed people are

drawn to libraries primarily because of the resources, services, and programs libraries offer, not because of their atmosphere or potential roles as community hubs or meeting places. This indicated to me that a process needed to be designed that would, over time, transform that basic belief held by library staff. This was an opportunity to create a new shared vision for library leadership, all staff members, and library volunteers. However, the ability to communicate these changes to the public would require providing new language regarding libraries and their role to every member of library staff, and supporting staff efforts to incorporate this language into their interactions with the public. Our 2012 staff in-service day training was the first step in this process. At this training, most frontline staff and many managers were introduced to these concepts for the first time.

Soon after this training, I created a webinar using Prezi, a screen capture video tool, and Survey Monkey to create and reinforce the concepts introduced and relate these concepts to the strategic planning process. All county library staff were required to view the webinar and answer a survey to qualify for Continuing Education (CE) credits. This reinforced a major philosophical change at York County Libraries. Libraries are no longer just about books; they are about education and learning. Our communities value education, so libraries can no longer simply read stories to little children: we must prepare children and their parents for the future. I wanted all staff to see that libraries provide the space and place for programs and connections to community organizations.

One of the follow-up survey questions encouraged staff to communicate library transformation stories. My favorite was related by a staff member at Kaltreider-Benfer Library in Red Lion. He recalls a mother coming into the library and requesting a library card for her daughter. As the young girl learned to read, she attended summer reading programs, chose new books to read, and learned about new series and authors that might interest her. She worked on reports at the library for school projects. While in high school, she also researched colleges and completed her FAFSA using library computers. While in college, during her spring and winter breaks, she used the library's resources to find materials for research projects. Eventually, she celebrated her college graduation. His next recollection of this young woman was checking out

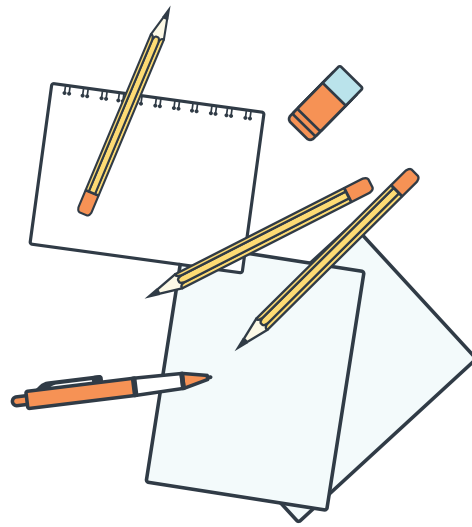
books to plan her wedding and decorate her new apartment. She regularly came in for reading materials, and then she asked about books on childbirth and parenting. His last interaction with her was placing holds on books about breastfeeding her new child. This staff person hoped to be there to give her child her/his first library card.

This story is the perfect representation of the library being used at different life stages. This is the embodiment of the concept of the *Library of the Future*: helping people transition as they transform their lives. As Marek describes in her book, *Organizational Storytelling for Librarians*, this type of story is called a “sacred bundle story” (2011, p.17). This type of story can be used as a powerful strategic planning tool since it reveals the values and norms embedded within an organization’s collective identity. In this case, stories such as these help to create the shared vision that libraries are now about transforming people’s lives and not just serving as information sources. This story produces an emotional connection to a patron and reinforces the idea that library staff are change agents.

In 2014, I was introduced to strategic storytelling through training sessions held by the State Library of Pennsylvania. In partnership with Michael Margolis, *The Library Story: Strategic Storytelling Toolkit for Public Libraries* (2015) was created. This created in me a desire to collect library stories like the one related above. I could use them in York County to tell our story to our community, stakeholders, and to determine how our library staff had integrated the training information into their professional lives. It became apparent to me that organizational storytelling (Boje, 2008) was integral to our change process. Not long after this session, I met with my former communication professor, Deborah Eicher-Catt. She had worked with me when I was an undergraduate, helping me to submit an article to *The Kentucky Journal of Communication*. We had always talked about wanting to collaborate in the future. I was excited to describe to her our strategic plans and the value of storytelling to the process.

#### DEBORAH’S STORY

It’s late Friday morning in early summer 2014, and as I prepare to meet my former student, Mina Edmondson, for lunch at the downtown farmer’s market, I can’t help but wonder how her new position in the library has been going for her. She is now District



Consultant for York and Adams Counties. When I had Mina as an undergraduate student, she was working in the library at the time. As I recall, I supervised an independent study with her in organizational communication where she applied her learning to the library context. I am anxious to hear what projects she is working on and what her daily work-life now entails. I knew when she was an adult learner that she was destined to find ways to make a difference in her world. So, I was not surprised when I heard that she had completed her M.L.S. and was hired full-time in a coveted staff position for the local library system.

As I scurry into the market, I immediately see her at a lunch table. After initial greetings and ordering our meals, a lively conversation ensues about life’s events—both personal and professional. At one point, Mina begins to discuss a library storytelling project she had just begun in earnest. She had attended some training sessions by national library consultant, Michael Margolis, called “GetStoried.” She explained that the goal of the training was to teach library personnel how to collect stories from staff and administrators (Margolis, 2015). Given my own interests in the communicative dimensions of narratives, I was immediately intrigued. She told me she was learning about how important narratives can be for helping library personnel strategize about how to respond to the changing nature of library culture brought about by the digital age.

My interest was piqued at hearing the key words: “narratives,” “change,” and “culture.” “That is fascinating,” I replied. I described how my discipline of communication is also interested in narratives, given that they are considered to be a vital way

in which people make sense of their worlds (Bruner, 1990; Fisher, 1984). When analyzed, narratives also reflect the cultural worlds from which they come. So, theorists of organizations (like libraries) have long appreciated how stories can reveal a great deal about what an organization believes, what it values, and the attitudes its members hold toward the world (Bartlett, 2011).

“This is exactly what the GetStoried training was about,” Mina replied with excitement. The training encouraged libraries to collect, share, and analyze their own stories so they can better adapt to the changing needs of their communities.

After talking about these ideas for a while, it suddenly occurred to both of us that we might have a collaborative opportunity in the making, something we had both mentioned in the past. What a serendipitous moment it was! Given that I was scheduled to teach communication research methods in the fall, I told Mina I could easily make our focus on narrative methodology. I could have my students actually interview library personnel and collect stories for her from around the county.

“Could you actually do that?” Mina asked.

I replied with an emphatic “Yes.” As I described, I could design my fall course as a “service learning” course, a mode of pedagogy that Penn State encourages. It is a way for students to learn course material by actually applying their new knowledge in real-world community settings. I thought working with the library system would be a great learning opportunity for my students.

Mina agreed that the idea sounded like a win-win situation. While she had done a short in-service training with staff and collected some transformational stories, having so many more stories from library staff throughout the system would benefit the system greatly in reimagining libraries for the future. And so our collaboration began. We used our remaining lunch time brainstorming what we wanted to accomplish and how to get started. We both knew that fall semester 2014 was right around the corner.

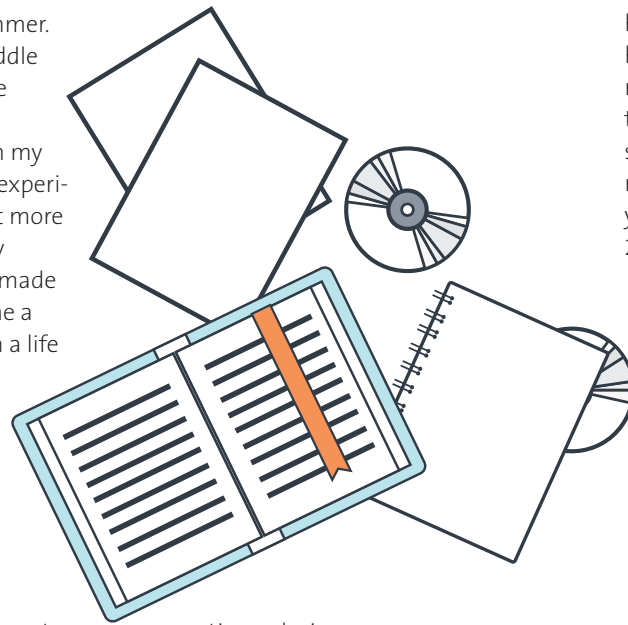
As I was driving home from lunch that day, I was pleased at the prospect of establishing a genuine collaboration with the library system. I couldn’t help but recall the significance my early library experiences in my small hometown in Michigan had on me. I was drawn to my little local library and absolutely loved being there. I remember walking on my own at an early age the two blocks from home to find books

to read—especially during the summer. Given that I grew up in a lower-middle class family, my parents didn't have the money to buy me many books. I've often thought, as I moved on in my educational path, that those early experiences of going to the library meant more to me than I perhaps had originally acknowledged. Those experiences made a lasting impression, instilling in me a love for learning and setting me on a life course I couldn't have imagined so long ago. "I wonder what the library means to all the people who actually get to work there," I thought as I pulled into my driveway.

### OUR INITIAL PROJECT DESIGN

Over the course of the summer, we met several times to design and coordinate our efforts. We knew we wanted to collect data through qualitative interviewing and storytelling that reflected current understandings of the library system culture, in order to assist the system's strategic goal of reimagining libraries for the future. We also wanted to provide Penn State undergraduate communication students the opportunity to learn about qualitative research and narratology (the study of narratives) through first-hand experience in the field, where the outcomes of their efforts could make a real difference to the county library system. We decided to interview as many personnel as possible from the 13 libraries within the system. We also thought it was important to interview and collect stories from different types of personnel, for example, front-desk staff, children's library staff, and administrators. We classified the libraries based upon the total membership (cardholders), collection size, and circulation as reported in the *Pennsylvania Public Library Data Collection* (Pennsylvania Department of Education, 2014). We also brainstormed the types of questions we would ask personnel, resulting in our final interview protocol, consisting of eleven open-ended questions (see appendix A). These questions solicited narratives of various types and provided the opportunity for personnel to describe their work experiences and their perceptions of the library culture as a whole.

It was decided that the 13 students enrolled in Deborah's research class would each digitally record interviews from three personnel, transcribe the interviews, and create typed transcripts for future the-



matic analysis.

As fall semester approached and our plans solidified, we made a presentation about the planned service-learning initiative at a quarterly library meeting attended by system-wide directors. We were able to field any initial questions about the study and, most importantly, solicit the cooperation of all personnel involved in the project, since each interview would take library staff approximately 30-45 minutes of their time. At this meeting, it was also explained that the primary responsibility of securing volunteers from the various libraries rested with Deborah and the student research team, comprised of the 13 undergraduate students from her research class. Informed consent was obtained from all research participants. We also informed potential interview subjects that the data would be collected in a way that would preserve their anonymity, in regard to Mina and others involved in the research initiative. These efforts became what we eventually named Phase I of our study. Deborah sought approval for the research from Penn State's Institutional Review Board, and the study was classified as "exempt," given its proprietary focus.

In Phase I, 113 staff personnel throughout the system were identified as potential interview subjects. During the fall semester 2014, the Penn State students interviewed 25 of these 113 staff members (22%). Of the 25 administrative personnel in the system, the students collected data from 13 individuals (52%), for a total of 38 employees. Of the 13 libraries within the system, students were able to visit and collect narratives from 12, a surprisingly

high number. In this phase of the study, branch and regional/member libraries were represented equally, at six each. Across the system, these 12 libraries included five small (under 80,000 circulation/year), four medium-sized (under 200,000 circulations/year), and three large-sized libraries (over 200,000 circulations/year).

While the students were taught how to qualitatively analyze their collected data (and presented these preliminary findings to us at the end of fall 2014 semester), the data was not fully analyzed by us until the following year, during summer and fall 2015. Deborah secured a Penn State Advisory Board Grant which supported a teaching course release for fall 2015. This allowed us the opportunity to carefully analyze the data for recurring themes or patterns. From Phase

I of our collaboration, we produced "Reimagining Public Libraries as Learning Communities: What Library Stories Can Tell Us" (Edmondson & Eicher-Catt, 2016). In addition to reporting on the inception of our collaboration, its design, and implementation, in this article we reveal what our collected stories tell us about this library system's organizational change process. In particular, in response to our interview question, "What does the library mean to you?" we identified some major themes that represent the embodied values of the institutional culture, and reflect its collective identity. These themes were: 1) the ideals of freedom and stability, 2) the maintenance of democratic values, 3) the importance of nurturing social connections, 4) an appreciation for lifelong learning, and 5) the all-encompassing experience created by engaging in such a vital point of contact with the local community. We also found staff members were experiencing an overriding tension between maintaining traditional values of library culture and the need for libraries of the future to innovate and change.

### THE EVOLUTION OF PHASE II OF OUR PROJECT

#### Deborah's story

In spring 2016, Mina contacted me. The York County libraries were having an All Staff In-service Day Training on May 6, and they wanted us to be keynote speakers. I quickly agreed, given that such an event provided us with the opportunity to share the results of Phase I. As Mina acknowledged, "I want

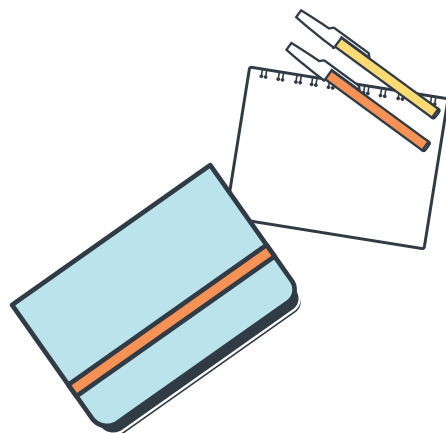


to make our presentation accessible to all of our staff. I want them to see their own stories and take ownership of the information we present.”

Given our hour and a half time allotment, we decided that we would engage the audience more directly in the storytelling process. It was also a great opportunity to collect more data, since well over 100 people would be attending. And so, Phase II of our collaborative project began. We met several times before the May in-service training. We put together a PowerPoint presentation which gave an overview of Phase I. More importantly, we brainstormed about what additional stories we wanted to collect. We decided to design the workshop component of our time as a small group activity. We wanted to focus on some of the initial questions we posed to Phase I participants, and also explore in more detail the themes we discovered. This in-service training would provide a wonderful opportunity to ask library personnel to share their stories not only with us but also with each other, in an informal setting.

We were committed to creating time during the in-service training for oral reporting out from small group discussions from the library staff themselves. We also asked every group to produce a written record of their discussions that would give us more data to analyze later. Therefore, after our initial overview of Phase I, we broke the audience of 114 staff members into groups of five to seven members, trying to disperse everyone in a fashion that allowed them to meet and discuss ideas with people with whom they did not regularly work. We gave each group a pen and paper, and asked for a group volunteer to serve as the recorder. We told them we were going to review the themes we found in their stories, along with some other questions, and asked them to discuss these in their groups. We gave groups about 5 to 7 minutes to discuss and record each question or prompt. We then asked for a volunteer from 2 or 3 groups to come forward and report to the entire group as a whole what their discussion/storytelling had revealed.

The prompts and/or questions we posed during the in-service were: 1) Please share your first library experiences; 2) What was significant about those experiences? and 3) What does the library mean to you? Following Marek (2011), we knew that these types of initial prompts/questions would generate “who I am and why I am here” type sto-



ries. This type of story, when shared orally among organizational members, can be beneficial in grounding members’ attitudes, values, and beliefs in the identity of the organization as a whole.

After giving participants time to share these stories, we moved on, in order to more fully explore the themes that emerged from our Phase I data. We thus proceeded to ask: 4) Why do you think the library represents the ideals of freedom and stability?; 5) Why do you think it is important for libraries to maintain democratic values?; 6) Regarding nurturing social connections, what activities are happening in your library as examples of this change in thinking about libraries?; 7) Regarding life-long learning, describe how working in the library has changed you; 8) What would the ideal library of the future look like—if we had...increased funding, increased space, increased technology, increased...?; and 9) Given the focus on innovation and change, are libraries still a repository for books?

## PHASE II—WHAT OUR SHARED STORIES REVEALED

Before the in-service training began, each group was asked to record their responses to the questions and discussion prompts. As mentioned above, our prompts were primarily related to the key themes discovered in Phase I. After introducing themselves and sharing their first library memories, we asked, “What does the library mean to you?” As discussed above, these questions/prompts were designed to help participants share their collective identity as a library culture. During their discussions and storytelling sessions, several themes emerged that indicated: the library is a place for the community to come together; it means connections; it is an information source; it means learning and diversity. The answers Mina expected, such as resources, services,

programs and books (identified in our 2012 survey) were now appearing as only minor themes. Other interesting terms were used in response to this question: potential, welcome, inspiration, public service, safety and positive experiences. It was apparent to us that the staff was feeling pretty good about what they do and the atmosphere they were attempting to create. It was also apparent that the library culture was shifting in terms of its values and beliefs. These responses provided new “sacred bundle” stories that reflect the changing identity of the library system as a whole.

At this point, the first theme identified in Phase I (libraries represent the ideals of freedom and stability to their communities) was presented to the group as a topic for discussion and shared storytelling. As they orally reported to the entire group, their discussions focused on several concepts: personal growth, equal access to information and resources, opportunities, and finally, that freedom of ideas and expression were key to the promotion of freedom. The fact that libraries have been a constant in the community, were a safe place for everyone, and functioned as anchors in our communities reinforced the paradoxical concept of stability. Enacting professional values of promoting privacy, neutrality, freedom from judgment, and opposition to censorship created a sense of great pride for the staff. A staff member reported that libraries should be “stable but not stale.” Another member commented that “libraries are like comfort food in physical form.”

When asked why libraries were important for the maintenance of democratic values--the second theme identified in Phase I--staff readily listed many concepts that showed how these values are shared by our system’s libraries. Among those values listed were the concepts of equality for everyone and freedom from prejudice and discrimination. Staff discussions addressed freedom of speech, intellectual freedom, and the value of diverse opinions and viewpoints. Staff members sensed that the significance of citizenship, literacy, safety, and trust enhanced the quality of life for all our community members. As one staff member commented, a library is a “great equalizer” within a community. Another indicated, “if you want to offer equal opportunities, it starts with equitable access to information.” As many noted, the library is a great place in which younger people can learn respectful behaviors from the older generation.

» **The next question allowed staff to dream. What will the Library of the Future look like? Words that emphasized “growth” dominated the list; words such as: more, bigger, better, different, flexible, and innovative. These descriptions relate to every area of library services. Staff equally recognized the need for technology to support growth and ideas, and the need for more staff that is better trained and better paid.**

The social connections created in libraries have become a pivotal marker of change for libraries. An overwhelming marker of this change is the variety of programs and personal and professional connections created in the library. The library staff have learned to say “yes” and to adapt quickly to needs and trends in our communities. Examples of these programmatic changes are STEM and STEAM programs for children and teens. Art and dance partnerships also allow for more greatly diversified library programming. Health, mental health, and social service programs are the results of partnerships built with other community organizations. It is noted that some libraries are creating fantastic programs, and there is a desire to better utilize these resources system-wide. Book shelves are being replaced with open spaces to allow for libraries to become gathering places. In this regard, we heard a compelling story. As one group reiterated, “only in a public library can a business consultant from Chicago hold an intensely meaningful conversation with the resident homeless person who likes to have ‘conversations’ with the portrait of the “Lady in Red” in our Quiet Reading Room.” The conversation between this unlikely pair ended in an embrace.

Libraries have become leaders in encouraging members to pursue lifelong learning opportunities. This theme was noted frequently in the Phase I interviews. Exploring this concept from a different angle, we asked staff, “How has the library changed you?”—recognizing that change is a reciprocal process. Learning social skills was a primary focus of staff discussions. Improved communication skills, socialization, patience, tolerance, and flexibility were identified by staff as ways the library experience has changed them. Understanding the diversity in their communities also ranked highly. Understanding poverty, greater awareness of mental health issues,

respecting individuality, and treating each communication transaction as unique and not as routine—all these change who we are. Library staff appear to be more aware of how the library and its access to resources effect change in ourselves and our communities. As one staff member reported, she had learned that “you can judge a book by its cover but certainly not a person.” Another indicated, “we are the places where people—all people—can better their lives and be more informed to be good citizens.”

The next question allowed staff to dream. What will the Library of the Future look like? Words that emphasized “growth” dominated the list; words such as: more, bigger, better, different, flexible, and innovative. These descriptions relate to every area of library services. Staff equally recognized the need for technology to support growth and ideas, and the need for more staff that is better trained and better paid. Perhaps most important, they wanted to retain superior staff. For the library of the future, we are asking for specialized spaces for hands-on programs, teen spaces with more and diversified technology available to enhance learning and creativity, open exterior space for gardens, and innovative programming. We also want multi-use spaces to accommodate various learning styles, disabilities and age groups. These spaces need to incorporate dance, the arts, community centers, maker activities, and utilize satellite sites located beyond our walls. Funding and its relationship to business and community connections are very important in our future. We heard the voices of caution: warning about growth while maintaining our integrity, supporting our home-like feel, focusing our purchasing based on valid collection tools, and defining the outcomes we want to achieve.

As described by Marek (2011), all of these shared stories are what Stephen Denning describes as “springboard stories;” i.e.,

stories that can spark action for members during a strategic planning process that leads to organizational change and learning. As Marek indicates, such stories enable a leap in understanding that can induce brainstorming and change.

Our final question addressed the topic of tradition versus innovation. We asked: “Are libraries still a repository for books?” Several groups simply responded “yes,” indicating the desire to maintain the traditional view of libraries. These stories are “cautionary tales” according to Marek (2011, p. 35). Although most cautionary tales typically highlight the negative outcomes of not making organizational changes, in this case these stories cautioned against “throwing out the baby with the bathwater,” i.e., getting rid of books altogether.

The vast majority of those attending the in-service training, however, in response to the question, “Are libraries still a repository for books?” said “yes... but...” and listed all the other things that our libraries currently are and are becoming. Here, it became readily apparent that our library culture is, in fact, evolving. Libraries need traditional books and resources, but we must continue to provide new ways of accessing information and services. To prevent libraries from becoming obsolete, we must broaden the concept of “library” to include real-life experiences. Libraries provide access to leisure activities and social interactions through book groups and sewing or knitting circles, not to mention LEGO clubs and video gaming. Historically, providing information and access to it is the foundation upon which libraries are built. However, methods of providing these foundational elements, and relationships with our communities, are ever-changing.

#### **OUR DEBRIEFING STORY**

A few weeks after our in-service training, we met again. We had some edits on a draft

manuscript to discuss, but we also wanted to debrief about the in-service training. When Deborah asked Mina if the in-service training unfolded the way she wanted it to, Mina responded with a resounding “Absolutely.” She was impressed with the level of ownership staff members exhibited when it came to the themes we shared with them from Phase I. Her goal of having them recognize that these were *their stories, their ideas*, was realized. Deborah agreed that the training went well and added that she was particularly impressed with the level of engagement she witnessed. Having taught small-group discussion for many years, she indicated that not all group activities are so successful. This indicated that the level of involvement by staff members was productive. After reviewing the in-service training evaluation forms, Mina shared some of the results.

Responses from the in-service training evaluations were overwhelmingly positive. Staff members commented: “the passion of our staff members is very exciting to see;” “this [in-service training] validated for me the role a library plays in the community.” Another employee noted, “I may not be doing something heroic at the library but I still have an impact on people’s lives.” Only a few participants questioned the value of the training, making comments such as: “I don’t know how this in-service training helped me learn how to check out books better” or “This in-service training was too philosophical for my tastes. I don’t see the practicality of it.” These negative evaluations are quite understandable. We had designed the in-service training specifically to explore the current library culture, i.e., the attitudes, values, beliefs, and the thinking behind what staff members typically do every day. So, we interpreted these few negative comments positively. To us, these comments indicated that we had succeeded in creating a communicative space where staff members could explore their evolving collective identity at a more abstract level. We had provided an important opportunity, therefore, for participants to reflect about who they are and what they want to become as a library of the twenty-first century.

Not being an employee of the library system, Deborah was especially interested in whether any of the stories heard that day or if the way the in-service unfolded had been surprising to Mina. Mina indicated that two things surprised her (in a positive way). One was the level of passion that groups showed when they reported out to the whole group.

It was evident to her that these had been productive conversations and instances of storytelling about the themes at a level she could have only hoped for. The other surprise for her was seeing library staff take the ideas about the library of the future even further. Some visionaries see home delivery of materials using drones, for example! Or, they see Pop-up Libraries in the most resource-deprived and diverse areas of our communities. Or, they see even greater use of new and developing technologies.

As our conversation ended, Mina mentioned that the York County Library System was under new leadership. While creating and communicating vision during this time of profound change will again prove challenging, our collection of library stories and the time spent identifying the current values and beliefs of library staff and leadership is encouraging. It provided much-needed scaffolding from which the York County System’s Library of the Future has evolved. From Deborah’s perspective, it is apparent that the transformational process is well underway. For Mina, it appears that the scaffolding is in place but now it is time to construct the libraries we envision. A new strategic plan is being formulated and the narratives collected have already been utilized in the planning process. s

To end, we share a story from one of our library staff who attended the in-service training focused on storytelling. Mina received the following email:

*“Hello Mina,  
I just wanted to say thank you for this morning. That was so empowering and really got to the core of why we do what we do. It was amazing to hear all of that and to talk about it, it got me so excited to be part of something like this.*

*I wrote this poem that I want to share with you:*

*Home  
The library once again took me in  
Like family, like home, like a second skin.  
And they will take me in again, and again,  
and again  
Until I am old and grey and thin.  
Because you see the library is not just books  
for the eyes  
It is about ideas and visions and impact and  
lives  
It is about achieving, dreaming, changing,  
growing and yes:  
Even family ties.”*

Dawn States (2016) ■

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# Doing technology

## » A teaching collaboration between Fresno State and Fresno County Public Library

BY RAYMOND PUN, SEE XIONG, ADAN ORTEGA, AND VANNA NAUK

In spring 2016, the President's Office at California State University-Fresno (part of the California State University system) offered grant opportunities for academic departments to create a community engagement program for students interested in supporting the Fresno community at large. Known as the Touch the Community project, the program solicited proposals that focused on a community concern and on how to address this issue. Several proposals were selected and funded (\$2,000) by the President's Office for the duration of two academic semesters. Some of these grant projects involved service-learning components: building computer labs, creating ESL programs, and engaging with K-12 students.

Fresno State librarians decided to put together a proposal focusing on the theme of the digital divide, and how collaboration with the Fresno County Public Library (FCPL) could address this concern through technology training workshops. This article will briefly cover how this academic-public libraries' partnership created new opportunities for the community, students, and for each collaborator. The article will also share the perspectives from student ambassadors who taught technology training workshops in selected FCPL branches.

### STARTING THE PARTNERSHIP

Several years ago, I co-wrote an article with Professor Elaine Carey entitled "Doing history: A teaching collaboration between St. John's University and the NYPL."<sup>1</sup> When I co-wrote this article, I was a public librarian at NYPL collaborating with a history professor at St. John's University. Now I am covering

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another kind of partnership, but from the other side as an academic librarian collaborating with public libraries. This experience was very helpful as I navigated through several communication channels and paperwork to ensure that both parties were in agreement with this partnership.

Fresno County is located in the heart of the Central Valley in California. Based on our literature review and statistics, we found that there is a high concentration of poverty in the Central Valley.<sup>3</sup>

In addition, a 2013 study by the Public Policy of California revealed that 40% of state residents do not have access to the Internet.<sup>3</sup> With the rise of government information and job opportunities migrating to the web, and the rise of emerging technologies and online tools being adapted in higher education, for-profit companies, and other agencies, it is becoming impor-

tant for all Americans to have access to these resources. On top of that, Fresno County is quite diverse with people who speak Hmong, Arabic, Cambodian, and Spanish, among other languages.

Our goal for this project was to demonstrate the library's commitment to support our community members to cross the digital divide. We hired and trained ten student ambassadors to lead and teach technology workshops and provide technology services to the community members in selected branch libraries. These student ambassadors gained leadership experiences and taught patrons how to create an email account, surf the Internet, use their mobile devices, download the public library's e-book collection, create resumes and search for jobs online, and learn to use social media sites, such as Facebook and Twitter.

Historically, there were limited contacts between Fresno State's Henry Madden Library and FCPL. This partnership led to new kinds of opportunities for both institutions. It started first with one email to the FCPL library outreach manager and several phone calls and meetings to solidify this collaboration. It became evident that FCPL wanted this collaboration, since they had limited technology instructors and wanted to provide more workshops to the community. There were also discussions on the memorandum of agreement/understanding, which is an important document to cover the legal bases for both parties. We discussed at length which branches would host the student ambassadors, and it came down to three locations: West Fresno, Woodward Park, and Sunny Side. These libraries were located across Fresno County, and were selected because they had classrooms in which to teach computer skills. The infrastructure is an important factor to consider when organizing a technology-training workshop with public libraries.

» **My experience as a student ambassador for the Touch the Community project was humbling. I think about how sometimes I have become out of touch with the community I live in because I spend most of my time in an academic environment as a student. I met people who used the service we provided and much more.**

#### **LAUNCHING THE COMMUNITY ENGAGEMENT PROGRAM**

Once it was announced that our proposal was accepted, we immediately called for student ambassadors. We interviewed students and recruited ten to participate in this one-year project. In addition to basic technology skills, we wanted students who were bilingual in order to support non-English speaking patrons.

We had student ambassadors from different majors who could speak Spanish, Arabic, Hmong, Cambodian, Hindi, and Punjabi. In our proposal, we described how the grant would fund their transportation costs. It was exciting to recruit these students who were ambitious and motivated to support our communities through this collaboration.

To build on this program, we had one orientation session where all students came together to learn about teamwork, instructional methods, and customer service techniques from librarians. We also showed them how to access specific resources, such as FCPL's e-books, social media tools, and job sites. We wanted the student ambassadors to feel comfortable in teaching these tools and resources, since they were leading most of the workshops.

Logistically, it was challenging to schedule ten students at three different branches. In fall 2016, we had ten workshops and there were two student ambassadors covering each workshop. Each workshop covered a specific theme from basic computer usage to social media to job searching. FCPL handled most of the marketing for these workshops. Some workshops had more patrons attending, and others did not have anyone at all. This was a challenge, and we identified ways to improve this for spring 2017. In each workshop, we also had one librarian (either from FCPL or from Fresno State) to monitor the workshop and provide additional support, if needed.

After each workshop, we deployed a

short (optional) Google Form survey for patrons to fill out. We found out that most of the patrons are senior citizens or veterans who were primarily interested in job searching and social media. Many times, patrons came in with a specific question and were not interested in the workshop experience. Some of the student ambassadors also provided feedback and suggested that it would be great to have more than two student ambassadors at each workshop because it could become challenging at times with the number of patrons and their demands.

As a result of the feedback and assessment, in spring 2017, we focused on four drop-in sessions in one branch library, the Betty Rodriguez Regional Library, and had four student ambassadors covering a shift from 10 a.m.–1 p.m. and another shift from 1–4 p.m. This was a dramatic shift, and, as a result, we supported more patrons on a one-to-one basis for longer periods.

We also reduced the Google Form survey to a short paper survey. Again, we found that people needed help with using computers, social media, and creating a resume. There were also unique questions that came up in these sessions, such as cyberbullying and data privacy.

Two of the student ambassadors were computer-engineering majors and provided basic coding help, which was of interest to several patrons. The second semester of the project was much more successful and more focused for our student ambassadors and community members. It was quite the learning experience for all of us to design a collaborative workshop that could meet everyone's needs.

The Touch the Community grant project started in September 2016 and ended in April 2017. Based on our survey in spring 2017, we served more than 50 members of the community. FCPL patrons were calling the Fresno State Library to inquire more about the project. We see that this kind of

service can be very helpful and supportive to the community. Here are three student ambassadors and their perspectives on the Touch the Community project.

#### **STUDENT PERSPECTIVE FROM SEE XIONG**

My experience as a student ambassador for the Touch the Community project was humbling. I think about how sometimes I have become out of touch with the community I live in because I spend most of my time in an academic environment as a student. I met people who used the service we provided and much more. There was one gentleman in particular who came to a session wanting assistance with a job search and left the session with his first resume. He spoke to me about his job search and unemployment dilemma. He spoke about not having a high school education, and how that affected his employment. Working with a lower socioeconomic community that lacks the privileges of a quality education and computer literacy is difficult and exhausting. However, it's humbling and reminds me that I'm not too far from where I came from.

I worked sessions in the affluent, predominantly white, northern Fresno, and sessions in central Fresno, which is predominately Latino and Southeast Asian American. Yet, not a single client I saw was of Hmong descent. Computer literacy is important to the Hmong community because modern technology allows the elders to communicate with their family members, but the use of services outside of the Hmong community is still minimal. To improve services to the Hmong community, we need to work directly with services that cater to them, and find people who are culturally aware of the needs of the Hmong and how to market to them.

#### **STUDENT PERSPECTIVE FROM ADAN ORTEGA**

» **Ultimately, these academic-public library collaborations can be fulfilling and engaging, and, most importantly, they can open new directions to support the academic institution's commitment to student success, diversity, and community engagement.**

While being involved in the Touch the Community program, in particular the technology class initiative at FCPL, I came in contact with many people who spoke a variety of languages and came from a variety of backgrounds. The experiences I had with these community members, I feel, shows that not only is technology help needed for people who do not have access to technology, but it is also important to have technology help in a variety of languages, as well. America has always been a melting pot of people of different cultures, and it continues to be that way today.

I had an experience with a middle-aged Hispanic woman who was asking for general technology help because she had no idea of how to use the Internet. She also spoke no English, which possibly could have been problematic. Fortunately, I can speak Spanish pretty well, if not fluently, and was able to communicate with her as I went through the steps and processes of basic Internet usage.

We eventually were able to set her up with an email account and her own Facebook profile so she could communicate with her friends here in the United States and her family in Mexico. It was truly fulfilling to be able to not only communicate with her and help, but to also get her on her way to eventually becoming proficient when it comes to web browsing and social media.

#### **STUDENT PERSPECTIVE FROM VANNA NAUK**

When I took on the role as a student ambassador for Fresno State, I knew that I would come across an array of challenges, but I wanted to participate in something rewarding. Working with Touch the Community gave me an opportunity to give back to young and middle-aged adults, who have found difficulties with using technology. In addition to technological challenges, I also found it common that students didn't know how to write a resume or lack the skills to

conduct a job search efficiently. With rapid technological advances and competitive job skills forever changing with higher demands, I felt that it was beneficial for our students to stay up-to-date.

I feel certain that Touch the Community was not only a learning experience for the student ambassadors, but also for our students. Because for many of our students, it was the first time that they had ever learned basic skills, such as using the web browser, creating a cover letter, and being introduced to today's workforce expectations.

Lastly, as a Cambodian person, I know that the Asian community in Fresno tends to be afraid to ask for help. However, I think if we continue these efforts to promote our services, particularly the diverse and bilingual team of student ambassadors, they may be more inclined to ask for technology support.

#### **CONCLUSION**

In the future, the Henry Madden Library may consider integrating this model into a service-learning program with an academic department or learning community that can build on students' professional experiences in technology and community engagement.

This partnership with FCPL has also brought new collaborative activities. Since the spring 2016 semester, FCPL offers public library cards to the academic community, and now we are thinking of providing new events and programs for the future, as well.

Ultimately, these academic-public library collaborations can be fulfilling and engaging, and, most importantly, they can open new directions to support the academic institution's commitment to student success, diversity, and community engagement. ■

#### **ACKNOWLEDGEMENT**

We would like to acknowledge our partner—Fresno County Public Library—for being such great hosts and supporters of

this project, and particularly Daniel Ng and Lisa Lindsay.

We also like to extend our thanks to Fresno State's President Joseph I. Castro and the Touch the Community project coordinators, Alex Gallo, Chris Florentino, and Sherri Fisk, for making this possible; to the Henry Madden Library colleagues who have been supportive, Dave Tyckoson, Peter McDonald, Glenda Harada, and Amanda Dinscore; and finally thanks to all of our student ambassadors who embedded themselves into the communities to support Fresno.

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#### **FOOTNOTES:**

- <sup>1</sup> Elaine Carey and Raymond Pun, "Doing History: A teaching collaboration between St. John's University and the New York Public Library," C&RL News 73, no. 3 (2012).
- <sup>2</sup> D. Walters, "Fresno has high poverty concentration, national study finds," Sacramento Bee, August 14, 2015, see [www.sacbee.com/news/politics-government/capitol-alert/article31113221.html](http://www.sacbee.com/news/politics-government/capitol-alert/article31113221.html).
- <sup>3</sup> See California's Digital Divide, June 2013, [www.ppic.org/main/publication\\_show.asp?i=263](http://www.ppic.org/main/publication_show.asp?i=263).

# Signage » A Design-Thinking Approach to Library User Experience

# by Design

BY EDWARD LUCA AND BHUVA NARAYAN

## INTRODUCTION

Amlessly wandering through library aisles and browsing bookshelves can be a pleasurable experience, but when one is new to a library, the maze of floors and the variety of resources can be daunting, and we rely on signs and visual clues to help us find our way. Libraries are “growing organisms” (Ranganathan, 1931), and in our digital age, users can find them more complex and confusing than ever before. Even regular visitors to a library need help to inform and guide them through the continual changes that a library undergoes. This assistance is often provided through signage, which must be regularly reviewed and updated (Polger & Stempler, 2014).

Despite or perhaps because of this, signage is an issue that proves challenging for libraries. Barclay and Scott state that “if there is one truism about library signage, it is that most of it is not very good” (2012, p. 37). Similar sentiments are echoed by White, who identifies poor visual communication as “a practice that librarians commonly cling to” (2010, p. 23), contributing to a poor user experience. Unprofessional, inconsistently designed, and negative signage creates a poor user environment, with “do not,” “prohibited,” and “no talking” signs scolding users rather than helping them use the library productively. Furthermore, bad signage can also turn away users, wasting their time and the time of library staff in answering queries that could be easily addressed with better signage. In fact, White (2010) declares that having no signage whatsoever is better than bad signage.

## LITERATURE REVIEW

Library signage is one of many “touch

Sign Name	Type	Location	Text	Usefulness	Update or Remove	Brand
Exam Results	Informational	Enquiries & Loans Desk, Level 2	Exam Results: “Take control, clear your fines online”  You can now pay your library fines online by logging into My Library @ <a href="http://www.lib.uts.edu.au">www.lib.uts.edu.au</a>  Fines over \$49 may prevent you from accessing your results.	Useful information to communicate when students are borrowing items at the Enquiries & Loans Desk.	Update	UTS logo to be updated. Font to be standardised.

Figure 1: All signs were recorded and evaluated using the following categories: name, type, location, text, usefulness, whether to update or remove the sign, and whether it utilized the library branding appropriately.

points” (Schmidt, 2010) in a library, which are “any interaction the user has with library service” (Hahn & Zitron, 2011, p. 28). Such touchpoints can easily turn into “pain points” (Schmidt, 2010, p. 20), or places of contact that can leave users feeling “confused, aggravated, or disappointed” (Schmidt, 2010, p. 20). Library staff, workshops, and the library’s website are also examples of touch points. Though a single sign may only be a small part of a user’s library experience, the fact “that the library has considered the impact that this one sign has on people’s perceptions of the library is a good indication that it is also considering the impact of more significant touchpoints, such as programming and services” (Schmidt, 2015, p. 25). Poor signage, however, can trigger library anxiety, a term coined by Constance Mellon to describe feelings of fear, uncertainty, and worry when visiting the library (McPherson 2015, p. 317).

Effective signage contributes to a user-

friendly environment, and can “help users move throughout buildings more efficiently and accurately and may reduce questions at service points” (Bosman & Rusinek, 1997, p. 81). It has been found that library users may experience a “fear of appearing ‘stupid’ and revealing ignorance by asking questions” (Coker, 1993, p. 27), which can be a psychological barrier to requesting assistance. More recently, library anxiety has been found to have a paralyzing effect, which can prevent users from “approaching a research assignment rationally and effectively and can influence a student’s ability to complete assignments” (McPherson, 2015, p. 318). Signage can help to reduce this uncertainty, fear, and confusion. Carlile suggests combating issues of library anxiety by providing “visual guidance through better signage, wording directions and instructions in jargon-free terminology, and having staff wear name-tags” (2007, p. 138). Together, these elements allow users to feel more comfortable about using the space, finding

» **Library signage is there to help users to use the library, which could be anything from assisting a user in navigating the library collection, to explaining how to use a self-check loans machine. The role of the librarian is to connect people to information, and according to Schmidt and Etches, signs can be seen as tools to achieve this, and hence their design falls well within the scope of library work.**

information, and locating resources.

Library signage serves two broad purposes: “informing library users and trying to influence their behavior” (Serfass, 2012, p. 5). It is important to help users to feel comfortable and confident in using the library to achieve this. Polger and Stempler argue that library signs are “living documents” (2014, p. 67), and must adapt and change as the library does. Librarians undertake responsibilities around designing signage, brochures, informational handouts, web pages, and promotional and instructional documents every day as part of their jobs. Hence, “librarians are in the business of graphic design, even if they have not been formally trained in design” (Wakimoto, 2015, p. 172).

Signage also acts as an affordance to the resources in a library—affordances are features in the environment that “indicate the potential for a behavior, but not the actual occurrence of that behavior” (Maier, Fadel & Battisto, 2009, p. 397). An affordance, according to Gibson, “points two ways, to the environment and to the observer” (1979, p. 141), and in this sense, library signage is a key affordance in the library user experience. Library signage is there to help users to use the library, which could be anything from assisting a user in navigating the library collection, to explaining how to use a self-check loans machine. The role of the librarian is to connect people to information, and according to Schmidt and Etches, signs can be seen as tools to achieve this, and hence their design falls well within the scope of library work (2014, p. 71).

Improving wayfinding is something that librarians can easily have control over. Mollerup calls this wayshowing and it “includes all activities and implements that make a location navigable: identifiable, understandable, memorable, and accessible” (2013, p. 50). Signage is an integral part of this wayshowing; changes to signage can be prototyped, refined, and implemented in a

relatively low-cost manner, reducing library anxiety and increasing positive attitudes.

Human wayfinding behaviors are affected by three factors: “differentiation of the environment, visual access, and complexity of the spatial layout” (Li & Klippel, 2012, p. 23). Li and Klippel argue that the layout complexity of an environment has the most significant impact on human wayfinding behaviors, and that even in areas with low layout complexity, a “misleading sign made participants choose the wrong bookshelf” (2012, p. 36). Too many signs and signs dense with information can also cause information overload, for, in a sense, signage can be considered the filters we use to sift through the information in our environment. When that information seems too much, Clay Shirky argues that “it is not information overload; it’s filter failure” (Asay, 2009). Hence, signage failure is a type of filter failure.

Godfrey suggests that the same usability principles that are applied to library websites are also relevant to other forms of library communication, such as signage, for “by avoiding library jargon, using personal and friendly language, and reducing unnecessary text, library communication becomes usable, useful, and clear” (2015).

Apart from recommending that libraries create a brand identity and use a consistent visual language on all signs, Schmidt and Etches (2014) re-work Brown’s (2002) classification of the types of signage and propose five types. This article uses these classifications of signs—directional, identification, instructional, regulatory, and informational (Schmidt & Etches, 2014), and uses examples from UTS Library and the literature to present evidence for how these signs can be improved in all libraries.

#### **CONTEXT AND APPROACH**

UTS is an inner-city university with more than a dozen buildings in varying architectur-

al styles, built across several decades. These buildings are not within a campus per se, but located on busy streets in the city amongst several tourist destinations, resulting in a lot of people traffic. Students and academics often struggled to locate campus buildings and the classrooms. Consequently, the university implemented large, standardized signage throughout the university and inside buildings. This signage system was not sufficient for the library’s purposes due to the complex nature of the library’s resources.

Around the same time, the UTS library retrieval system went online in July 2014. This on-site, underground, automated storage and retrieval system uses radio frequency identification to store low-use items from the library collection. The system stores roughly 450,000 items, while a further 200,000 remain on the physical library shelves. This system, although allowing UTS to retain its print collection on-site, is not browsable. In preparation for its implementation, UTS Library staff were faced with the task of not just enhancing its online discovery tools using a design-thinking approach, as detailed in Booth, Schofield, and Tiffen (2012), but also reconfiguring the library spaces and redesigning all the signage. Simultaneously, as described in Tiffen and England, we envisioned the library as a “place of collaboration, social engagement and creativity, staffed by individuals who are approachable, personable, and unique” (2011, p. 238). Existing signage did little to support this vision, as evidenced by the increased number of help desk inquiries.

Since 2012, the UTS Library has also appointed an artist-in-residence to, in the words of our university librarian, “ask questions of us that we’d not ask of ourselves and to consider aspects of the library and its progress from a [visual] artist’s perspective” (Booth, 2016). The first of our artists-in-residence, Chris Gaul, aimed to show that interfaces for exploring and browsing library



» **As the testing was in parallel to the prototyping on account of the low-cost and low-stakes solutions (unlike product testing, for example), we simultaneously engaged in a process of prototyping and testing that informed each other in a continuous process. Once there was enough user input to decide on a sign, we proceeded to make more fixed signage that was professionally produced.**

collections, both physically and online, “can be creative, delightful tools that encourage playful exploration and serendipitous discovery” (Gaul, 2013b). The UTS Library also intended to represent a culture of creativity, as described in Chan, Crosbie and Williams, where “the visual identity will become synonymous with the experience of the library... [bringing] the university together as a hub of knowledge, culture, and collaboration” (2015, p. 2).

Alhamdani describes design thinking as “an inventive process of thinking backwards from people... that leads to design a product, a service, or else is based on the conclusions of the knowledge gathered in the process” (2016, p. 80). Razzouk and Shute assert that design thinking “engages a person in opportunities to experiment, create and prototype models, gather feedback, and redesign” (2012, p. 330). A key aspect of the process involves empathizing with the user, which the Stanford’s design school describes as “the centerpiece of a human-centered design process” (Hasso Plattner Institute of Design, 2013, p. 2). Amiel and Reeves argue that “design-based research calls for practitioners and researchers to engage in long-term collaborations” (2008, p. 33), while Serfass recommends that one staff member should be assigned to oversee signage (2012). In our case, the communication officer at the library, also a trained librarian, was the coordinator of this project and engaged with all the stakeholders including library staff, students, academics, and university staff at various stages of the redesign process. A number of academics were also consulted from various departments, including researchers from the library and information science discipline and from the design disciplines.

We adapted the design-thinking process as follows, to suit an academic library:

1. Empathy: To understand the needs of our users, including students, academics, university staff and members of

the public, we conducted observations (Curedale, 2013), library sweeps (Given & Leckie, 2003), shadowed users, engaged in conversations, and conducted interviews. This approach provided us with rich contextual information and a more insightful understanding of the library user experience than the numerous surveys that had been conducted in the past.

2. Definition: The information we gained from the empathetic approach, above, was used to define the problems we found that were related to signage or could be solved with signage. We conducted a signage audit by photographing signage found throughout the library and mapping them to a table organized according to the categories outlined by Schmidt and Etches (2014, p. 83). We also identified touchpoints that lacked sufficient signage.

3. Ideation: Based on the mapping as above, library staff engaged in brainstorming sessions that were not only fun in terms of group cohesion, but also resulted in several non-traditional signage ideas. These brainstorming sessions also involved some students working part-time at the library, who offered a valuable student perspective with a lot of reflexive humor from their own experiences. The resulting solutions we arrived at had a conversational tone to them. Although this was not common practice in previous signage, we decided to prototype the more playful ideas for testing, as it was in line with our vision for the library being seen as less authoritarian and prescriptive. We also removed signs that were duplicated, redundant, or caused an information overload.

4. Prototyping: We prototyped a range of signs on printed paper. First, we addressed common printed signage around the library, followed by hanging identification signage, and wayfinding signage

last. By beginning with low-cost printed signs, we had the freedom to experiment with fonts, colors, and placement before deciding on a final design. Updating signs in this way allowed us to implement gradual changes over a period of two years, with continual user input throughout the process. This made the process more manageable, and, over time, helped us arrive at signage that worked for all our users.

5. Testing: As the testing was in parallel to the prototyping on account of the low-cost and low-stakes solutions (unlike product testing, for example), we simultaneously engaged in a process of prototyping and testing that informed each other in a continuous process. Once there was enough user input to decide on a sign, we proceeded to make more fixed signage that was professionally produced.

## IMPLEMENTATION

This section details the design-thinking process we adopted as described above. Given and Leckie argue that identifying usage patterns within library spaces is useful in matching “information services to users’ information behaviors, or to redesign the social activity space of libraries” (2003, p. 366). We identified, through user observations and signage sweeps on every floor, that there were a number of issues within the physical library spaces. This was done in a process similar to Given and Leckie’s (2003) library sweeps, wherein we conducted timed walks (or sweeps) through the library space, and documented a range of user behaviors taking place, including signage-related behaviors. This provided a valuable method for investigating questions about how our users interact with the signage. As part of this process, library staff observed, shadowed, and had informal conversations with users over a period of several months in 2013–14. We tracked reference desk

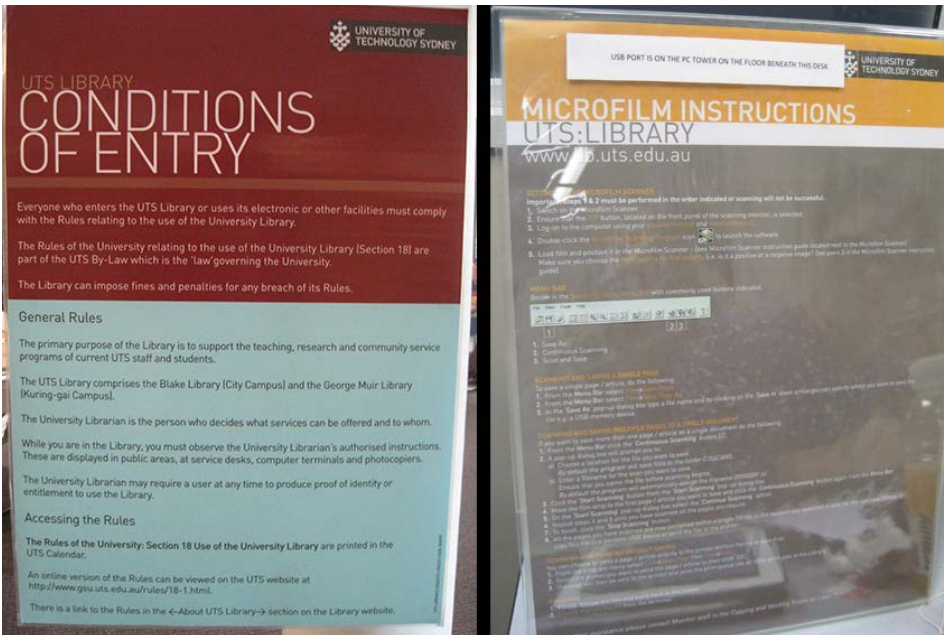


Figure 2: An example of two problematic signs. They use inconsistent colors and fonts, contain too much information, and the content cannot be scanned quickly.

queries using RefTracker and were able to use statistics from the application to assess the changes in the number of queries about particular library topics.

We observed that students were regularly visiting the information desk with questions that the staff believed they had already addressed in various signs throughout the building. These included locating spaces, services, and resources within the building, such as: finding the printing room, printing, locating a water fountain, finding parts of the library collection, locating group study rooms, finding library workshops, and

ordering books from our automated library retrieval system.

The sheer number of inquiries and evidence of confusion amongst our users led us to examine our assumptions about how we expected users to find that information. It was at this point that we discovered that many of the inquiries we received were about wayfinding or how-to processes to interact with library systems. We also identified that some of the recent changes in the library spaces were not implicitly addressed in our current signage. Thus, some of the

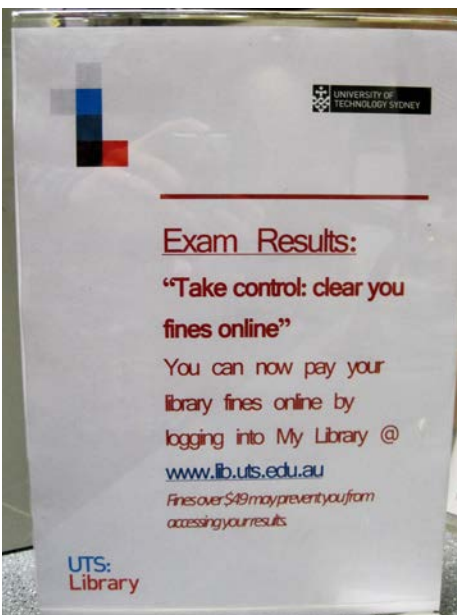


Figure 4: While this sign uses the library colors and some brand elements, the information is poorly conveyed with a poor choice of typeface.



Figure 5: The redesigned version of the sign in Figure 4. The critical information, previously the final sentence, has been flipped to the top of the sign.



Figure 3: A selection of new signs implemented with a consistent visual style, brief messages, and colors corresponding to the floor.

confusion was caused by the very signage that was aimed at reducing this confusion.

We conducted a signage audit to identify the scope of the issue, in which we photographed every sign in the library and created a spreadsheet. Such an inventory of all signs throughout the library allowed us the opportunity to evaluate “a multitude of issues relating to language, design, branding, and overall aesthetic” (Stempler & Polger, 2013, p. 122). The first phase of the project examined common printed signage,



Figure 6: The sign's key message is communicated with a brief amount of text in a large font, followed by more information below.



Figure 7: The library directory is prominently visible on each floor. Floors are assigned different colors and call number ranges are clearly labeled.

before examining permanently fixed signage in the second phase. This allowed us to observe the effects of low-cost changes and test these to receive feedback before implementing more permanent changes.

As part of the signage audit, every sign in the library was photographed, annotated, and placed in a spreadsheet and classified in the following categories: directional, identification, instructional, regulatory, or informational. Each sign was also evaluated in terms of its usefulness. Does it serve its intended purpose, and is it clear and easy to understand?<sup>1</sup> Figure 1 provides an example of how our signage audit was formatted.

The signage audit revealed the following issues:

- Too many signs, some of which were reactionary or temporary responses to an inquiry that occurred years ago.
- Signage introduced at different points in the library's history, resulting in inconsistent branding, terminology, and style.
- Poor information design, with too much text laid out in a confusing and convoluted manner, such as in Figure 2.
- Multiple signs referring to the same information, leading to information overload.
- Many signs were simply old, and looked faded, untidy, and unprofessional.

Based on the issues identified above, seventeen of the fifty-four kinds of common printed signs could be removed immediately—either they were no longer relevant, contradicted another sign, or the information was already addressed elsewhere. One paper sign had been up for ten whole years, according to the date in the footer.

We developed a simple template for printed signs, with a range of complementary background colors and a clear typeface (see Figure 3). Figure 4, a confusing and poorly formatted sign, is redesigned in Figure 5.

All the new signs are divided into two parts—with an important, attention-grabbing message in a large type, and then further detail for those willing to read on (see Figure 6). At the bottom of each sign we added our social media hashtag #utslibrary and icons for Facebook, Twitter, and Instagram. Students actively engage with the library on social media, and many of our signs sparked positive conversations amongst students who photographed the signage and posted it.

In keeping with Schmidt and Etches' classification (2014), the following discussion is mapped to their five categories as mentioned earlier. We propose a sixth category: fun and delightful signage, which we



Figure 8: This wayfinding sign was professionally designed and on brand, yet wasn't conveying information effectively and was pasted on top of the space vacated by an even older sign. There is no clear hierarchy of information, and the text is too small to read from a distance.

implemented to reduce library anxiety and encourage a positive user experience.

### DIRECTIONAL

Directional or wayfinding signage helps users "get from where they are to where they want to be" (Schmidt & Etches, 2014, p. 83). Brown suggests that library signage should



Figure 10: Call number signage uses topic headings to allow for greater discoverability of materials. The colors from the Collection Ribbon are used as a visual clue to assist students locating items



Figure 11: The transition from yellow to green communicates the change from the 00s (computer science/information & general works) to 100s (philosophy and psychology).

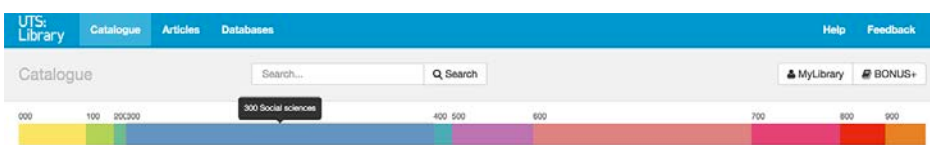


Figure 9: The interactive "Collection Ribbon" is visible at the top of UTS Library's online catalog (2016).



Figure 12: A number of old-fashioned and unhelpful regulatory signs, which were removed after the signage audit and subsequent analysis.

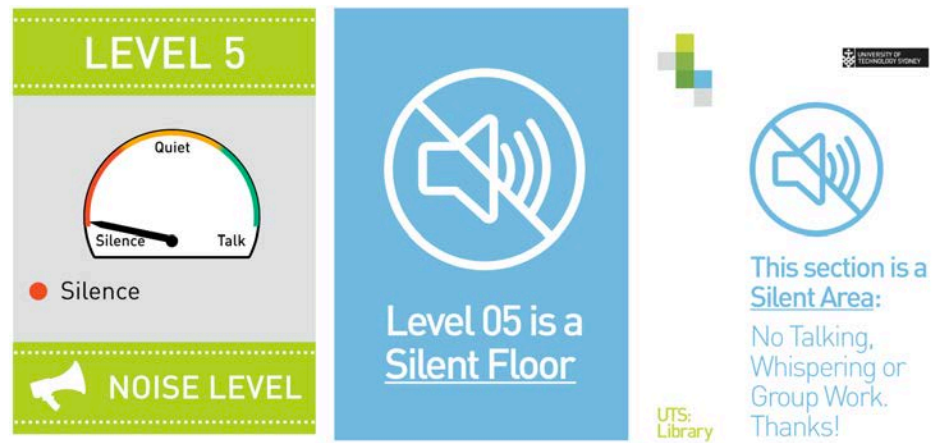


Figure 13: Ineffective noise level signs that were prototyped and tested. The first sign, in particular, requires too much thinking and is unclear.

not be wholly responsible for guiding users, and that “wayfinding should be considered [even] when developing the architecture for the building” (Brown, 2002, p. 95). Although the UTS Library building was purpose-built as a library (Peake & Wilschefski, 1989), our users were still encountering a number of issues locating certain features of the library. In our study, we found that wayfinding signage at UTS Library served the following purposes:

- Helps a user to orient themselves upon entering the library and to work out where they need to go next.
- Find the area in the library that is relevant to their visit (a group study room, a training room, a silent study area, and so on).
- Helps a user to locate specific parts of the library collection, including print and other media.
- Helps the user locate facilities such as bathrooms, computers, printers, and water fountains.

A key consideration is where a sign should be placed, hence the library sweeps and user studies described earlier were essential in allowing us to consider the physical locations where users may require information. Serfass calls these “decision points” (2012, p. 5), and argues that identifying these is particularly relevant for directional signage. Similarly, Barclay and Scott use the term “bump point” to identify areas “where people routinely stop or slow down as they decide which way to go next” (2012, p. 37). Library staff typically find it challenging to adopt a user-centered perspective, so conducting ethnographic research was essential in making informed design decisions that addressed the needs of our users. Fortunately, this form of user research can be performed relatively quickly and at low cost—simply observe your users in action. Despite this method’s informal structure, ethnographic observations “should still be

systematic, careful, and well documented with notes, sketches photographs, or raw video footage” (Martin & Hanington, 2012, p. 120).

We did this through a meticulous process of observing, shadowing, and documenting our users, their queries, and their navigation through the library over several months. The bump points were mapped to the library floor plans before any new signage was implemented. **Figure 7** demonstrates the final signage and information required by users entering each floor, which we identified through observations and interviews.

The placement height of wayfinding signage was also found to be an issue. Many signs were hanging from the ceiling, well above eye level and ignored by users. When we began to experiment with new wayfinding signage, we used temporary, printed signs mounted on portable stands to test placement before implementing final signage.

Being a university with a large international student cohort, it was also necessary to make the signage universally comprehensible, and hence floor numbers needed to be highlighted prominently at doorways, stairs, and elevators, and not just in the directory and at floor/elevator entrances. They also needed to follow a consistent design. This had not been especially clear in the previous iteration of wayfinding signage, which is shown in **Figure 8**.

## IDENTIFICATION

UTS Library uses the Dewey Decimal System to classify its book and journal collection. In 2013, the Collection Ribbon (see **Figure 9**) was introduced to the online library catalog, inspired by our artist-in-residence Chris

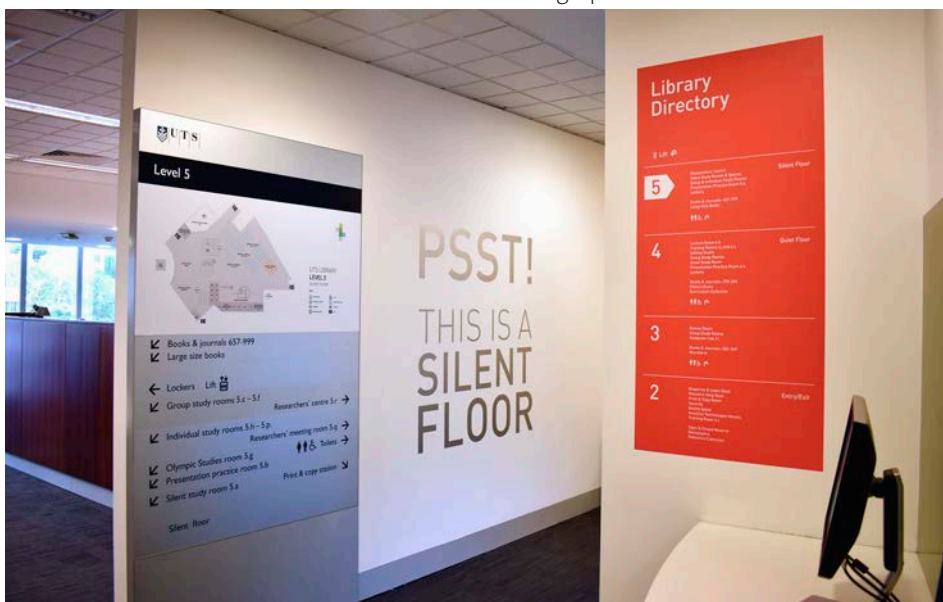


Figure 14: Our final, effective noise signage, seen immediately upon reaching the silent floor.



Figure 15: Informational sign close to the group study rooms, which is placed at a bump point where users might be wondering whether they can book a study room.

Gaul's work in developing ways to visualize library collections. The Collection Ribbon is a colored ribbon that assigns colors to different subject ranges. This is a functional feature, too, as clicking on the different colors allows a user to refine their search results by subject area, enabling them to discover new materials. This feature was designed to simulate a browsable way to look at the collection, like walking through a traditional library aisle. In addition, a "Shelf View" design was incorporated into the catalog to

show the books adjacent to any individual book on the physical shelves.

Hahn and Zitron found that call number classification "confuses students where they do not have the context and frame of reference whereby they can apply this number as corresponding to the location of a book on a shelf" (2011, p. 32). The addition of posters that assign a broad subject to call numbers has been found to assist first-year students who are unfamiliar with the library (Hahn & Zitron, 2011). The call number itself is

the most crucial element of the sign for a known search, but subject headings and material lists help to encourage browsing and discovery (Stempler, 2013). The same study found that "a color-coded stack signage system has helped users orient themselves and find materials in a library with high layout complexity" (Stempler, 2013, p. 512).

Woodward suggests that libraries consider how they might adapt elements of the bookstore model to attract users "in the same way bookstores have developed sophisticated strategies to attract customers" (2004, p. 20). Due to the size of library collections, and the counter-intuitive ways in which they are often organized, Woodward argues that "effective signage and logical arrangement often make it easier to find materials in a bookstore than in a library" (2004, p. 118).

We took these ideas into consideration and decided to introduce topic headings (different from the Dewey Decimal Classification classes) on our call number signage to make the stacks in our physical library easier to browse (see **Figure 10**). These topic headings match our students' study areas, which makes it easier for users to browse and discover items in the subjects of their interest or related items—or stumble upon something entirely different elsewhere. This was a collaborative effort with input from our liaison librarians, as they were familiar with the terms most useful to students studying at our university.

Using the Collection Ribbon from our library catalog, we were also able to assign colors to the call number signage. For example, items in the 300s (social science) are blue, shown in **Figure 10**. This simple visual clue aids navigation and provides a hint to users unfamiliar with the layout of the collection. **Figure 11** shows the transition from one topic area to another, demonstrated by the change in color.

When auditing signage, it is important to be critical and question the rationale behind all signage. At UTS Library, a particular row of computers is reserved for community members—alumni members, day visitors, and independent researchers. Originally named "G-Row," the meaning has become unclear over time and in 2016, it was the only row of computers to be specifically named. A library's signage system must be flexible enough to allow for changes in resources, services and facilities. In this instance, many staff members referred to the



Figure 16: Library foyer before any signage work. Directional signage is well above eye level and ignored by users. Poster boards displaying promotions and events look old-fashioned and untidy.

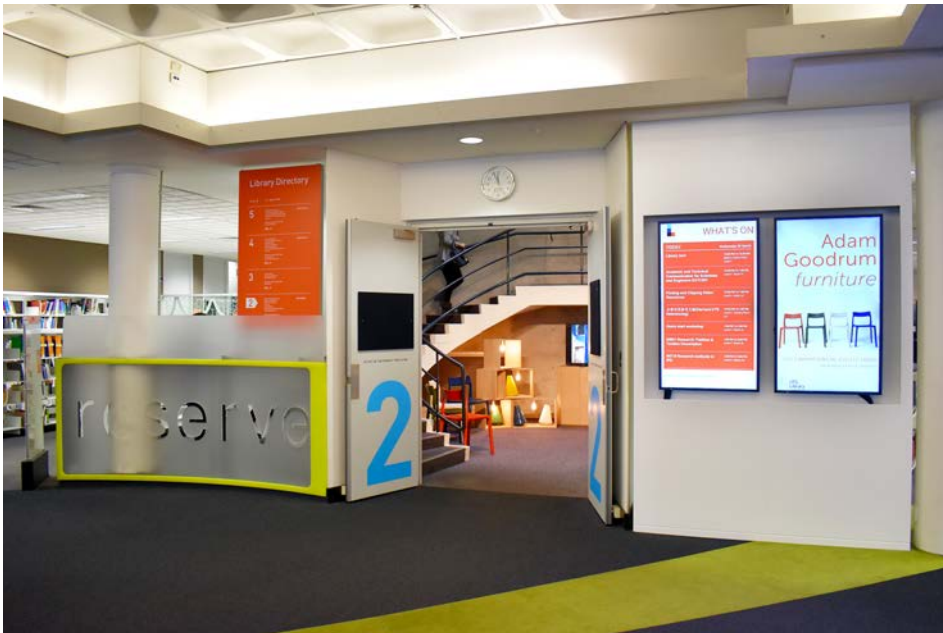


Figure 17: The library foyer as of early 2016. Two digital displays have been introduced at eye level, showing today's library workshops (informational), as well as exhibitions and other promotions. A directory board is seen on the left-hand side.

row as “G-Row,” yet the name had no meaning and was unnecessarily confusing for users. Signage should “help create a meaningful experience for its patrons” (Polger & Stempler, 2014, p. 68), and librarians must be able to acknowledge when something is no longer working. A simple sign stating “This row is for community members” to indicate that the computer was available to those who were not UTS staff or students, was created and is now being used to designate the appropriate row. We found it valuable to be wary of statements such as “that’s the way it’s always been. Question-

ing the status quo and asking whether there was a better way of doing something led to a number of unexpected changes that significantly improved the user experience at our library.

#### INSTRUCTIONAL

Instructional signage helps users to better utilize the library. This is also one of the most common types of poor signage; when a user encounters an issue, helpful staff members are quick to prepare a handmade sign explaining the correct procedure. These accumulate. And become outdated. And

cause clutter. Schmidt and Etches argue that paper signs are often put up because something isn’t working very well (2014, p. 86). Instead, librarians should address the core issue, which will improve the visual environment and make the library more pleasant to use. This idea is supported by Mollerup, who argues that user instructions can sometimes be seen as “repair design for poorly designed products that cannot themselves explain how they should be used” (2005, p. 15). Creating a professional-looking version of the same sign does little to address the underlying issue. Brown suggests that “most library policies and instructions for complicated procedures should be presented to users by word of mouth or in a handout or flyer, rather than a sign” (2002, p. 93).

Printing is a common but often complicated procedure at academic libraries, and UTS Library’s own Print & Copy Room proved to be a problematic user environment. Staff members at the library’s reference desk receive many inquiries about printing and copying services, and as part of this study, we shadowed users and observed the room to uncover why. The room appeared to be thoroughly signposted, with many different signs explaining how to add money to your account. Yet, there was little consistency to these instructions, with many signs created at different points in time and using different terminology and language. A key piece of information—that users can print from their laptop or mobile device, not just the library computers—was not to be found on any of the signage. The library’s website did not provide information about this either, instead listing printing costs, how to add money to your account, and where to get help. Clearly, there was a wealth of information available about printing, but not necessarily the information users actually needed to print and copy.

All existing signage was removed, and the following strategies were implemented to address this issue of information overload:

- Rewriting the page on the library’s website to include clear sections on “printing from a library computer” and “printing from your laptop, tablet or phone” (UTS Library, 2016).
- Developing a handout for the reference desk on printing from your own device, which was given to students who were not using library computers.
- New, simplified signage in the Print &

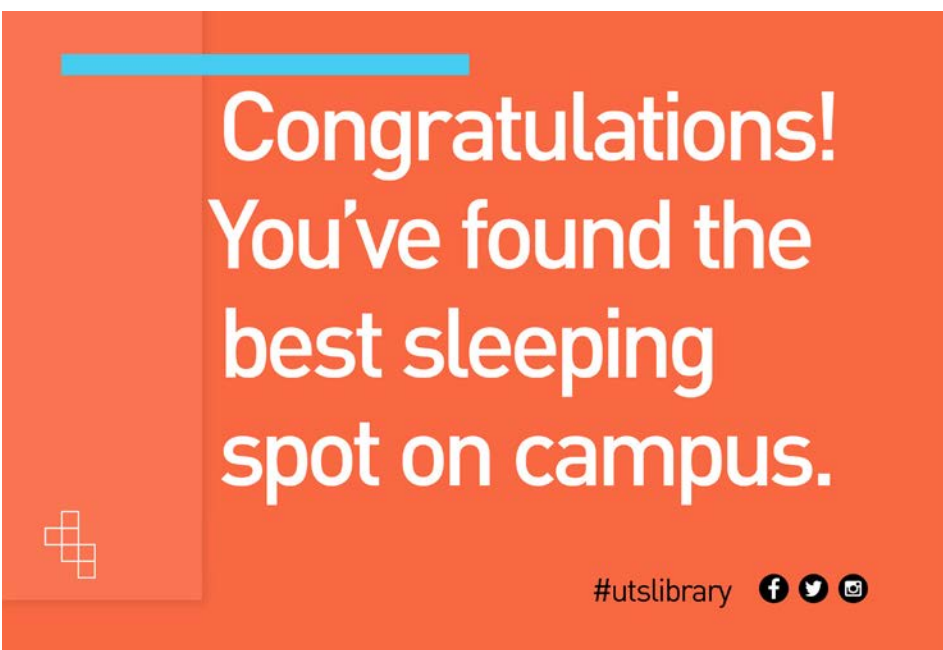


Figure 18: This sign is a playful acknowledgment of a common user behavior.

Copy Room that clearly explained how to add money to your account, how to print, and how to copy.

An amusing, and simple, solution also became apparent through our observations—there were large queues of ten or more students forming to use the one stapler available. This example illustrates the value in critically observing user environments in action. We added a few extra staplers in the room and the issue was solved.

## REGULATORY

Regulatory signage aims to enforce rules and influence user behavior and is typically the most challenging type of sign to implement. Schmidt suggests that most or all regulatory signs should be removed as they do not apply to most users and are usually not effective anyway (Schmidt, 2015). It is not surprising to find users appearing confused when entering a space covered in signage proclaiming rules, regulations, and instructions. By cultivating a positive library experience, users “may feel more confident and comfortable with using the library” (Carlile, 2007, p. 138), which encourages continued use of the library.

Controlling noise levels is a challenge faced by most libraries. The silent floor at UTS Library was found to be completely covered in regulatory signage, all of which was largely ignored by users. Signs such as “No smoking,” “Text, not talk,” and “Quiet environment” were found on every column in silent study areas, creating visual clutter and a poor user environment. There was also inconsistent terminology, with “quiet environment” and “silent zone” used in the same areas, shown in **Figure 12**. Words such as “environment” and “zone” are unnecessarily complicated, particularly when the signs refer to the entire floor.

Rather than regularly “reminding” users, we decided instead to focus on the three access points to the silent floor—an elevator, a front stairwell, and a rear stairwell. This sign went through many iterations, and library sweeps were conducted to evaluate the success of the signs by assessing noise levels. A number of abandoned designs are shown in **Figure 13**. The final sign we decided on is seen as users arrive at the silent floor: “PSST! This is a Silent Floor” (see **Figure 14**). Note that “psst” is used instead of “shh”; it’s not a command, but is more of a playful aside. This is, in fact, an instructional sign, but is enacted like a demonstrative sign, which

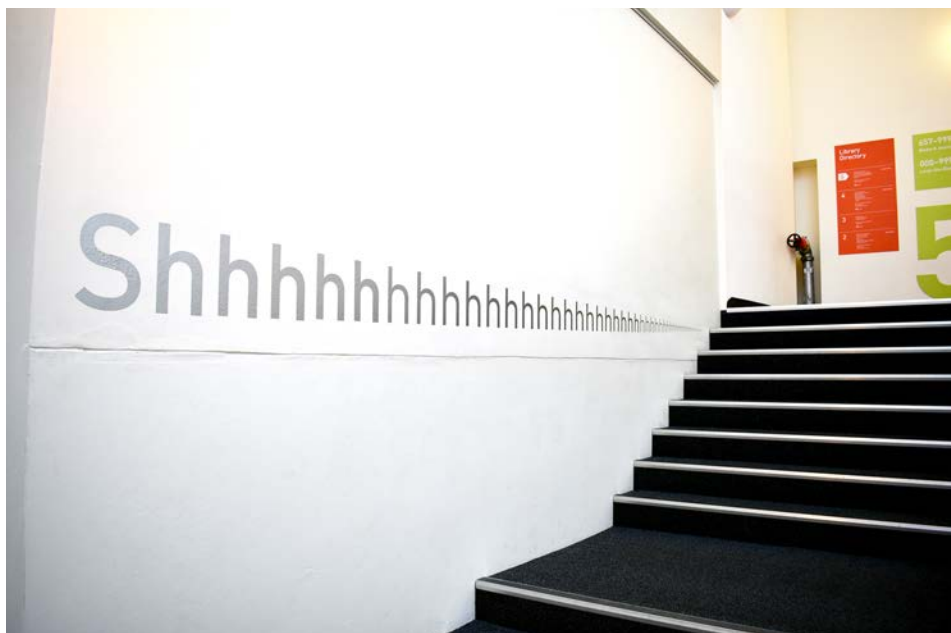


Figure 19: A playful take on a regulatory sign.

doesn’t regulate users who are already following the rules. A reflective silver color is used rather than black to prevent the sign from appearing too officious or confrontational. Library staff have since noticed a marked decrease in noise levels after the signage was implemented.

## INFORMATIONAL

Informational signage need not only tell users about things that they are seeking information on, but can also tell them things they may have never known about. **Figure 15** provides an example of communicating

key information to library users at an appropriate time.

The library foyer is an important first impression. We found that this space was not being utilized appropriately, with a range of signs not at eye level (see **Figure 16**). A common challenge was conveying that the ground floor is actually Level 2, which is especially important when users need to move between levels. Establishing the floor the users were in within the building whether they were entering or moving through the building was accomplished through large floor numbers installed near



Figure 20: Users are encouraged to pick up books from any of our displays and borrow them. We change their location in the library catalogue to “On Display” to assist access—this also allows us to evaluate how effective the display is, as we can see the number of books that have been borrowed.



Figure 21: UTS Library's return chutes. Photo credit: Chris Gaul.

the front stairwell, rear stairwell, and near the elevator. These are also color-coded to create another layer of visual identification for users. A directory has also been installed to the left of the stairs to allow students to orient themselves before moving to another floor, shown in **Figure 17**.

#### FUN & DELIGHTFUL

We propose a sixth category of signs, which are those that do not serve a direct purpose in helping users to understand the library, but rather reinforce a positive environment with humor and “illustrate a culture of playfulness, creativity, and authenticity” (Chan, Crosbie & Williams, 2015, p. 3). We saw this as a key aim of our audit and redesign—we wanted to be surprising and subvert users’ expectations of library signage. Using humor, where users may typically expect a harsh or even mean instruction, engenders goodwill and gives users more confidence in using the library. Furthermore, incorporating humor into our signage allowed us to convey important information in a way that is fun, rather than authoritarian.

A popular place for our students to sleep is in an informal bean bag area underneath a stairwell, but most students did so with a guilty feeling, as they did not really know why

the bean bags were there. The sign shown in **Figure 18** was placed in the area to encourage and normalize sleeping in this designated space. The implied meaning is that the space is in fact intended for users to sleep in, and that this behavior is an acceptable use of the library. In this example, library anxiety is reduced by clarifying any uncertainty about the use of the space. This sign has also been the subject of numerous mentions on social media channels, where students have advised others that the library is a great place on campus to have a nap!

With the success of new signage to reduce noise levels on the library’s silent floor, we decided to introduce a playful “Shhhhh-hhhhh” sign wrapped along the stairwell (see **Figure 19**). This is not intended to be taken seriously, but still serves as a useful reminder about the appropriate use of the silent floor.

The UTS Library has regular rotations of book displays and exhibitions. We observed that students were not borrowing items from the collection that were on display, despite many showing an interest and examining the books. After speaking to a number of students, we realized that students viewed the display as a static one, rather than something that they could interact

with and borrow from. We included the sign “Borrow the one you love” (see **Figure 20**) on our book display to encourage students to borrow directly from the display.

Another project by UTS Library’s artist-in-residence, Chris Gaul, saw our return chutes “transformed into a playful and useful way for visitors to reflect on the books they have just finished reading” (Gaul, 2013a). The return chutes originally reflected three sets of call number ranges, 000–349, 350–650, and 651–999. This seemed to users like we were making them do our work of sorting the returns; however, this sorting served no useful purpose as the items would then be mixed before being checked in. The introduction of the labels in **Figure 21** provided an unexpected moment of reflection for users returning materials.

In summary, all of our playful and delightful signage has made the library a fun place to visit and has improved the library user experience. By using signage to convey our library’s personality, we help to reinforce an image that is not authoritarian but rather user-focused and accessible. Students have been receptive to these signs, too, as is evident from the dozens of photos posted by students to social media channels of all of our new signage.

#### CONCLUSION

This paper demonstrates how the design-thinking process can be utilized to guide the development of library signage as a key aspect of the library user experience. Often neglected and poorly maintained, library signage is an important touchpoint for users that can be made more useful, and, as we have argued, offers an opportunity to reflect the library’s personality. The examples throughout this paper are demonstrations of how we have addressed a number of issues experienced at UTS Library. The design principles behind these solutions, however, are universal and can be applied to any library. This approach simply requires a

» **All of our playful and delightful signage has made the library a fun place to visit and has improved the library user experience. By using signage to convey our library’s personality, we help to reinforce an image that is not authoritarian but rather user-focused and accessible.**



thoughtful focus on your users and their library experience when designing signage. ■

## ACKNOWLEDGEMENTS

The authors thank the University Librarian Mal Booth and all the librarians and employees of the UTS Library at the University of Technology Sydney, Australia for their contribution and support in various parts of the redesign mentioned in this article. Specifically, we would like to credit UTS Library's 2012 artist-in-residence, Chris Gaul, and in-house designers Thomas Fethers, Joanna Grygierczyk and Emily Gregory, who have been responsible for the development of the library's visual identity and brand.

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## FOOTNOTE:

- <sup>1</sup> This measure was borrowed from Abby Covert's Information Architecture Heuristics: [http://abbytheia.com/wordpress/wp-content/uploads/2012/04/poster\\_readable.jpg](http://abbytheia.com/wordpress/wp-content/uploads/2012/04/poster_readable.jpg).



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