LIBRARY LEADERSHIP & MANAGEMENT

A New Way to Improve Library Services: Conducting a Participatory Design Study of Faculty Research Practices

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Introduction

Anthropologist Nancy Fried Foster defines participatory design as an "approach to building spaces, services, and tools where the people who will use those things participate in coming up with the concepts and then designing the actual products."[1] With increasing frequency, libraries are conducting participatory design studies that employ ethnographic methods—such as in-depth interviews, photo interviews, mapping diaries, observation studies, and design workshops—to gather information about the research and work practices of faculty, students, and staff. While these methods can be time-intensive, they enable libraries to gather rich data that are embedded within a larger set of activities, providing a deeper understanding of user behavior. Once analyzed and interpreted, the findings can be shared with constituents, such as architects, software developers, or library administrators, and applied to a host of initiatives, including library renovation, website redesign, and improved library services.

Participatory design starts with a question, and the question determines the appropriate methodology to employ. Our question was "How do faculty members conduct research?" Our goals were to better understand the research, teaching, and technological needs of faculty, and discover the degree to which faculty use (or do not use) library services, resources, buildings, and technologies to satisfy these needs. To this end, we conducted a series of in-depth interviews with faculty members with the anticipated benefit of producing a body of data to inform library decision-making. The following article provides a summary of our results, including an overview of our procedures, methodology, and approach to analysis. By contributing to the growing literature of case studies on participatory design projects in libraries, we hope to demonstrate that this new approach to improving library services is within the reach of academic libraries, no matter their size or available resources.

Literature Review

Our project builds on previous studies that have used ethnographic methods to address this type of question. For example, Colby College librarians conducted a study in 2010 in which faculty were asked open-ended questions on how they use library and information technology (IT) services.[2] Interviews took place in faculty offices and were video-recorded for subsequent co-viewing and evaluation by librarian and IT staff. The results of the

study generated ideas for new approaches to faculty services, provided the basis for a deeper understanding of faculty culture, and strengthened the relationships between all constituents.

A second study, called Project ERIAL (Ethnographic Research in Illinois Academic Libraries), took place in 2010 across five academic libraries and focused on the research processes of students.[3] Librarians employed several ethnographic methodologies, including semi-structured interviews, photo journals, mapping diaries, and web and space design workshops.[4] This qualitative study was grant-funded, took place over two years, and enlisted the help of two anthropologists. Project ERIAL enabled librarians to experience the students' world and subsequently institute strategic changes to improve services.

Both of these studies—and many others—draw a direct connection to the work of anthropologist Nancy Fried Foster, director of anthropological research at the University of Rochester for a decade, and now senior anthropologist at Ithaka S + R. Foster's work has made the University of Rochester a hub for participatory design in libraries, and her Council on Library and Information Resources (CLIR) sponsored workshops have equipped numerous librarians with new tools to better understand their users and design better services, spaces, and technologies. Our study, likewise, benefited from two CLIR workshops led by Foster in 2012.

Methodology

To answer our research question—how do faculty members conduct research?—we designed a qualitative study focused on a series of in-depth interviews with a representative selection of faculty members. Each interview was approximately 45-minutes long, semi-structured, and took place in the faculty member's office—*in situ*, in anthropological terms. The interviews were video-recorded for subsequent analysis; Jacobsen served as the primary interviewer, while Miller ran the video camera and asked follow up questions (probes). Six questions served as touchstones for each interview:

1. Tell us about your current research project. Where do you work on this project?

2. What materials are you using for this project? How did you know these items existed? How did you obtain these materials? How do you use these items?

3. How do you organize your work? Tell us about your office setup. What programs do you use? What technology do you use?

4. Do you use materials in your teaching? If so, what types of materials? How did you know about these items? How did you obtain them? How do you use them?

5. How do you keep current in your field?

6. If you had a magic want to help you in your current research project, what would you do with it?

With this methodology, we did not ask directly about the library. Instead, we listened as faculty articulated their research practices to indirectly learn about their use of library materials, services, and facilities. We conducted the interviews during the fall semester of 2014 without a grant or any special funding. We used a digital video camera and tripod already in the library's holdings; the only real expense was our time. Our goal was to conduct 10-12 interviews with faculty solicited from a wide range of disciplines and schools within Pepperdine University.

Following an internal proposal to the Dean of Libraries, we sought Institutional Review Board (IRB) approval and completed a required web-based training course on "Protecting Human Research Participants." We then selected faculty members for interviews through nomination by division chairs and library subject liaisons.

Review and Analysis

At the close of the interview period, we had completed nine 45-minute interviews with individual faculty members. Although slightly short of our projections during the planning and recruitment periods, we were satisfied with the representational breadth of the subjects. Within Seaver College, our main undergraduate campus in Malibu, California, six of eight divisions were represented, while the remainder represented three of our graduate programs; namely, Education, Psychology, and Public Policy.

During spring semester 2015, we began the review and analysis process. We reviewed all nine video recordings separately on our own, extracted data points for comparison and interpretation, and then met to discuss our notes and ideas on coding. The coding process was thus deliberately inductive, with comparable data points arising out of the analysis process.

We used a Google Spreadsheet as our preliminary coding frame, a place to record the iterative results of the coding process and tease out some categories that gained significance across multiple interviews (see Figure 1). Clearly, some of these categories grew out of our scripted, open-ended questions, such as:

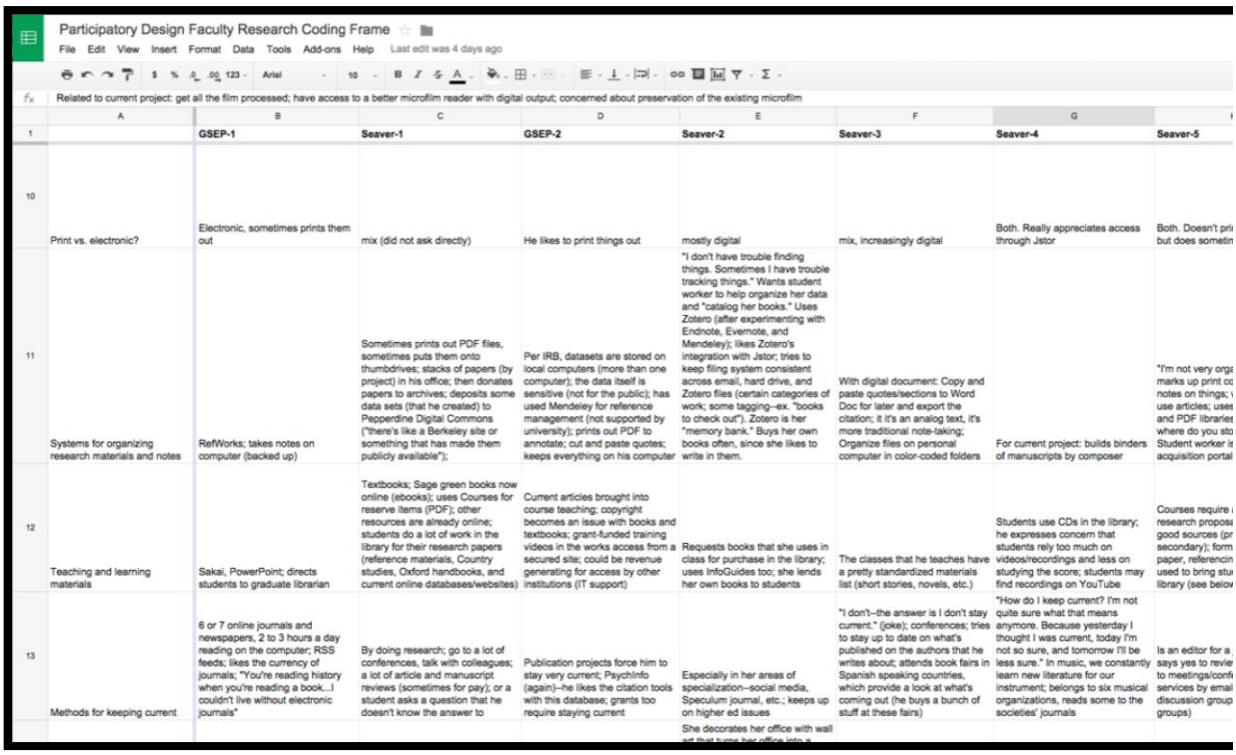
- Systems or methods of organizing research materials
- Preferred physical location(s) for conducting research

However, many other categories emerged in the expansive, conversational answers enabled by the interview format, often spurred by follow-up questions. These categories include:

- Preferences for reading (and note-taking) print versus electronic
- Methods for communicating and collaborating with co-authors/colleagues

Here are a few notable quotations from various interviews that illustrate some of these categories, particularly the question of print versus electronic resources.

- A faculty member from one of our graduate campuses suggested that the rows of stacks in the library could be done away with in favor of a coffee shop since "It's all on the computer now, right?"
- On the importance of currency in research: "You're reading history when you're reading a book…I couldn't live without electronic journals."
- "I still love paper. I have a really hard time not having the paper article and reading it, and working it up. And I have a tablet I can do that on, but I just don't think I *understand* the work unless I'm actually reading a physical piece of paper."
- On visiting libraries: "There's something about the smell of dust and old leather that is really pretty intoxicating."


Participatory Design Faculty Research Coding Frame

File Edit View Insert Format Data Tools Add-ons Help Last edit was 4 days ago

Related to current project: get all the film processed; have access to a better microfilm reader with digital output; concerned about preservation of the existing microfilm

	A	B	C	D	E	F	G	
1		GSEP-1	Seaver-1	GSEP-2	Seaver-2	Seaver-3	Seaver-4	Seaver-5
10	Print vs. electronic?	Electronic, sometimes prints them out	mix (did not ask directly)	He likes to print things out	mostly digital	mix, increasingly digital	Both. Really appreciates access through Jstor	Both. Doesn't pri but does sometin
11	Systems for organizing research materials and notes	RefWorks; takes notes on computer (backed up)	Sometimes prints out PDF files, sometimes puts them onto thumbdrives; stacks of papers (by project) in his office; then donates papers to archives; deposits some data sets (that he created) to Pepperdine Digital Commons ("there's like a Berkeley site or something that has made them publicly available");	Per IRB, datasets are stored on local computers (more than one computer); the data itself is sensitive (not for the public); has used Mendeley for reference management (not supported by university); prints out PDF to annotate; cut and paste quotes; keeps everything on his computer	"I don't have trouble finding things. Sometimes I have trouble tracking things." Wants student worker to help organize her data and "catalog her books." Uses Zotero (after experimenting with Endnote, Evernote, and Mendeley); likes Zotero's integration with Jstor; tries to keep filing system consistent across email, hard drive, and Zotero files (certain categories of work; some tagging--ex. "books to check out"). Zotero is her "memory bank." Buys her own books often, since she likes to write in them.	With digital document: Copy and paste quotes/sections to Word Doc for later and export the citation; it it's an analog text, it's more traditional note-taking; Organize files on personal computer in color-coded folders	For current project: builds binders of manuscripts by composer	"I'm not very orga marks up print co notes on things; use articles; uses and PDF libraries where do you sto Student worker is acquisition portal
12	Teaching and learning materials	Sakai, PowerPoint; directs students to graduate librarian	Textbooks; Sage green books now online (ebooks); uses Courses for reserve items (PDF); other resources are already online; students do a lot of work in the library for their research papers (reference materials, Country studies, Oxford handbooks, and current online databases/websites)	Current articles brought into course teaching; copyright becomes an issue with books and textbooks; grant-funded training videos in the works access from a secured site; could be revenue generating for access by other institutions (IT support)	Requests books that she uses in class for purchase in the library; uses InfoGuides too; she lends her own books to students	The classes that he teaches have a pretty standardized materials list (short stories, novels, etc.)	Students use CDs in the library; he expresses concern that students rely too much on videos/recordings and less on studying the score; students may find recordings on YouTube	Courses require research proposa good sources (pr secondary); form paper, referencin used to bring stu library (see belov
13	Methods for keeping current	6 or 7 online journals and newspapers, 2 to 3 hours a day reading on the computer; RSS feeds; likes the currency of journals; "You're reading history when you're reading a book...I couldn't live without electronic journals"	By doing research; go to a lot of conferences, talk with colleagues; a lot of article and manuscript reviews (sometimes for pay); or a student asks a question that he doesn't know the answer to	Publication projects force him to stay very current; PsychInfo (again)--he likes the citation tools with this database; grants too require staying current	Especially in her areas of specialization--social media, Speculum journal, etc.; keeps up on higher ed issues	"I don't--the answer is I don't stay current." (joke); conferences; tries to stay up to date on what's published on the authors that he writes about; attends book fairs in Spanish speaking countries, which provide a look at what's coming out (he buys a bunch of stuff at these fairs)	"How do I keep current? I'm not quite sure what that means anymore. Because yesterday I thought I was current, today I'm not so sure, and tomorrow I'll be less sure." In music, we constantly learn new literature for our instrument; belongs to six musical organizations, reads some to the societies' journals	Is an editor for a says yes to revie to meetings/confe services by emai discussion group groups)
					She decorates her office with wall art that turns her office into a			

Figure 1. Coding frame in Google spreadsheet

Results

Many themes and observations about faculty culture emerged from the categorization process.

1. **Projects.** Most faculty are involved in multiple, simultaneous research projects
2. **Locations.** Most faculty use their campus office for research, some conduct research at home, and some write in a variety of places (on a laptop). For a few respondents,

research also required travel to a specialized library or archive. Some respondents indicated that work locations depended on childcare schedules.

3. **Collaboration.** For collaborative work, most faculty use email to contact others, while some use social media, phone calls, and face-to-face contact. Some expressed an interest in using shared document editing software like Google Docs and Dropbox, while a few are actively using these products.
4. **Discovery.** Faculty indicated a variety of means of discovering materials: specific databases, Google/Google Scholar, the library catalog, mining bibliographies, social media, visiting a bookstore, publisher email, direct contact with authors/colleagues, and Research Now (online research company). Access to materials was provided through interlibrary loan, from the library, directly from the author, and from other university databases.
5. **Reading.** Most have a hybrid approach when it comes to print versus electronic.
6. **Organization.** Faculty use a wide variety of methods and technologies to organize materials. Most use some kind of citation software (such as RefWorks, Mendeley, or Zotero), while others thought they should be using one. One quote: “There are a ton of different options, so it’s almost like information overload on how to organize your information.”
7. **Teaching.** Direct integration of their own research with teaching was not widely indicated. When asked if they use materials in their teaching, faculty mentioned both tools and resources: Sakai, online databases, books/textbooks/e-books, library materials, primary and secondary sources, InfoGuides, CDs/streaming, current articles, video tutorials, and PowerPoint.
8. **Keeping current.** Some faculty use social media for communication and staying current. Others mentioned staying current by attending conferences, reading journals (both print and electronic), editing a journal, being a reviewer of a journal, conducting research/publication projects, writing grants, and joining a listserv.
9. **The Office.** We asked each faculty member to give us a tour of his or her office. Faculty explained the organization of their shelves, cabinets, and desks. They described the materials they use for research and teaching, which ranged from books and journals to posters and objects. Many offices contained art objects from travels or from student projects. The tours provided an enlightening and personal look into a professor’s life.
10. **Magic wand.** When asked what they would wish for with a magic wand, many faculty responded “more time.” Other responses varied, including a desire to have nearby colleagues, ways to discover faculty interested in similar research subjects, or the ability to speak and understand all human languages.
11. **Facilities.** There was little mention of using library facilities; the exception was a request for a coffee shop in the library.

Faculty Needs

Faculty expressed various needs, some of which were met right away, and others are planned for the near future. These results were shared and discussed with the library management team and disseminated to faculty through the library's electronic newsletter.

a) Web-based data collection site

b) Better tools for online collaboration

c) Help with citation software

d) Improved communication about library workshops

e) Podcasts (like TED talks) curated by the library

f) Access to a better microform reader

g) Automated notification when resources become available

h) A coffee shop in the library

i) Alumni access to library resources

j) Electronic access to the Economist and the Wall Street Journal

k) Use of reserve books outside of the library

l) Access to a specific database

m) In-person workshops on using databases

n) The means to learn new languages for research

o) Ways to discover faculty with similar research subjects

Conclusions

The results of this study provided invaluable insight into faculty culture as well as data to improve library services, spaces, and technologies. Should we desire more data, the results of this study could serve as the foundation for a survey more broadly disseminated among the faculty. As far as lessons learned, we feel the recruitment process may have been more successful if we had incentivized participation, such as providing participants with gift cards or a similar reward. We may also have achieved our projected participant numbers if we had extended the duration of the project.

The results of this study also confirmed the presence of trends found in other academic libraries:

a. In an increasingly digital environment, library services intersect with multiple points of the scholarly research cycle, including support with citation software, data management and preservation, data mining, and new publishing or dissemination opportunities.[5]

b. Research increasingly occurs in networked environments utilizing social media, discovery platforms, and electronic communication that enable faculty to collaborate and share their work within and across institutions and disciplinary communities.[6]

The process of visiting faculty in their offices and discussing their needs strengthened our interpersonal and professional relationships in a way that defies metrics. We are very grateful to the faculty who opened up their doors and contributed their time for this participatory design study.

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[1] Nancy Fried Foster, "Introduction," in *Participatory Design in Academic Libraries: Methods, Findings, and Implementations*, ed. Nancy Fried Foster. (Washington, D.C.: Council on Library and Information Resources, 2012), 1, accessed September 21, 2015, http://www.clir.org/pubs/reports/pub155/pub155.pdf.
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[6] *NMC Horizon Report: 2015 Higher Education Edition* (Austin, TX: New Media Consortium, 2015).