

Conversations with Web Site Users: Using Focus Groups to Open Discussion and Improve User Experience

Suzanna Conrad, California State Polytechnic University, Pomona, skconrad@cpp.edu

Nathasha Alvarez, East Los Angeles College, alvarenm@elac.edu

Abstract: User feedback on Web site design can be vital to understanding what issues library users may encounter when visiting a Web site. But obtaining this feedback can be time consuming, difficult to structure, and expensive. In past years, staff working on the Cal Poly Pomona University Library Web site collected user feedback from surveys and usability testing. This team was interested in acquiring a more basic understanding of how users interact with the web in general, whether for research or other purposes, and how such experiences could inform design decisions. This article will discuss what focus groups are, why libraries should consider conducting focus groups for Web site testing and development, how focus groups can complement usability testing, and if focus groups are worth the time and effort. Results from focus group sessions will also be shared and discussed including information that fueled design decisions and benefits that participants gained from the experience.

Keywords: focus groups, user-centric Web site design, academic libraries

Acknowledgments: Thank you to the Cal Poly Pomona Teacher-Scholar Support program for providing assigned time to support this project. Thank you to the Library Web Team Alfredo Lafarga, Cecilia Huang, James Koga, Julie Shen, and Paul Hottinger, for support before, during, and after focus group sessions. Thank you to student assistants Sabrina Bommarito for assisting with a mock test session and to Natasha Tambaoan for sitting in on focus group sessions.

Introduction

Design decisions and functional improvements to the Cal Poly Pomona University Library Web site have been driven by qualitative and quantitative data collected from usability testing and user surveys since 2013. This data includes the observations by the Cal Poly Pomona University Library Web site design team during usability testing, participant feedback generated from completing usability tasks, participant pre- and post-questionnaires, and participant responses to multiple choice surveys created by library faculty and staff. While beneficial, this data did not offer significant self-directed, honest feedback from participants about the overall functionality and design of the Cal Poly Pomona University Library Web site. Further, the predefined usability tasks and closed-ended survey questions could not fully capture user perceptions and experiences with the Cal Poly Pomona University Library Web site.

Concerned with the limitations of the data, the Cal Poly Pomona University Library Web site design team decided to expand its research collection methods to include focus group sessions. Focus groups provided the Cal Poly Pomona University Library with an opportunity to clarify previous data collected through usability testing and user surveys. What is more, conducting focus group sessions presented a unique forum for the Cal Poly Pomona University Library Web site design team to obtain relatively unstructured, authentic feedback from participants about expectations they held of navigating the Web in general and experiences with the University Library Web site specifically. This article describes the planning and implementation of focus group sessions at the Cal Poly Pomona University Library, and results that emerged from participant conversations during these sessions.

Background

In the last three years, the Cal Poly Pomona University Library has been shifting web strategies to a model of data-driven decision-making. Surveys on various topics including discovery, mobile experiences, and general web experiences have been run annually and will likely be run every other year going forward. Usability testing has become a regular function of the web team and incentivized student participants are recruited from the campus community. Changes to the Web site are not made based on impulse or stakeholder's opinions. Rather, when suggestions are received, a core web team reviews web analytics, usability testing reports, and previous survey results.

In 2012, the Cal Poly Pomona University Library conducted a study to investigate mobile user experiences on the library Web site. This study included three phases: a survey, an evaluation of similar institutions' approaches to offering mobile library experiences, and subsequent usability testing of external library Web sites as well as the Cal Poly Pomona University Library's library mobile Web site (Conrad and Shen 2014). Many of the findings of this study were helpful for informing general Web decisions.

There were, however, many subsequent questions that resulted out of this study's usability testing phase. These questions persisted in other usability testing studies conducted by the Cal Poly Pomona University Library. For example, students often did not understand the jargon that we were using in some of the usability tasks. Similarly, many of the features on the Web site use library jargon; for instance, few students were aware of what a "subject librarian" was. Often students were confused by the contact options on our Web site due to vocabulary choices. Usability testing certainly drew our attention to some of these issues; however, usability testing was only as good as our ability to anticipate how a student might behave on a Web site and our ability to write tasks in a manner that was not confusing or misleading to students.

Focus group sessions were viewed as a viable supplement to usability testing. Focus groups offered a valuable way to engage in conversation with students about what they expect not only on the library Web site, but also on the Web in general. Conducting focus groups was in essence taking a step back to analyze students' expectations of navigating Web sites without making any assumptions about students' experiences on library Web sites through potentially biased usability tasks. Focus groups offered another data point in a suite of tools that the Cal Poly Pomona University Library could reference when making data-driven decisions.

Literature Review

The use of focus groups in academic evaluation research and qualitative data collection came to prominence in the social sciences in the late 1980s (Morgan 1997). Early focus group methodology guides, such as David Morgan's *Focus Groups as Qualitative Research* (1988) and Richard Krueger's *Focus Groups: A Practical Guide for Applied Research* (1988), helped establish the place of focus group interviewing as a valuable social science research technique. Morgan and Krueger's early work on focus groups, and the updated volumes published on the subject in recent years, provide useful background on the history and use of focus groups, and offer substantive guidelines for planning and conducting focus groups (Greenbaum 2000, Krueger 2009, Morgan 1997, Morgan and Krueger 1998).

Focus groups are unique small group interviews led by a designated moderator who encourages interactive discussion from group participants. Focus group discussions center around a set of conversation topics or questions defined by the researchers in advance (Morgan 1988). The overall goal of a focus group is to obtain qualitative feedback from participants in the form of thoughts, feelings, and opinions that arise from these moderated discussions (Barbour

2008; Morgan 1997). Focus groups are primarily used as an investigative tool to develop, refine, or evaluate an existing product, service, or issue, but can also be useful in generating new ideas for future products or services (Greenbaum 2000).

The size, composition, and implementation of focus groups depend greatly on the nature and purpose of the research study (Barbour and Kitzinger 1999). Richard A. Krueger and Mary Ann Casey, authors of the popular focus group manual *Focus Groups: A Practical Guide for Applied Research*, offer useful parameters for designing focus group research studies. Krueger and Casey recommend focus groups be comprised of a homogeneous group of participants ranging in size from four to twelve people (Krueger and Casey 2009). In formal research studies, such as marketing and commercial research, the size of focus groups tends to be larger and the use of a professional moderator and special focus group facilities are often employed. This practice is less common in academic and nonprofit settings (Shoaf 2003). David Morgan suggests that focus group guidelines be considered broadly in academic research to allow for variations that arise throughout the planning and research process, rather than restricting focus groups to a set of exclusive criteria (Morgan 1997).

Published research on the use of focus groups by librarians emerged in the 1980s and has since been well documented in the library literature. Meg Scharf and Jeannette Ward's 1986 publication "A Library Research Application of Focus Group Interviews" was among the first to highlight the benefits of using focus groups in the library setting. Scharf and Ward's focus group study at the University of Central Florida Library explores student perceptions of the library as a starting point for generating new ideas for library service offerings (Scharf and Ward 1986). Their experience demonstrates how focus groups can be used as a quick, low-cost research method to collect qualitative data for special topics in the library - including general perceptions,

the online catalog, library instruction, and collection development - in addition to other quantitative research methods already in place (Scharf and Ward 1986). What is more, Scharf and Ward note that focus groups also provide an added benefit in that they foster a sense of goodwill from student participants by making them feel their opinions matter to the library.

Focus groups have since been used to explore various aspects of the library landscape. The focus group method has been used in library research to examine attitudes toward general information seeking (Massey-Burzio 1998; Valentine 1993; and Young and Von Seggern 2001), obtaining user feedback for library planning projects (Williams and Parang 1997), and understanding student perceptions and use of the Internet (Chase and Alvarez 2000 and D'Esposito; Gardner 1999). Barbara Valentine's case study "Undergraduate Research Behavior: Using Focus Groups to Generate Theory" aims to understand how students conduct research and complete written assignments. "Focus groups," Valentine notes, "provide a quick and effective tool for eliciting relatively spontaneous responses from participants" (Valentine 1993, 304). What is more, Valentine suggests less formal focus groups provide value as an evaluative tool and should be incorporated as a complementary method to collect additional qualitative data in library science research. Further, Virginia Massey-Burzio's exploration of reference desk services at Johns Hopkins University echoes Scharf and Ward's finding that focus groups help the library generate a positive public image among focus group participants. Massey-Burzio writes, "Students and faculty really appreciate the opportunity to be heard and the library is viewed as being caring enough to solicit their experiences and interested in making their research easier." (Massey-Burzio 1998, 214).

Most recently, focus groups have been used to better understand user experiences with library Web sites (Bordac and Rainwater 2008; Crowley et al. 2003; Leighton et al. 2003;

Oldham 2008) and remote users (Thomsett-Scott 2006). Researchers at the Texas A&M University Library turned to focus groups in response to repeated difficulties experienced by patrons in using the library Web site. “A decision was made to involve patrons by asking them to evaluate the library’s Web site, instead of having a small group of people from within the organization controlling every aspect of the design and content.” (Crowley et al 2003, 205). Focus groups were held with student participants at the University Library and helped the Web Team identify significant problem areas on the library Web site including confusing terminology and navigational structure (Crowley 2003). Additionally, focus group data enabled the Web Team to generate Web site design decisions based on direct user feedback, to improve the usability of the library Web site in a targeted manner, and brought to light issues that would have otherwise gone unseen by the library.

While focus groups provide a unique opportunity to collect qualitative feedback from users about their Web experiences, it is not recommended that focus group data alone be used to make Web site design decisions. Web usability and user experience expert Jakob Nielsen cautions that data collected from focus groups only allow researchers to assess what users say about a particular Web site and not what they do while using the Web site (Nielsen 1997). “Since there are many differences between what people say and what they do,” Nielsen writes, “direct observation of one user at a time always needs to be done to supplement focus groups” (Nielsen 1997). Focus groups are best suited to discover what users want from a system, product, or application and direct observation of users completing predefined usability tasks is most effective for assessing interaction styles and Web site design usability (Nielsen 1997; Nielsen 2002).

Nielsen's recommendations are reflected in much of the focus group research evaluating user experiences with library Web sites where complementary approaches to data collection such as surveys, usability studies, and individual interviews are incorporated. Bonnie W. Oldham's study, "Focus Group and Usability Testing in Redesigning an Academic Library's Web Site" underscores the advantage of evaluating library Web sites by combining focus group data with other data collection methods. Oldham and the Web site redesign committee at the University of Scranton Weinberg Memorial Library used data from focus groups to identify the primary challenges faced by students and faculty when using the library Web site for research and validated that data with subsequent usability testing (Oldham 2008). "Focus groups, usability testing, and surveys can be used effectively in conjunction with one another to ascertain not only how users think and feel but also to observe how they navigate a Web site to locate information" (Oldham 2008, 237-238). Improvements to the library Web site were made in response to data collected in both focus groups and usability testing, and research participants were again surveyed as a follow-up measure to see if the changes met their expectations.

Similarly, Sarah Bordac and Jean Rainwater's case study, "User-Centered Design in Practice: The Brown University Experience" employed the use of diverse qualitative and quantitative data collection methods through a combination of focus groups, usability testing, and individual interviews, to drive functional improvements to the library Web site. The Web team at the Brown University Library sought the opinions and experiences of novice users with general and library-specific Web sites to assess the information-seeking behavior and needs of the broader student population (Bordac and Rainwater 2008). "This focus on user opinions," Bordac and Rainwater write, "helped ensure the changes we made were beneficial to users and avoided situations of having to choose among contradictory staff suggestions" (Bordac and

Rainwater 2008, 112). Data gathered through the research process provided a student-centric framework through which the Web team can redesign the library Web site and review library content on the Web site moving forward.

Methodology

Previous surveys and usability testing of the Cal Poly Pomona University Library Web site led us to believe that students do not always consider the library Web site as the first choice for conducting research. Additionally, anecdotal interactions with students both at the reference desk and in instruction sessions supported this theory; students frequently mentioned other sources for finding research including Google, Google Scholar, Wikipedia, and other Web sites of varied academic integrity. Rather than conduct focus groups to discuss a Web site many of the students were not using regularly, we broadened our scope to determine how students were conducting academic research in general. This approach is similar to that conducted by University of Massachusetts, Amherst (Center for Spectator Sports Research 2010) and to research conducted by Bordac and Rainwater (2008). So while our overarching purpose was initially to determine what Web experience students expected when using a library Web site, the research questions were more broad so that we could understand what general Web experiences and principles our students found familiar and understandable. The focus group research questions were as follows:

1. How do students conduct research and what user experience do they expect?
2. How do they pursue help when they have trouble?
3. How can we design our Web site to support their expected experience?

Three focus groups were conducted in February and March of 2015 with undergraduate and graduate students. Students were offered lunch, refreshments, and \$10 campus gift cards. The sessions, including check-in times, offering lunch, and conducting sessions, were 90 minutes and occurred over the lunch hour.

Recruitment & Challenges

Students were mainly recruited via a survey conducted in the month prior to the focus group sessions. Preference was given to students in their early academic careers; the survey, which is not the focus of this article, had been sent to a sample group of students in their first or second years at Cal Poly Pomona University Library. This approach was similar to Bordac and Rainwater's focus on novice users so that "baseline interface and content expectations are established upon which future enhancements can be built" (2008, 129). Additionally, select faculty teaching lower division English and Library courses were encouraged to publicize the focus groups to students enrolled in their classes.

The rationale behind prioritizing early career students as focus group participants was based on the assumption that many of these students had limited experiences with the library Web site and librarians who might help them with their research. In prior usability testing studies conducted by the Cal Poly Pomona University Library, early career students often encountered the most issues with jargon on the library Web site and were less likely to have used the library Web site for research. Students in upper-division courses have conversely often received library instruction from a librarian; while many of these upper-division students may also not be utilizing the library Web site, there was anecdotal evidence to support that they were aware of library Web services.

Nineteen students from various colleges, departments, and majors signed up for focus group sessions. Twelve students participated in the actual focus groups, with six in the first round and three in the second and third rounds. Six students confirmed dates but cancelled before the date of testing. One student did not respond to emails.

Scheduling enough students for productive focus group discussions was challenging, most likely due to the timing of the focus groups during the academic year. A temporary librarian was acting as the point person for researching and designing the protocol, for scheduling and arranging focus group dates, and for providing summaries of testing. Because of this limited time frame, focus groups had to be conducted close to the end of an academic quarter, which conflicted with many students' busy final exam schedules. Scheduling students was also challenging due to the timing of the focus groups; some students were simply unavailable and others did not show up on the day of focus groups.

Much of the literature suggests that a minimum of three focus groups be conducted for full saturation. The minimum number of recommended participants in focus group sessions is four to six according to Krueger and Casey (2008). Ideally we would have had a few more participants in the second and third round of the study. Also, because of existing time and budget restrictions, we limited the focus groups to the recommended minimum of three rounds.

Deciding who would moderate and attend sessions

Prior to conducting the focus groups, we discussed the choice of moderator. Shoaf (2003) details the benefits of hiring a professional moderator for focus groups in a library setting. While a professional moderator certainly would have been preferable, some of the team had experience moderating usability testing and in the interest of limited funding, a moderator was chosen from

the team. It was important to choose a moderator who would be friendly and approachable. Also the moderator should be able to lead a session and let the conversation develop without influencing participants to respond a certain way, which can be difficult if the moderator is from within the institution. To prepare for having one of the librarians lead as the moderator, literature was reviewed for best practices and suggestions. In the weeks leading up to the first focus group session, we also held a mock focus group session or interview with one of the students in our department. Conducting this practice round was crucial; many of our questions were formulated from a librarian's perspective. Holding a practice session with a student allowed us to modify our questions and approach to make it more understandable for our test subjects; it also allowed us to practice transitions between questions and work out any awkwardness.

We also decided that the number of people in the room should be minimal to avoid overwhelming the students. In previous rounds of usability testing, up to six people from our Web team had attended testing sessions. Frequently students seemed intimidated by the large group; some were intimidated by recording equipment and the size of the room. For the focus groups, only the moderator and one other librarian were in the room with the exception of one session where a student from the department also sat in on the focus groups. Only the moderator was seated at the table with the students. In order to allow our Web team to still benefit from the live discussion, we streamed the audio from the focus groups via Adobe Connect. The librarian not seated at the table was chatting with the Web team in Adobe Connect and getting feedback from them. Students were informed that there were a few people online listening to our conversations.

Focus Group Procedures

On the day of each focus group session, students first checked in by signing consent forms and completing a seven-question survey with demographic information and questions about Internet and library usage. Students were encouraged to get lunch as we checked other participants in. All library staff in the room introduced themselves to all participants and wore name tags. Participants were also given name tags. Microphones were positioned in the center of the table where students were seated and a small portable projector was used to discuss specific Web sites the students mentioned during the session.

We modelled our focus group questions after Krueger and Casey's recommendations, protocols from the University of Massachusetts Amherst (Center for Spectator Sports Research 2010), Oldham's examples (2008), and the University of Michigan libraries (University of Michigan LibGuides Usability Task Force Undergraduate Student Focus Groups 2009). Our question guide has been included in Appendix 1. It included a total of seven questions or activities with some of the questions or activities broken into sections or tasks. Four of these questions were classified as key questions, one was a transition question, and the remaining two were opening and ending questions.

Before beginning the focus group, participants were read a summary of what would happen during the session. This summary included the goals of the study and addressed any perceived risks. We also estimated how long the session would last, noted that additional library staff were listening in online, and pointed out that observers in the room might be taking notes about the session. We gave the participants an opportunity to ask questions. After this summary concluded, we confirmed that we would begin recording the session.

Once we had begun recording, participants were first asked an opening question about a difficult research assignment they might have had to complete in the previous quarter or in high school. Each participant was encouraged to respond. Then the conversation transitioned to a key question probing how they would complete that assignment today and how they would seek help if they could not find what they were looking for. Again, each participant was encouraged to share their experiences.

As a transition question, we next asked participants what other Web sites they use on a daily basis, not just for research. Asking this question gave the moderator a pool of Web sites to project for all participants to see so that navigation and features of that Web site could be discussed in the subsequent key question. After the mentioned Web sites were discussed, we completed the same exercise with the Cal Poly Pomona University Library's Web site by projecting the Web site on the wall and discussing positives and negatives about the interface and functions.

The last activity we had participants complete were short usability tasks. We passed out tablets to each of the participants along with a small sheet of paper with a task on it. Students were asked to complete the task and write down what they were doing as they completed the task. Most were able to complete the task; for those who were not able to complete the task, we asked them to stop after a few minutes. Then the group discussed their experiences. The first task was to find library hours on a day other than the current day. The second task was to navigate out of the library hours page to find information on the research topic they had discussed at the beginning of the session. We collected the sheets of paper with the tasks and notes after each task was completed. Incorporating this element of usability testing allowed us to apply a real-world scenario during the focus group and get the group's feedback about successes and failures.

Throughout the session, we continued to iterate that no experiences were bad experiences and that we as the library would benefit from their honest feedback. Literature frequently refers to focus group and usability testing participants' hesitation to be too critical in sessions. Often the critical feedback is the most valuable. For this reason, we encouraged them to be honest and critical; we reiterated that their negative feedback can help us tremendously.

After the session, students filled out a five question post-questionnaire providing feedback on the session. Students also filled out paperwork confirming receipt of their \$10 gift card incentives.

Findings

Pre-questionnaire

After completing consent forms, students were asked to complete a seven-question survey before beginning the focus group sessions. Demographic questions included their status (undergraduate or graduate), year, and major. They were also asked to rate their experience using computers and the Internet with choices of Beginner, Intermediate, and Expert and to estimate how many hours they spent on the Internet weekly. Additionally, we asked how often they used the library in-person and how often they accessed the library Web site. Options for both of these questions included never, daily, weekly, monthly, once a quarter, and once a year. Lastly, we asked them to list three Web sites they use for academic research. All 12 students answered the demographic questions and additional questions about skill level and frequency of use. One student only listed one Web site that s/he used for academic research.

Most of the participants (83 percent) were undergraduates, with 17 percent, or two participants, enrolled in graduate programs. The numbers of undergraduates were slightly lower

than the corresponding reported overall 2014 university enrollment of 93 percent undergraduates (California State Polytechnic University, Pomona Institutional Research and Academic Resources 2014). Most of the students were early career students in their first or second years including first-year graduate students (75 percent). Three students were in their 3rd and 5th years.

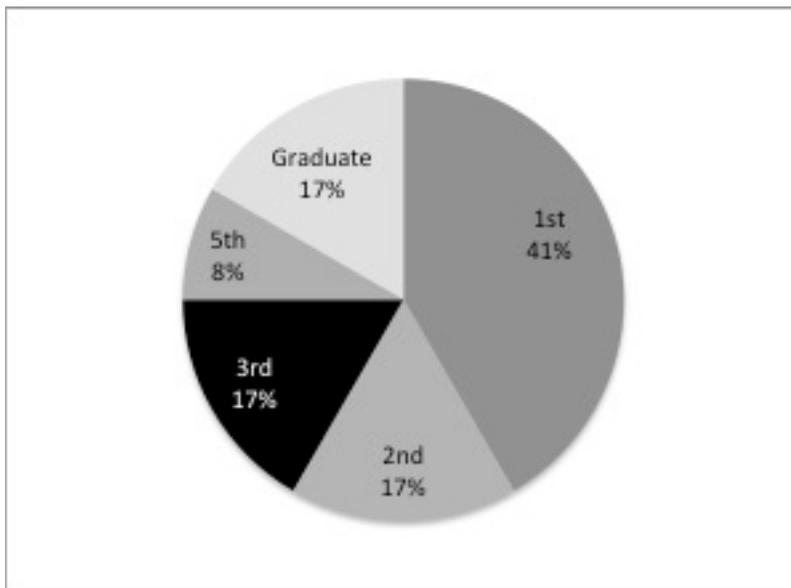


Figure 1: Year of Participants

Students came from various departments with the most students (3 students or 25 percent) from business majors. Other majors included Biology, Business Accounting, Chemical Engineering, Computer Science, Computer Information Systems, Hospitality Management, Landscape Architecture, and Mathematics. One student was undeclared.

Regarding skill levels on computers and with the Internet, students were more likely to view themselves as savvy technologists. Ninety-two percent of participants indicated they felt their skill levels were either intermediate or advanced.

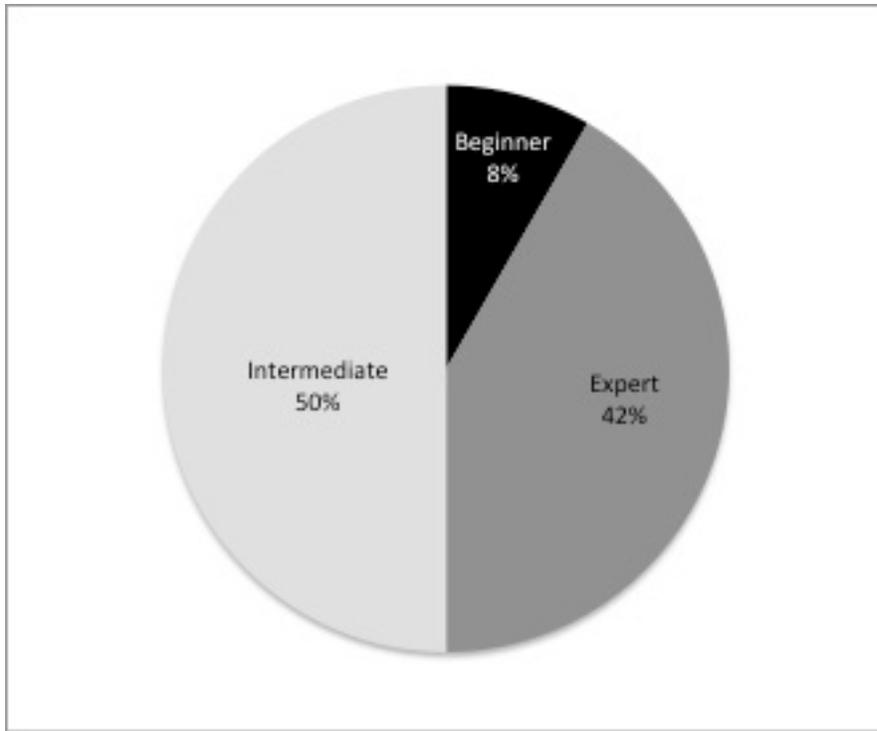


Figure 2: Participant Self-Reported Rating of Computer and Internet Skill

Similarly, 92 percent of participants spent more than 11 hours a week on the Internet according to their self-reported estimates. Fifty-eight percent of these participants spent more than 15 hours a week on the Internet.

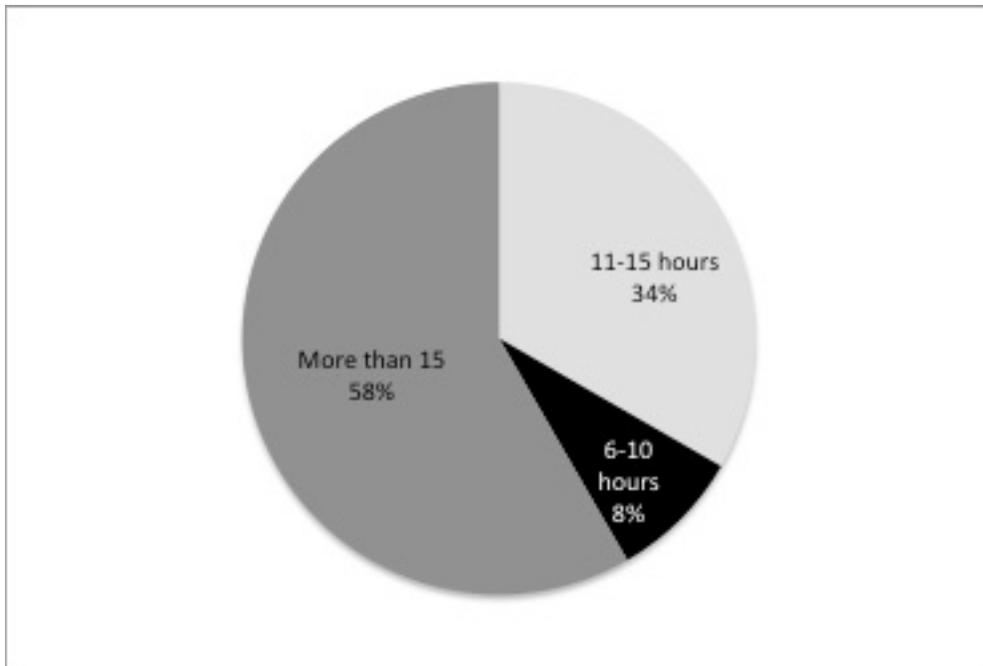


Figure 3: Participant Self-Reported Weekly Time Spent on Internet

Participants were asked to report their usage of the library building, i.e., how often they visited the building for any purpose. They also were asked to report their usage of the library’s Web site. More participants indicated that they used the library in-person on a frequent basis; 75 percent indicated that they used the library in-person at least weekly. Comparably, 66 percent stated that they used the library Web site at least weekly. One of these participants checked two options: daily and weekly.

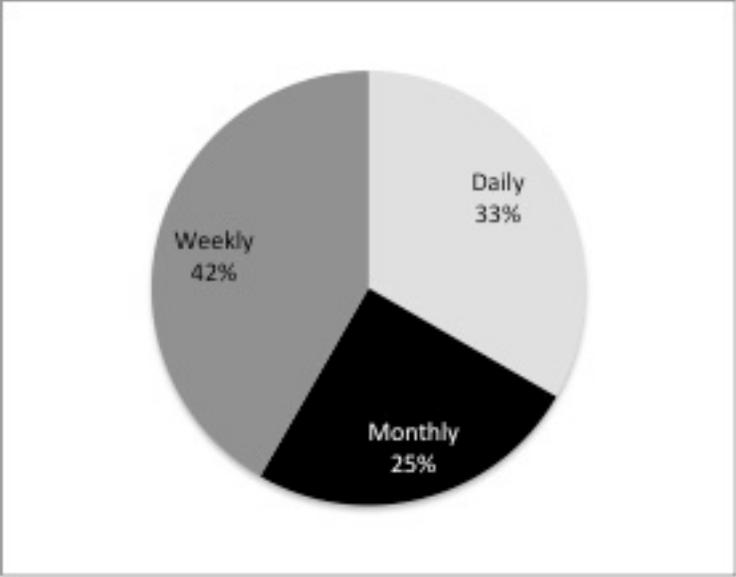


Figure 4: Participant Self-Reported Usage of the Library (In-Person)

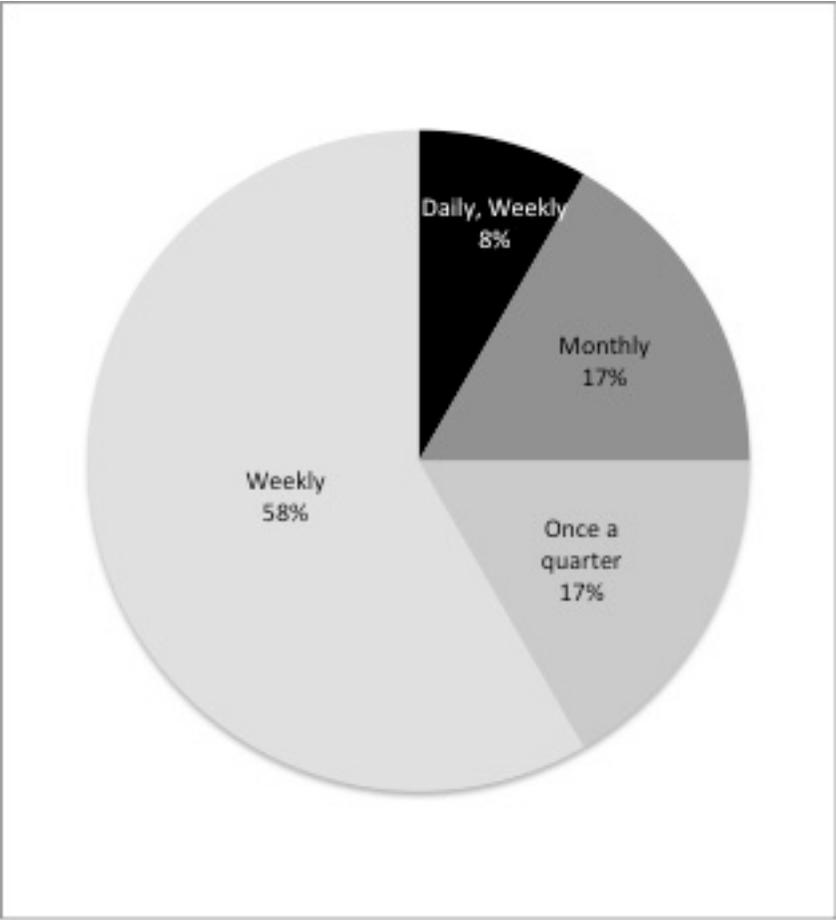


Figure 5: Participant Self-Reported Usage of the Library Web Site

In reality, however, it is likely that the number of these students accessing the Web site regularly is lower. Many of the students who may have reported high usage of the Library Web site on the pre-questionnaire made statements in the discussion group that insinuated their usage of this Web site was much less frequent than reported. This could perhaps be attributed to psychological barriers common in focus group and usability testing; often participants are less honest in order to avoid hurting the feelings of the moderators, especially if they are aware that the moderators are from the institution itself. During the discussion, these hesitations lessened as more students became more comfortable speaking their minds in the groups, and as they were encouraged to be honest even if their statements were negative.

Focus Group Results

General Research Behaviors

During the discussion, we opened with having everyone introduce themselves and talk about a challenging research assignment they had worked on in the past. A few students mentioned their research strategies while talking about the specific challenging assignment and frustrations they experienced when they couldn't find what they were looking for. For instance, one student stated: "the most challenging bit was having to sort through hundreds of abstracts even though I practically used the most specific keywords I could come up with and I refined it in every other way possible." Others also mentioned being overwhelmed with information and not knowing what resources might be the most appropriate for their specific assignment. One student mentioned that at her previous community college, the professor had required the students to find resources from the library Web site only. She expressed frustration at this request

as she was not familiar with the library Web site and had not been able to find what she was looking for.

After asking this initial question, we asked a key question prodding the student as to how they would approach that same challenging research assignment today. We probed to understand what the students liked about the specific resource they chose, how it could be improved, and how they would get help if they were not able to find what they were seeking. A few students mentioned their professors as resources; for instance one stated, “I would probably try to visit more of my professors since I didn’t do that as much last time.” Another student said that she would interview her instructors first before conducting research.

Some students used the Library Web site for researching. One graduate student actively used the Library Web site’s discovery layer “OneSearch” for searching. She stated “I always start with OneSearch on the library Web site. I know there’s are a lot of other links on the opening page, but I start there because it’s quick and generally has pretty quality results and can take me ... immediately to articles and books and I can choose between the two and it’s for me the fastest way to go about it.” Other students attempted to use the Library Web site, but without success. One stated that “when I use the Web site here, the library Web site, and I search, it doesn’t give you the specific, it gives you, like if you use two words it will give you mixed results. It’s not exactly what you’re looking for.” Another student mentioned troubles using the Library Web site discovery layer. He stated, “The problem I had was that there were, the stuff that I was searching for I was getting millions of hits even when I was refining it down to very narrow and very, very detailed keywords.” The reception of the Library Web site’s discovery service, which in this case is an open-source product Xerxes with articles fueled by Summon,

was mixed. Some students found the interface easy to use and comparable to other services, while others found the results overwhelming.

Many students reported using Google to conduct research. This included both Google Search and in lesser cases Google Scholar. One graduate student stated:

I always prefer going to Google instead of the library database because I find it very confusing and even for the words that they search online that I tried typing in telecommunication infrastructure and globalization, this was my research topic, so the library database came up with words that even if you put the quotations to make it combined, it came up with things like telecommunications separately. Like in the entire paragraph in the entire research thing, they had like telecommunications is different and globalization is different, and it didn't come up in the entire topic one.

Another student concurred with the sentiment that Google or Google Scholar were simpler to use, stating "I would agree though, to make it easier I would probably just go on Google. And then especially for me like I said, you know, finding the science journals, I would probably just go to Google Scholar; it's just much more simpler and more broad." In some cases, as often happens with focus groups, it appeared that some of the participants were more hesitant than others to admit where they had conducted research online. This issue was less prevalent in the first, larger focus group, since the group had a few participants who were not afraid of sharing their opinions. In later focus groups, at least a few seemed more reserved and potentially fearful of judgment from the group if they mentioned the wrong resource. The moderator attempted to avoid this by assuring them that no answers were wrong answers and that all feedback would

help the library; however, it was not always possible in all groups to encourage complete frankness.

Students were next asked a probing question about what they liked about the various resources they were using for research. One student, when talking about Google Scholar, stated:

You know, well for the most part, I know that it's certified for most of what I use it for, for the purposes I use it for, it's more like, I know that the people who wrote those, articles I guess, are more professional, they have more background to them. And it's not like Google, where you can just put in something and random comments can be reflected back.

A few students mentioned Google Search as a means of verifying details or information. For instance, one student stated: "I've used it because for business when I need to study for a test or when I clarify the meaning of something, I feel like it will give me several options, several Web sites will come out, but they will be valuable resources there. I know I'm getting the right answer." Overall, most students who were using Google Scholar, or in some cases even Google Search, felt that the responses they were receiving were accurate and relevant to answering their research questions.

One student detailed his preference for the Library Web site over services such as Google Scholar. He stated:

So the one thing that I was told when I did my research was that Google Scholar can, it's hit or miss, you can find really good information on there but you can find information from journals that ... aren't that strong and aren't that responsible about who posts stuff on their journals. So I was told to use Google Scholar as a resource if I can't find

anything at all. So I was left with the Cal Poly Pomona University Library database because it sort of, you can find stuff that is actually credible in most cases. A lot of the smaller journals that aren't that picky about who publishes, there aren't that many in the Cal Poly Pomona University Library database.

This student was more active in undergraduate research activities on campus and was perhaps the most concerned with credibility of research in comparison to other undergraduate students interviewed.

Students also shared what they did not like about the particular Web sites we were discussing. For instance, one student mentioned the issue with relevancy in Google Search while expressing her criticisms of that particular Web site when used for research purposes:

Just that I think a lot of times the results are organized based on popularity more than relevancy. So you know sometimes you're getting things especially that are newer things because those things tend to have more activity and that's not necessarily what you want. So that was my frustration, was just trying to find things that were, you know, relevant ... and not, you know, just like someone going and visiting it now and talking about it.

Another alluded to the issues of information overload. She stated: "Like even if you search like a name usually it's just a title and the rest of it's just like stuff that you don't need. So like the actual content is nothing and you clicked on it for no reason."

Two also mentioned issues with hitting pay walls when searching for content on Google Scholar or Google Search. One of these two participants elaborated as follows:

Because if I search for a particular topic, for a research topic, they lead me to a page which gives me exactly what I want but it will only show me one to two pages and if I want to move forward with the third and fourth page they want me to get membership. So that is very annoying, like “Wait, you’ve already shown me two pages! Why don’t you allow me to see three pages?”

Again, the issues of too much information to sort through were discussed in the context of multiple services including Google Search, Google Scholar, and also when using the Library Web site discovery layer.

Getting Help

We were also interested in understanding how students sought help when they could not find what they were looking for. In previous usability testing cycles, we had noticed that many of the students were not aware that subject specialists were available to help them via a variety of methods. A few of the participants in this focus group were aware that librarians were available to help them and mentioned that they have visited or would visit or contact the library to get help. For example, one stated that she was planning to visit the reference desk to ask for help finding a book after the focus group session:

I don’t even know where to start, you know, and do they even have any [books], I know they do because on her [the professor’s] Web site she said go to the school library. But, that’s where I really am totally confused and if there wasn’t a person I would go on the Web site and try to figure it out, but I already know that if I go on the Web site and try to figure it out I am going to be given all this information and I wouldn’t know what shelf is it on, ‘cause that’s what the hard part is - finding a book on a shelf.

This student, while aware of library services to get help, expressed confusion and discontent with something as simple as finding a book.

Three students mentioned that they would go to their professors first to get clarification. One stated: “Always to my professors just to see if I’m doing something wrong, if there is something else I’m overlooking, and then if it’s something I need to find, like in a book or something, that’s when I would go to the library.” Another student claimed that she would first ask her classmates to see if they had additional information, but if that was not helpful, she would go to the professor. She stated that at times she and her classmates had approached the professor together and she recommended that they should “maybe go as a group, just in case like the professor’s one of those professors where, you know, you’re a little intimidated.”

The campus writing center is also housed in the Cal Poly Pomona University Library. This center assists undergraduates with writing assignments. One student claimed that she would get help from this center, but that if she were having problems finding articles or resources, she “would probably have to go to another search engine besides the Library Web site.”

One student, a graduate student, expressed frustration with trying to get help at all. She stated:

I have been to the [writing center] once for help but then they said they don’t help master’s students, only undergrad students. And then like, for the professors they also have office hours, but most of, like being a masters student is like oh you are out of this school, you are expected to know everything. So, then where do we go? We need help too! ... Master’s students don’t really have time for other students. They are so busy. Because our classes, the timings are also like evening classes, so morning 8-5 you work

and then 6-10 you have class, so we don't really have friends in class ... Even if I email them saying, "Hey I need help!" so they are like, oh you are expected to know this, do it by yourself. I don't know where do I go for help for that.

Students, after sharing these experiences using certain Web sites for research and also after sharing experiences asking for help, were asked a transition question of what other Web sites they visited on a daily basis. We were interested in discussing general Web behavior to ascertain if certain styles of navigation or search results generation were standard to student users.

Web Sites Frequently Used by Students

Students mentioned many Web sites they use daily including social media such as Facebook, Twitter, and Pinterest; e-mail services such as Gmail, the campus e-mail service, Yahoo!; and other Web sites including BuzzFeed (through social media), Reddit, Tumblr, Amazon, Ticketmaster, banking Web sites, etc. At least one student mentioned Wikipedia. Other sites they used for academic purposes included Get Study Room, Slader, and Chegg. Some mentioned using association Web sites and city or government Web sites. When the moderator was not sure of what a Web site was, the student was asked to describe the site and its services.

Once students had finished listing the Web sites they used regularly, a mini-projector was used to project the more frequently discussed Web sites on the wall. The moderator asked about how they would navigate the Web site, what functions they would use, what they liked about the Web site, and what they would do to improve it. Two Web sites, GetStudyRoom.com and Amazon.com, were discussed in every group. One group discussed Chegg in detail; the other two focus groups were aware of the Web site, but were not using it. One group each discussed Blackboard, Reddit.com, and Slader.com.

In the case of GetStudyRoom.com, the service is one that is offered by the campus to students. According to focus group participants, the site is a community discussion board that lists the classes they were enrolled in and lets them chat with other classmates. One student explained that it is a space where students can clarify issues from the class or catch up on missed sessions: “I just like people helping each other out because sometimes you don’t want to bug the teacher about it, you just want a quick response and that can be nice.”

All three focus groups mentioned Amazon as a service they use frequently. Most groups discussed textbook purchases on Amazon. Many admitted that they first search on Amazon to find what they were seeking, including searching by subjects, authors, and editions of textbooks or books. Two focus group sessions commented on left navigation facets on Amazon. One group said they would use facets to narrow searches, but most of the time knew exactly what they were looking for and would use the search to get a narrow results set. One talked about the huge results set and said, “I think just refine the search with the options you have on the side. Price, shipping, if you want paperback or hardcover...” Because the CPP library Web site offers a discovery layer with faceted search results, it was particularly helpful to hear how students’ general Web experiences with facets might influence their behaviors on the library Web site.

All groups mentioned Chegg, but only one focus group discussed Chegg in detail. Students described Chegg as a service for multiple things such as buying or renting books, getting solutions from textbooks, and for finding scholarships. Chegg is, according to the services listed on the company Web site, a paid subscription service. Some students found the price reasonable; others were not willing to pay for a subscription. Other students talked about Chegg as a time-saving mechanism for finding textbook solutions.

In one focus group session, Blackboard was also discussed. Focus group participants talked about general features that they liked within Blackboard as well as annoying notifications, lack of automated due dates, and lack of access to Blackboard sites after the conclusion of the course. The last of these criticisms may be a campus configuration.

Slader, much like Chegg, was discussed in one focus group session as a portal for sharing textbook solutions. The one student who used this Web site claimed that Slader had an easy-to-use interface that allowed her to quickly cross reference her book with questions and answers posted to the site. Another student talked about his usage of Reddit, including getting general information or looking up funny or interesting posts. He mentioned using Reddit to get up-to-date information about sports or news, however, did not really use Reddit for educational purposes. Another student in the same session stated that she only used Reddit “for fun stuff like cat pictures.”

Discussing the Library Web Site

After discussing Web sites that the participants used on a regular basis, the conversation segued into a discussion of the library Web site. The moderator first clarified who had used the library Web site before. Most claimed that they were familiar with the Web site. Only one student admitted that she had only used the library Web site once or twice. It is possible that more participants were inexperienced with the library Web site; however, these reported details were consistent with what students had listed on their pre-questionnaires.

Students were asked what they liked and disliked about the Web site. The Web site was projected on the wall, similarly to the prior discussion question. One student felt that the resources she found on the page would be credible. One student commented on the convenience

of the discovery layer, which the Cal Poly Pomona University Library called “OneSearch.” She stated, “I like having the OneSearch right up front.” As the group continued discussing, she added an additional statement about OneSearch:

I just think it’s so direct and I’m really not sure other than information why all the other links down below are there, unless you only want to look at databases. I don’t know maybe I’m a different kind of researcher but if I want to know what’s immediately available to me, the OneSearch really does the job... I help my advisor by working with some of her students to help them along with their research, because I’ve been doing it for a while, and they do not use the library Web site because I think it’s overwhelming to them. I think they really do not understand what’s the difference between e-journals and databases and the card catalog, though there’s no physical card catalog anymore, but the library catalog. I think that they’re overwhelmed with the choices and they don’t know how to proceed so they resort to Google and Wikipedia. Because it’s fast and easy.

Additionally, another student from a session on a different day explained how she would use OneSearch when not sure what to do:

One of the problems that I had was finding online journals or just books online, ‘cause I didn’t know how to like navigate, so accessibility to that and like knowing where to go especially. Even now like I wouldn’t really know, I would just go into the search bar and put in OneSearch and see if something would pop up and maybe refine the search to like journals or something.

The discussion of search from these focus group rounds was not surprising; in other usability testing conducted at the Library, we had frequently experienced students' likelihood to search for everything when the option existed. Additionally, students almost always resorted to searching via Web site search boxes rather than navigating through the Web site by browsing (Conrad and Shen 2014).

Two other students mentioned the convenience of the chat service offered by the Library. One stated "when you're having queries and you can just type in and then you get a reply...that's like the best thing." Another student in the same session agreed, "because nowadays people sometimes can't physically come to the library and everybody has Internet access and it's really easy to just chat."

Three students commented about the appearance of the Web site as pleasing or helpful. One student liked the slideshow images that were displayed on the main page of the Library and claimed that she would click through them. Another student liked that the Library page was at least slightly different from the campus Web site. He said:

The biggest frustration I've had with other Web sites is that there's no differentiation with the library Web site and actual university Web site. So it's very, it's hard to see when you're navigating away from the university Web site into the library Web site. It's nice that the color scheme is the same but at the same time it looks different to the Cal Poly Pomona University Library Web site.

This feedback was surprising; when launching the most recent template from the University, which was the one focus group participants were shown, there were many discussions within the Library and with campus IT about streamlining the Web sites to avoid student confusion. This

comment from a student contradicted many of the claims and evidence provided by IT. A third student commented on her positive reactions to prominent inclusion of library hours on the Library homepage, stating “that’s one of my biggest pet peeves when I go to a company’s Web site and it’s like ‘I just don’t know what time you’re open.’”

Many students, when asked what they disliked about the Library Web site, talked about the overwhelming amount of information that might not be in an easy to access location. One stated: “but it’s so weird I didn’t even know that was there. A lot of the information on the library Web site is hidden.” Upon further discussion she followed up with “you have to be an expert to find it.” Another student also felt that information was hidden because “the library Web site is like trying to put so much information in the Web site that...it’s hidden within something else.” Another participant in a different session made a similar statement: “You’re presented with so much information.” She continued by justifying why librarians or library staff might include so much: “[It’s] in the spirit of being helpful and complete, but I think it’s overwhelming to a certain set of students.” Another student stated simply: “There’s many things to read.” One student detailed her general frustrations with the Library Web site, specifically talking about how she often would come to the Library when she was not able to find things on the Web site, because the different header sections were confusing to her. She gave an example of looking for databases under a databases page and then looking for books and articles under another books and articles page. She concluded with “I think that is very, very difficult for people like me.” In this case, the student may have not explicitly mentioned jargon as the reason she could not find something; nevertheless, her described experiences indicate that jargon used on the Web site may be the basis of her troubles.

A unified discovery layer was also not always positively discussed, despite some students mentioning how helpful OneSearch was. One student stated that she liked OneSearch, however, followed up with “sometimes I kinda find that like confusing like it’s not clear if you’re looking at resources or if you’re looking at books that are in the library.” After some additional prodding about her statement, she clarified that she is never sure which books are physically available versus which books are eBooks. One student found OneSearch to be too broad at times. He stated:

It’s again with OneSearch and the main thing, the main problem, or not even a problem, that I have it’s sort of, it feels counterproductive. When you use OneSearch ... it gives you maybe a couple options for each thing, but that’s usually, when you’re looking for an article, you’re usually not going to find it in the first three. If you’re looking for a topic that’s a little bit more complex, you’re not going to find it in the first three hits. So it seems counterproductive. If I’m going to click “view expanded” and have to go into articles anyway, what’s the point of OneSearch because it’s just showing me, okay you have at least three articles you can look at, but beyond that I still have to go into each one and find what each one is about – it doesn’t show me abstracts, it doesn’t show me whether they’re scholarly, it doesn’t show me any of that stuff. So I still have to go into each one individually or I have to click into expanded articles or whatever.

The student continued to give a specific example of a search term that the moderator then projected. He discussed his issues with specific parts of the interface and why he felt that OneSearch was at times not helpful.

Students in the first session also, after having discussed their frustrations, concluded that introductory sessions and workshops would be helpful for them. For instance, one stated:

I feel like maybe that should be like a class or like a workshop all freshman or incoming transfers should take, “how to navigate the library Web site” and how to use your resources. It should be like a mandatory thing, ‘cause I know like I was in Summer Bridge and we did attend like workshops and we did learn about the library and everything and the Web site. But I feel like it should be mandatory for all first time freshman and transfer students just so that they know what is available on campus and their resources.

Interestingly enough, the Cal Poly Pomona University Library does have a newly offered information literacy class that fulfills general education requirements. Additionally, subject specialists teach one-shot sessions instructing students on how to use the Library Web site and resources. One student from the first focus group session had attended a library information session as part of a first-year class and had also been assigned library video tutorials to complete as part of classwork. She claimed that this session was helpful as were the tutorials she completed online. Of the other focus group participants in this session, who were mostly first and second year students, none seemed to have experienced either the information literacy class or had experienced one-shot classroom instruction in library use. One student thought that having assignments associated with the Library Web site in their classes would be helpful for learning how to use the site, stating “I feel like that’s a good way for teachers to force and push the library onto students so that they take the initiative to go and use it and learn how to use the Web site.”

As the last part of the guided discussion before having students complete tasks or activities, participants were asked how they would seek help if they had issues finding what they needed on the Library Web site. One student in the first focus group session had frequently visited the reference desk and said she would come there for help. Another student mentioned that she would also look on the Web site for a staff contact and phone number, preferably with the person's title so that it was more likely that she was reaching the right person. She said that calling or e-mailing was more conducive for her than "coming down here to find someone, only to discover they're at lunch or not here today." A few other students commented on the user interface to describe how they would find help. One student claimed that she would use OneSearch to search for help. She stated: "It says OneSearch and it says everything, so you automatically think it's going to search up everything." After further probing, she said that if she did not find anything, she would Google it. At least two other student mentioned Google as a place that they would search to get help on the Library Web site. Another student said, while looking at the projected image of the library Web site, she would click on a tab called "Services and Help." Two students had used the librarian chat program in the past.

Findings from activities

At the end of the focus group sessions, we also organized two activities that were very similar to usability testing activities. We had six tablets that we shared with the students so that they could each try to complete the same task. We had printed copies of the tasks that we passed out to students, and we provided them with pens and pencils so that they could write down what steps they took to complete the task. After they had completed the task, we discussed their steps and frustrations together.

The first task we had students complete was to find the library hours for the next quarter. On the current Library Web site, the opening hours are displayed prominently in two locations on the Web site including in the header of every page and in the lower left of the homepage. Searching for hours also will bring up links to the hours page in a bento box search results format. Once the student had clicked on the hours in the header, on the homepage, or found the hours by searching, the hours were displayed in a tabbed LibGuide. Hours for the current quarter were on the first tab with hours for the second quarter available on a second tab.

In all sessions, there was no clear singular path to look up library hours. All of the students completed the task in different manners. Some students used the search box to search for hours. Some students clicked on the hours in the header or on the homepage to find them. Other students browsed to various subpages of the homepage while attempting to find hours. Three students were not able to find the hours for the following quarter either because they never found the library hours page or because they overlooked the tab on the LibGuide for future library hours.

After students discussed their experiences trying to find the library hours, they were given a second task. We asked them to remember the research paper they had talked about at the beginning of the discussion and try to find information or resources for that assignment from wherever they had left off after the first task. We were interested to see how they navigated once they were no longer on the library's homepage. Students were again given a copy of the task on a piece of paper and encouraged to write down the steps they took to find the information. After giving them a few minutes, we discussed their results as a group.

The library hours page had a slightly different header than the main library homepage, as did all of our library's LibGuides pages. Having a different header on these pages was

problematic as students were not sure where they were or how to navigate to a page that could help them with their assignment. Many students would type search terms into the first search box they found; this was a behavior that we had observed in previous usability testing as well. One student clicked around on different things without really knowing what the words might mean; for instance she clicked on “Research Guides,” which were LibGuides, found that the information was not helpful and then went back to the homepage and tried clicking on “Databases.” Another student also looked first at the databases pages. Only one student used advanced search options to research her topic. The advanced search allows students to search by certain fields, Boolean operators, format types, subject areas, and dates.

Subsequent Discussions

In the last part of the focus group sessions, we asked participants if they had any other commentary or feedback. In one session, asking for this feedback turned into a general discussion about their opinions of the library and the library’s services. In one group of students, a participant commented that she liked the digital signage at the library’s entrance and elevator print signage. Another student talked about the lack of visible exit signs. In this same session, the group talked about students hogging tables in the library and how the staff should discipline students who were taking up too much table space.

In two sessions, students provided additional feedback about the library’s Web site. One student stated, “I think it would be helpful if you were to go on the Web site and actually search for something yourself ...I think that would be really helpful, because you would put yourself in our situation.” This comment and similar comments were always interesting because they made the moderators and other staff participating in the group realize that we have become very disconnected from the student’s perspective. Certain things that bothered or concerned students

had just never occurred to staff in those positions. This kind of learning reinforces the need to obtain student feedback in some form because putting ourselves in their shoes is not always possible or fruitful.

Another student, who was a graduate student, reiterated her opinion that the library Web site included too much information and that the search functions were the most helpful. She stated:

I would go back to what I was saying earlier about the kind of overload of information on the homepage. Once I get past that, I just, I almost ignore the homepage. I just use the OneSearch. And for me maybe it's different because I, maybe I have more experience than some undergrads that aren't as accustomed to searching this way. I don't know, maybe it's just the way my brain works, I'm not going to say that you know I'm better at something than somebody else or that they don't understand it, I think anybody can get there. It's a matter of some trial and error, learning how to use it. But I've had to use it a lot over the past year especially and so I've gotten a good routine and to the point where I can coach other people on how to get there almost without looking at it.

Based on these discussions and prior feedback from usability testing groups, the importance of comprehensive search functions continued to rise to the forefront.

In this last discussion section, many students also gave positive feedback about the focus group session. Some stated that they were pleased that the library was interested in hearing their opinions. The idea that we should try to think like a student emerged multiple times, but as mentioned above, that suggestion may be difficult to implement.

Post-questionnaire

Students were given paper copies of post-questionnaires after the focus group session concluded. The post-questionnaire included five questions about the experience in the focus group. First, participants were asked what they learned in the session. Many mentioned various library services that they had been unaware of; for example chatting and texting a librarian services. Others were pleased to learn that they could contact someone in the building if they were having some sort of problem here with another student. A few students mentioned knowing how to access library hours on the webpage. Other students said they received information about how OneSearch works and also how to navigate the library Web site.

When asked if they were more likely to either attend library events or use library services, most said yes. Some mentioned that they would use OneSearch in the future. A few wrote that they were already using services and had attended events in the past. One participant made a very positive comment on the impact of her participation, stating, “I feel that my own opinions could also help in making these library services easier and more accessible.”

Students were also asked what they liked and disliked in two subsequent questions. Many of the students mentioned the food and gift card incentive. Others felt that the staff in the room were friendly. Quite a few students talked about liking that they were being heard. One stated: “Other participants were heavily involved and we were able to give our opinions and not feel judged.” Similarly, another mentioned liking being able to share opinions “openly and without having any negative feedback.” One student felt reassured after the session. She stated: “all the students feel the same as I do. Earlier I thought that everyone knows how to use the library Web site and I am the one left out. But now I know that everyone is making an effort to learn something.” Overall, the students seemed to feel comfortable sharing and felt that the others in

the group also felt this way. A few students also made suggestions for improvement. We had a few problems with the projector so they mentioned that more reliable technology could have been used. In one of the later, smaller groups, a participant felt that a bigger group might have been better.

As a last question, we asked students if they had any additional comments. A few mentioned requests such as putting job availabilities on the Web site, having more people at the desks to help, having visual representations on the group study room pages so they could view the room, etc. One student volunteered to give more feedback on databases she was using for classes. One student reasserted that the library Web site should include less information. Another student just gave an overall positive statement, saying: “Enjoyed it a lot. Had more fun than expected.”

The feedback from the post-questionnaire, and from the focus group discussions, reasserted what many scholars mentioned in the literature review: doing focus groups can be a good public relations tactic. We did reach additional students and educate them about our services by having an open discussion. Students seemed to leave with a positive feeling about the library, especially because the library was making an attempt to get their feedback.

Discussion

Without a doubt there are limitations to focus groups as a means of collecting feedback about Web services. Focus groups were frequently used as a discussion opener in much of the reviewed literature, not as a means of determining design. We were aware that we were taking a step back by conducting focus groups; however, it was necessary to take this step back to understand some overarching issues students have with library Web sites and the Web in general. The learning from this focus group study did not lead to any immediate changes to the interface

of the Web site. However, it did provide additional data for larger decisions, both past and future. The feedback from students in this group was used to craft usability tasks for two test rounds of usability testing on LibGuides. Once that usability testing was completed, feedback from both the focus group sessions and LibGuides usability testing rounds was used to make recommendations for the relaunch of LibGuides. Quotes from focus group sessions, along with quotes and evidence from usability testing, were used in discussion with reference librarians to justify design decisions. The results of focus group sessions combined with usability testing feedback led the team to recommend the minimization of content on LibGuides, develop two-column standard templates across all public-facing LibGuides, and to launch a header that was consistent with the rest of the library Web site. Similarly, feedback from these sessions is currently being used to make recommendations for a relaunch of the frequently asked questions service LibAnswers. Discussions about the usage of search, header consistency across all library Web properties, and options for getting help have been influenced by the data from these focus group sessions.

Having results from focus group sessions complements existing data queues. Over the last three years, our library has collected both quantitative and qualitative data from multiple sources. These include Google Analytics pageviews and in-page analysis click tracking; occasional Crazy Egg heatmap campaigns to ascertain page clicks; analysis of search logs from site search, the discovery layer, and the FAQ service; frequent surveying of student users; usage capturing through video tools such as Inspectlet; usability testing results from multiple rounds; and now focus group session results. One source alone does not always indicate a trend, but when multiple sources continue to reinforce problems or challenges with a Web site, it is much

easier to make internal justifications for change and action. Focus groups create an excellent narrative to share with stakeholders who may be uncertain or hesitant to initiate change.

Because focus groups are often only a starting point, they may be too time intensive if researchers are not prepared to collect data from additional usability testing, card sorting, or surveys. Focus groups themselves should not be the sole method of collecting feedback for designing a library Web site. Additionally, focus groups require a commitment in terms of time and monetary investment. Testing sessions must be scheduled, participants must be recruited and individually scheduled, the group must debrief after sessions, and transcripts should be produced from the sessions for later usage and analysis. From our experience, focus groups are more expensive and time consuming than usability testing. Food was purchased for our focus group sessions, so that took additional funding and time to organize. We had to purchase more incentives for focus groups than we had for past usability tests. In usability testing we generally had students come in groups of five; however, we had twelve focus group participants and would have preferred to have at least fifteen.

The number of focus group participants is important. The more students we had in a focus group, the more successful and fruitful the discussions were. For example, the first round had the most participants with six students. This group was the most active and ultimately the most productive. Regardless of the number of participants, some less vocal participants had to be prodded to participate more. The participation was not balanced in any of the three groups, rather there was always at least one student who was more careful to speak up.

Perhaps part of this shyness was also related to some feeling of perceived judgment. In at least one group, some students seemed to be judgmental of online Web sites offering homework solutions. They seemed to view this as cheating. Other students had no problem sharing that they

were using these types of Web sites. While students reported in the post-questionnaire that they were comfortable having discussions in the group, it is possible that some did not report discomfort or the feeling that they might be judged.

Our focus group results also made us aware of inherent issues with information literacy among our students. Students expressed issues sorting through the multitude of search results on the library Web site and Google. More information literacy instruction, whether through one-shot instruction sessions or participation in an information literacy class, might help abate issues that these students encounter when conducting research. Furthermore, some of the students were not aware of quality issues searching for research online as was made evident by one student's comment that she knows she's "getting the right answer" when fact checking on Google.

Feedback from focus groups also confirmed that library jargon continues to serve as a barrier to easy navigation of the library Web site. For example, students expected the "Research Guides" link on the homepage to direct them to a list of book and article results for the specific subject or discipline referenced. Similarly, tab headers on the University Library Web site failed to fully convey the information and resources available on subsequent library pages. It was not apparent to many first and second year students that additional services, such as study room reservations and online research help, could be accessed by clicking on the "Books & Articles," "Services & Help," and "Meet & Study Here" tabs. This confirms earlier findings from usability testing at Cal Poly Pomona, which demonstrated that words used on the University Library Web site aren't easily understood by students. Terms such as "subject librarian," "library catalog," and even "databases" are not always clear to users participating in usability testing (Conrad and Shen, 2014, 16).

Jargon is not easy to address with changes to design or vocabulary choices; many library specific terms are difficult to describe to a user who might not be aware of the inner workings of the library. Getting student feedback in a discussion format reiterated our existing knowledge that students are not aware of many library services. Few of the students knew that they had a subject librarian who could assist them. Not all were aware of chat or texting services. They were also not aware that someone in the building could help them with noise disturbances or conflicts with other students. While focus group sessions may have made this select group of students aware of library services, a multi-faceted outreach strategy is necessary to inform more students of how the library can assist them. We have used findings from this and prior research to encourage more outreach, education, and marketing initiatives on our campus promoting library services, which may in part alleviate some jargon issues if successful. Research on how to address jargon is certainly a topic worthy of further research.

Lastly, it is very important to realize that we as librarians generally do not actually know what services students are interested in using. We were unaware of services like Chegg or Getstudyroom.com. One student, when talking about issues with students hogging tables in the library, said, “You should walk, you should come to the library as if you were a student. And walk.” To these students it seemed easy to suggest that the staff in the library should just pretend to be a student. Our disconnect from the students only reiterated the need for continual campaigns to get more information from our users, whether this is through focus groups, usability testing, surveys, or another method.

Conclusion

Focus groups are a useful research method that should be considered when collecting qualitative and quantitative data about library services. The ultimate success of focus groups depends greatly on the timing of the focus group sessions and financial support of the library. Planning for focus group sessions can be a time and labor intensive task and ample resources should be dedicated to this effort. Staff time, technical support, and monetary incentives are required for the recruitment of focus group participants and for the implementation of the focus group sessions. However, the time and energy spent on focus groups is well worth the effort. In addition to serving as a positive public relations opportunity for the Cal Poly Pomona University Library, holding focus group sessions with students allowed the Library Web Team to better understand the Library Web site user experience from a student's vantage point.

Data collected through focus groups sessions confirmed many of the issues the University Library was familiar with including the continued need to market library services more effectively across campus, and in particular the need to target students early in their college career. The data also underscored the barrier library jargon creates for students when navigating the library content and services promoted on the Cal Poly Pomona University Library Web site. Finally, the focus group sessions offered new insights into how students interact with Web sites in general and the user experience they expect when visiting the Cal Poly Pomona University Library Web site. While the Library Web Team made no immediate changes to the design and navigation of the library Web site based solely on focus group feedback, the information has already served as an additional data point for design decisions on services such as LibGuides and LibAnswers. Used as an additional queue of data, findings from our focus group sessions will

enable the Library Web Team to continue to promote student-centered design decisions as a complement to usability testing and user surveys.

References

- Barbour, Rosaline S. 2008. *Doing Focus Groups*, Qualitative Research Kit. Thousand Oaks, CA: Sage Publications.
- Barbour, Rosaline S, and Jenny Kitzinger. 1999 *Developing Focus Group Research: Politics, Theory and Practice*. Thousand Oaks, CA: Sage Publications.
- Bordac, Sarah, and Jean Rainwater. 2008. "User-Centered Design in Practice: The Brown University Experience." *Journal of Web Librarianship* 2 (2-3): 109-138.
- California State Polytechnic University, Pomona Institutional Research and Academic Resources. 2014. "Just the Facts Fall 2014." Accessed November 10, 2014. https://www.cpp.edu/~irar/just-the-facts/Historical-Reports/Just_the_Facts_F14.pdf.
- Center for Spectator Sports Research. 2010. "Website Design and Content Evaluation for the Library at UMass - Focus Group Report." Accessed November 10, 2014. <http://www.library.umass.edu/assets/aboutus/assessment/attachments/WebsiteFocusGroupReport.pdf>.
- Chase, Lynn, and Jaquelina Alvarez. 2000. "Internet Research: The Role of the Focus Group." *Library & Information Science Research* 22(4): 357-369.
- Conrad, Suzanna and Julie Shen. 2014. "Designing a User-Centric Web Site for Handheld Devices: Incorporating Data-Driven Decision-Making Techniques with Surveys and Usability Testing." *Journal of Web Librarianship* 8(4): 349-383.
- Crowley, Gwyneth H., Rob Leffel, Diana Ramirez, Judith L. Hart, and Tommy S. Armstrong II.

2002. "User Perceptions of the Library's Web Pages: A Focus Group Study at Texas A&M University." *The Journal of Academic Librarianship* 28(4): 205-210.
- D'Esposito, Joann E., and Rachel M. Gardner. 1999. "University Students' Perceptions of the Internet: An Exploratory Study." *The Journal of Academic Librarianship* 25(6): 456-461.
- Greenbaum, Thomas L. 2000. *Moderating Focus Groups: A Practical Guide for Group Facilitation*. Thousand Oaks, CA: Sage Publications.
- Krueger, Richard A. 1988. *Developing Questions for Focus Groups*. Thousand Oaks, CA: Sage Publications.
- Krueger, Richard A. 1988. *Focus Groups: A Practical Guide for Applied Research*. Thousand Oaks, CA: Sage Publications.
- Krueger, Richard, and Mary Ann Casey. 2009. *Focus Groups: A Practical Guide for Applied Research*. Thousand Oaks, CA: Sage Publications.
- Krueger, Richard A. 1998. *Moderating Focus Groups*. Thousand Oaks, CA: Sage Publications.
- Leighton, H. Vernon, Joe Jackson, Kathryn Sullivan, and Russell F. Dennison. 2004. "Web Page Design and Successful Use: A Focus Group Study." *Internet Reference Services Quarterly* 8(3): 17-27.
- Massey-Burzio, Virginia. 1998. "From the Other Side of the Reference Desk: A Focus Group Study." *The Journal of Academic Librarianship* 24(3): 208-215.
- Morgan, David L. 1997. *Focus Groups as Qualitative Research*, Qualitative Research Methods. Thousand Oaks, CA: Sage Publications.
- Morgan, David L. 1988. *Focus Groups as Qualitative Research*, Qualitative Research Methods. Thousand Oaks, CA: Sage Publications.
- Morgan, David L. 1998. *The Focus Group Guidebook*, The Focus Group Kit. Thousand Oaks,

CA: Sage Publications.

Morgan, David. 1998. *Planning Focus Groups*. Thousand Oaks, CA: Sage Publications.

Nielsen, Jakob. 2002. "Usability 101: Introduction to Usability." *Nielsen Norman Group*. Last modified January 4, 2002. <http://www.nngroup.com/articles/usability-101-introduction-to-usability/>

Nielsen, Jakob. 1997. "The Use and Misuse of Focus Groups." *Nielsen Norman Group*. Last modified January 1, 1997. <http://www.nngroup.com/articles/focus-groups/>

Oldham, Bonnie W. 2008. "Focus Groups and Usability Testing in Redesigning an Academic Library's Web Site." *Journal of Web Librarianship* 2(2-3): 219-246.

Sharf, Meg Koch, and Jeanette Ward. April 9-12, 1986. "A Library Research Application of Focus Groups." Paper presented at the National Conference of the Association of College and Research Libraries, Baltimore, Maryland.

Shoaf, Eric C. 2003. "Using a Professional Moderator in Library Focus Group Research." *College & Research Libraries* 64(3): 124-132.

Thomsett-Scott, Beth C. 2006. "Web Site Usability with Remote Users: Formal Usability Studies and Focus Groups." *Journal of Library Administration* 45(3-4): 517-547.

University of Michigan LibGuides Usability Task Force. 2009. "Undergraduate Student Focus Groups." Last modified September 2009. <http://www.lib.umich.edu/files/services/usability/LibGuidesFocusGrpReport.pdf>.

Valentine, Barbara. November 1993. "Undergraduate Research Behavior: Using Focus Groups to Generate Theory." *The Journal of Academic Librarianship* 19(5): 300-304.

Williams, Sheryl, and Elizabeth Parang. 1997. "Using Focus Groups to Match User Expectations with Library Constraints." *The Serials Librarian* 31(1-2): 335-339.

Young, Nancy J., and Marilyn Von Seggern. 2001. "General Information Seeking in Changing Times: A Focus Group Study." *Reference & User Services Quarterly* 41(2): 159-169.

Appendices

Appendix 1

Discussion Guide

Overarching Purpose: Determine what web experience students expect when using a library Web site.

Focus Group Research Questions: How do students conduct research and what user experience do they expect? How do they pursue help when they have trouble? How can we design our Web site to support their expected experience?

- | | | |
|----|---|------------------------|
| 1. | Name, major and a challenging research assignment you worked on last quarter? Or in high school? | Opening (5 min) |
| 2. | If you had to write a research paper on that topic today, where would you go for information? | Key (10 min) |
| | 2.1. What do you like about the resource? | <i>probe</i> |
| | 2.2. What would you do to improve this resource? | <i>probe</i> |
| | 2.3. Where would you go for help if you couldn't find what you were looking for? | <i>probe</i> |

3. **What are some other Web sites you use on a daily basis?** **Transition** (10 min)
(Go around the group and have everyone contribute)

PROJECTOR: ONE OF THE SITES MENTIONED ABOVE

4. **What are different techniques you use to navigate a Web site?** **Key** (10 min)
- 4.1. How do you navigate the Web sites mentioned above? *probe*
- 4.2. When would you use the search bar? Links? Other? *probe*
- 4.3. What do you like about this Web site? *probe*
- 4.4. What would you do to improve this Web site? *probe*

PROJECTOR: LIBRARY Web site HOMEPAGE

5. **How would you find information on the library Web site?** **Key** (15 minutes)
- 5.1. Have you used the library Web site before? *probe*
- 5.2. For those who have not used the library Web site before,
how would you navigate this site? *probe*
- 5.3. What do you like about the Web site? *probe*
- 5.4. What would you improve about the Web site? *probe*
- 5.5. Where would you go for help if you couldn't find what you
were looking for on the library Web site? *probe*

PASS OUT TABLETS & TASK ACTIVITY SLIPS

6. **Activities to test tabbed interface and header consistency** **Key** (15 minutes)

6.1. Task 1: Find the library hours for next quarter (Spring 2015)

GROUP DISCUSSION

6.2. Task 2: Now thinking back to the research paper we talked about at the beginning of our discussion, find information for that research assignment from where you left off.

GROUP DISCUSSION

7. **Anything else you want to add? Anything we missed?** **Ending** (10 minutes)

Do you have any comments you'd like to add finding information using your preferred research resource? Or the library Web site?