Creating Audience and Environment-Friendly Research Guides: Findings from a User Study

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Introduction

In Fall 2013, the investigators conducted a user study of the DePaul University Library Subject Research Guides. At that time, librarians at DePaul had created a total of 410 research guides on the Springshare LibGuides CMS platform, with 148 active in Spring Quarter 2013. The library website supported a variety of guides, including subject guides, how-to guides, and course guides; this user study focused only on the subject research guides. While the number of guides had been growing steadily, it remained unclear how students were using these webpages. Although quantitative data was readily available from Springshare, the investigators wanted to gain a fuller picture of usage beyond the numbers. This qualitative study was intended to fill that gap by investigating how students perceived, navigated through, and understood these guides. Results were analyzed in support of a redesign that would better meet actual student needs.

Online research guides have been evaluated in the literature in multiple studies, and many institutions have presented on their implementations of LibGuides. These investigations can be grouped into four categories examining: guide navigation and design, guide organization compared to students' mental models of research, actual guide use, and intended guide audience. While these studies often included recommendations, the authors have not found an implementation that fully synthesized these findings.

Concerning the navigation and design of the guides, the tabbed approach has sometimes proven problematic when tabs were not designed properly and were therefore overlooked by users.[1] Cluttered research guides with multiple search boxes and extraneous content not central to the guide's subject focus were unhelpful and often overwhelming for students.[2]

The format-based guide organization, adopted by many libraries, often clashed with students' mental models of research.[3] Moreover, research guides have been found to present issues of cognitive overload for students.[4]

Although studies indicated that guides should be created with an intended audience in mind and customized to that specific audience[5] it was sometimes unclear who, exactly, was using these research guides. Castro-Gessner, Wilcox, and Chandler learned through data-mining that 45% of the users accessing their guides were not affiliated with their institution.[6] Tawatao, Hungerford, Ray, & Ward advocated for designing guides specific to beginner and expert needs.[7]

Researchers have studied not only who is using their guides, but also in what context they encounter or are more likely to use guides. Without an instruction session, students are less likely to use research guides and may be confused when looking for course-

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specific help; consequently, several studies advocated for focusing on the creation of course guides as opposed to subject guides.[8]

The goal of this particular user study was to gain a better understanding of the use of the subject research guides at DePaul University. DePaul University is the largest private Catholic university in the United States, located in an urban setting, Chicago. Although it has graduate programs, DePaul primarily serves an undergraduate population, and views itself as a teaching university. The focus of this inquiry was not on navigational issues or usability per se, but instead focused on how DePaul students experienced and understood the research guides. The investigators expected that the study would both reaffirm some of the findings from other studies and also provide valuable insights specific to the DePaul student population.

Methodology

The investigators worked with 15 student participants, recruited through flyers in the library and around campus, as well as through advertising on the library website and blog. The participants included six students 18-20 years old, five 21-25 years old, and four participants aged 25 and older. Of the 25 and older participants, the youngest participant was 32 years old and the oldest was 54 years old. There were eight female participants and seven male participants. One freshman, four sophomores, two juniors, five seniors and three graduate students joined the study. Three participants had worked at the University, including one person who had worked in the library.

Each session was attended by two investigators. One investigator served as the facilitator and interviewer; the second investigator served as an observer and note taker. Sessions were also recorded with the audio and screen capture software, Morae (Techsmith).

The user study consisted of the following four parts: research habits interview, unguided research task, research task using a research guide, and an exit interview. During the research habits interview, the facilitator asked participants a series of questions about their general research habits and familiarity with the library. Participants were then asked to walk through their hypothetical research process for a described assignment. Students could choose to use the computer or merely describe the process. Facilitators were ready with prompts to elicit additional information, if necessary. In the third task, students were presented with a research question and asked to go to a specific subject research guide, share their impressions, and describe how they might use the guide to complete the research task. Finally, at the close of the session, the facilitator asked students questions about their experiences during the session and their general impressions of the subject research guides.

The investigators used one guide with participants in this study, the Psychology Research Guide. Overall, subject research guides at DePaul University were consistent in format and were based on an internally developed template. Librarians were encouraged to follow this template in order to enhance user experience by presenting a predictable path to information retrieval. Most DePaul subject research guides, including the guide employed in this study, were arranged with the following tabs/pages: Overview (serving as a table of contents), Articles, Encyclopedias & Reference, Books & Ebooks, and Citing Sources. There were, of course, exceptions to this model. Some guides used additional tabs and headings in order to best suit the subject matter of the guide. One particular page on the Psychology Research Guide: Tests & Measurements, was not studied in this observation because it was a page not generally found in other guides.

Results

Using qualitative research methods, including inductive coding of the screen captures and audio recordings, the investigators identified thirteen trends over the course of the 15 sessions. These trends are listed below, along with the number of total sessions in which the issue arose. In many cases, the same issue was referred to multiple times during an individual user session.

1. Participants expected research guides to be focused on subject-specific resources. (14/15 sessions; 93%) Participants did not expect to find general

resources on the research guide. They were surprised to find links to items like the library catalog, general article databases, or general citation information that did not specifically refer to the particular subject matter at hand. Participants largely viewed the research guide as a place they would go after they had already used the library home page or general resources and therefore expected the research guide to exclusively focus on the subject. *Sample Quote:* "I think maybe either um a list of books that DePaul has, or some type of, something that makes going to this research guide a little bit more specifically focused on psychology…just because here it really is just a search bar to search all of the books that DePaul has access to which isn't necessarily needed to go into this research guide to do."

2. Participants indicated they would start their research with the articles tab. (13/15 sessions; 87%) Research was often equated with finding articles, although the definition of an "article" was not always well-understood. Few people were interested in finding books or using encyclopedias. *Sample Quote*: "If I'm doing research, I'd definitely click on Articles first."

3. Participants indicated that they would not use encyclopedias as part of their research process. (7/15 sessions; 47%) Participants felt that encyclopedias would be either too elementary or would be only available in print format. The term "encyclopedia" was not particularly meaningful to the students, and students did not associate the use of encyclopedias with academic research. *Sample Quote*: "I never really considered using encyclopedias."

4. Participants indicated a preference for including actionable content on the page to minimize clicking through multiple pages and sites. (10/15 sessions; 67%) Participants did not understand why certain types of content were included—especially informational boxes without clickable content or boxes containing a list of links. One example on the guide template receiving this critique was an informational box about encyclopedias with text and a picture, but no clickable links (figure 1). Participants were also frustrated with the Citing Sources page within the guide, indicating that it was too many clicks through to see an example of a formatted citation. They were unsure why this page would be useful if it only provided a list of links to other citation guides (figure 2). *Sample Quote*: "I don't want to have to go to a bunch of different places to find what I'm looking for."

5. Participants did not always notice the side box content. When they did notice the content, they expressed disinterest in any content that was not subject-specific and/or directly actionable with ways to get further assistance. (15/15 sessions; 100%) As mentioned previously, participants did not expect to find content that was not subject-specific. In addition, they were not interested in un-actionable content. These problems were compounded when there was non-subject specific, non-actionable content in boxes in the side columns. (Pages on DePaul guides generally contained two or three columns, with the middle column serving as the wider, main content column.) Participants, for example, were uninterested in a side-content tutorial on scholarly vs. popular journals and a Google Scholar search box. *Sample Quote*: "it's just sort of an informational box that doesn't serve much purpose."

FIGURE 1
Example of Non-Actionable Content Box

6. Participants were overwhelmed with choices. (10/15 sessions; 67%) When landing on a page, students often did not know where to start their research. To manage the information overload, they generally focused their attention on the middle column content and in the case of the Articles page, tried to read database descriptions and/or titles to determine the most appropriate tool for their topic. This trend was more pronounced among the freshmen and sophomore participants. *Sample Quote*: "I feel like there's so many [article databases] I wouldn't know what to choose."

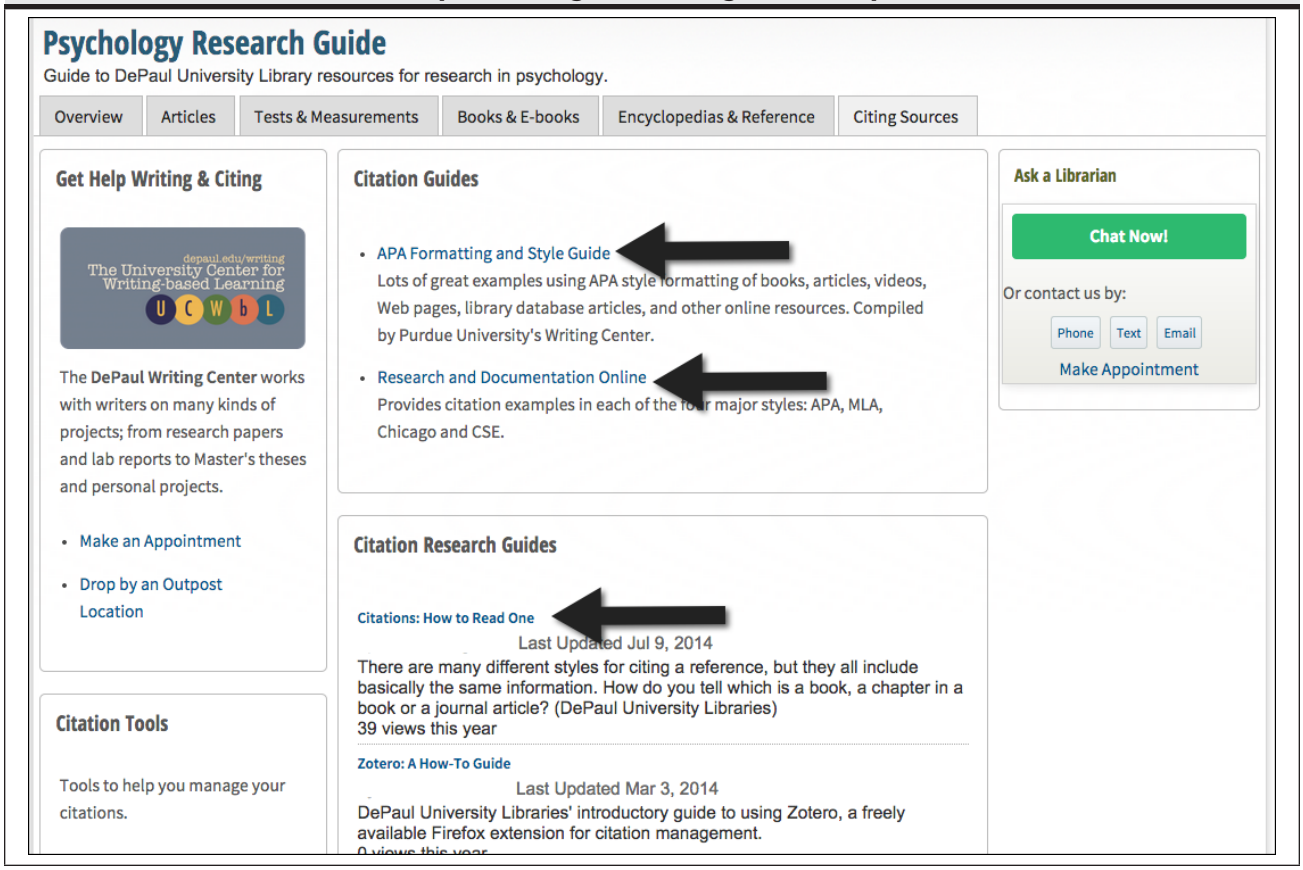
7. Participants gravitated towards using resources they recognized by name. (9/15 sessions; 60%) When participants saw a familiar database name in the list, they often indicated they would start with that resource, regardless of the description or where the database occurred in the list. Participants mentioned JSTOR, EBSCO, and PubMed specifically. *Sample Quote*: "I would usually [start with] JSTOR, because I'm comfortable with that."

8. Participants clicked on the first link listed on a page. (7/15 sessions; 47%) Although many participants looked for a resource they knew by name, if none were familiar, many chose the first item in the list. *Sample Quote*: "I guess I would just click on the first one and see what happened"

9. Participants liked and commented on the inclusion of the AskALibrarian box. (12/15 sessions; 80%) The template for subject research guides included an AskALibrarian widget on the top right hand side of each page. Having AskALibrarian in the same place on all of the pages reinforced the idea that the students could contact the librarians for assistance. *Sample Quote*: "I really like how this (AskALibrarian) pops up on every page, because that's like so helpful!"

10. Participants who read descriptions took them literally. (12/15 sessions; 80%) Students

FIGURE 2
Example of Citing Sources Page from Template



who read the descriptions were very literal minded about what they found. Some students were not interested in PsycInfo because the description emphasized the older archive of material, back to 1887, while PsycArticles was more appealing, since the description mentioned the term "full-text" and the title included the word "articles." *Sample Quote*: "I wouldn't use PsycInfo, because that has older articles."

11. Participants trust faculty recommendations. (7/15 sessions; 47%) Some participants stated they would first consult with their professor, rather than the librarian for research assistance. Others mentioned that they sought out professor-recommended resources. Some participants suggested including faculty comments on the resources, explaining which should be used for which purposes. *Sample Quote*: "I would probably go to my professor first before I would ask a librarian."

12. Participants expressed frustration at having to navigate to and sign into multiple interfaces from the library website. (6/15 sessions; 40%) Different logins for interlibrary loan services or vendor-specific database accounts (my EbscoHost, *e.g.*) were too much for some of the participants, so they avoided using those services. They were also frustrated that they could not save articles or searches from databases using their usual methods (*i.e.* bookmarking, saving to different open tabs, or copying URLs). *Sample Observation:* One participant expressed frustration that s/he is often taken to different sites and asked to put in a password/username, and all of the sites look different.

13. Some participants were unsure as to the function of the Librarian's profile on the Overview page. (6/15 sessions; 40%) Participants often stated that they would only contact the librarian for assistance with a technical problem on the page, like a broken link. Students expressed reservations in contacting the librarian because they were unclear on what her role was. *Sample Quote*: "She's a reference and instruction librarian <pause> I wouldn't want to bother her."

Discussion & Recommendations

Prior to this investigation, librarians at DePaul had relied on one subject research guide template to meet all users' needs. These guides were expected to be simultaneously comprehensive, instructional, and subject-focused. The guides were intended for use outside of the context of the library website (*e.g.*, through a link from the web or from within a learning management system), as well as in conjunction with it. In trying to simplify the guide creation process by relying on one template, the guides became generic and ineffective.

DePaul's original subject research guide template was not optimal for any particular user group, and was instead confusing for many. In order to remedy the situation, authors divided recommendations into those that could be easily implemented, and those requiring more consideration and planning. Consequently, recommendations were applied in a two-tier approach. Re-envisioning the guides in response to the larger issues of purpose, audience and context would take time, working with several different stakeholders in the library. In the short term, smaller scale changes to the design and layout of the guides, as well as a refined approach for the presentation of key resources would allow the guides to be more subject-focused with leaner, more navigable content. Table 1 details the first round of recommendations. After presenting the quick fixes listed above to the key stakeholders, the investigators addressed the big picture issues of purpose, audience, and context. First: What was the overall purpose of the guides? Was the primary purpose of the guides instructional? Or were they intended to be lists of resources, either selective or comprehensive? Second: Who was the primary audience for the guides? Were the guides aimed at beginning undergraduates, graduate students, faculty, or library staff? Was it possible to create one type of guide that would serve all of these audiences? And third: What was the intended context for guide discovery? Were the guides conceived as stand-alone websites? Or, were they designed in the context of the material presented on the library homepage?

TABLE 1
Recommendations

Issue	Recommendations
1. Participants expected research guides to be focused on subject-specific resources.	A. General article databases should only be included if they are essential for research in the subject being discussed. B. Library catalog searches should be subject-specific. For example, include canned subject searches or tips for searching the catalog for that subject area. C. The discovery system search box should be excluded or minimized in importance on the research guide since it is a general tool, available on the library homepage and makes subject-specific searching more difficult.
2. Participants indicated they would first go to the Articles tab/page.	A. Through library instruction, emphasize the importance of other source types and their role in the research process. B. Design the research guide to be more pedagogical in nature and promote the roles of using different types of information. For example, the Background Information tab should be listed first if it should be the first step in a research process.
3. Participants indicated that they would not use encyclopedias as part of their research process.	A. Rename the Encyclopedias tab to "Background Information" or a similar term to indicate its function. B. Design research guide to be more pedagogical in nature and promote the roles of using different types of information. C. Clearly indicate that the encyclopedias are online sources, not print.
4. Participants indicated a preference for including actionable content on the page to minimize clicking through multiple pages and sites.	A. Exclude non-actionable content boxes from the research guides. B. If the guide contains a Citing page, include either citation examples or an embedded citation generator.
5. Participants did not always notice the side box content.	A. All side boxes should be strategic and context-specific. For example, include a box with search tips for a database on the page, but not a link to a guide with tips. B. If using boxes in columns for design purposes, to break up text-heavy content, make these boxes have invisible lines so that they don't read as a content box. C. Guides should have a one or two-column layout.
6. Participants were overwhelmed with choices.	A. Include a top three resources box on the Overview page. B. List the most important resources first. Do not list resources in alphabetical order. Provide users with visual cues that direct them to the most important resource (color, fonts, etc.). C. List additional, supplementary resources in a second box. D. Do not give students multiple options when one best resource would suffice. E. Don't include general databases unless they are key to the field.
7. Participants gravitated towards using resources they recognized by name.	See recommendations for 6.
8. Participants clicked on the first link listed on a page.	See recommendations for 6.
9. Participants liked and commented on the inclusion of the AskALibrarian box.	A. Keep the AskALibrarian box consistently placed on pages.

TABLE 1
Recommendations

Issue	Recommendations
10. Participants who read descriptions took the descriptions literally.	A. There should be a liaison-wide review of database descriptions to update for accuracy. B. Within a subject research guide, customize the database description for that context and how students may use it for their research in that subject area.
11. Participants trust faculty recommendations.	A. Librarians should make efforts when possible to collaborate with faculty on research guides or course guides. B. When a faculty member is involved in the creation of a guide, include a "faculty seal of approval." C. Continue to encourage faculty to include and promote the use of research guides through inclusion on their syllabi and course websites.
12. Participants expressed frustration at having to navigate to and sign into multiple interfaces from the library website.	A. Research guides need to look as consistent as possible with the Library website.
13. Some participants were unsure as to the function of the Librarian's profile on the Overview page.	A. The Librarian Profile should make it clear that students can contact him/her with questions. Box may be labeled "Contact Me." B. To make the box more actionable, librarians could include a chat widget allowing students to chat directly with the subject librarian when s/he is online.

As the data from the study revealed, the guides could not successfully be all things to all people. Instead, for DePaul, the investigators decided that the primary audience would be the undergraduate student. Succinct, curated lists of the most important resources in each subject area would be presented, with context specific information and research help. Subject research guides would no longer be forced to follow a template for organization; rather, librarians would be encouraged to organize their guides according to what the subject-area dictated. At the same time, librarians would still be given basic layout and content guidelines to follow and would use a basic template to ensure consistency in look-and-feel. For programs and subject areas with graduate students, separate subject research guides or pages would be created. A more robust, A-Z list of databases, sortable by subject and type would meet the needs of the more advanced user or staff member who desired a comprehensive list of resources maintained by the library.

For the first year student in need something much more instructional, the librarians would create one general guide to research. This guide would not be subject-focused, but would be pedagogically driven, presenting the basic steps involved in research, and presenting general resources that could be used for topics across multiple subject areas. Unlike the focused guides created for one particular subject, the general guide would be created in a context independent of the library website. Students could be directed to it from a learning management system or an e-mail link. The creation of additional course guides would be encouraged in order to address the specific needs of particular research assignments.

The library would also be more pro-active in shaping the context from which guides were accessed. Using the research guides system API, the library had already been working to include lists of resources and tools in individual courses within the learning management system prior to the user study. However, a

more concerted effort would be made in the future to incorporate library resources into the learning management system in a programmatic way.

Implementation and Next Steps

In order to implement these recommendations, the investigators first shared all of the findings with the key stakeholders in the library: the subject research guide creators, *i.e.* the subject librarians, as well as the digital services coordinator, who oversees the library's website. By working directly with these two separate library departments, various concerns about making changes to the existing web-presence and impacts on workload were pro-actively addressed. A larger forum was then convened in the library to disseminate the findings from the study, presenting the data and creating space for a conversation about the different types of guides that should be created. Allowing the subject specialists to use their expertise in crafting the guides, and not rigidly enforcing one particular vision, helped to generate buy-in from the stakeholders.

In Spring 2014, while the investigators were analyzing the data from the study, LibGuides 2.0 was introduced, providing a responsive platform for many of the recommended changes. Currently, the library is in the planning stages for migrating to the new version. While migration has delayed implementation of the user study recommendations, the new platform provides a more robust means of managing an A to Z database list, including the ability to sort by subject and type. The new platform has also provided the Library with an opportunity to re-conceptualize the subject research guides. The investigators have already created a new vision document for the guides to address the issues of audience, purpose, and context. This document will drive what and how content is migrated into the new system, as well as the shape the new subject research guides.

Notes

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