A Working Set of Best Practices in Research Guides

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**Introduction**

When students begin their research, they don’t often turn to library resources. Instead, they start with Google. Then Wikipedia. Often, the library website is their final resort (Ouellette, 2011). While it is true that no library can compete against Google’s ubiquity (and enterprise), it is possible to create library resources that are so user-centered and well-promoted that they are an early stop on a student’s research path. These resources may take shape as *research guides*.

This report aims to outline a working set of best practices in the creation of research guides. It will first define the research guide (and its two forms, the subject and course guides), followed by a literature review. The body of this report will go over in further detail *course guides vs. subject guides*, *connecting research guides to the campus community*, and *designing guides*. Finally, it will recommend best current practices in creating a user-centered research guide. The reader may also find an appendix outlining software options and lastly, a bibliography. Although this was written with the S.C. Williams Library at Stevens Institute of Technology in mind, the author has tried to remain as general as possible so that other academic libraries may find these recommendations useful in their own contexts.


**Definitions**

According to the Online Dictionary for Library and Information Science, a *research guide* is “a printed or online resource that provides detailed information, instructions, and advice concerning best strategies, techniques, and resources for research in a subject or field of study” (Reitz, 2013). Research guides have appeared in print format for some time. Librarians began to compile research guides in the 1950s (Little, 2010) and continue to this day (as a contemporary example, we can look to something like the *Research Guide to Contemporary Literature* series published by Infobase Learning). The term “research guide” is often somewhat synonymous with other expressions, such as *pathfinder, topical guide, subject bibliography,* and in a digital context, *webliography.* While some printed guides like the *Research Guide to Contemporary Literature* continue to be used today, most contemporary guides are digitally conceived, created, and maintained by institutional librarians with the intent to serve their particular communities’ needs. Digital research guides are usually hosted by the institution or, as is increasingly the case, via a third-party software, such as LibGuides by Springshare. For more information on software, see Appendix A.

To an increasing extent, digital research guides will usually take one of two forms: either as a *subject guide* or as a *course guide.* *Subject guides,* the more common of the two forms, usually provide a basic to comprehensive list of resources within a specific discipline. Most of the research guides available at the S.C. Williams Library are subject guides (the *Computer Science Subject Guide,* for example, outlines scholarly and popular resources within the computer science discipline). *Course guides or course pages,* on the other hand, are usually constructed based on a particular course’s syllabus and include resources that might only be useful to that particular course. For example, *this course guide* from Duke University Libraries’ outlines basic resources for the MATH89S course, *The Magic of Numbers.* It includes specific resources that may prove to be superfluous to other courses in the math discipline.
**Literature Review**

With the emergence of software like LibGuides, it is now possible for librarians to create digital research guides with greater ease at a faster pace. Additionally, the ability to conduct surveys and measure statistics—how many page visits have occurred within a set period of time, for example, and how many people have clicked a link on that page—has given rise to a small wealth of research over the past five years based on the metrical usage of research guides. The convergence of these two factors—the swift, expansive emergence of digital research guides and the ability to measure their usage—provides an interesting myriad of research one can explore, from inquiries in best design practices, to case studies, surveys, and more.

Surveys and interviews can be helpful in answering questions like, “Are library patrons actually using my research guide? If not, how can I get them to use it more?” At Duke University, librarians undertook one of the largest surveys about research guide usage, as illustrated by Reeb and Gibbons in 2004. The survey, which was given to over one thousand library patrons, indicated that 53 percent had never used the libraries’ subject guides, while 24 percent reported rare usage. In 2005, San Jose University surveyed 1,031 (mostly undergraduate) students across three disciplines (Nursing, Journalism & Mass Communications, and Organization & Management). For the most part, survey results indicated that the most useful page within each subject guide was the Articles & Databases page, and that those students who received library instruction tended to use the subject guide more frequently (Staley, 2007). Quite recently, librarians at Winona State University surveyed one section of an International Business Law course about a course guide, to whom they had already taught an instruction session on using that course guide. Their findings, which included survey results and statistical metrics of the guide’s use, reiterated Staley’s: that research guides are most effective and most used after students have received library instruction, and further, that guides should be created as course pages (as opposed to subject guides) (Leighton & May, 2013). In another recent study, librarians the University of Alberta and Grant MacEwan University, both in Edmonton, Alberta, Canada, conducted a qualitative research study that involved interviewing eleven participants for about one hour each.
Research indicated that students generally don’t use research guides, but will if they are stuck in their research, if they need to find resources in an unfamiliar discipline, or if their professor asks them to use it. Echoing Staley’s findings, students also noted that they use the Databases page within a subject guide more than any other page (Ouellette, 2011).

Ouellette’s participants also commented on the overall look of the LibGuides platform. Generally, they did not find it to be user-friendly or very aesthetically pleasing, and especially found the use of tabs to look passé. “The tabs look outdated and I get the idea that the information is outdated,” one student said (ibid). Reeb and Gibbons note, “in spite of the intrinsic value of the library subject guides…students fail to connect with them. Students lack a mental model that includes subject guides…” (2004). One possible way to “meet the student on the student’s experiential terms” (ibid) or to introduce a literal “mental model” is to design research guides with cognitive load theory in mind. Jennifer J. Little of SUNY Brockport notes that cognitive load theory “is based on the idea that cognitive capacity for learning is limited and that techniques can be developed to help learners avoid cognitive overload” (Little, 2010). She recommends that librarians reduce extraneous cognitive load by creating templates to unify guides, so that each research guide generally has the same layout as the next; “reduce the amount of […] redundant, information” (ibid); create short videos instead of screen-captured images with captions; create course-based guides rather than discipline-based guides; personalize—or “humanize”—each guide; and more.

And it is possible to “humanize” a Web 2.0 tool, such as a LibGuide. Little recommends implementing a conversational style within the text of the guide itself, “such as using ‘I’ or ‘you’ rather than the third person, [which] helps students connect with the material more easily than when written in a formal style” (ibid). LibGuides also make it possible to include librarian contact information and even a headshot, which indicates to students that one or more “real” librarians created the research guide (this information can be included in SubjectsPlus as well). Librarians Juliet Kerico and Diane Hudson advocate that LibGuide creation promotes librarian collaboration (2008) which shines through to the final product, while Tammy S. Sugarman and Constance Demetracopulos of the William Russell Pullen Library at Georgia State University
also indicate that it’s possible to create research guides not only in collaboration with other librarians, but with faculty and students as well (2001).

Through these publications and others, it is clear that some practices in research guide production are better than others. Some of these practices, which will be discussed in the body of this report, include: the creation and use of course guides over subject guides; creative, modern design; and research guide promotion/marketing, via library instruction and collaboration. These practices will be loosely framed within the context of the S.C. Williams Library.

Course Guides vs. Subject Guides

There is one prevalent piece of advice garnered from studies on the use of research guides: Use course guides over subject guides. For some librarians, the question of whether to choose one over the other doesn’t even exist. When research guides are created with a particular course in mind, it is easier for students to relate to them, for faculty to promote them and, frankly, easier for librarians to produce them. Because there is no pressure to relay all the resources within a single subject area, librarians can, ideally using the class syllabus as their guide, include only what’s relevant for that course.

Subject guides typically correspond to discipline. Via usability testing, University of Rochester librarians “repeatedly observed […] that undergraduates lack an understanding of an academic discipline” (Reeb & Gibbons, 2004). This does not indicate that undergraduates aren’t bright, but rather that disciplines are becoming more interdisciplinary. (For instance, as proposed by Reeb and Gibbons, which research guide should a student choose when studying bioterrorism: biology, political science, or medical anthropology?) Because of this shift in scholarship, it might be more meaningful for librarians to create and for students to use course guides over subject/discipline guides, as they’ll be better tailored to students’ scholarly needs and research models.

While there are some course guides available from the S.C. Williams Library at Stevens Institute (CAL103, E101, HHS310, HST495), the majority of
research guides are subject guides. If in the future librarians would like to transform subject guides into course guides, one easy way to do this would be to add additional pages within the subject guide for a specific course. West Chester University Libraries has done this by creating tabs for individual courses within the general subject guide. As illustrated in Figure 1, a course guide for ESP311 is embedded within the more general Languages and Cultures guide as a separate tab.

![Languages and Cultures guide](image)

*Figure 1. A course guide for ESP311 is embedded within the more general subject guide as a separate tab.*

While this approach may be easier than creating an entirely new course guide, students must be made aware of the course page’s existence within the more general guide. If librarians would like to implement a practice such as this one, the author recommends indicating the individual course page within the title of the subject guide—in the case of the West Chester University subject guide, it could be retitled as Languages and Cultures (includes ESP311), or something along that line. If librarians or faculty have the opportunity to introduce students to the subject guide within an instruction or regular class session, West Chester librarians claim that an advantage to this approach is that “the students are automatically made aware of the larger subject guide, to which they will hopefully return in the future for help with other research assignments” (McMullin & Hutton, 2010). In a class session, librarians and faculty should not simply share the link to the guide, but also demonstrate how to use it.

By narrowing subject guides into course guides, librarians and faculty will have the opportunity to work together more. For a librarian, the first step in creating a course guide might be to gain access to a course’s syllabus. If the librarian and faculty member do not already know each other, this an opportunity for the librarian to introduce herself to the professor and offer her services to them. This will create a connection across the campus—a way to promote not only the course guide, but also the library and all of its services (from library instruction to an institutional repository) in context of the school as whole. Campus
connections will be further discussed in Section 2 of this report.

The Take-Away:

- Because course guides are typically tailored or personalized to match the syllabus of a course, students can better relate to their content in the context of their personal scholarship.
- If a librarian does not have the time to create an entirely new course guide, course pages should be created within an already existing subject guide.
- Creating course guides creates connections between librarians and professors—an invaluable relationship that can better the library’s standing within the school community as a whole.

Campus Connections:

Connecting Students, Faculty, & Librarians to Research Guides

In order for research guides—no matter if they are a subject or course guide—to be utilized by students and faculty, it will be necessary for librarians to promote them in one form or another. In various studies, it has been proven that without promotion, students will not use research guides very often, if at all (Reeb & Gibbons, 2004) (Staley, 2007) (Ouellette, 2011). There are a number of ways librarians can go about marketing guides.

Most easily, librarians should use course guides instead of subject guides, as they often tend to market themselves in title alone (Gonzalez & Westbrock, 2010). Course guide creation also requires librarians to reach out to faculty, at which point they can ask faculty to demonstrate the research guide to their students in class, or even ask to bring their class to the library for an instruction session. (If faculty seems unresponsive, librarians can incentivize instruction as a “day off” for faculty.) If a library is lucky enough to have subject librarians or liaison librarians, this is another opportunity for those librarians to further embed themselves within their discipline, and share the guide with fellow faculty.

Librarians can also ask for course guides to be digitally embedded into the course’s learning management system page, if one exists. As discussed, the creation of a course guide creates an opportunity for faculty and librarians to connect, and beyond that, it might create an opportunity for faculty,
librarians, and students to work together. In some instances, librarians have not only hired student workers to help build and maintain guides (ibid), but have taught instruction classes in which students have helped compile helpful links, citations, and other local resources to be included in a guide (Sugarman & Demetracopoulos, 2001). A project such as this would help students learn how to research and use technology more efficiently, but perhaps most importantly, it would foster a deep and trusting relationship between students, librarians, and professors.

The most effective way by which research guides can be marketed is through library instruction. If students are introduced to the research guide in the context of an instruction class, “the guides are seen as relevant and helpful” (ibid). One recent citation analysis from the Library of Health Services at the University of Illinois at Urbana-Champaign indicated that 49.55% of nearly 3,000 citations from 118 student reports “came from resources presented at instructional sessions, indicating that library instruction has an impact on students’ research habits” (Rafferty, 2013). (All student participants in this study had attended a library instruction session, thus there was no control group with which to compare them.)

At San Jose University, Staley found that “a statistically significant correlation was found between attendance at library instruction sessions and the reported frequency of using the Articles & Databases page” on the research guides (students who did not receive instruction reported nearly 30% less usage of the same page) (2007). Staley also noted that because upperclassmen will have had more library instruction by their senior year, they are more likely to use library resources, like research guides, than underclassmen.

For students who have not had the opportunity to attend instruction sessions (distant learners in particular), research guides must be prominently displayed on the library website in order for students to know they exist (Ouellette, 2011)—especially if they are not promoted by professors. The S.C. Williams Library webpage currently does a great job of this by placing a “Find Research Guides” drop-down menu directly underneath the Serials Solutions Summon box (oneSearch) (see Figure 2). Students shouldn’t have a problem finding the guides.
However, even if research guides are easily accessible through the library webpage, this doesn’t mean students will understand what research guides are. The terms “research guides,” “subject guides,” and even “course guides” are not familiar vocabulary for the typical undergraduate student. Students at Bucknell University suggested that research guides should be named for what they do, not what they are (Reeb & Gibbons, 2004). For example, instead of labeling the research guide drop-down menu “Find Research Guides Here,” this text could be changed to “Get Started With Your Research Here,” “Need Help With Your Research? Look Here,” “Beginning Your Research,” or something else along these lines. Although the term “research guide” seems fairly self-explanatory, some students have admitted to not even knowing they exist. By relabeling the research guide to something more user-oriented, students may be more likely to find it, use it, and connect to it.

The Take-Away

- Using course guides over subject guides is a way to promote relevancy to students in title alone
- Using course guides should enable librarians to connect to professors more easily with good reason, which will aid in scheduling library instruction (and even in promoting something unrelated, like an IR)
- Guides should be embedded in LMS pages, if possible
- Student workers & students can be trusted to create and maintain guides (under supervision)
- Guides should be introduced via library instruction in order to be seen as relevant and helpful (and to be used more)
- Guides (in general) should be labeled for what they do, not what they are

Research Guide Design
While the basic infrastructure of a research guide is usually bound to the software with which it’s built, librarians still have the opportunity to customize its content and basic user experience, and keep the guide up-to-date. The most heavily employed third-party software is Springshare’s LibGuides, and thus the majority of research on design is in the context of the LibGuides platform. Because LibGuides will soon be releasing a new design (LibGuides 2) and the S.C. Williams Library may start using a different platform (SubjectsPlus), the author will discuss design in a more general context (more details on software can be found in Appendix A).

As stated in the literature review, Reeb and Gibbons (2004) note that despite the advantage of using a research guide, students don’t use them because they can’t connect with them. As is increasingly the case, one’s digital life (online profile pages, computer and smartphone interfaces, etc.) has become almost completely customizable. Perhaps because of this, when scholarly tools like a research guide don’t speak directly to a student—if they don’t advertise themselves as helpful to every individual student—students will be less inclined to use them. When developing content for research guides, librarians should be aware of the language that they’re using and think about how a student might interpret it. (This is why it’s better to use a phrase like “Begin Your Research Here” rather than “Research Guides.”) When applicable, librarians should write to the student in the first and second person (use “I” and “you”). Where possible, students should be able to give feedback within a research guide itself (perhaps answering a polling question like, “Was this research guide helpful for you?”). This “de-formalizes” the guide and lets the student know that a) again, a “real” librarian has created the content for them and b) that the content is in flux and while authoritative is not the authority.

![Figure 3. An example of a user feedback box from SUNY Brockport’s LibGuides.](image)

Jennifer Little notes that this practice will allow students to “interact or reflect about the relationships between them with the help of structured personalized
guidance,” (2010) and that in the context of cognitive load, this is an example of *germane* cognitive load, “when learners effectively organize and integrate the new material into their working knowledge” (ibid). In the context of design, extraneous cognitive load—occurring when “when the amount of cognitive processing is overtaxed and the information presented is disorganized or not relevant to the task at hand” (ibid)—can be reduced by using “clear and precise” headings, and by defining the scope of the research guide (within a subheading or on a homepage). Long, wordy paragraphs should also be avoided, and when possible, be replaced with either a short instructional video or using screenshots/images with text captions. Students complain against clutter in research guides, and suggest that pages within guides be kept to a minimum (Ouellette, 2011). Many librarians also recommend creating a template after which every guide should be modeled (Gonzalez & Westbrock, 2010; Jackson & Pellack, 2004; Little, 2010; Moses & Richard, 2008; Ouellette, 2011). Finally, librarians also must remain vigilant against link-rot by using link-checker tools embedded in software as well as by manually checking links every few months.

**The Take-Away:**

- Speak directly to students using personal language, like “you” or “I”
- Make room for student feedback
- Use clear and concise headings
- Define the scope and purpose of the research guide within a subheading or on the homepage (or on every page)
- Avoid wordy paragraphs by using images or videos instead
- Create as little a number of pages within the guide as possible
- Create a template on which every research guide can be based
- Use link-checkers often, and manually check links for rot at least every few months.
Recommendations for Best Practices

Most of these practices are fairly straightforward, and to anyone who has worked in web design, perhaps even obvious. Nonetheless, it is recommended that the library remain aware of these current, user-oriented practices going forward (with the knowledge that they will continue to evolve in step with technology and scholarly needs).

- *Whenever possible, use course guides over subject guides.*
- *Whenever possible, transform subject guides into course guides, or add course pages to subject guides.*
- *Librarians should work in conjunction with professors and class syllabi to produce course guides.*
- *Whenever possible, guides should be embedded in LMS pages.*
- *Guides are most used after being introduced in library instruction; thus demonstrate (and even create them with students) during library instruction.*
- *Guides should be labeled for what they do, not what they are.*
- *Guides need to remain visible on the library homepage.*
- *When creating guides, speak directly to students using personal language, like “you” and “I.”*
- *When creating guides, use comment boxes, polls, or provide contact information so students have the ability to give feedback to librarians (and ask for their feedback).*
- *When creating guides, use clear and concise headings.*
- *When creating guides, define their scope and purpose within subheadings, on homepages, or most effectively, on every page.*
- *When creating guides, avoid wordy paragraphs by using videos or images as often as possible.*
- *When creating guides, create as little a number of pages within the guide as possible.*
- *Create a template after which every guide should be modeled.*
- *Check for link-rot often (manually and by using link-checkers).*
Conclusion

To librarians, research guides have the capacity to be somewhat invaluable tools. In creating them, librarians have the opportunity to reign in resources on one specific subject or for one specific course, and often learn something new in the process. However, it is vital to remember that a guide must be a user-centered learning tool, and so must be designed to speak to the user directly (and not to other librarians). In order for guides to remain relevant as the digital world evolves, they will continually have to be updated and maintained to meet user-needs. This is not an easy (or fun) task, but if librarians wish for their work to remain germane, they must find creative ways to address students and meet them where they are. These basic practices should themselves remain relevant, even as scholarship and technology speed along into the future.
## Appendix A: Software

<table>
<thead>
<tr>
<th>Features &amp; Considerations</th>
<th>LibGuides</th>
<th>SubjectsPlus</th>
<th>Library-created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customizable</td>
<td>To an extent. Basic look can be matched to school’s colors, for example, but all interfaces look generally similar.</td>
<td>To an extent. Basic look can be matched to school’s colors, for example, but all interfaces look generally similar.</td>
<td>Completely, or at least to the ability of the librarian or programmer.</td>
</tr>
<tr>
<td>Supports user feedback</td>
<td>Yes. There are a number of content boxes that interact directly with users (“Suggest a Link,” for example).</td>
<td>Yes, but fewer options than LibGuides. Allows for general comments and suggestions.</td>
<td>Yes, as long as librarian knows how to create or re-use feedback widgets.</td>
</tr>
<tr>
<td>Responsive design</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (or no)</td>
</tr>
<tr>
<td>Content box options</td>
<td>A large variety of content boxes and widgets to choose from.</td>
<td>A small handful of content boxes to choose from.</td>
<td>Librarians can abandon the idea of a content box when creating their own site.</td>
</tr>
<tr>
<td>Multimedia management</td>
<td>Easily embeddable media.</td>
<td>Ingests metadata from YouTube, Vimeo, and Flickr.</td>
<td>Media will exist on server and can be embedded within page.</td>
</tr>
<tr>
<td>Summon integration</td>
<td>Yes, Summon will search through LibGuides for resources.</td>
<td>Yes, Summon will search through SubjectsPlus guides for resources.</td>
<td>No.</td>
</tr>
<tr>
<td>Interface</td>
<td>The librarian will add boxes into columns. The user will navigate through a web of boxes on a single page.</td>
<td>The librarian will “drag and drop” boxes into columns. The user will end up scrolling down to view material.</td>
<td>The librarian has the ability to control how they build their site, and ultimately the UX.</td>
</tr>
<tr>
<td>Social media integration</td>
<td>Yes (Twitter, Facebook, and other social media).</td>
<td>Yes (Twitter)</td>
<td>Not directly.</td>
</tr>
</tbody>
</table>
| Feature               | LibGuides | Springshare | SubjectsPlus
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<tbody>
<tr>
<td><strong>API Available</strong></td>
<td>Yes, data is available to use in other applications.</td>
<td>Yes, data is available to use in other applications.</td>
<td>Must be created programmatically.</td>
</tr>
<tr>
<td><strong>Link Checker</strong></td>
<td>Yes, a link checker is built-in.</td>
<td>Yes, a link checker is built-in.</td>
<td>Links must be check manually.</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td>Because users pay a good deal of money for LibGuides, Springshare provides a “community page” to search through others’ guides and even use content from others’ guides. Springshare also provides help and training.</td>
<td>Because SubjectsPlus is an open-source software, there is a lively community on Google that helps each other out with problems. A Wiki and YouTube channel is also available.</td>
<td>None.</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Expensive, but overall cost depends on size of school.</td>
<td>Free (open-source)</td>
<td>Cost to host.</td>
</tr>
</tbody>
</table>
Bibliography


