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## **Redesigning Subject Guides With Usability Testing: A Case Study**

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## **Redesigning Subject Guides With Usability Testing: A Case Study**

This study considers best practices in subject guide design on the LibGuides platform based on usability tests and semi-structured interviews conducted at a mid-sized university library. The study investigated student preferences for guide navigation and was then expanded to address the overall usefulness of subject guides to students. The results indicate that the choice between side and tabbed navigation is highly individual, with students sometimes using the same reasoning to explain opposite preferences. The findings also suggest that thoughtfully maintained subject guides remain relevant to students. The authors recommend that librarians should enlist help from faculty members to promote subject guides and reconsider the inclusion and presentation of subject librarian photos in their guides. They also recommend that librarians conduct their own usability testing to ensure that their subject guides are best serving their particular institutional context.

**Keywords:** subject guides; LibGuides; usability; research guides; undergraduate students; academic libraries

## **Introduction**

Subject-based research guides are a common service provided by academic libraries. A survey of 99 American academic library websites in 2011 found that all of them offered such guides (Ghaphery & White, 2012). At the authors' institution (Hong Kong Baptist University, a mid-sized comprehensive research university), liaison librarians develop and maintain subject guides using the popular LibGuides platform. The content is structured around resource formats such as books and journal articles, and the navigation is based on a left-side menu. Although librarians at the institution spend significant time and effort developing and maintaining subject guides, their relevance to students remains unclear. Measurement of impact is usually limited to the tracking of guide visits, which provides useful numbers but does not inform best practices. The authors perceived a need to re-examine the design and content of the current subject guides more holistically in order to make improvements based on best practices. For example, librarians were aware of recent studies advocating for the adoption of pedagogical designs for subject guides that lead students through the research process (e.g. Lee & Lowe, 2018). To assess the adoption of this and other best practices, the authors embarked on a local usability study.

## **Literature review**

As described by Reeb and Gibbons (2004), library subject guides generally take the form of annotated bibliographies. Sometimes called pathfinders or "research guides", these resources are curated by librarians to include key resources for particular disciplines or topics. Subject guides serve as starting points for research in a disciplinary area and are thus primarily intended to be used by students who need to conduct research on an unfamiliar topic. A secondary benefit is to librarians themselves,

as the production of subject guides requires them to consciously engage with important sources in the discipline. Guides have been described as providing significant career and professional development benefits to librarians (Bagshaw & Yorke-Barber, 2018; Reeb & Gibbons, 2004).

First appearing in printed form decades ago, subject guides in electronic form became a focus of professional attention in the mid-1990s (Vileno, 2007). There are many ways that subject guides can be made available online, but the LibGuides platform developed by Springshare has arguably achieved ubiquity since launching in 2007 as a means for libraries to develop and host their subject guides. In 2017, Springshare founder Slaven Zivkovic claimed that LibGuides had a user base of over 100,000 librarians (Whitmer, 2017), and LibGuides has been described as “the industry standard for library subject guides” (Whitmer, 2017, p. 284). A survey of 57 libraries using LibGuides conducted in 2013 by Primary Research Group found that almost 80% of them used LibGuides for subject guides. Following the emergence of LibGuides as a commonly-used platform, a number of studies examining different aspects of their effective design and use have appeared (e.g., Adebajo, 2010; Gonzalez & Westbrook, 2010; Ouellette, 2011; Sonstebj & DeJonghe, 2013). Nevertheless, Bowen, Ellis, and Chaparro (2018) have observed that while usability testing of LibGuides has been widely discussed among the librarian community, there is a need for further investigation. With a diverse range of libraries using LibGuides internationally, additional data from different types of institution will help in the development of best practices in subject guide design on this platform.

Applying the lens of cognitive load theory to LibGuides, Pickens (2017) makes the point that students come to such guides to find resources for their assignments, not to learn how to use the subject guide itself. Therefore, librarians should design guides to

be as intuitive as possible. A widely-acknowledged fundamental principle in this regard is to ensure consistency in format, language, and content (Ouellette, 2011; Quintel, 2016; Vileno, 2007; Welker, 2016). This avoids causing confusion and frustration in users as they make use of different guides.

In addition to the need for consistency, librarians need to avoid some common usability mistakes. According to Thorngate and Hoden's review of the literature on LibGuides usability and design (2017), these include:

- over-reliance on library jargon;
- pages that lack focus or contain too much content; and
- navigation that is unintuitive or contains an excessive number of tabs

This last point regarding navigation merits special attention. Tabbed navigation was the only option available when Springshare first released LibGuides and it has been consistently identified as a usability issue. In the worst cases, users may simply fail to see these navigation links entirely. Thorngate and Hoden found that when tabbed navigation was placed at the top of the page, two out of 15 participants in their usability study were unable to locate the tabbed menu and thus unable to finish the assigned task (2017).

Perhaps in response to such concerns, side navigation was provided as an alternative to tabbed navigation when Springshare launched LibGuides Version 2 in 2014. Writing after the introduction of this new feature, Welker (2016) noted that the effectiveness or otherwise of side navigation was a significant gap in the literature, and encouraged librarians to experiment with it. The well-known information architect Steve Krug has written that when done well, tabs are an excellent design choice (2014) and problems occur only when they are poorly implemented. However, several recent

empirical studies support side navigation. Eye-tracking testing undertaken by Harvard Library found that participants were much quicker to focus on an area of interest when side navigation was in place (Markman, 2016). Conerton and Goldenstein (2017) interviewed users and arrived at a more inconclusive result, with four out of eight expressing preference for tabs over side navigation. Thus, usability testing has supported the efficacy of side navigation, but users' expressed preferences have not always aligned with this. While a consensus on the superiority of side navigation from a usability perspective may be emerging, further studies are needed.

Regarding content organization, librarians tend to organize their subject guides according to resource format (books, journals, databases, multimedia, etc.). This has been attributed to the mental models that librarians bring to their jobs (Welker, 2016). However, student mental models are quite different and tend to emphasize the research process rather than format types. Several studies support this. Sinkinson, Alexander, Hicks, and Kahn (2012) found that organization by format was the least popular organizational scheme among students. After reorienting a (non-LibGuides) subject guide around two key tasks that students were expected to undertake (finding information for assignments and writing assignments), Kerrigan reported that usage of the guide doubled and faculty feedback was consistently positive (2016).

Stone, Lowe, and Maxson (2018) compared the efficacy of a guide using a "pedagogical" design (i.e. organized around the research process) with that of a more traditional pathfinder. Using an A/B testing methodology, they found that the students gave significantly higher ratings to the pedagogical guide. An assessment of a final assignment (an annotated bibliography) showed that students using the pedagogical guide outperformed students using a pathfinder in all five categories assessed (source, annotation, evaluation, citation, and mechanics), the difference was only significant for

citation. A similar study by Lee and Lowe (2018) showed that while there was no significant difference in performance on an assigned task, students enjoyed a more positive learning experience when using a pedagogical guide.

These two latter studies suggest that students prefer pedagogical guides, but they do not necessarily improve student learning. Nonetheless, overall, these studies suggest librarians should organize their subject guide content around student needs rather than resource formats. In the words of German (2017, p. 163), this will “flip the question from ‘What do I need to put on my guide?’ to ‘How does the guide help the student to be successful?’”

This review has so far focused on user experience issues with subject guides. This makes the assumption that general subject guides (when done well) are useful, needed, and an appropriate area for librarians to spend a significant amount of their limited time. However, this is by no means universally acknowledged. Mahaffy (2012) notes that several studies suggest that students do not naturally make the connection between their particular research needs and the resources provided by subject guides, and suggests that guides should be designed around courses rather than broad subjects. Even if students do find their way to a library’s subject guides, Chen and Chen (2015) speculate that subject guides might overwhelm users. They agree that customized course-level guides provide more benefits, although they require more time investment and closer collaboration with faculty. Other studies that similarly suggest prioritizing course-specific and assignment guides over general subject guides include Gonzalez and Westbrook (2010) and Nichols and Mellinger (2007).

Such considerations prompted Sonstebly and DeJonghe (2013, pp. 91-92) to pose a fundamental question: What is the future of the subject guide? Despite evidence that course and assignment guides are better utilized, most academic libraries persist in the

provision of subject guides. Is this simply a case of inertia, or is there intrinsic value in providing subject-based guides? Additional evidence would help to provide answers.

## **Methods**

Based on the literature and anecdotal observation of Hong Kong Baptist University students' use of subject guides, the authors were keen to redesign these guides to make them more useful to students. (Course guides and other non-subject guides were not part of the scope of this project.) Subject guides would be improved by applying usability best practices, and by shifting from a format-based design to a process-based design.

Prior to the present study, subject guides at the authors' institution had exclusively made use of a traditional format-based structure. The guides heavily emphasized resource recommendations organized around typical format categories readily understood by librarian (e.g. books, journals, databases, internet sources, etc.).

Recognizing the results of recent findings from the literature, as described above, librarians involved in the study resolved to redesign their subject guides around the research process. A new subject guide template was created in LibGuides, with help from a library colleague with web design experience to enhance the look and feel. This new template used a side navigation menu, which had been the default navigation option since the library upgraded to LibGuides Version 2.

To provide additional evidence to inform the redesign process and to address uncertainties uncovered in the review of the literature, usability tests were organized to answer two major questions:

- (1) Do students prefer side or tabbed navigation for subject guides?
- (2) Do students think that subject guides are useful?

The first research question was intended to objectively test which navigation option is most effective in terms of successful task completion by students. The second question expands to the overall usefulness of subject guides, and students were allowed to interpret the term “useful” as they wished. This was intended to encourage students to comment as freely as possible, in the hope of delivering insights into how to redesign the library’s subject guides to meet student needs.

The study was conducted in the second half of November 2018 and was approved in advance by Hong Kong Baptist University’s Research Ethics Committee.

To address the first research question, a second version of the template with tabbed navigation was created. This was the only substantive difference between the two templates, which were otherwise identical in terms of content and organization.

The authors wanted the usability tests to be representative of as wide a range of disciplines as possible, but the resources needed to conduct in-depth testing precluded the inclusion of every subject taught at the institution. As a compromise, one subject from each of the institution’s academic Faculties/Schools was selected to at least ensure broad representation from a variety of different disciplines. Subject librarians were then tasked with creating a new guide for the seven selected subjects, each with a side navigation version and a tabbed version, for a total of 14 guides. A different librarian then reviewed these guides to check for errors (e.g. broken links, typographical mistakes) and to provide content suggestions. Screenshots of the two guides prepared for Computer Science are provided as Figures 1 and 2.

[PLACE FIGURE 1 HERE]

[PLACE FIGURE 2 HERE]

In selecting participants for the usability tests, the authors decided to restrict eligibility to Year 2 undergraduates. The rationale was that this population would be familiar enough with university-level academic expectations to be able to provide useful feedback on how subject guides could be improved to help students complete assignments. At the same time, they were not far removed from the experience of being freshman students, a group that librarians particularly wanted to target with the new subject guides.

Convenience sampling was used to recruit students for the tests. Librarians reached out to faculty library coordinators of selected academic departments, who helped to recruit two volunteers from each department. Although all were fluent in English, most were native Cantonese speakers. Two of the three researchers that participated in the study could speak Cantonese, and participants assigned to them chose to speak in their native language. The third researcher was not a Cantonese speaker so participants assigned to them had to converse in English, which for some students was a non-native language. A Cantonese-speaking research assistant was present at these sessions to translate if participants needed to express themselves in their native language.

Each session was divided into two parts. In the first part, one student from each department was asked to complete a series of tasks using the side navigation version of the new subject guide for their discipline. The other student from the department was asked to complete the same tasks using the tabbed navigation. In the discussion below, individual tests are referred to by the participant's disciplinary area and the version of their guide they were given for the usability testing. For example, the participant from

the Department of History who used the side navigation version of the guide would be referred to as “History, Side.”

Screen recording software was used to record the students’ performance for later review. The purpose of these tasks was twofold. First, to collect evidence of their behavior in navigating the guide to inform possible improvements to the guide templates. Secondly, to familiarize the student with subject guides ahead of an in-depth interview.

In the second part of the session, the student was shown the version of the guide that they did not use in the usability test. The researcher then conducted a semi-structured interview to explore in more depth their thoughts on the subject guides. The audio of these interviews was recorded to aid in analysis. See Appendix for descriptions of the usability tests and the interview questions.

QSR International’s NVivo 12 for Mac software

(<https://www.qsrinternational.com/nvivo/nvivo-products/nvivo-12-mac>) was used to aid the data analysis. The screen recordings and accompanying audio were exported as video files and added directly to NVivo. Audio from the semi-structured interviews was first transcribed, with the resulting text files then being added to NVivo. The researchers next made an initial pass through the data, and then met to discuss and agree upon the codes to be used. Some minor changes and additions were made to these during the coding process.

## **Findings**

Given the goals of the research, the majority of coded terms naturally fell under the broad category of “subject guides”. However, a significant percentage of codes were

categorized under three other areas, namely “information literacy experience,” “library resources,” and “liaison librarians.” These additional data emerged from the semi-structured nature of the student interviews, which allowed the researchers to pursue topics of interest that were not necessarily directly related to the research questions. Figure 3 below provides an overall impression of how codes were split between the four top-level categories, as well as some examples of categories at the second level of the coding hierarchy.

[PLACE FIGURE 3 HERE]

Student performance in the usability testing was analyzed by looking at how many of the three tasks the students were able to complete, broken down by navigation type, as shown in Figure 4. The two types of guide navigation appeared to have a broadly similar effect on students’ completion of the usability tasks. However, the significance of the association between the assigned guide type and student performance could not be tested by statistical methods such as Pearson’s chi-squared test due to the small sample size.

[PLACE FIGURE 4 HERE]

Students were asked to state a preference for side or tabbed navigation during the interview. Apart from one student (Visual Arts, Tabbed), all students expressed a preference for one or the other. There was no clear-cut preponderance of opinion, with five students expressing a preference for side navigation and eight students expressing a preference for tabbed navigation.

There was also no obvious correlation between navigation option that students preferred and the option they were assigned for the usability test, as shown in Figure 5. It should be noted again that no claim of statistical significance can be made.

[PLACE FIGURE 5 HERE]

When prompted to provide reasons for their preference, some participants cited perceived problems with how noticeable the navigation options were. However, these problems were attributed to both options. The following examples of opposing opinions about the visibility of the tabbed navigation illustrate this:

STUDENT: I prefer this one.

LIBRARIAN: This one, the tabbed one?

STUDENT: Yes, because I think this is umm... both tabs are right about down the title... yeah...

LIBRARIAN: So they are very visible?

STUDENT: Yes, [more] eye-catching than this one.

(Humanities and Creative Writing, Side)

STUDENT: The one that I just used looks better

LIBRARIAN: This one [side navigation] looks better, why is that?

STUDENT: Maybe...I'm not sure... sometimes I may miss the tabs at the top. The labels in the side version are easier to notice.

(Chinese Medicine, Side)<sup>1</sup>

Several participants indicated that their preferences were based on past experiences, including parallels with the interfaces of other websites and software. Again, the opinions expressed were divergent. One student (Computer Science, Side)

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<sup>1</sup> This excerpt has been translated from Cantonese.

said that the user experience of the tabbed guide was “exactly the same as [a] browser” and speculated that their preference for the tabbed guide was attributable to their being used to the way internet browsers use tabs. Similarly, another student (Humanities and Creative Writing, Tabbed) connected their preference for side navigation with their experience of Microsoft Word, where the table of contents displays on the left of the screen. Conversely, one participant (Marketing, Tabbed) stated their preference for one navigation option (side) based on their experience of another (tabbed). The side navigation guide reminded them of the typical layout of websites produced by the Hong Kong government, which they regarded as providing a poor user experience. This appeared to contribute to their preference for the tabbed guide.

Overall, the sample data revealed no clear preference for either type of navigation. Although participants provided similar reasoning for preferring one over the other, they came to different conclusions.

Evidence to answer the second research question, regarding the perceived usefulness of subject guides, was drawn primarily from participant responses to interview questions relating to their intention to use the subject guide in future and whether they would recommend the subject guide to their friends and peers. The authors are conscious of the potential for students to provide answers to these questions that do not reflect their true feelings. The students were aware that they were being interviewed by a librarian from their institution who was heavily invested in the creation of subject guides. Nevertheless, the authors believed that the usability tests and interviews represented a valuable opportunity to obtain data on how useful students perceive subject guides to be. To mitigate students’ probable reluctance to express any criticism of subject guides directly to a librarian, the interviewer explicitly stated that participants should be as candid as possible in their comments.

To the question of whether they thought it likely that they would use the subject guide in future, ten participants said that they would (with two stating they would not, and a further two did not give an explicit response). Some of these assertions of future use were not convincing and reflected the concern discussed above that expressions of support might not be genuine. For example:

LIBRARIAN: After we enhance our new subject guides, do you think you'll use it in the future?

STUDENT: Yeah.

LIBRARIAN: So, you'll come back to it for your assignments and your essays?

STUDENT: Yeah.

LIBRARIAN: Remember [name of student], you can be totally honest. You can say "absolutely not".

STUDENT: I will use [it] a bit.

(Visual Arts, Side)

In the contrasting example below, a participant that expressed a strong opinion that the subject guide would be very useful for them in the future. This student had not encountered subject guides before, and linked the guide to the completion of academic assignments:

LIBRARIAN: Now again being honest, do you think you'll use this guide in the future?

STUDENT: Yeah, definitely. Yeah, because I'm working on the assignments now. I would maybe just... an hour later. I [will] start using it.

(Marketing, Side)

These examples show that commitment to future use of subject guides ranged from lukewarm to fairly certain. Overall, a majority indicated some form of future use.

For the two participants who stated outright that they would not use the subject guides again, both gave as their reason that they saw no need to revisit them once they had established familiarity with the disciplinary databases and tools useful to them. Such responses indicate that the discovery of novel resources was an important way in which some students were judging the utility of subject guides. Indeed, a review of interview text coded for novelty showed that students were being exposed to a range of resources for the first time. These included disciplinary databases such as Ovid, PubMed, Business Source Complete, and a variety of primary source databases. Participants also reported discovering library-supported tools they had not encountered before, such as Mendeley and BrowZine. These findings suggest that the original purpose of subject guides serving as a “pathfinder” to guide students to new resources is of continuing importance.

One particularly illuminating comment came from a student enrolled in a creative writing program. After first explaining that they usually relied on Google to locate ideas for their writing, they noted that:

STUDENT: I think from this guide, I found out that I can actually find ideas from this guide, because like what I just said I usually listen to music or watch a movie, read a book to get my ideas, but now I learned a new way that I can find something about writing ideas...

(Humanities and Creative Writing, Side)

Participant responses like these support the usefulness of subject guides in the discovery of novel discipline-specific resources.

One final measure of subject guide usefulness was whether students would recommend the guide to their peers. Of the eight participants who made comments in this area, none stated that they would not. Three were non-committal, for example stating that they would need to see if they themselves found the guide useful before

recommending it to their friends. Five participants said that they would recommend the guide to others. Freshman students were identified as those who would most benefit. Several students noted that the guide would be particularly helpful to first-year students taking a required English course, because it covers the fundamentals of academic writing including literature searching and citation.

While much of the analysis focused on addressing the two main research questions, other useful findings emerged during the process of examining and coding the data. Understandably, many of these were of primarily local significance. Here, selected observations of possible wider interest will be detailed. For example, student comments revealed the significance of Hong Kong Baptist University's required first-year English course as being their first exposure to several information literacy concepts fundamental to undergraduate study. This underscores a valuable benefit of conducting usability testing: revealing opportunities to enhance library services in the context of unique institutional circumstances. The obvious follow-up for the authors in this instance will be to work with the faculty offering the English course to highlight the library's subject guides.

A consistent message from participants was that the most effective way to promote student use of subject guides would be to ask their teachers to introduce the guides in class. Some participants were candid in describing themselves and their peers as being very focused on course requirements. The following statement was typical: "if not related to our assignment or our project, we usually will ignore it" (Marketing, Tabbed). Indeed, the data supported the anecdotal impression of librarians that few students would seek out and use resources such as library subject guides. The authority of teaching staff was offered by one participant as the solution to this:

STUDENT: Let the professors and the lecturers [introduce the guide]... because there are students, like me, and I wouldn't go to a library and ask for these resources by myself. I would ask the teacher, if I need to do that assignment.

(Marketing, Side)

This is an important consideration, as it suggests that even if students do rate subject guides as useful, they will not independently seek out such resources. Soliciting the help of faculty in promoting subject guides is a potential strategy for kickstarting student engagement.

One commonly-used feature of the LibGuides platform is the inclusion of a profile box containing the name and contact information of the librarian responsible for creating and maintaining the guide. At Hong Kong Baptist University, librarians have been required to include their photo in their profile, with the reasoning that students will recognize their librarian on sight and thus find them more approachable. Some colleagues were not comfortable with this, and so a question about librarian photos was included in the interview script. All participants provided a response when asked to comment on the photo of the subject librarian, and these were coded as negative, neutral, or positive. Several students shared negative comments, for example:

LIBRARIAN: What do you think about having the picture of the librarian?

STUDENT: It is a little bit creepy for me, because you know someone staring at me when I have to find something useful.

(Humanities and Creative Writing, Side)

LIBRARIAN: What about having their picture on the guide, is that...

STUDENT: It's quite strange.

LIBRARIAN: It's quite strange, why is it strange?

STUDENT: Why you have to look at the person that I don't know... and... it's quite strange. I'm not in some company, and I'm not looking for some introduction...

(Visual Arts, Side)

These were balanced by positive comments from other participants:

LIBRARIAN: Okay, what do you think about the photo?

STUDENT: I think the quality is pretty good.

LIBRARIAN: Okay, do you find it odd or...

STUDENT: No it's perfectly fine. I should know the person who I'm going to ask help from.

(Computer Science, Side)

Overall, the distribution of comments on the photo was even, with four students providing negative comments, four providing positive comments, and the remaining six students expressing neutral comments. These mixed results provide an impetus for reconsidering the way that this feature of subject guides is employed.

## **Discussion**

The findings of this study revealed no predominant student preference for one of the two navigation options that are provided in the LibGuides system. There was also no pattern in the preferences expressed, with neither student disciplinary background nor the guide type assigned in the usability test correlating with participant choice between side or tabbed navigation. The phenomenon of students using similar reasoning to justify opposite choices provides evidence that the preference is idiosyncratic and related to individual experiences. Although this study did not identify a clear-cut student preference, an eventual decision was made to adopt tabbed navigation, based on the slight (8 to 5) majority of students that expressed this preference. Student preference

was intended to be the sole basis on which this decision was made but, in the absence of a clear winner, the general preference of subject librarians for tabbed navigation was also considered. Providing subject librarians with a free choice on which style to use was a possibility, but the authors decided against this in order to preserve the consistency of the user experience in the LibGuides system.

This study yielded mixed results to the question of how useful students find subject guides. In the usability tests, the observations of the authors paralleled those reported by Sonsteby and DeJonghe (2013). Participants rapidly scrolled through guides without absorbing the content. There was a striking preference for search boxes and, when presented with a list of links, students invariably followed the first one on the list. Several struggled to complete the tasks set for the tests. Judging from these observations alone, it would not be unreasonable to conclude that students do not find subject guides useful. However, when asked to provide feedback, many participants indicated that they would use the guide again or recommend it to fellow students, particularly Year 1 students. While it is difficult to disentangle these responses from the context of the students being asked for feedback by librarians involved in the creation of the guides, they indicate that there may still be value in the concept of subject guides.

Combining the above discussion with the additional findings reported in the previous section, the authors offer the following takeaways that may be useful to other libraries reviewing their subject guide offerings:

- **Libraries can make navigation choices that respond to their students' preferences.** While some usability studies (e.g. Markman, 2015; Thorngate & Hoden, 2017) have suggested side navigation for LibGuides as default best practice, the question has not been completely settled. The present study did not demonstrate a clear advantage either way. By obtaining feedback from both

students and librarians, institutions can determine which of the two options best aligns with the preferences of their community.

- **Subject guides remain relevant, but libraries should validate their selection of content through student testing.** Most students expressed positive feedback on the usefulness of subject guides, but some still struggled with the tasks set for them. Librarians responsible for maintaining subject guides should not simply assume that they have selected the best resources, or that their guides are intuitively organized. As Sonsteby and DeJonghe (2013) suggest, ongoing usability testing can help ensure their continued utility to as many students as possible.
- **Enlist the help of faculty to promote subject guides.** With so many resources competing for students' attention, many rely on their professors to direct them to those that are most useful. Having faculty help to promote subject guides could be highly effective in increasing student usage, although this of course necessitates convincing faculty of their value.
- **Reconsider the inclusion of librarian photos in subject guides.** Librarian profiles are a standard feature of the LibGuides platform. Some libraries, including that of the authors, make the intuitive assumption that having subject librarian photos and contact information on as many pages as possible increases the likelihood that students will reach out for help. There is anecdotal evidence supporting this view, such as the report by Reeb and Gibbons (2004) that subject librarians with guide photos are more approachable to students and are even asked for by name. However, the present study suggests that some students may instead regard such attempts to provide personalized contact points "creepy". Like the preference for side and tabbed navigation, this may vary according to

institution, but it is a factor that those responsible for guides should investigate in their own organizational context.

### ***Limitations and suggestions for further research***

An obvious limitation of the present study is its small scale. In common with similar studies reported in the literature (e.g. Lee & Lowe, 2018; Sonsteby & DeJonghe, 2013; Stone, Lowe, & Maxson, 2018), it was restricted to a convenience sample at a single institution. The findings gathered via such research design may not be generalizable. While the literature on the results of single-institution usability testing has continued to grow over the years, there is a lack of studies taking a larger-scale or comparative approach. In the discussions and findings above, it is speculated that some of the results observed may be due to individual or institutional idiosyncrasies. Studies undertaken on a larger scale might explore whether there is merit to such speculations.

In hindsight, another weakness was the broad scope of the study's second research question, "Do students think that subject guides are useful?" In the interviews, some students made insightful connections between the purpose of subject guides and specific research needs, such as the required English course. However, analysis of student responses suggested that other students did not have sufficient understanding of how subject guides might be useful to provide an answer to this question. Therefore, another recommendation for future studies is a clearer definition of "usefulness". In this study, students were implicitly tasked with applying an individual and subjective interpretation of "usefulness." Some students regarded subject guides as useful if they aligned with their pre-existing preferences for website design. Librarians might center their definition of "usefulness" on task completion, which can be objectively measured and assessed among different academic or demographic groups. The concept of usefulness also presents an opportunity for a deeper evaluation of the impact of subject

guides. The present study looked at performance on a usability test, and asked participants if they found subject guides useful, but assessment of real-world use is needed to evaluate their true impact (or lack thereof) on student outcomes. For example, one of the takeaways above is to enlist faculty help to promote guides, which might create an opportunity to study how students use them in an authentic setting.

This study's methodological integrity was also perhaps affected by the fact that some participants were able to be interviewed in their native language while others were not. It is recommended that future studies of bilingual populations be consistent in employing one language or another to facilitate data collection and analysis.

## **Conclusion**

Libraries at higher education institutions worldwide continue to invest considerable time and effort into developing and maintaining subject guides. In 2013, Sonsteby and DeJonghe provocatively asked whether discovery services had made subject guides of the traditional sort obsolete. Almost six years on, this question is still unresolved. The results of the present study provide additional evidence that while the experiences of other libraries serve as useful starting points, each individual institution should make the effort to find out what works best for its users. Iterative local usability testing and constant improvement are important. Whether or not this will be sufficient to secure the long-term future of subject guides remains to be seen. Librarians should continue making the best subject guides they possibly can, and rigorously assess the impact of these guides on student learning.

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## **Appendix: Usability tasks and interview questions**

### ***Usability tasks***

- (1) Imagine that it's your first time writing an essay at university and you're not sure what to do. Use this guide to find some advice on this.
- (2) You have heard about software that lets you save articles and generate bibliographies automatically. Find a link on this guide that provides more information about this software.
- (3) For your essay on [disciplinary topic], use the guide to locate the following:
  - (a) A scholarly definition for [disciplinary topic].
  - (b) Three scholarly sources about [disciplinary topic].

For each source, provide a citation in [disciplinary] style.

### ***Interview questions***

- (1) Please introduce yourself and say what programme you are in.
- (2) Did you learn anything new/useful from this guide? Do you think that there is too much or too little information on this guide?  
  
[Participants will then be shown the version of the subject guide that they did not use in the usability test]
- (3) You have now seen two different versions of the same subject guide. I'd like to know what you think of each of them. Which one do you think is easier to use?
- (4) What do you like about each guide? E.g. color, layout, etc.
- (5) For each guide, what would you change?
- (6) How do you usually find information or articles for your assignments?
- (7) Have you used a library subject guide before?

- (8) If yes, how did you find the guide? Did it help you find the information that you needed?
- (9) Do you think that you will use the library subject guide in future?
- (10) Do you think that the subject guide will be useful to your fellow students (new students especially)?
- (11) Did you know that there was a subject librarian for your department? Do you think this is useful? What do you think about having their picture on the guide?