The Enduring Landscape of Online Subject Research Guides

This article reports the results of two related studies: data collection on characteristics of online subject guides at academic ARL libraries, and a survey of heads of reference at the same group of libraries concerning policies and practices for writing, maintaining, and promoting subject guides. Results are compared to a similar investigation published in 2004. Observation of guides focused on numbers and types of web links included, timeliness and accuracy, and discoverability of guides from each library's homepage. Survey questions included impact of guide quality on librarians' evaluations, use of guide templates, and reasons for using or not using a guide management system such as LibGuides.

n 2004, Lorraine Pellack and Rebecca Jackson published an article in *Reference and User Services Quarterly* titled "Internet Subject Guides in Academic Libraries." That article was based on an examination of subject guides on the websites of US academic libraries in the Association of Research Libraries (ARL) and a survey of heads of reference in those same libraries. The librarians who responded to that survey expressed great interest in the project, and in the years since, the 2004 article has been cited many times. As a result of the success

of the 2004 article and changes to the technology supporting online subject guides, Rebecca Jackson, one of the authors of the earlier study, decided with Kristine Stacy-Bates in 2010 to repeat the earlier research study, with a few alterations. This study gathered much of the same data as the previous study to examine the changes that have occurred in the intervening years. Data from the earlier article was gathered in 2002, while guide examination for this study was done from 2011–13 and heads of reference of ARL academic libraries surveyed again in 2013.

Technology and creative ideas for using it have greatly affected the ways libraries present themselves to their users. Prior to the digital age, librarians created print subject guides and pathfinders to highlight useful information resources in various fields, and these guides were brought online as libraries developed web sites and began to rely on web resources. The introduction of the LibGuides platform in 2007 and the use of other content management systems presented many libraries with a more convenient way to manage online guides. Since 2002, most guide creators have been able to develop guides faster and to change their guides more quickly. The present authors found that the number of links

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per guide had increased in the decade between the two studies. However, there are still many guides in need of updating, with some broken links to resources found in the majority of guides examined in this study.

Subject guides remain an important element in the array of services librarians provide for their users. According to Tim Wales, "[the subject guide's] *raison d'être*, far from being called into question, has actually been reinforced in the internet age as library users struggle to navigate through the masses of online information now available to them."²

LITERATURE REVIEW

Even before the introduction of LibGuides, librarians wrote about web-based subject guides and the use of homegrown content management systems for streamlining their production. While the authors do not intend to review all of the pre-2002 literature on library guides, one article deserves special mention. In 2001, Louis A. Pitschmann wrote a paper for the Digital Library Federation based on an "informal survey" to uncover the major challenges in creating useful lists of "free third-party web-based resources," or subject guides. This was one of the first documents to deal seriously with standards for the collection of Internet resources. The survey found the major challenge was the selection of quality resources and defining what criteria characterize "quality." Pitschmann maintained that collection development policies should be created for electronic resources, as they are for print resources in many libraries. His evaluation criteria were much the same as librarians use today in teaching students to evaluate web content: accuracy, authority, completeness, depth of coverage, currency, and level of intended audience.4 Pitschmann concluded, "Web resource creation does not consistently include equally rigorous evaluation and revision as does information in print format; in fact, the most extensive evaluation of composition and organization may occur after completion and then only by end-users."5

The literature on subject guides since 2002 tends to focus on a few themes: guide content and arrangement, the use of guides, and promotion of their use. A few researchers have written specifically about LibGuides and other systems for development of subject guides. The first theme is partially addressed in the Subject Guides section of *Library Success: A Best Practices Wiki*. One of the tips cautioned "a subject guide is not a laundry list of every reference book or Internet link related to a topic. Instead, a truly useful subject guide is a list of carefully selected resources." Ouellette, studying user perceptions of guides, observed that "especially students that are new to the research process, are easily overwhelmed by too many choices. . . . Therefore, subject guides should contain a limited number of high-quality resources rather than comprehensive lists of everything available to students."

Arrangement of resources is also important. Researchers seemed to agree on the separation of resources into categories and the arrangement of resources within those

categories. In 2002, Jackson and Pellack looked for an alphabetical arrangement of resources.⁸ Today, relevance ranking is the most common arrangement of results in search engines, research databases, and other online resources, with options for changing the sort order if desired. Of the writers commenting on the arrangement of resources within categories, all of them recommended a relevance-based arrangement, Stitz et al. observing that "Users will often try links that appear earlier in a category first." 9

The need for annotations was another content issue addressed by a number of writers. Truslow, as well as Chen and Chen, found that the percentage of annotations varied widely within and among subject guides, though in both studies the majority of resources did include annotations.¹⁰ Slemons wrote that students "want to know what information [the resources] provide, how and when they might use them, and their strengths and weaknesses."11 Whether or not annotations are necessary for all resources listed in a guide, they are certainly helpful for those resources selected as "best bets." Jennifer J. Little wrote an article discussing cognitive load theory related to subject guides. She made several recommendations regarding the content and arrangement of guides, including "Provide clear descriptions of each research guide's purpose and for each resource listed in the guide."12

Accuracy, both in the guide text and in the currency of links, came up many times in the literature. 13 Pitschmann considered accuracy to include the "the extent to which [the guide] presents prevailing opinions, ideas, concepts, scientific findings, theories, and practices relating to the subject."14 Of course, keeping links updated as resource URLs change is also of utmost importance. With the use of LibGuides and other database platforms, link checking is often automated. However, for LibGuides, humans must initiate the process of link checking, which should be done on a regular basis. Unfortunately, many such systems look only for "Page not found," 404 or 504 errors; until just recently, they have not recognized redirects, which often lead to a completely different website than intended. As Corrado and Frederick stressed, even with the use of automated link checking, "nothing is better than having a person . . . check the pages manually."15 Judd and Montgomery pointed to subject guides as marketing tools for the library, and as such "they should be free of typos and the content should be up-to-date with hyperlinks current and active."16

Related to content as well as to user experience is the use of templates for guides. A few writers commented on their use, all recommending them. Tchangalova and Feigley, and Dalton and Pan wrote that using templates helps students navigate from one guide to another within an institution.¹⁷ In a survey distributed via two discussion groups, Wakeham et al found that "The guides of 92% of respondents were based on a template though this was sometimes described as 'basic', 'rough' or 'flexible.'"¹⁸

The second major theme of recent studies, use of subject guides, has generated a larger body of research than was

available in 2002. Part of this is probably the result of better methods for measuring website usage. Part is probably due to the greater emphasis on libraries' accountability for the added value of librarians' services. In a survey of guide users by Courtois, Higgins, and Kapur, 40 percent of the responses rated the guides as not helpful or only a little helpful. Peeb and Gibbons reviewed previous research on subject guide usage. Their explanation for students not using subject guides was that "Undergraduate students' mental model is one focused on courses and coursework, rather than disciplines." Thus librarians need to move away from discipline-based research guides toward course-based guides.

Dana Ouellette offered several explanations for why students do not use subject guides: they are not aware of their availability, they prefer to do their searches with familiar tools on the web, and "they do not feel they need to [use them]."21 He also offered three conditions under which students will use guides. "Students will use subject guides if they are stuck. . . . [or] if they have to find information in a new discipline. . . . [or] when their instructor specifically suggests that they do."22 Addressing Ouellette's first explanation for why students do not use guides, Stitz et al. pointed out that subject guides should be featured strategically on a library's website so that they can be found.23 However, even if guides are linked directly from the library's website, they have to be named in such a way that users know what they are. In a study by Chen and Chen, 75 percent of the guides examined were linked from the library's home page.²⁵ Even with the entry point on the library's home page, Stitz et al. found that users did not recognize the link.26 Dalton and Pan found that "'LibGuides' as a term was not meaningful to users."27 Tchangalova and Feigley commented on the wide variety of names of—and purposes for—library guides: "How to describe what a subject guide is in a succinct understandable way is difficult (hence the plethora of terms)."28 It seems that the perfect name, recognizable by all, has yet to be determined.

Some authors have written about interesting elements of the use of subject guides. Forbes and Brown, Ouellette, and Staley, all found that the pages which linked to databases were more heavily used than other pages in the guides.²⁹ Other sections that Ouellette found to be popular were pages with citation help and pages with links to encyclopedias and dictionaries. The only guide parts that Ouellette described as unhelpful to students were the "'find books' sections, which many students found unnecessary because a catalogue search box already exists right on the libraries' homepages."³⁰

One way of ensuring that students knew about the guides librarians had created, according to researchers, was through promotion. Foster et al. devoted an entire article to promotion of LibGuides. After trying many promotional activities, they concluded that the most successful marketing came from course-related instruction.³¹ Forbes and Brown also found that instruction increased the use of their subject guides.³² Staley added that instruction also increased the "use of the subject guide homepage."³³ Grays, Del Bosque,

and Costello suggested that the use of social media might increase the use of subject guides. ³⁴ However, no studies have been done linking promotion by social media and increased subject guide usage. In fact, it seems that at present there is no magic bullet for effective promotion of guides except by demonstrating them in classes.

In addition to the literature so far reviewed, there have also been articles specifically about LibGuides, the most frequently used platform for guide creation by the libraries in the present study. Several writers promoted the use of LibGuides for various reasons, including

- ease of use by librarians, who do not have to learn HTML or other programming to create the guides;
- production of more specific guides for courses and other needs:
- ability to share content among librarians, both within and outside a specific institution;
- flexible organization of resources;
- ability to incorporate RSS feeds, videos, and other social media features;
- built-in link checker; and
- statistical analysis feature.³⁵

Ghaphery and White pointed out a common pattern of who in the library now handles guide creation with Lib-Guides: "It appears that many library systems departments are not actively involved in either the initiation or ongoing support of web-based research guides." For many librarians, the ability to create and offer such resources instantly, without the need for intervention of local technology systems staff, is very attractive.

Forbes and Brown presented a project from the University of Denver's Penrose Library using LibGuides usage data combined with data from Google Analytics. Statistics generated from LibGuides are very general, indicating which guides, pages, and links get used most often. Using Google Analytics they were able to determine: how users found their guides (from search engines, their own library website); who those users were; numbers of repeat users; length of time users stayed on the guides; and more.³⁷

Given what the literature describes about subject guides in the above review, and the changes that have occurred in the creation and maintenance of these guides, the authors were curious to discover what the actual differences were between those guides analyzed in the 2002 Jackson and Pellack study, and the equivalent guides in this study.

METHOD

In the 2004 published study, Jackson and Pellack examined the guides in chemistry, astronomy, journalism, and philosophy. Note that for the 2004 article, the data was collected in 2002; therefore the present authors will use 2002 as the date of comparison with this study's data. In the interests of time,

and since the chemistry guides tended toward great length, the present authors visited the chemistry, journalism, and philosophy subject guides of ARL academic libraries in the United States, numbering 101 institutions at the time of the study. The Iowa State University Library subject guide for philosophy was eliminated from the review because one of the authors had developed it and felt that might be considered a conflict of interest. Guide observations were primarily during 2011 and 2012, with a few observations made in 2013. The subject areas chosen represented disciplines in the sciences, social sciences, and humanities. In all, the authors reviewed 98 guides in chemistry, 92 guides in philosophy, and 70 guides in journalism that were available from these 101 institutions.

For each institution, the authors used a template similar to the 2002 study template to record data, including name of school; discipline (chemistry, philosophy, or journalism); the date the guide was checked; the date it was last updated (if displayed); whether the guides were linked directly from the library's home webpage and that link's name; the steps required to land on the guides, if they were not linked directly from the main library website; the content management system (if identifiable) used to create the guides; the number of resources included in the guide and the percentage of dead links; whether the resources were in categories, were alphabetized, and/or were annotated; and the inclusion of e-journals, e-books, indexes, or tags in the guide.

Beyond that, the authors developed spreadsheets for each discipline listing each linked resource, the URL for the resource, and exactly which libraries linked to that particular source. All links integral to an individual guide were checked and logged in these spreadsheets; links that were clearly included as header, footer, or sidebar entries for all guides for the library were not counted or checked. Some guides included identical content boxes or subsections in more than one section of the guide; in those cases, links were not counted twice.

As in the earlier study, a survey was sent via email to all the ARL libraries in the studied group, addressed to the head of reference (if one could be identified) at each library, with a request to forward the survey to the most appropriate person. Both the past and present researchers felt the survey would add interesting contextual background that could not be gleaned from the guides themselves. Of 99 surveys distributed in August 2013, 32 (32 percent) were returned—lower than the 57 percent return rate for the 2002 study, but still a satisfactory and usable number of responses.

RESULTS

Arrangement and Content of Guides

The first data point collected in the observation of guides was the number of institutions that directly linked to their subject guides from the home page of the library. If a link was on a drop-down menu with a different title, such as

"Research Assistance," that was not counted as a direct link. Using the number of philosophy guides (92) as the base of this analysis, the authors found that 62 (67 percent) libraries linked directly to a list of their guides from their home pages. For libraries linking directly to their guides, the majority (63 percent) called them either Research Guides or Subject Guides. Other names included Research by Subject, Library Guides, and Research Guides by Subject and Course; three libraries used the product name LibGuides.

Of the 33 percent of libraries with guides not linked directly from the home page, some gave links from drop-down menus on the first page—links with names such as Research Help, Search and Find, and Finding Help. At other libraries, pathways were hard to discover. In some cases, it was necessary to choose the right library from a group of campus libraries to find the subject guides that fit the topical focus of that library. One site's only path from the homepage to the subject guides was via the link for "Personal Librarians." If these authors had difficulties locating guides, then patrons who may already be facing daunting choices for finding information might never stumble upon this type of resource.

As was discussed in the literature review, LibGuides is a popular system for several reasons including that it is easy for librarians to learn, and it circumvents the necessity to wait for technical services or systems staff to implement corrections identified by subject librarians. The present study showed that 71 percent of the 101 libraries reviewed were using LibGuides. Locally developed named systems or other known systems counted for a very low percentage. For 28 percent of the libraries, guides were provided through an unnamed local system or a system that did not display any branding.

In 2002, guide organization was considered in the Jackson and Pellack study as being an important aspect of the usability of guides. In 2011-13, most guides (87 percent) were divided into categories, similar to the 83 percent of guides arranged in categories in the 2002 study. Although journalism had the highest median number of links, journalism guides were least likely to have links sorted into categories, with 41 percent of journalism guides providing a single uncategorized list of resources. In each subject, when categories were used, they followed different patterns at different libraries. In many cases, the categories were named for research actions, like Find Articles, Find Books, or Find Background Information. Other guides featured subfields of a discipline instead, and some included both. For instance, a user might find a philosophy guide divided into the categories of general reference sources, finding journal articles, finding books, and then further categories of ethics, metaphysics and epistemology, non-Western philosophy, recent acquisitions, and blogs and feeds—a real hodge-podge. Many of the guides had categories for citation styles, remote access to library resources, primary sources, and other aspects of the research process.

An important aspect of guides in the past was the alphabetical arrangement of resources within categories. In this

Table 1. When was the guide last updated?

	Guides with Unknown "Last Update"	Median Time Since Last Update	Maximum Time Since Last Update	Minimum Time Since Last Update
LibGuides sites (n = 184)	8 guides (4.3%)	67 days	1,088 days	0 days
Unbranded sites $(n = 74)$	46 guides (62%)	97 days	1,677 days	2 days
All guides (<i>n</i> = 260)	54 guides (21%)	71 days	1,677 days	0 days

Elapsed time between "last updated" date (if given), and date when guide was checked

Table 2. Results of Internet Guides Review

	Chemistry	Journalism	Philosophy
Total number of libraries with guides in the subject area	98	70	92
Total number of distinct URLs found	4,834	4,053	2,430
Median number of links by guide	88	105	53
Mean number of links by guide	141	151	77
Guides with at least one dead link	88 (90%)	60 (86%)	66 (72%)
Guides with more than 10% dead links	20 (20%)	18 (26%)	15 (16%)
Most links in a single guide	1,117	1,469	349
Fewest links in a single guide	19	12	7
Number of resources linked by only one library	3,845	3,058	1,898
Number of links to resources that were local to that library	1,937	835	777

study, most of the guides (79 percent) did not consistently alphabetize resources, while in the 2002 study, only 39 percent of guides were not in a consistent alphabetical order. In a time when arrangement of search results by relevance is the norm, that may be what searchers expect in a list of resources—seeing the most important at the top of the list. If that is the case, however, the arrangement should be explained somewhere on the guide. If "best bets" or a similar designation was used as a heading, it was fairly evident that links in that section were the most relevant. There were other guides with arrangements that seemed to be neither in relevance order (based on the authors' judgment of the relative importance of resources for that discipline) nor in alphabetical order. Again, a simple explanation for the arrangement of resources within a category should be provided.

As with guide organization, annotation of guide resources is still commonly mentioned in the literature as a necessity.³⁸ However, only 54 percent of guides provided annotations for all or most of the links. The other guides either had no annotations (8.5 percent of the total) or less than half of their links were annotated. Since many librarians plan guides to serve as starting points for patrons' research in a subject area, this lack of explanation of resources seems to limit their usefulness.

One feature that was no longer a concern in the present study as opposed to the 2002 study was the presence or absence of printed URLs accompanying links. In LibGuides, when a guide is printed, the URL is usually provided, even though it is not visible online. In addition, based on the authors' experience, the tendency for printing guides regardless

of platform has declined; more work is done online than was the case ten years ago. Further, if a user is working from a print guide, it is often easier to find the resource by name with a general search engine than to risk the possibility of errors in typing long URLs.

The authors also looked for revision dates in the guides. One of the first things librarians tell students about evaluating websites is to look at the date—if the site is really old it is probably suspect. Of all the guides from the three categories, 21 percent listed no dates for the latest revision. Surprisingly, even 4.3 percent of sites using LibGuides, which automatically displays the date of the most recent change to a guide, had suppressed the revision date (see table 1). Between the last revision date (for guides displaying a date) and the date the authors observed a guide, the median time elapsed was 71 days. As table 1 shows, LibGuides users seem to update their guides, on average, more often than non-LibGuides users. The maximum number of days elapsed since the last update—1,677 days—is more than 4.5 years. One LibGuide went nearly three years (1,088 days) without an update. Since currency is such an important indicator for evaluating guides, libraries should make this available to users, and those dates should reflect the currency librarians teach their students to expect.

Uniqueness of Resources

As shown in table 2, chemistry guides had the highest number of distinct URLs as a group, partially because more of the libraries in the study had guides on this subject. Journalism came in a relatively close second, and philosophy was a poor

third. However, journalism had a higher median and mean number of links per guide than chemistry or philosophy. Possibly the higher median for journalism could be attributed to the fact that journalism guides often listed local and national newspapers and other media outlets that were not relevant for the other two subjects. The highest number of links in a guide for any of the subject areas was often the result of a guide listing all disciplinary journals in that library's collections. When this happened, the count of links for that guide rose significantly.

Table 2 also shows the count of links in each subject that were cited by only one library. These numbers are fairly high and lend credence to the argument that each library tailors its own guides to its curricular and research needs. In each subject area, a large majority of URLs had only been selected by the creator of one guide—80 percent for chemistry, 75 percent for journalism, and 78 percent for philosophy. There were a few guides that created value beyond their own institutions by offering a unique (and generally well-maintained) set of links. These were guides that other libraries linked to as well, since they served as portals to very specific sets of information in a field (see Huber's Chemistry and Biochemistry guide for the UC Santa Barbara Library that includes a comprehensive list of professional chemistry societies in the United States and worldwide).³⁹

For similar reasons, the authors were also interested in the number of local links used in subject guides. "Local" links were defined as those linking to resources or departments within that library or its host institution, or to resources within the same community or state. A large percentage of links in each subject area were local (40 percent in chemistry, 21 percent in journalism, and 32 percent in philosophy), supporting claims that guides are customized to meet the needs of the local community. There was a large overlap between local links and URLs linked by only one library. However, some resources that counted as local for one library, such as ThermoDex, the University of Texas Libraries' locally created index to resources in thermodynamics and physical properties of materials, also were linked by other libraries' guides—24 of them in the case of ThermoDex.⁴⁰

Table 3 shows comparisons of data from the 2002 study and the present study. The 2011–13 numbers for the median and mean number of links per guide for each subject area have increased from the 2002 numbers. This could be a result of the ease of updating guide information, especially using database driven systems or LibGuides.

Table 4 shows the total numbers of links, and the links unique to each library, for each subject area in 2002 and in 2011–13. Again, there are increases in the numbers of links in 2011–13 compared to 2002.

The percentages of dead links have not varied significantly since the 2002 study. In fact, the percentages of dead links in the chemistry and journalism guides have increased somewhat—from 4.0 percent to 6.3 percent for chemistry, and from 6.0 percent to 7.5 percent for journalism. However, in philosophy, there is a huge decrease in the numbers of dead

Table 3. Number of links used per guide: 2002 and 2011–13

	2002	2011-13
Chemistry, median	43	88
Chemistry, mean	79	141
Journalism, median	56	105
Journalism, mean	97	151
Philosophy, median	37	77
Philosophy, mean	65	77

links in the current study compared to 2002—from 15.0 percent down to 4.9 percent. It is interesting that in 2002 there were many more dead links in the philosophy guides, but in the current study the percentage of dead links comes closer to the other two disciplines. Overall, the percentage of dead links in the guides is discouraging. Granted, there were some guides with no dead links at all, indicating meticulous care with the upkeep of those guides. Still, there were several other guides with more than 10 percent dead links (see table 2), and one guide had 58 percent dead links. Perhaps the LibGuides link-checker has lulled its guide creators into an erroneous assumption that the bad links being caught by the system are the only bad links.

The authors also tracked some of the types of resources in the subject guides. All of the guides listed at least one index for the subject; many listed multiple indexes. Forty-three percent of the guides linked to at least one individual ejournal. For 26 percent of guides, individual journals were not listed, but aggregators or publishers of journals (such as JSTOR, ACM Digital Library, Springer, or ScienceDirect) were, making a total of 69 percent of guides that linked to ejournals in some way. This is a slight increase from 62 percent of guides in 2002. Links to individual ebooks were included in 85 percent of the observed guides, and another 4 percent of guides did not link to specific books but did link to ebook packages. This is a large increase from the 56 percent of guides linking to ebooks or ebook packages in 2002, and indicates that libraries are subscribing to more ebooks than in the past and that librarians are using guides to help promote them.

What were the most popular links in each subject area? Table 5 shows that indexes are the most common choices for librarians to include for each subject. For chemistry, *SciFinder* is the big winner. *Communication and Mass Media Complete* tops the list in journalism. Philosophy's top link is to *Philosopher's Index*. Other popular resources run the gamut: handbooks, company and industry sources, local library catalogs, and encyclopedias.

SURVEY RESULTS

The ten-question 2013 survey sent to heads of reference yielded 32 replies. (See appendix for survey questions.) Participants were also invited to include comments with the

Table 4. Numbers of guides and links: 2002 and 2011-13

		2002	2011–13
Number of libraries with guides in the subject area	Chemistry	95	98
	Journalism	78	70
	Philosophy	98	92
Total Distinct URLs linked in subject	Chemistry	3,577	4,834
	Journalism	2,381	4,053
	Philosophy	1,107	2,430
URLs unique to one library by subject	Chemistry	2,489	3,845
	Journalism	1,734	3,058
	Philosophy	724	1,898

Table 5. Most frequently occurring links

Subject Area	Internet Resource	No. of Libraries Linking
Chemistry $(n = 98)$	SciFinder	78 (80%)
	Web of Science	74 (76%)
	CRC Handbook of Chemistry and Physics	67 (68%)
	Reaxys	64 (65%)
	NIST Chemistry WebBook	59 (60%)
Journalism $(n = 70)$	Communication and Mass Media Complete	56 (80%)
	LexisNexis Academic	53 (75%)
	Ethnic Newswatch	37 (53%)
	Vanderbilt Television News Archive	33 (47%)
	Factiva	33 (47%)
Philosophy ($n = 92$)	Philosopher's Index	88 (96%)
	Stanford Encyclopedia of Philosophy	80 (87%)
	JSTOR	65 (71%)
	Local online catalog	61 (66%)
	Routledge Encyclopedia of Philosophy	47 (51%)

survey answers, and many questions drew comments from more than half of the respondents. All 32 responses came from libraries where librarians develop research guides in subject areas relevant to their responsibilities. One respondent noted, "They develop guides both in their own areas, and in collaboration with others to support interdisciplinary research and to bring the print and digital resources of the libraries into focus." Several other comments referred to course guides or guides on multidisciplinary topics. One library was using subject guides at the time of the survey, but moving to replace them with course-specific guides.

Twenty-three (72 percent) of the respondents noted that their libraries are using LibGuides as the platform for their subject guides. This percentage is almost the same as the examination of the guides revealed (71 percent). A few libraries (9 percent) are using LibGuides for some guides and another specialized content platform for others. Some (13 percent) decided to use other platforms such as Library à la Carte or

Course Tools, and the two remaining libraries were not using a commercial product for their subject guides.

The most common reason given by survey respondents for using a specialized content platform for subject guides was ease of use, mentioned by 20 (87 percent) of the Lib-Guides users. At one library, "the platform is so well liked and successful that our plans are to move most of our standard web content to the LibGuides platform and distribute web maintenance to content owners system-wide." Other reasons given for using LibGuides included having consistency among guides (six responses), the ease of reusing content (five responses), giving more control to the subject librarians responsible for the guides (five responses), and the ease of updating them (five responses). Affordable cost, good customer support, and availability of use statistics were mentioned as reasons to select LibGuides by a few respondents. Reasons for not choosing LibGuides were given by a single respondent each: incompatibility with a local course

reserves system, limits to customization, and uncertainty of the long-term success of the vendor.

Users of non-LibGuide systems also gave their favorite features of those systems, e.g., "We use Course Tools because it's so scalable and it puts the resources into the students' course management environment" and "we will be able to do more with the information as we build our guides in our Drupal CMS . . . share them with Discovery Services . . . incorporate the information collected within those guides throughout our site, providing contextual information as our users do their research." One CampusGuides user also gave "ease of use" as a benefit.

When asked if their library used a template for the format or content of subject guides, eight respondents (25 percent) said yes, nine (28 percent) said no, and the rest (15, or 47 percent) indicated that their libraries used templates, but very basic templates that did not give much if any guidance as to the content to include. A fairly typical response was "individual librarians have the flexibility to deviate from the templates depending on the topic of the guide." Some respondents considered use of LibGuides itself the same as using a template. The authors did not count "using LibGuides" as indicating use of a template unless the respondents noted the use of some additional guidelines for format or content. Some libraries without templates were in the process of developing guidelines to provide consistency. Eight respondents commented that guides for different subjects or purposes should have differences in presentation. The guide analysis for this study shows that all of the guides examined at least identified the host institution. Many times, guides at the same institution had recognizable similarities such as layout, local links to the catalog, and database lists. Some obviously had strict templates that were used for every guide produced by that library. Though the literature tends to favor consistency among guides of an institution, in practice, based on both observation and survey responses, most consider branding, or identifying the institution, and basic guidelines adequate for their purposes.

Most (88 percent) of the respondents noted that their libraries keep usage statistics for their subject guides. The comments for this question showed that the extent to which these statistics are used varies—they may be checked only by the librarian responsible for the page, they may be downloaded on a schedule, or they may be compiled into formal usage reports. Six commenters indicated that their libraries use Google Analytics for this purpose, frequently combined with the statistics feature of LibGuides. Two respondents (6 percent) indicated that their libraries did not keep statistics, and two noted that their libraries record these statistics occasionally but not systematically. Thus, though more libraries are noting usage statistics than in the 2002 survey (67 percent), the range of importance of these statistics seems to remain the same.

Dead links were found on most (82 percent) of the analyzed guides; because these are frustrating for the user and embarrassing for the creator, link checking is a key issue in

guide maintenance. The present survey asked about the processes libraries use to check links. Thirty of the respondents (94 percent) indicated that their libraries use a link checking program of some sort. However, only six respondents (19 percent) indicated that links were checked regularly—and one of those was at one of the two libraries where all link checking was done manually. Twelve respondents (38 percent) noted that links on their subject guides are not checked on a regular schedule, and the other 14 (44 percent) did not mention the frequency of link checks in their answers. One commenter noted, "Librarians are encouraged to review their guides at least once or twice a year and to test each link directly." This human link checking is important to catch links that no longer point to the intended content, but still point to a placeholder page that link checking programs do not indicate as broken. Even with its limitations, automated link checking can decrease the number of dead links; however, the observation portion of this study, finding the median percentage of dead links per guide to be 6.1 percent, indicated that many guide authors are not taking full advantage of even this tool.

In the extreme case, out-of-date guides can be removed. One survey question asked, "Do you remove guides which become outdated if there is no one to update them?" Twenty-two respondents (66 percent) said that this is always done, while five (16 percent) replied that this is sometimes done when all guides are reviewed. Two respondents (6 percent) admitted that outdated guides are not removed, while at the other extreme, three (9 percent) said that their libraries never have instances of guides without authors, since all guides are reassigned immediately. One comment noted "typically they are un-published rather than completely removed," a feature allowing for later updating and reuse of a guide, while still removing the guide from public view.

Since developing subject guides is part of many librarians' position responsibilities and can take a great deal of time, an important question was whether librarians' evaluations were influenced by the quality of their guides. Half of the respondents (16 or 50 percent) indicated that this was not the case at their libraries—very close to the percentage responding "no" to this question in the 2002 survey (51 percent). For the other half, only five (16 percent) answered with an unqualified yes. "Copies of the guides are routinely included in everyone's review files" was a comment from one of these. Four commenters (13 percent) noted that the presence or lack of guides affected evaluations, but that quality of guides was not considered. Seven respondents (22 percent) indicated that there were some circumstances when the quality of guides affected a librarian's evaluation, though guide quality was not regularly a component of evaluations; for instance, librarians with new guides, extensively revised guides, or high use statistics for their guides would be more likely to point out their guides for evaluation. What Jackson and Pellack observed in 2002 is still found today: "All this work [that librarians do to create guides] is only minimally considered in librarian evaluations."41

One new question added to this survey dealt with the perceived level of promotion that subject guides receive from libraries and librarians. Twenty-one respondents (66 percent) felt that guides at their libraries receive adequate promotion, while seven (22 percent) thought guides are not promoted enough. Four respondents noted that the level of promotion varied, and that while some librarians showed off their guides well, others within the same library system did not. Means of promotion included using guides in instruction, working with liaisons in academic departments, featured positioning on library homepages, and outreach through social media.

The final question was "Do you think creating and maintaining these guides is worth the time and effort they require?" None of the respondents answered this question with "No." Indeed, 21 (66 percent) gave positive answers, sometimes showing great enthusiasm for the value of these guides in their libraries. Comments to this effect included "when I see the large usage numbers some of the guides are seeing, it feels gratifying and shows they are filling a need," "we create guides at faculty request and know that [they] are valued," and "we have received grateful feedback from many students and faculty. The guides are a big help to them both to focus their research and to discover tools they didn't know the Library had."

However, eleven respondents (34 percent) answered this same question with, in essence, "maybe" or "it depends," discussing how some guides were used much more than others or expressing concerns about user engagement with guides. Responses here included, "At times yes, and for certain guides, but I have a feeling that many are not used, and not worth the effort" and "Making users aware of research guides is a challenge." One thoughtful comment included this advice:

a large number of guides are too long, too dense, and not particularly user-friendly. Librarians spend a lot of time carefully compiling exhaustive amounts of information, but they could use help packaging it for consumption. Using a CMS lowers the technical barriers to web publishing, but we sometimes forget that there are important non-technical aspects of creating great guides. Librarians need to become more familiar with principles of user-centered design and best practices in writing for the web. With staff training, editorial guidelines, and usability testing, we hope we can improve user experience with our research guides so students will get more out of them.

CONCLUSION

The intent of the present study was to update the research done by Jackson and Pellack on library research guides in 2002, and to analyze changes that have occurred since then. In several areas, practices have remained the same. For

instance, access to guides from the library's main website has changed very little. A majority of libraries do include direct links to their subject guides. However, based on usage statistics and some librarians' comments, the names used for these links do not resonate well with users, both then and now.

Some differences between the studies show trends emerging from the growing use and sophistication of technology. Notable is the separation of guide creation and revision from the functions of Information Technology (IT) and Technical Services (TS) staff. Even where guides are not created with a platform such as LibGuides, many are built using content management systems in which librarians can input new resources to a system using a template and guides can be created "on the fly." Even with the ease of updating, outdated links are still found on many guides. The arrangement of resources in alphabetical order (61 percent alphabetical in 2002, 21 percent in the present study) is less common and seems of less importance today, given that so many databases and search engines display their results in relevance order. Eighty-five percent of guides in 2011–13 contained links to e-books, up significantly from 2002.

Some of the survey answers were similar to responses from the 2002 survey. In each survey, all the respondents indicated librarians are expected to create and maintain guides for their subject areas. Whether or not librarians' evaluations are influenced by the quality of their guides has not changed at all over the past ten years: about half of the respondents said that guides did not have an impact on librarians' performance reviews. A majority of respondents in both surveys judged that having librarians create and maintain subject guides was worth the time and effort involved.

There were, however, some important changes since the 2002 survey. Some of them are the result of the high use of LibGuides. In 2002, 54 percent of the libraries used automated link checking; in this study that number has risen to 94 percent, partly because LibGuides offers automated link-checking. However, the percentages of dead links have not varied much since the 2002 study. Unfortunately, until librarians can be sure that such mechanisms do indeed register every link that is wrong, human intervention is necessary. An increase was seen in the number of libraries that check statistics on usage of guides—from 67 percent in 2002 to 88 percent in 2013; it is not clear how these statistics are being used

The present analysis of guides and survey of reference leaders in ARL academic libraries in the United States has shown many changes in the creation and use of guides in the previous 10 years. Even more important, it has shown that librarians continue to believe that one of their essential responsibilities is to lead researchers to the best resources for their needs. Fundamental problems still remain; quality, both in the selection of resources and in the editing of the guides, remains an issue. However, it seems clear that library subject guides will not soon disappear from library websites, and that there will continue to be much written in the library literature about them.

The authors of this study feel that the research about library guides needs to address several themes that so far have little mention in library literature. There is very little research on the assessment of subject guides or on the role of guide creation and maintenance in the work of the librarians who create them. A future survey could explore this area in more depth. More information about the ways in which students use subject guides is definitely needed. What pages or categories within subject guides could be eliminated? What category names would encourage student use? How many categories or resources are too many? What would be the best way to call attention to what "Subject Guides" or "Research Guides" or even "Course Guides" are? Research about the success of social media to promote guides, preservation of different versions of guides, and copyright of guides is needed. The literature on library subject guides is rich, but each new study opens doors for more, useful research on the subject.

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APPENDIX. RESEARCH LIBRARY SUBJECT GUIDES SURVEY QUESTIONS

- 1. Do librarians in your institution develop e-resources/ subject guides pages in subject areas relevant to their responsibilities?
- 2. How do you ensure the validity of the links on your eresources/subject guides pages? Do you use automated link checkers?
- 3. Do you have a template for the format/content of your subject guides?
- 4. Are librarians' evaluations influenced by the quality of their guides?
- 5. Do you keep statistics on the use of these pages?

- 6. Do you remove guides which become outdated if there is no one to update them?
- 7. Do you think creating and maintaining these pages is worth the time and effort they require?
- 8. Do you use LibGuides or another specialized content platform to host and edit your guides?
- 9. What are one or two reasons for the decision to use or not use such a system?
- 10. Do you feel your librarians adequately promote the use of the guides to your community?