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The Interactive Research Guide: Will Function Bring Users Content? A Project Model Illustrated by a Proposed Paper-Writing Guide

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Introduction

In making the move from print to the Internet, research guides (or pathfinders, or subject guides) have seen great benefits. From increased usage to ease of maintenance, Web-based subject guides have seen advancements associated with content management. While this shows progress the emphasis there has primarily been on streamlining the original process for guide creators.

Users, however, have not seen as many advancements developed for interactivity. Simpson, Williams, Arlen, and Bushnell state: "The true heyday of subject guides could likely be on the horizon with the advent of course management software (CMS), federated search engines, and the creative application of technologies" (34). One "creative application" the authors directly cite is the "Server Side Include" which Northrup, Cherry, and Darby (2004) used to maintain dynamic link management (example: a vendor changes their database link, and the librarian updates a simple file to correct the link in *all* of their subject guides). This is, again, a librarian's benefit (cuts down work time) which is advantageous for guide users (the links are made to work quickly). Despite the limitation in the example, I feel that Simpson et. al. are advanced in their vision in that creative applications of technology can be used to enhance not only the guides, but also the purpose of the guides. Once a library has created and maintained a robust collection of research guides, a simple index is impressive, overwhelming, and full of potential. Focus, then, should switch from "What is the user looking for?" to "Why is the user looking?" By focusing on the function being accomplished and utilizing dynamic Web-based technology, it is possible to shift the focus of the research guide to accomplishing the function while accessing the information needed. To illustrate this, I have created a project called "The Ten Minute Paper Guide" for Johnson County Community College (JCCC), which I will dissect for a better understanding of what research guides could potentially become.

History and use at JCCC

As Carla Dunsmore points out, libraries saw an increase in collection sizes and community literacy at the beginning of the 20th Century, the result was "increasing numbers and complexity of finding aids," which resulted in the publication of "finding lists" (Dunsmore 138). Dunsmore's research then shows that Mary Canfield's 1972 paper, "Library pathfinders", was perhaps the first to name the tool and define them as topic-specific reference guides and for use as printed handouts, only meant to assist in the beginning of the user's research (139).

While early days of pathfinders found that libraries were willing to purchase pre-made guides directing users towards starting points, the modern library has found an online home for subject guides, often with the purchased product being only the framework to contain original guide material. Web services such as LibGuides (http://www.libguides.com) have offered an integrated suite of tools, features, and

format for holding an institution's created guide output. While interactive features such as user-contributed comments, chat-reference, an embedded Google Book tool, and Really Simple Syndication (RSS) Feed implementation can all be implemented, the goal of getting to the end product is not always fully accommodated. For example: JCCC's Billington Library has a research guide collection of annotated bibliographies, all pertaining to different fiction genres. They also have topical guides on things such the election involvement, regionally and nationally. To find any of these, however, one must know how to navigate the library's homepage (http://library.jccc.edu), and are presented with the single link, "Research Guides". Beyond that obstacle, the user can also remain unaware of their potential because a) finding them may reveal an outdated process guide (perhaps an MLA guide that is unrevised), or b) finding them puts users in an active researcher role where time dedicated to the guide will be based on the value of the title, or perhaps a small abstract.

Function

There is not a formal step to conclude what should be done next. As cited previously, Simpson et. al. point out that as Web technologies are now provide guides potential in their integrations, it seems that guides are at a turning point. LibGuides, again, is an example of successful integrations of these technologies. While features within LibGuides include popular social Web services, they have created Facebook applications, widgets, and instant Twitter feed updating, all of which are for use outside of the guide pages. These serve as progressive promotional tools, and perhaps these can lead users to the fact that they exist.

The discovery of resources in this manner, however, is still not guaranteed to come at a useful time. On the topic of subject guides, Meredith Farkas wrote, "If we can understand [user] information-seeking behavior and put ourselves in their path, right at reach, we'll be much more likely to have an impact" (2007). The "path" in question here could be the user's topical need as they enter, but a patron suffering from over exposure to library resources might not best be served by a continually growing list of things to be looking for. Instead of trying to serve the "what they are looking for," maybe the zenith of research guides which Simpson et. al. can see is when we can instead ask, "Why are you looking?" In fact, in their paper about creating entries for subject guides in an institution's OPAC, they state that "future research should investigate the usage of subject guides across disciplines and user groups, particularly in relation to the various retrieval mechanisms" (Simpson 41). How a person in need of accomplishing a certain task goes about retrieving relevant information is what should be focused on. An institution's Online Catalog is, by definition, its resources indexed. It seems like a good place to look.

But is this indexing helpful to their queries? Will someone, for the sake of argument, search a catalog with terms like "how to write a paper," or will they search for the paper's topic? While it is not absolute that the subject guide based on paper writing will be skipped over, it is a plausible scenario, not to mention potential guides written about APA and MLA formats, etc.: The focus on where access happens cannot always guarantee results. Nonetheless, the initial statement it is true: research into how users can access subject guides is necessary. Letting the function control the access points, however, may assist users finding the appropriate materials

Despite focus on access, others research has been done on quality of content. In "Was this guide helpful?" by Courtois, Higgins, and Kapur, the authors evaluate recommendations and implement a survey tool into subject guides at Gelman Library (George Washington University). "The survey also revealed a fundamental problem: many users did not consider guides to be helpful" (195). The authors also reveal that previous research had suggested creating guides which are course specific. While maybe I have mistaken the suggestion, it appears that the end product would be that course's guide, and not necessarily a guide on content which is covered in that course ("English 101 Guide" instead of "Guide to Early 19th Century British Authors", for example). If I do understand this correctly, more students from the course may use it, but a resource which may be relevant to many groups of people is then pigeonholed by a label.

The available research has led me to believe that the idea of the research guide is not only at the point where purpose and access is ready to develop, but is also ready for a more interactive approach to use. If librarians could look at what their patrons are trying to accomplish instead of directing them towards indexed resources, then maybe a type of guide is ready to be developed that evolves a catalog or research guide. The solution does not appear to be to dissolve the old format of guides, but rather to integrate them into a tool that serves the purpose of interaction, promotion, and providing content. To capture this aspect, one can observe the function of a project Johnson County Community College is developing: an interactive guide that acts as a resources-and-methods research tool for students writing papers.

Paper Writing Guide

Johnson County Community College is in a unique position to further support user research. The institution's Billington Library hosts a great deal of high quality librarian-created content, and maintains a positive relationship with vendors who provide access to subscription services and resources. With an acknowledgement that this is a blessing not taken for granted, the opportunity is ideal to combine available resources into an interactive research guide.

Resources for the Guide

These are the sources currently proposed to be incorporated for the paper guide.

Serial Solutions 360 API – Serial Solutions 360 Search, formerly Central Search, is a federated search engine. It combines many of the databases JCCC subscribe to into one, convenient location that requires one query. One search field would ideally cut down research time as well as map to the mental model users have developed from popular search engines. It comes with a default search format, but the results and feelings toward the product have been mixed.

Recently, the vendor released the Application Programming Interface (API). The API can return a service's data in a format which can be integrated into custom interfaces for different purposes. For a developer to utilize the 360 API, a non-disclosure agreement must be signed, prohibiting a discussion of the finer points of its inner-workings. The function of the API, though, is quite public: to search multiple library database subscriptions and return one result set.

JCCC Catalog API – Johnson County Community College uses an Ex Libris Voyager-based catalog. An API does not formally exist from Voyager, so one was created by the author to use across resources. While this may involve some "dirty" screen-scraping techniques and URL manipulation, being able to integrate the Catalog

Meebo Chat Reference Widget – This Instant Messaging (IM) tool can be embedded into web pages, allowing users to communicate in real-time with librarians.

LibGuides API – The Library decided to purchase LibGuides after realizing that using an open source CMS for subject guides with equal functionality was not realistic. The staff necessary for a reasonable implementation timeline is simply not there.

The API LibGuides has developed, as well as their openness to suggestions for it, allows for relevant guides to be returned based on the search terms. The hyperlinked names of these guides can then be returned in a number of formats.

Code in development

While the resources listed thus far are preexisting, certain technologies will have to be developed internally. Linking the above resources require an interpreted search. Interpreting user searches should be a paramount concern for digital library research, and while user error is cannot be 100% eliminated, measures can be taken to assist.

In order to aid in the search process, programs facilitating the following were created:

Truncation – In order to ease the burden of the user, truncation algorithms are to be placed within the system. While this may yield a few additional unwanted results, it has a greater potential to include results accidentally skipped. Obviously, the efficiency will need tested to justify the extent to which it is used.

Stop-Word and Punctuation Elimination – This allows the system to eliminate words (the, an, a, etc.) and punctuation (periods, colons, unclosed quotes, etc.) from user entered queries which may cause errors in searches.

Quote Detection – While this is an extension of the aforementioned punctuation function, it specifically looks for phrases within quotes to retain the enclosed structure, while allowing all other words to be required, but without order.

How the guide is used

The following illustrates the added functionality with existing content and resources combines to help execute the function of writing a paper.

Step One: User chooses a category

After loading the Web site, a user selects the category they wish to search from a drop-down menu. The selection effects the article databases and subject guides that may be queried and incorporated.

Step Two: User enters text and submits

The text input field allows a user to enter what they are searching for. Since users are not expected to be expert searchers, there are many precautions to limit user error beyond the scope of most database features available at this early stage of the search process.

Step Three: User receives a set of results

After the terms have been appropriately formatted for the sources searched, the following sets of results come back:

- 360 Search – returns a list of articles, all full text.
- JCCC Catalog – if it can find supporting material, books will return here.
- LibGuides – Any relevant guides and bibliographies are retrieved and listed.
- Additional resources may be added later.

Step Four: User begins reviewing sources

Connected to every resource within every set of items are two features: The item titles are hyperlinked to the actual source, and a checkbox appears next to each of them.

As the user sees the results return to them asynchronously, they can immediately begin viewing the items. Clicking the title will target a new tab or window, making the resource viewable. While the catalog results cannot return the full book electronically, they do link to the relative catalog entry, providing call number, cover image, and item status.

Step Five: User makes selections

As mentioned before, each item is equipped with a checkbox. If the user decides that the information they reviewed is to be used in their paper, they simply click the checkbox, and the item is placed into a bibliographic collection module within the screen space. All of the bibliographic information follows the item, and is stored with a session ID into a database. The option for item removal is included with a checkbox for removal in the bibliography module.

Step Six: User reviews checklist

A helpful list of tips is generated for the user. Each item must be checked off before they can export their bibliography. Questions ranging from, "Do you have a clear thesis statement?" to "Did you cite the works listed in your bibliography?" Once all have been checked, the bibliography has an export option enabled. An option to print the checklist is also made available.

Step Seven: User exports the bibliography.

When finished with the paper guide, the user can export their bibliography. Ideally, there will be multiple formats (MLA, APA, etc.). Now that the user has been through the steps of making a paper, which a standard research guide can do, they've used that same guide to actively build their bibliography with resources the guide adapted for them in real-time.

While not a perfect system, this is an interactive method of not just listing how to go about writing a paper, but engaging the user while they are finding resources and forming the actual paper.

Current Development

As of August 2008, the infancy of the 10MPG is developing faster than anticipated. Currently, the topic category feature, the submitted-text interpretation is in place, and the catalog, articles, and subject guides are all being searched and returned. There are adjustments to the LibGuides API which LibGuides owners, Springshare, are graciously assisting Billington Library with, and the styling for all three resource groups is currently not conducive for a user interface. The biggest omission, and what I knew would take the longest development cycle, was the bibliography builder. When this is implemented, some of the minor problems can be repaired as it sees early introduction into library use.

Another minor setback is that Web servers are currently being upgraded. Currently, the pages use ASP, XML, and the Prototype JavaScript Library. Ideally, a more modern programming language, or a set of languages and technologies which interact more easily, will be used, but the state of the server prohibits this from happening.

Iteration 2

When everything is in place, I would like to see about the possibility of either incorporating a Web-based word processing component, like Google Docs, or perhaps converting it into a browser plugin which lends itself to a Google Docs user. As there are many types of papers, integrating more or different resources based on the type of paper in conjunction with the subject will need to be addressed. Since there is already movement at JCCC to organize user studies of the first iteration, feedback will be readily available for creating additional features or suppression of currently-planned components. Since teachers in different disciplines have committed future class time to experimenting with 10MPG, the function of writing any paper will stay the primary focus of the guide, no matter what that paper may be.

Future Guides

For ideas on other guides, one can turn to the functions of JCCC student life. The Mathematics Department already hosts a number of software programs which can be used to calculate different kinds of problems. What can be done to integrate them all, and what library resources can be tied to them to support the function? Should a separate guide be made for presentations? Many students are just now of a voting age: making and Election guide tied into registration, volunteer, campaigns, and other opportunities and resources may prove beneficial. A study into student assignments and departmental studies is another paper itself, but one that may be necessary to gauge how we can better serve our population.

Conclusion

Writing a paper is a task frequently required of academic library users, so the usefulness of an interactive guide model will be measured by JCCC with the reaction to the paper guide. Per institution, the number of functioning guides and tasks they perform should be determined by access to resources, the ability and knowledge of programming and Internet technologies, and the ability to afford the effort and possible subscriptions/services which may be incurred.

As digital formats of guides and resources continues to take the place of print, and as the ability to achieve these resources becomes cheaper and more commonplace, the need to focus on function will become critical for the ease of resource discovery and utilization. In a time of tight budgets, limited staff, resources and time, libraries cannot pay for under-utilized resources. Our Library is in a unique position to leverage many existing, high quality resources that will provide our students with library materials when and where they need them. This opportunity, along with future interactive guides based on function, can complement existing public services libraries provide, furthering their endeavor to enhance users research skills.

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