

Usability Test Report: Research Guides

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[Background](#)

[Study Design](#)

[Metrics Collected](#)

[Research Questions](#)

[Participants](#)

[Undergraduate Participants](#)

[Graduate Participants](#)

[Results](#)

[Tasks](#)

[X's and O's Exercise](#)

[Key Findings](#)

[Recommendations](#)

[Critical](#)

[Highly Recommended](#)

[Implementation](#)

[Appendix A: Research Guides Test Script](#)

[Appendix B: X's and O's Assessment](#)

[Appendix C: Rainbow Spreadsheet](#)

Background

In collaboration with the LibGuides Working Group, Lindsey Sprague conducted a study to measure the usability of the Research Guides at J. Murrey Atkins Library

(guides.library.uncc.edu). Between 9/18/18 and 9/26/18, we conducted usability tests with 7 total participants: 5 undergraduate students and 2 graduate students.

Study Design

This study used task-based analysis to assess the learnability, efficiency, memorability, error-tolerance, and user satisfaction with the current design of the Research Guides on the library website.¹ Participants were asked to rate the ease or difficulty of each task on a scale of 1 (very easy) to 5 (very difficult) after completing the task. After the task-based testing, users were shown three different screenshots of guides and asked to draw a circle around the content they found useful or valuable, and to draw an X over any content they would not use or did not find valuable.

4 of the tests were completed in Atkins 139B, and the remaining 3 tests were completed in Atkins 246B. Lindsey Sprague moderated each of the tests, managed streaming and recording technology, logged start task and end time, task success rate, user paths through the website (clicks), and recorded qualitative observations including facial expressions, comments, and questions. Users were asked to think aloud during the usability tests, describing their reactions to the website and motivations for clicking on certain items.

For the 5 undergraduate tests, we created observer labs in Atkins 123 and 258 where library faculty and staff involved in creating or maintaining Research Guides were invited to observe the tests, record notes, and share observations. The observer lab was connected by video and audio to the testing room. Observers could view participant screen activity, see participant facial expressions, and hear user comments and think-aloud commentary. Observers were instructed to make notes of anything interesting they noticed during the tests, particularly points where the user was confused or could not complete the tasks. After each test, Lindsey debriefed with observers.

Metrics Collected

Quantitative:

1. Time to complete task
2. Task completion (success) rate
3. Single Ease question ratings
 - a. User ratings of the task difficulty on a scale of 1 (Very Easy) to 5 (Very Difficult)

Qualitative

1. Observations of body language and facial expressions
2. Participant questions and think-aloud protocol comments
3. X's and O's exercise data
 - a. What participants found useful and what they said they would not use on the three screenshots of research guides.

¹ <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>

Research Questions

Based on knowledge shared during the initial project kickoff meetings with the LibGuides Working Group on 5/16/2018 and 6/21/2018, the following questions guided the design of this study:

RQ1) How do users locate information within the guides?

RQ2) How do users find and access the guides initially? What is the user flow from the homepage to the final action (locating a resource)?

RQ3) How do users interact with the tabbed navigation within guides?

RQ4) Are users able to return to the research guides after navigating away from them to complete tasks?

RQ5) What do users think of the layout and design of the research guides?

RQ6) Where do students turn for help if they encounter a question or problem?

RQ7) What improvements can we make to the overall layout and look and feel of the guides?

Participants

We tested with a majority of undergraduate students because this group uses LibGuides more frequently. Of the most visited research guides (those with 500 or more views) that map to a specific course, 16 of the guides are for undergraduate level courses whereas only 1 of the most visited guides maps to a graduate level course. This tells us that the heaviest users of research guides are most likely undergraduate students. Among the guides with 500 or more views are databases by discipline and introductory subject guides.

This ratio of 5 undergraduate to 2 graduate students also reflects the student body at UNC Charlotte, with 23,914 undergraduate students and 5,403 graduate students. We screened participants using a survey in order to study a broad spectrum of users with diverse representation in regards to college, major or field of study, gender, age, race and ethnicity. We recruited undergraduate and graduate participants with digital displays in the library, social media posts, and a recruitment table in the student union. Our goal was to capture a range of perspectives and levels of library experience including at least two participants who are not regular library users.

Undergraduate Participants

Identifier	Year in	College/	Visits the library	Age	Gender
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	School	Major	website		
P1	Senior	Business	Often (multiple times a week)	22-25	Female
P2	Sophomore	Biology	Infrequently (only when required)	17-21	Male
P3	Sophomore	Special Education and Child Development	Once a month	17-21	Female
P4	Senior	German/ International Studies	Often (multiple times a week)	17-21	Female
P5	Junior	Mass Media and Communications	Never	17-21	Male

Graduate Participants

Identifier	Department	Visits the library website	Age	Gender (self-identified)
P6	Information Technology	Often (multiple times a week)	26-29	Male
P7	Counselor Education	Often (multiple times a week)	22-25	Female

Results

Tasks

1. What are participants's initial impressions of the Research Guides homepage?

The screenshot shows the J. Murrey Atkins Library Research Guides homepage. The header includes the UNC Charlotte logo, the library name, and links for Home, Contact Us, My Library Account, and My Interlibrary Loan Account. A search bar is located in the top right. Below the header, there is a navigation menu with options: ALL GUIDES, BY GROUP, BY SUBJECT (selected), BY TYPE, and BY OWNER. A search bar is also present with the text 'Search: Enter Search Words' and a 'Search' button. To the right, there is a section titled 'A-Z Database List' with a link 'Go to A-Z List' and a note: 'Full list of Databases the library subscribes to, including trial access.' Below the navigation menu, a list of subjects is shown, each with a count of guides next to it:

Subject	Count
African-American Literature	1
Africana Studies	8
American Studies	5
Anthropology	2
Architecture	4
Archives	4
Art	3
Art History	2
Biinformatics	3
Biology	4

Figure 1: Research Guides Homepage

We intended to answer this question with Task 1. With the Research Guides homepage displayed on the laptop screen, the moderator asked participants, “Looking at this web page, what do you expect to be able to do here? What kind of information do you expect to find?” 6 out of 7 participants expressed varying degrees of confusion about the purpose of the page, or described what they expected to find using vague terms like “thing,” and “stuff.” They were unsure what exactly they could do using a Research Guide. Most participants focused on the list of subjects and ventured guesses about what they could find on the list. One graduate student said, “It seems like it’s by subject, so if I needed something for counseling I’d look under the counseling one, but I guess it depends on what I’m looking at” (P7). An undergraduate student said, “They have all the different categories that I might need...here there’s something under Sociology, there’s 14 different things I could look into” (P2). One student looked at the numbers next to the subjects that show how many guides are under that subject and said, “The numbers off to the side tell me how many of something but I’m not sure what” (P1).

Two participants remarked on the design of the page. An undergraduate student said, “Wow, this is really intense, there’s a lot of stuff here,” and another student said, “This honestly looks

like the 11th page of Google,” referring, candidly, to the results of a Google search that are typically irrelevant once a user gets to the 11th page (P1, P5).

On a positive note, one student said that she could find “resources for the class,” or “online stuff for the class that’s available through the library,” while another student said, “I’m assuming that I can search for specific sources that would help within my major” (P1, P4). Participant 2 also said, “this is very helpful.” Although some participants correctly identified the purpose of Research Guides, the majority of participants were confused about what they could do with Research Guides. The design of the current homepage was largely unhelpful in giving them clues about how they might use the guides.

2a. From the library homepage, how do users locate a specific course guide?

We intended to answer the question with task 2a: “[Starting at library.uncc.edu] You are a history major and you are writing a paper for your class HIST 2600: Roman Empire. Your instructor said the library has a research guide specifically for this class where you can find sources for your paper. See if you can find the research guide for this class.” 7 out of 7 (100%) participants completed this task successfully by locating the HIST 2600: Roman Empire course guide. Participants spent an average of 59.2 seconds completing this task, with the fastest time of 38 seconds and the longest time of 1 minute 38 seconds.

- **3 participants (42.9%)** completed the task by clicking on the “Research Guides” link in the Research box on the library homepage.

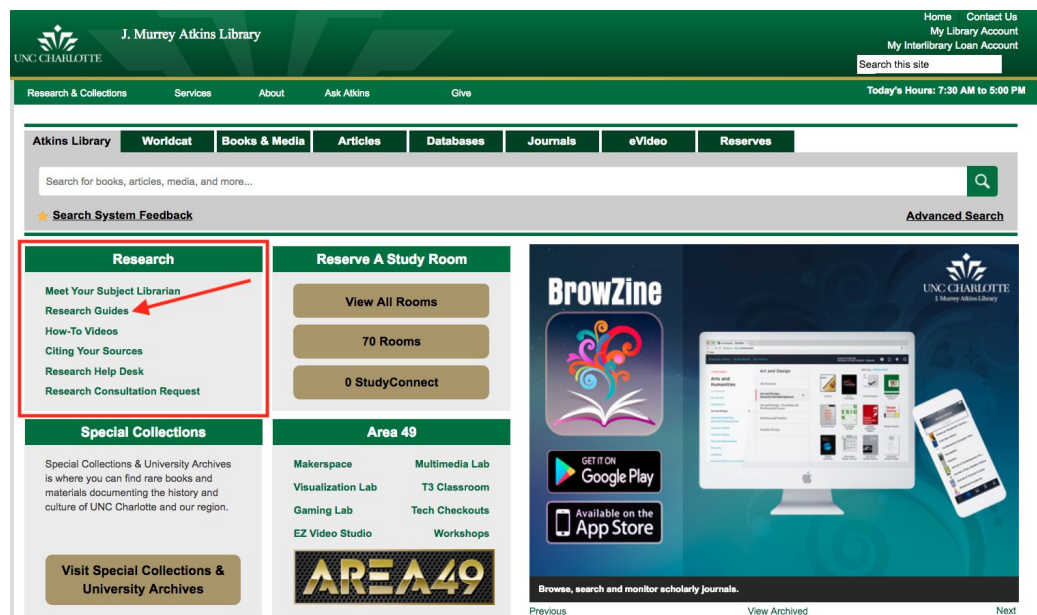


Figure 2: Link to Research Guides on the Library Homepage

- From this point, 2 participants located the HIST 2600: Roman Empire course guide from the history subject list. 1 participant used the search interface on the guides homepage to search for “HIST 2600,” and again for “roman empire.” She selected the second search result on the list. This took her to the Primary

Sources tab on the HIST 2600: Roman Empire course guide. She commented, “it says primary sources. That makes me think the more important ones are here” (P3).

- **2 participants (28.6%)** completed the task by using the Research & Collections dropdown menu and selecting Research Guides. From here, participants located the the guide on the subject list under History.

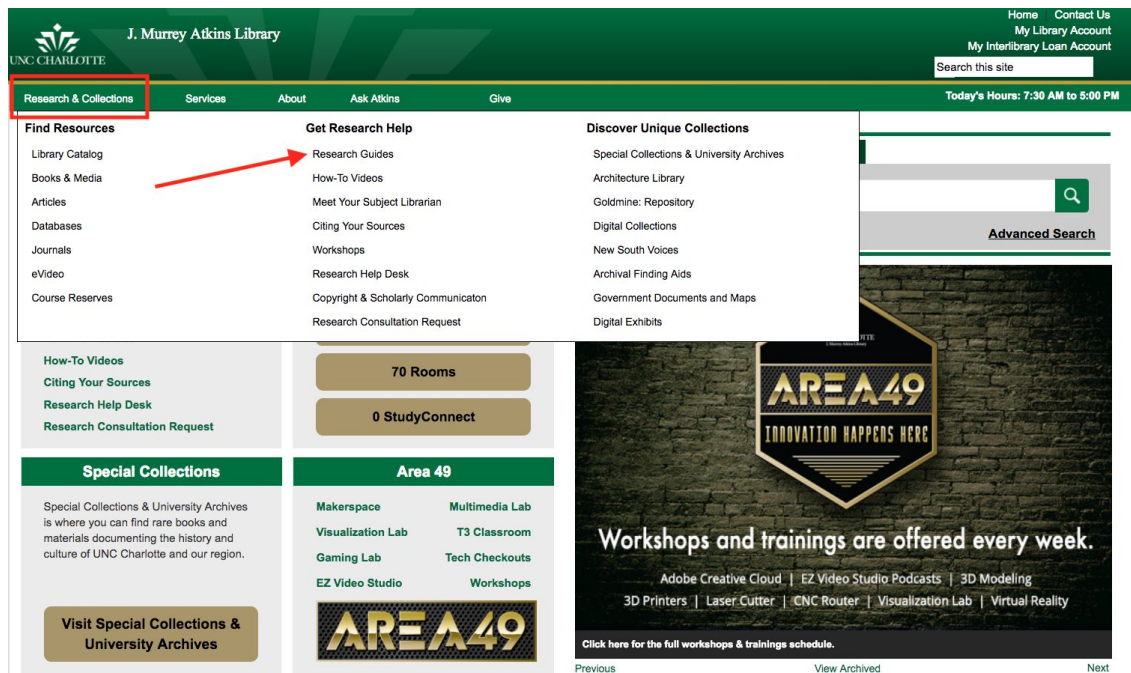


Figure 3: Research and Collections dropdown menu

- **1 participant (14.3%)** completed the task by using the site search in the upper right hand corner of the homepage.

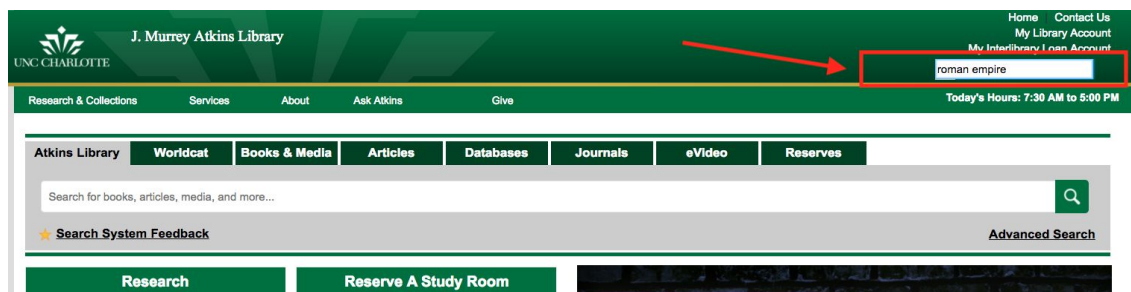


Figure 4: Participant 6 used the site search interface to locate the guide

- This graduate student searched for “roman empire” and clicked on the first search result, which took him to the “Primary Sources” tab of the HIST 2600: Roman Empire guide.

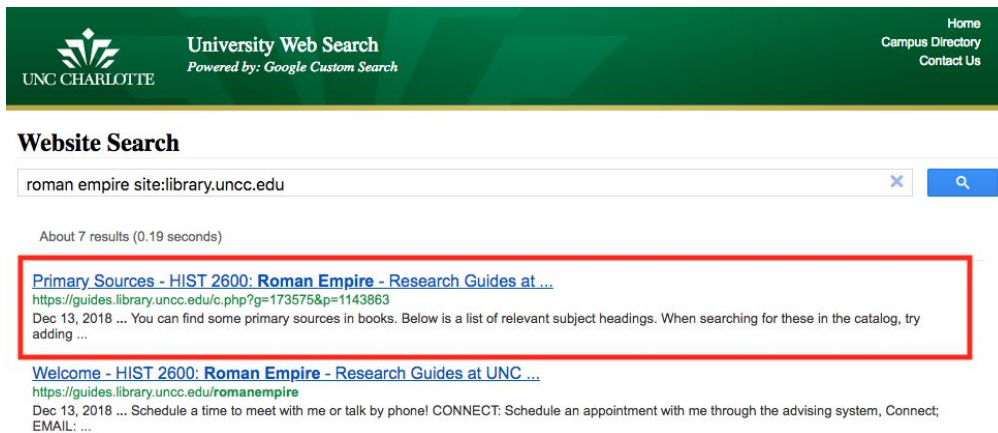


Figure 5: Site search results for Roman Empire

- **1 participant (14.3%)** used the databases tab on the homepage search interface to locate the HIST 2600: Roman Empire course guide. This graduate student clicked on “Databases by Subject” under the Databases tab.

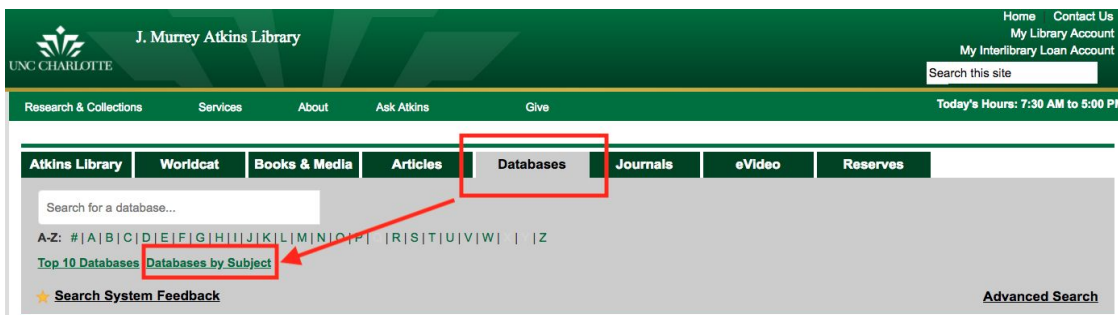


Figure 6: Databases by Subject

- From this point, the student selected “History” from the subject list and was taken to the History Databases research guide.
- On the research guide, she used the CTRL+F keyboard shortcut to find the phrase “Research Guide,” which she located in the breadcrumb navigation.

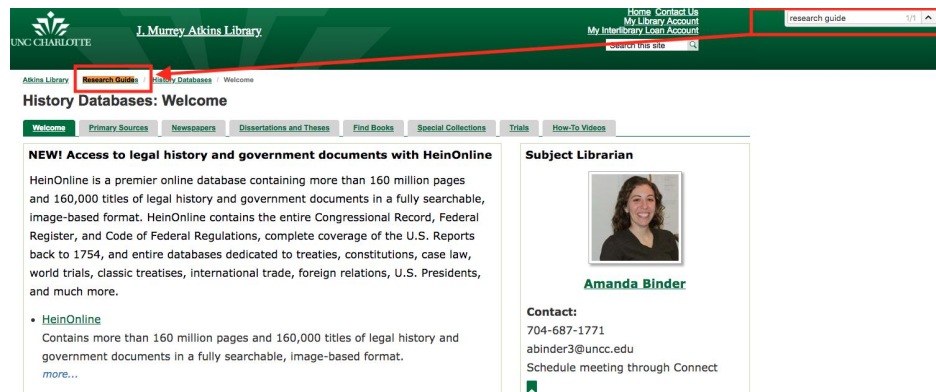


Figure 7: CTRL+F search for “Research Guide”

- From here, the participant was taken to the research guides homepage, where she selected the HIST 2600: Roman Empire course guide from the History subject list.

2b: How do users find a known resource when it is located in the left column on the first page of a guide?

We intended to answer the question with task 2b: “[From the HIST 2600: Roman Empire guide] Using this guide, please locate an encyclopedia on the Roman Empire. When you are finished, please return to the Research Guides homepage.” 6 out of 7 (85.7%) participants completed this task successfully. Participants spent an average of 36.2 seconds completing this task, with the fastest time of 1 second and the longest time of 1 minute 39 seconds. Participants found this task to be fairly easy. They rated the ease of Task 2 (parts a and b) as a 2.1 on a scale of 1 (very easy) to 5 (very difficult).

- **3 participants (42.9%)** found the

Task 3a: How do participants get from the Research Guides homepage into a subject-specific database? How do they choose a database from a list?

Task 3b: How do students use their selected database to locate a specific article? What are their search strategies?

Task 4: How do students find contact info for a specific subject librarian when they are unfamiliar with the subject and do not know the librarian’s name?

Task 5a: How do students locate a general subject guide from the Research Guides homepage?

Task 5b: How do students locate an unknown resource, using keywords as a guide, that is located in the third column of a page? How do participants interact with tabbed navigation in a guide?

Task 6: Starting from the Research Guides homepage, what are students's strategies for using the guides to select a relevant resource for a paper?

X's and O's Exercise

Key Findings

Recommendations

Critical

1. Disable and remove the search box within guides. It is misleading and causes users to make critical errors. Search from the homepage can remain, but placeholder text should be changed to alert users that they can search for a specific guide or subject.
2. Create a new homepage for the research guides that helps users understand what they are, what they can do with them, and how they might be helpful. Reduce the amount of text on the homepage and help users accomplish their goals by guiding them with meaningful headings, images/icons, and brief descriptions where necessary.

Highly Recommended

1. A maximum of 7 tabs per guide. Rationale: Users gravitate towards the tabs and find them to be helpful at navigation and distinguishing content when they are labeled effectively. However, more than 7 tabs causes cognitive strain when users have to distinguish between similar or unclear choices.
2. Adopt a two-column layout for general subject guides, with one main body column and a smaller side column for "help" resources like librarian contact information. Rationale: Users often overlook information in the side columns, scanning the middle column first and only looking at side columns after they do not find what they seek. Users tend to look to side columns when they do not find what they are looking for and need help. Side columns, therefore, are a useful location for help content including librarian contact information.
3. Develop a consistent look for general subject guides, and develop a model template that can be reused. Design recommendations for the first iteration of the subject guide template:
 - a. Break up text with images.

- b. Prioritize writing for the web; users scan content, they do not spend time reading every word.
 - c. Include a top, full-width box that includes “top resources” or “starting points” that contains 3-5 of the most valuable resources for the specific subject. This gives novice users a helpful starting point, and allows more advanced users to continue scanning if they do not find what they need in the top resources box.
4. For both subject guides and course guides, less is more. Users are confused by too many text-oriented boxes.
 - a. *Avoid the hoarder approach* to curating content in general subject guides: rather than keeping every resource jumbled together in a general subject guide, consider why each resource is in the guide and who it is serving. Users typically did not select a resource past the third option on a list, so consider why each resource is on the page and how it is helping your users.
 - b. *Remember the signal to noise ratio*. What is the message the guide needs to convey? Is it getting lost in the surrounding noise?
5. Users want to see consistent, professional-looking headshots on guides.
6. Add email contact info for librarians on all guides.
7. On the subject librarians page on the library website, add subject specializations (majors) under each librarian, or consider updating the page to display a table with a list of majors and the name and contact info of the designated subject librarian for each major. Users were unsure which librarian to contact based on current general subject categories.

Implementation

In collaboration with the LibGuides Working Group, we suggest the following ideas for implementing the recommendations above:

- Schedule training and work parties/edit-a-thons.
 - Host more frequent work parties as designated times for librarians to update their guides. Work parties can be focused on a specific aspect of the guides (updating links, removing old content, migrating guides to two-column format, reducing the amount of text on the page, etc.). This will allow librarians to edit and update their guides in more manageable, focused times.
 - Training on writing for the web
- Migrate one or two general subject guides to the new format and test with users. Get user feedback and make changes before implementing the format across all subject guides.
- Work with the UX Designer to create a more effective design for the Research Guides homepage.

