U.S. Government Documents

Columbia University
U.S. Government Document Resource Guides

User Test Report

by
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Executive Summary

The Columbia University Library Government Documents website is faced with the difficult task of representing an especially deep collection of materials within the holdings of a major research library. Legally mandated as a Federal Deposit Library, Columbia must provide access to these collections both to its student and faculty groups as well as the general public. The site currently approaches this task with a broad selection of subject guides, providing detailed lists of available resources.

Conceptually, this approach addresses users’ need to browse these extensive collections to identify resources they may not be aware of and access those materials, either on the Columbia website, physically in the Columbia Libraries, or elsewhere on the internet. However, the scope of these guides presents a difficult design challenge. Users must be able to quickly access these resources and do so in a way so that they feel confident that they have fully explored these collections.

With these goals in mind we make the following recommendations for the Library’s Government Documents site:

Simplify the Government Documents homepage, making the list of subject guides immediately visible to users
- At present the CLIO search bar and large header graphics draw users attention and users may then overlook other valuable resources
- Increasing prominence of subject guides will more clearly communicate to users the importance of the links

Simplify and expand labels and descriptions included with guides and individual resources
- Long lists of resources, particularly those using wide sets of vocabulary, are daunting for users and prevent easy browsing
- Providing unified descriptions and labels across all resources and guides will allow users to quickly understand and access information through this site

Convert HTML-only Subject Guides into LibGuides
- The basic HTML guides provide limited functionality for users, require extensive scrolling to locate resources and lack a search function
- LibGuides build in organization, searchability and provide a unified visual appearance that distinguishes the Subject Guides from other aspects of the library’s website
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Introduction

Government documents collections are, by nature, wide ranging and extensive sections of a Library’s holdings. From local and state to federal and international government agencies, all produce a wealth of materials that must be made accessible.

Columbia University (CU) currently provides access through a U.S. Government Documents portal, organizing these materials into collection guides organized by government level. As a Federal Deposit Library, Columbia is entrusted with enabling public access to a wide range of government documents. Because of this responsibility, with collections open not only to Columbia students, staff, and faculty but also to the general public of New York City, the library has a responsibility to make these resources available to users who may not be readily familiar with such research. Further, these resources exist in formats ranging from digital databases to microfiche, and the site must communicate where and how users may access these resources.

This study was commissioned by the CU Libraries to better understand how users interact with these guides, their preferred modes of browsing and search, how well they understand the information provided, and how the overall usability and interaction design impact users’ views of the site. To study these questions, and arrive at the recommendations for possible changes to the design of the site detailed in this report, a team of usability researchers from Pratt Institute’s School of Information and Library Science undertook a user test, involving eight participants completing two tasks on the site. The findings of this test are detailed in this report.
Methodology

This study utilized the user test method for usability research. This method utilizes real users and involves a moderator or team of moderators implementing the test and making observations. Users should be selected who are representative of a typical user of the website or tool. The test is performed in a lab or some kind of controlled setting, and the user and screen are often recorded while taking the test. In addition, users are encouraged to “think aloud,” which assists the researchers in making recommendations.

Before the test, a team of usability experts creates pre- and post-test questionnaires. The pre-test questionnaire includes questions about demographic information and similar experiences, and the post-test questions are about the user’s experience on the site. They also create a script for the moderator, which includes tasks that the user must try to complete. Additionally, the team creates a consent form which the user must sign, allowing the research team to use the recording of their test in the analysis of the website (Barnum, 2010).

After the user is welcomed and signs the consent form, they take the pre-test questionnaire and then begin the usability test. The moderator explains what they are tasked with, and offers assistance only when necessary for the test to proceed. The user and their actions on the screen are recorded, including audio and video, so the “think aloud” portion of the experience is captured as well as any interaction between the user and moderator. After all tasks are completed, the user takes the post-test questionnaire, which includes some type of quantitative measure of their experience, such as the SUS or System Usability Scale, which is the most widely used usability scale in the country (Sauro, 2011). This includes ten questions for which users assign a single number based on their experience (Appendix B). The test also includes room for qualitative feedback. After the test, the user completes a post-test questionnaire and may also give an interview.

After all tests have been completed, the team of experts analyzes the results and makes recommendations for changes to the website or tool. This involves combining or synthesizing individual results to find commonalities and look for the most interesting areas of the study (Norgaard & Hornbaek, 2006). Both qualitative and quantitative feedback is taken into account when making recommendations.

Four evaluators at Pratt Institute School of Library and Information Science began this study by browsing the Columbia University Government Documents Library to familiarize themselves with the interface, evaluating its layout, content, systems of categorization and functionality. The evaluators then developed the following two tasks for participants to perform, with the intent to highlight the most severe and frequent usability issues of the interface.
Task 1
You are writing a research paper on the presidency of Harry Truman. You were given the assignment yesterday and are looking for places to start your research. Your professor has asked you to cite at least one print and one digital resource from the government documents collection.

Task 2
For your Government Documents class, you need to look at issues of the Federal Register from 1941. Do you have to go to the library to get them, or can you access digital versions from home?

These tasks were designed to direct participants to several subject guides, which make up the bulk of the Government Documents website.

The evaluators then created pre- and post-test questionnaires (Appendices A & B). The pre-test questionnaire was designed to get demographic information from participants, and their levels of experience with government documents and library websites. The post-test questionnaire was designed specifically to elicit information about the emotional experience of using the site, using a standardized post-test questionnaire called the System Usability Scale (SUS), which provides qualitative data and enables comparisons to the SUS scores of other websites, and finally asking participants if they had any other feedback about their experience.

The evaluators wrote a script from which to moderate each user test, in order to better control the environment in which participants would perform the test. They also drafted a consent form for participants to sign allowing the evaluators to video and audio record them during the test.

Each test used the Silverback software, as it allows evaluators to record audio and video, of both the user and the computer screen on which the test takes place. This allowed evaluators to review the user tests for a more detailed analysis than notes alone. Evaluators conducted a pilot test to ensure that the software and tasks operated as expected.

Each evaluator was responsible for recruiting two participants, for a total of eight. Each participant was observed by either one or two evaluators. The time allotted for the tests was 45 minutes, including the pre- and post-test questionnaires. Upon arriving at the location of the test, participants were welcomed, had the test described to them, and asked to sign the consent form before taking the pre-test questionnaire. Participants were asked to “think aloud” during the test, or tell the evaluator what they were thinking and experiencing with the site as they worked on the tasks. The think aloud method provides rich, qualitative data about current feelings and experiences, which provides greater depth to the usability analysis.
Findings and Recommendations

Overview

As Columbia is a Federal Depository Library, users of the Columbia University Government Documents collection come from various parts of the community. The results of the pre-test questionnaire show that our participants represent a population that has at least a college degree and feels fairly confident about their ability doing library research, rating themselves between a 3 and 5, with 5 being the highest possible level. We feel this group is representative of some typical users of the website.

Overall, these users found the Government Documents site to be usable but also reported issues with ease of use and learnability. On the SUS, scores ranged from 25 to 75 out of 100. In general a score of 68 is to be considered average, with the Government Documents site scoring a 43, indicating that the users had several negative reactions to the site (See the Appendix for a summary of this survey).

Based on the results of our user testing, including data from the SUS questionnaire and information shared through “thinking aloud” during task completion, we have compiled a list of three areas which could be improved to increase usability of the Columbia University Government Documents website. These areas point to difficulty the users had in discovering the wealth of information offered by Columbia’s Government Documents collection. Our recommendations will help users understand and navigate all of Columbia’s government resources.

Homepage & CLIO Search bar

The home screen of the Columbia Government Documents website serves as the portal into a wide array of important resources. The page is clean and the text is clear and easy to read. Users of the website would feel welcomed into this collection. Based on user tests, we have isolated three elements that could be improved upon to make this homepage more user friendly (See Figure 1 below):

1. Resources particular to the Government Documents collection are accessible through the lists on the lower portion of the page, but many users are drawn to the CLIO search bar, which is prominently located at the top of the page. It was unclear to these users that the tool searched Columbia’s entire catalog, instead of just the Government Documents collection.

2. The universal navigation bar is located in a position of prominence, but applies to the entire library, not just this specific collection. Because of the positioning of these
elements, many of the Government Documents resources listed fall outside of a user’s field of vision. This is especially true on a smaller monitor, where the lower list may fall below the fold. Jakob Nielsen, in his 2010 article “Scrolling and Attention,” states that although today’s web users do scroll, it is best to prioritize and place the most important information above the fold (Nielsen, 2010).

3. Users may need to return to the homepage to rethink their search strategy, but as the site is currently designed, a user has to repeatedly hit the browser’s back button to do so.

Figure 1: Search bar and Universal Navigation bar are prominently located, drawing in many users and causing resource lists to potentially fall below the fold (indicated by red line and shading).

We recommend three simple design alterations that would increase the clarity of the home screen and allow users to gain a better understanding of the wealth of information available on the Columbia Government Documents website:

1. By moving the main navigation bar to the bottom of the page, where many users expect to find sitewide information, the main content of the page would be more visible and would
not be overshadowed by less relevant resources. In addition, if
the size of the graphics and “U.S. Government Documents”
header were reduced, the most relevant resources would move
up higher on the page into a user’s line of sight, making them
more likely to be used. With this additional space, each subject
guide listed could include a brief explanation or description of
its contents. Users would be more confident that they were
choosing the correct guide if they knew in advance what sort of information it contained
(See Figure 2 below).

2. Include a button or clickable area on each subsequent page after the homepage that
takes the user directly back to the Government Documents home screen, allowing users to
toggle back to the beginning quickly and easily.

3. We recommend replacing the current “Locating Government Documents” feature box
with a “Using CLIO to Locate Government Documents” box. As many users prefer search as
a method accessing this information it is key that they know what is, and what is not,
accessible through the catalog search. Importantly, users should be informed that the links
to outside resources featured in the government documents collection are not accessible
through CLIO. Providing this information will help users decide how to use the site, likely
depending on whether they would like to search for a specific resource, using CLIO, or
browse to see the materials available in general, using the guides. The language we
recommend for this feature is (See Figure 2 below for the proposed location):

**Using CLIO to Locate Government Documents**
- CLIO provides access only to resources held by CU Libraries, including:
  - Books
  - Journal Articles & Government Periodicals
  - Statistical and other databases
- CLIO does not include links to external websites provided in the Government
Document guides
- Using CLIO will take you to the main CU Libraries page

Overall these recommendations should increase users’ ability to quickly determine their
preferred method of access after arriving on the Government Documents homepage. With
their options clearly presented, they will be able to select the best method of access for
their task and quickly proceed to locating resources.
A consistent theme in our study was that terminology and labeling was confusing to users. Users new to searching for government documents may have trouble with titles and government document jargon - this may be unavoidable - but there were also problems with the way Columbia Libraries have labeled their subject guides and collections. Participants generally did not know what headings in the research guides meant and reported being confused by obscure terms. One user glanced at the subject guides, but quickly moved on, not recognizing them as relevant resources. Based on our user tests, we noted four main problems with the terminology:

1. Research guides were unclearly labeled and lacked descriptive information.
2. There is no indication what is within the Columbia University website and collections, and which links send users to outside resources.
3. There is no description of the contents and function of the subscription databases
4. The word “guide” is used quite a bit, and sometimes means different things in different contexts.

We have three related recommendations to improve the clarity and consistency of the terminology and labeling:

1. Use consistent, differentiated vocabulary.
   Using specific and deliberate terminology will clarify for users what resources are available to them through Columbia University Libraries and will guide them on their research path. The word “guide” is a bit overused on the website, and is used to indicate different things, including instructions for conducting research, lists of available collections, and subject lists that point to resources within Columbia’s collection and from other institutions. These useful resources allow users into the government document collections, and should be differentiated. Columbia may want to come up with its own names, but we suggest:

   - Research Guides by Subject
   - Government Documents Inventory
   - Useful Resources Beyond Columbia

2. Add further descriptions to guides & resources.
   Users could not predict what on the website would be useful to them, and grew frustrated by having to click on everything to see what it was. This was particularly difficult with the databases, most of which require a login and do not offer many clues about their contents once a user is logged in. We recommend adding short descriptions that indicate the contents of databases. Descriptions would also be helpful for the research guides. For example, the subject guide “Campaigns & Elections” has a description once a user clicks on it: “This is a selective guide to resources at Columbia University Libraries and on the Internet, for conducting research on federal campaigns and elections. Most of the items included are available in Lehman Library. For other locations and titles, check CLIO.” Instead, we suggest that the first sentence of the description appear under or next to the title of the research guide in the list (see Figure 3 below).
3. Create an icon to indicate links that take users to other websites. When a resource is requires a Columbia University login, a key icon indicates this to users (see Figure 4).

Figure 3

We suggest that another icon be created to indicate when a link will take users away from the Columbia University website. The icon could be as simple as an arrow that points away at an angle (see Figure 5).

Figure 4
Organization and Categorization

One of the strengths of the Government Documents Library website is its breadth of resources and information. However, users found the organization and categorization of this information to be flawed, and generally confusing, at every level.

Users had three main issues with the organization and categorization of the site:

1. From the very first page, users feel lost and confused. Links do not directly lead to information: they lead to lists of links, which lead to lists of links, resulting in users ending up very deep in the site, without being sure they are going to the right place, and as a result having a hard time getting out. Users did not find most or all of the lists of links had a logical order, which exacerbated the feeling of getting lost.

2. Users have no way to search or filter the content of the guides, magnifying the effect of the previous issue.

3. Many guides are intimidatingly long, and, again, not in a particularly logical order for users. The length resulted in some users giving up on looking for the information they needed before reaching the end of the page. One user said “this page is so long, and I am so far down so I guess it isn’t here,” before leaving the guide.

We have several recommendations to improve the organization of the site to increase its navigability for users.
Our first recommendation, which would at least partially address all of the issues above, is to use the Libguides platform for research guides, rather than the current internal HTML web pages.

First, it would address Issue 1 by making all of the individual “guides” immediately visible in tabs. This would allow users to select between them without once hitting the back button. Furthermore, there would be no way for users to get lost within the guides, with the other options so apparent.

Next, adopting Libguides would resolve Issue 2 because Libguides has a built in search feature that allows users to search an individual Libguide or all of the Libguides maintained by an institution. For example, a user searching for the Federal Register, as ours did, could search it by name in the Libguide.

Finally, using Libguides would help with Issue 3 because the use of boxes for different categories within a guide is not only more space-efficient, showing users more of these
categories at once, but also more easily browsable. The intimidatingly long page becomes several, more manageable boxes, and users can quickly identify which they may need.

Our second recommendation for improving the organization of the site, and further address Issue 1, is to categorize or recategorize each list of links. To do this, we recommend conducting a card sort. A card sort is an information architecture design method that involves giving participants, who are ideally representative of your target users, organize topics from the content on the site (like a list of links, or the content of one guide) into categories that make sense to them, and using that data to restructure the content (Spencer 2003). Reorganizing the impressive amount of information on the site into a scheme that users find logical will help them more efficiently find the information they seek, and make the experience of using the site more pleasant by decreasing confusion and feeling “lost.”

Conclusion

Overall these recommendations can be considered to fall into the category of visibility. Their goal is to make the resources and information contained in these guides more readily available to the site’s users. Making the guides more prominent on the homepage, adding description and information about where links lead and what information they contain, and creating greater clarity in the guides’ organization are all recommendations for taking existing information and making it more highly visible to users.

This goal is key because visibility translates quickly to learnability and understandability. Very few users will be turning to government documents as the sole objects of their research and task, instead incorporating them as part of a broader goal. It is therefore essential that both new and experienced users be able to turn the the CU Library’s Government Documents site for quick assistance in locating their desired information. With detailed information about the organization and contents of these guides available at a glance they will be able complete their tasks and leave with a positive experience of the Government Documents site as a deep, powerful and accessible tool for research.
References


Appendices

Appendix A: Pre-Test Questionnaire & Responses

**Questionnaire**

Q1) Your Name: ____________________  
Q2) Your Age: 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49  
Q3) Your Occupation: ____________________  
Q4) Do you currently or have you in the past used government documents or resources for school or work?  

**Responses**

<table>
<thead>
<tr>
<th>Q1 (Anonymous)</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>25-29</td>
<td>Teacher and Graphic Designer</td>
<td>I have not as far as I know</td>
<td>Master's Degree</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>25-29</td>
<td>Archivist</td>
<td>No</td>
<td>Master's Degree</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>25-29</td>
<td>Student</td>
<td>Yes</td>
<td>Some Graduate School</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>25-29</td>
<td>helper to a man</td>
<td>Yes, I have done that.</td>
<td>Bachelor's Degree</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>25-29</td>
<td>Sales</td>
<td>yes</td>
<td>Master's Degree</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>45-49</td>
<td>attorney</td>
<td>yes</td>
<td>Some Graduate School</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>25-29</td>
<td>Chief Marketing Officer</td>
<td>No.</td>
<td>Bachelor's Degree</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>25-29</td>
<td>Journalist</td>
<td>Probably.</td>
<td>Bachelor's Degree</td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix B: Post-Test Questionnaire and Responses

Questionnaire - System Usability Scale (Brooke, 1986)

Q1) I think that I would like to use this system frequently
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q2) I found the system unnecessarily complex
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q3) I thought the system was easy to use
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q4) I think that I would need the support of a technical person to be able to use this system
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q5) I found the various functions in this system were well integrated
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q6) I thought there was too much inconsistency in this system
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q7) I would imagine that most people would learn to use this system very quickly
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q8) I found the system very cumbersome to use
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q9) I felt very confident using the system
   Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q10) I needed to learn a lot of things before I could get going with this system
    Strongly Disagree 1 | 2 | 3 | 4 | 5 Strongly Agree

Q11) Is there anything else you want to tell us about the website?
There were almost too many options and resources that it was easy to become overwhelmed and not know where to begin. Obviously I could have resorted to using "find," which I did for the second task, but felt that I had to use one of the many links provided on the opening page.

I would like the subject of my search to always be highlighted in my results.

The search bar results were actually pretty useful, though the information seemed inconsistent in format and content. I remember using systems like JSTOR to do research and found their search functions to be more comprehensive, and it was easier to quickly discern whether or not the results contained the information I wanted.
CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title Of Study: Columbia University Government Documents Library User Experience

The purpose of this usability study is to evaluate the Columbia University Government Documents Library website. We are interested in determining whether or not people can accomplish common tasks and easily find information using this website. The session will not 'test' you or your ability, rather, the session will test the Columbia University Government Documents Library website to provide information on areas that might need to be improved. Please be advised that there are no risks associated with participation in this session.

Procedures: I have been told that, during this session, the following will occur ...
• I will complete brief online questionnaires; pre-test, post-tasks and post-test
• I will be given tasks using the Columbia University Government Documents Library website. While completing these tasks, I will be asked to "think aloud" to verbalize my thought process.
• Members of the Pratt UX Team will observe and take notes. In addition, the session will be captured on video for future review.
• The session will last no longer than forty-five minutes.

If for any reason you are uncomfortable during the session and do not want to complete a task, you may say so and we will move on to the next task. In addition, if you do not want to continue, you may end the session and leave at any time. Approximately eight people will participate in this study. Results from all sessions will be included in a usability report. Your name will not be included in the report nor will your name be associated with any session data collected unless disclosure is required by law.

I,_______________________________________________, have read and fully understand the extent of the study and any risks involved. All of my questions, if any,
have been answered to my satisfaction. My signature below acknowledges my understanding of the information provided in this form and indicates my willingness to participate in this user testing session.

Age: ____  (Note: Must be 18 or older to participate in this study)

ID #______________________

Signature: __________________ Date: _______

Thank you for your participation!
Appendix D: Moderator Script

Intro
Hi my name is _____ and this is _____(second moderator). Thank you for agreeing to take part in our study. The feedback we get from this test will give us valuable information that will be used to evaluate and improve the usability of the Columbia University Government Documents Library website.

We will be using Amazon’s Silverback program to record what you do on the website. This will record a video of you with audio of your voice, and will capture your actions like mouse-clicks on the screen. We will ask you to think aloud while you navigate the site and the program will record your voice. These recordings will be used to analyze the usability of this website, but will not be released. You will be anonymous in our report.

Have you read and signed our consent form? Do you have any questions about what we’re going to do today or how the information we gather will be used? (answer any questions they have) If you have the consent form, please give it to me now. Thanks!

We will spend the next (approximately) 30 minutes using the computer in front of you to conduct our study, including pre- and post-test questionnaires, and a series of two tasks to be performed on the Columbia Government Documents web site. During this process, the Silverback screencast software will be running in the background of this computer to capture screen recordings of this user test. Throughout this process, I will be sitting with you. I may ask you questions from time to time.

Before we start, do you have any questions for me?

Pre-Test Questionnaire
To begin, please complete the short questionnaire that is open in your browser so we can get some information on your background and your familiarity with government documents and library websites.

Intro to tasks
We are going to ask you to complete two tasks on the Columbia Government Documents website. We want you to know that this test is of the usability of the website, and not a test of
your abilities or knowledge. If you have trouble completing a task, this reflects on the usability of the website, and is helpful information for us to know.

The main goal of this test is to understand your reactions to this site and its usability. Please think out loud and talk through your decision process while completing the tasks. I may ask you occasional questions or encourage you to elaborate on an idea. When you have completed a task, I will prompt you to the next part of the process. I want to note that this website has many links that lead to other sites. Since those other sites are not the focus of this study, I will prompt you to return to the Columbia Government Documents website if that happens.

On this website there is an “ask a librarian” service. This will not be available during the test, but if you feel like you cannot complete this task without asking for help, please ask me and I will serve as the librarian. I will now start the Silverback program.

**Task 1**
You are writing a research paper on the presidency of Harry Truman. You were given the assignment yesterday and are looking for places to start your research. Your professor has asked you to cite at least one print and one digital resource from the government documents collection.

**When the complete the task**
Do you have any questions or feedback you’d like to share at this point?

**Task 2**
For your Government Documents class, you need to look at issues of the Federal Register from 1941. The Federal Register is a daily publication of the federal government. Do you have to go to the library to get them, or can you access digital versions from home?

**When the complete the task**
Do you have any questions or feedback you’d like to share at this point?

**in case they get too far off the website**
This website looks useful for what you’re looking for, but let’s move back to the Columbia Government Documents website?

**If the participant gets very lost or is very frustrated**
Remember, you can “ask a librarian” if you feel lost or stuck.

**Post-Test Questionnaire**
Thanks so much for all your helpful feedback. We have one last questionnaire to wrap things up and summarize your experience with the website. The questionnaire is open in your browser.

**End**
Great - thanks again!