In July 2016, the J. Murrey Atkins Library’s Usability Lab conducted a study of Special Collections & University Archives’ redesigned website as well as the Archival Finding Aids search. The website is vital for users to discover Special Collections & University Archives’ collections, general information, and interface tools. The redesigned website launched July 1, 2016. The Usability Coordinator collaborated with members of the Special Collections & University Archives and the Technology and Digital Strategies department to complete the study. This study was conducted briefly after implementation to highlight usability issues that should be addressed before the fall 2016 semester.

Three usability methodologies were used in the study, tasks-based testing, tree jack testing, and card sorting. Tasks-based testing, card sorting, and tree jack testing were used to test the Special Collections & University Archives’ website and tasks-based testing was used to test the Archival Finding Aids interface.

The majority of the participants completed the tasks with little difficulty. This is particularly noteworthy considering that none of the participants had any exposure to Special Collections & University Archives’ website or Archival Finding Aids search interface prior to testing. This report contains a list of recommendations to improve the efficiency, effectiveness, ease to learn, error tolerance and engagement of the website and search interface.

- **Effectiveness**: is the interface useful to users and help them achieve their goals accurately
- **Efficiency**: can users complete a task quickly and accurately
- **Engagement**: is the interface pleasant and satisfying to use
- **Error Tolerance**: does the interface prevent errors, or help a user recover from errors that occur
- **Ease to Learn**: does the interface support the ease of completing a task through initial orientation and continued learning

**Study Design**

The tasks-based analysis helps researchers uncover usability issues as users interact with an interface via predefined tasks. Student participants in this study attempted nine predefined tasks on the website (Shown Below) and six predefined tasks on the Archival Finding Aids search interface. The Usability Coordinator collaborated with members of the Special Collections & University Archives department to develop a set of functions to be tested. The Usability Coordinator and the Assessment Assistant developed and finalized the study’s task list. The final task list highlights typical activities performed by users. In addition, participants were
asked post-test questions to gather qualitative data: Which feature do you find the most useful? Are there any features that are difficult to navigate or find? Are there any features missing from the website?

**Website**

1. You would like to visit Special Collections & University Archives, where is it located?
2. Locate Special Collections and University Archives Oral History collection.
   a. How many interviews are in the collection?
   b. What websites allow you to access the Oral History collection?
3. You have a question about a research project using Special Collections and University Archives, locate the contact information.
   a. Who is the Digitization Production Librarian?
4. What types of materials can be donated to Special Collections & University Archives?
6. Does Special Collections & University Archives own a limited edition of *Gone with the Wind*?
7. Locate the Sanborn maps.
8. Find details about copying and scanning materials located in Special Collections & University Archives.
9. What types of University Archives Materials can you find online? And where?

**Archival Finding Aids Search Interface**

1. Locate the Swann vs. CMBE papers (1971)?
   a. In what box is the papers located?
2. In the Alexander (Frederick Douglas) papers, what material is contained in the Elmwood Cemetery folder?
3. What collection includes a photo of Martin Luther King Jr. at Johnson C. Smith University?
   a. When was the photo taken?
4. Which collection includes Rosedale Plantation photos?
5. Identify two Mecklenburg Declaration of Independence Collections.
   a. What is the finding identifier?
   b. In what year did she return to North Carolina to become the first woman to practice medicine in the south?

Participants’ performances as they attempt to complete the tasks expose usability issues and inform recommendations. During the test session, participants were encouraged to articulate their thoughts and actions aloud as they worked through the tasks. The think aloud protocol allows researchers to understand the context for user actions and decisions while completing a specific task; making it easier for the researchers to determine the underlying causes of usability issues.
The student participants also completed a tree jack activity. “Tree testing is a usability technique for evaluating the findability of topics in a website. It’s also known as ‘reverse card sorting’ or ‘card-based classification’. Tree testing is done on a simplified text version of your site structure – without the influence of navigation aids and visual design” (Tree Testing Tool). Participants were asked to complete three predefined tasks (Shown Below) using Optimal Workshop’s Tree Jack tool. The activity asked the participants to use Special Collections & University Archives navigation to select the label he/she would click to locate the following information:

1. Where would you locate information about the Dalton Reading Room?
2. You want to investigate Special Collections & University Archives’ Photographs, where would find them?
3. You would like to donate items to Special Collections & University Archives, where would you find more information about this process?

The test sessions were conducted on a Dell desktop computer running Morae Recorder. Morae Recorder captures the desktop activities and the participants’ facial expressions via a web camera. The three methodologies were tested in Google Chrome. The Usability Coordinator acted as the facilitator. The facilitator greeted participants upon arrival, guided participants through the informed consent, presented the participants with the tasks, answered participants’ questions, and prompted the participants for responses. In addition, the Assessment Fellow took notes during the sessions and worked with the Usability Coordinator to analyze the data produced.

The Special Collections & University Archives department participated in an open card sorting activity. "Card sorting is a method used to help design or evaluate the information architecture of a site. In a card sorting session, participants organize topics into categories that make sense to them and they may also help you label these groups" (Card Sorting). Card sorting helps researchers organize information from the user perspective. An open sort requires participants to label top-level categories. The activity used Optimal Workshop’s Optimal Sort, a digital card sorting tool that allows virtual participation. The tool analyzes the results and produces standardization grids, similarity matrixes, and dendrograms.

**Recruitment**

Student participants were recruited through email. The emails included the purpose of the testing, the testing timeframe, the participation incentives, and contact information. Eight student participants took part in the study. The eight student participants read and signed an informed consent form to participate in the test session. The consent form is approved by the university’s Institutional Review Board (IRB). The student participants were incentivized with a $10 Starbucks gift card for his/her participation. Participants received the incentive regardless of whether they completed the focus group. Eight Special Collections & University Archives’
department members completed the open card sorting activity. The department members completed the activity digitally and his/her submissions were anonymous.

**Participant Demographics**

The student participants consisted of six undergraduate students and two graduate students. The undergraduate students represented eight different areas of study (*Figure 1*).

<table>
<thead>
<tr>
<th>Classification</th>
<th>Field Of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>• English</td>
</tr>
<tr>
<td></td>
<td>• Biology</td>
</tr>
<tr>
<td></td>
<td>• Systems Engineering</td>
</tr>
<tr>
<td></td>
<td>• Elementary Education</td>
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<td></td>
<td>• Chemistry</td>
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<tr>
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<td>• Economics</td>
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<tr>
<td></td>
<td>• Freshman (1)</td>
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<td></td>
<td>• Junior (2)</td>
</tr>
<tr>
<td></td>
<td>• Senior (3)</td>
</tr>
<tr>
<td>Graduate Student (2)</td>
<td>• Bioinformatics</td>
</tr>
<tr>
<td></td>
<td>• Engineering</td>
</tr>
</tbody>
</table>

*Figure 1*

**Recommendations**

The following recommendations were developed based on analysis of the data gathered from eight student participant-testing sessions and the department card sorting. The pre-test survey responses, the individual task, and the post-test survey responses influenced recommendations. The study revealed several modifications that should be addressed to enhance the engagement, effectiveness, efficiency, error tolerance, and ease to learn of the Special Collections & University Archives’ website and the Archival Finding Aids search interface.

**Website**

- **Add a “Contact” page to the website.**
  
  Adding a “Contact” page to the Special Collections & University Archives website will increase the efficiency, effectiveness, ease to learn, and engagement of the site. Currently, users can locate contact information such as physical location, phone number, and email on all secondary pages located through the navigation except “About Special Collections.” Task three asked participants, “you have a question about a research project using Special Collections and University Archives, locate the contact information,” all eight participants visited the “About Special Collections” secondary page on his/her first attempt. The eight participants commented that this is where they would think they would locate the contact information. Five of the eight participants in the post-test survey commented that a contact page should be added to the website. The “Contact” page should include a phone number, email, and physical location of the
department. In addition, the page should include a sub-navigation link to the department’s directory. The “Contact” page should be placed in the navigation as well as a “Quick Link.”

- **Update J. Murrey Atkins’ “Directory” secondary page for consistency.**
  Updating the library’s directory will improve the efficiency, effectiveness, engagement and ease to learn of the library website which directly effects the Special Collections & University Archives’ website. Task three’s sub task asked to participants to identify, “who the Digitization Production Librarian is.” The study facilitator directed participants to use the library’s main navigation to complete the task because the department directory was not included on the Special Collections & University Archives’ website.

  a. *Update the “Library Directory” subpages formatting to be consistent with the landing page.* During the participants’ search it was discovered that the “Library Directory” landing page’s sub-navigation pages, “Employees by Department” and “Employees by Alphabet” format is not consistent with “Library Directory” ([Figure 2](#)). Additionally, job titles should be included on the two subpages to make the formatting consistent with the landing page. Note: While the results were being analyzed, employees’ job titles were added to the “Employees by Department” and “Employees by Alphabet.”

![Figure 2](image-url)
b. **Link the “Employees by Department” subpage to the landing page.** The “Library Directory” landing page and the “Employees by Department” subpage list the exact same content but in a different format. Removing the subpage and linking directly to the landing page will improve the error tolerance of the site. Both pages are organized by the department in alphabetical order. The landing page lists employees in each department in alphabetical order where the subpage does not.

c. **Add a department “jump-to” to the “Library Directory.”** Adding a “jump-to” will allow users quick access to the desired department without scrolling. The “jump-to” should include: Administration, Collection Services, Facilities, Public Services, Security, Special Collections & University Archives, and Technology & Digital Strategies.

- **Fix broken image on “Reproduction & Use” secondary page.**
  On the “Reproduction & Use” secondary page, there is a broken image above the first heading, “Reproduction & Materials” (*Figure 3*).

![Figure 3](image-url)

- **Evaluate the “University Archives” collection label.**
  Special Collections & University Archives has nine collections: Oral history interviews, historical maps, photographs, government documents, rare books, university art collections, university archives, digital collections, and manuscripts. Various tasks asked participants to locate information within Special Collections & University Archives. Task nine asked, “What types of University Archives Materials can you find online? And where?” In analysis of the eight sessions, the Usability Coordinator identified the term “University Archives” to be misleading to participants. Participants in the sessions used the department name, “Special Collections & University Archives” and the collection, “University Archives” interchangeably. With both titles using “University Archives,” new users do not differentiate between the two. For example, participants clicked “University Archives” collection to search for Special Collections & University Archives information such as location, contact information, reproduction and use, and donating materials. Evaluating the collection label or providing details to users to differentiate between the two will increase the efficiency, functionality, and desirability of the site. The collection label, “University Archives” could be renamed to UNC Charlotte Archives.
Make the navigational label and sub-label boxes clickable.
In one of the eight sessions, a participant commented that the gray box (Figure 4) encompassing a label should be clickable and not just the text. Updating the navigational boxes to be clickable will increase the effectiveness and efficiency of the website’s navigation.

Figure 4

Ensure consistent labeling of collections throughout website.
Ensuring consistent labeling of collections will decrease user confusion and increase the ease to learn, engagement, efficiency, and effectiveness of the website.

a. “University Archives” is a sub-navigational-label under the “Explore Our Collections” navigational label and “Explore Special Collections & University Archives” is on the homepage, but under “Get Help With…” it is labeled as “University Archives & Records.” The naming of the “University Archive” collection should be consistent throughout the Special Collections & University Archives website.

b. The Special Collections & University Archives’ website allows users to discover collections in two different places, in the navigation, “Explore Our Collections” and at the bottom of the homepage, “Explore Special Collections & University Archives.” These two areas should have consistent labeling because they allow users to view and discover the nine collections. “Explore Special Collections & University Archives” could be too vague compared to “Explore Our Collections” because it refers to exploring all of Special Collections & University Archives not only the collections.

c. “Government Documents” under the “Explore Our Collections” navigational label should be labeled as “Government Documents & Maps” to be consistent. In addition, the secondary page’s title should be updated.
Evaluate navigation labels.

Evaluating the current navigational items to rename and reorganize will improve the efficiency, ease to learn, effectiveness, and engagement of the website. The eight student test sessions revealed that duplicate information is located in different navigational labels. Additionally, student participants expressed confusion where the correct information would be located due to label terms in tree testing and tasks-based testing. Eight Special Collections & University Archives’ department members completed an open card sort and the Usability Coordinator analyzed the produced similarity matrix (Figure 5). “The similarity matrix shows the percentage of participants who agree with each card pairing” (Tree Testing Tool).

<table>
<thead>
<tr>
<th>Similarity Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproduction and Use</td>
</tr>
<tr>
<td>100 Planning your Visit</td>
</tr>
<tr>
<td>100 100 Instruction and Tours</td>
</tr>
<tr>
<td>100 100 100 Reading Room Policies</td>
</tr>
<tr>
<td>87 87 87 Donating Materials</td>
</tr>
<tr>
<td>82 82 82 82 75 About Special Collections &amp; University Archives</td>
</tr>
<tr>
<td>82 82 82 82 37 Research</td>
</tr>
<tr>
<td>50 50 50 50 50 37 87 Finding our Materials</td>
</tr>
</tbody>
</table>

![Figure 5](image)

Below is a proposed navigation that could be used to increase the usability of the website. 

*Note: any major changes to the navigation should continued to be tested with users throughout the website’s lifecycle.*

- Explore Our Collections
  - Digital Collections
  - Manuscripts
  - University Archives
  - Oral History Interviews
  - Photographs
Archival Finding Aids

Create an overview of the Archival Finding Aids search interface.

An overview of the search interface will provide users with general information and will decrease false expectations of the interface. During the tasks-based testing, five of the eight participants expressed confusion when they could not view an item located in the interface. The description that is located on the “Manuscripts” and “Finding Our Materials” secondary page should be used in creating the interface overview, the secondary page states:

Finding aids for our current holdings of manuscript collections (personal papers and organizational records) have been made available for online browsing and keyword searching. You can also explore a list of manuscript collection summaries organized by subject. These finding aids do not link to online collections -- they help you find physical collections you may be interested in. The collections can then be requested in the reading room on the 10th floor of the library.
The overview can link to the interface’s frequently asked questions, tutorials, glossary, and legend. The overview will increase the effectiveness, efficiency, and engagement of a user session.

- **Create a glossary of terms.**
  Creating a glossary will increase the efficiency, effectiveness, ease to learn, and engagement of the interface. The glossary will not be immediately obtainable within the interface, users will have to access it through a secondary page on the Special Collections & University Archives website due to the search interface being owned by a third party vendor. The Special Collections & University Archives department can request the vendor to include the glossary or a link to the glossary within the interface. Glossary terms should include a definition as well as the term’s components within the interface; for example the term “role” should explain creator, subject, and source. The following terms should be considered: Finding aids, repositories, manuscript collections, collections, digital objects, accessions, subjects, names, classifications, advanced search (creator, title, notes, subject, keyword), corporate entity, identifier, extents, agent links, component’s, instances, materials (types), container (type, indicator), and filters (type, subject, source, role, repository).

- **Create a legend.**
  Creating a legend will increase the efficiency, effectiveness, ease to learn, and engagement of the interface. The legend will not be immediately obtainable within the interface, users will have to access it through a secondary page on the Special Collections & University Archives website due to the search interface being owned by a third party vendor. The Special Collections & University Archives department can request the vendor to include the legend or a link to the glossary within the interface. On the interface’s results page an icon is listed to the left of each result, to increase the efficiency, ease to learn, engagement, and effectiveness of a user’s search an explanation of the icon is needed. The icons represent: repository, collection, archival object, corporate entity, person, digital object, and subject (*Figure 6*). Currently, users can mouse-over an icon to display its representation. In testing, none of the participants discovered this functionality, but all eight participants expressed confusion in identifying hierarchy/differences on the results page (*Figure 7*) or in a result’s breadcrumbs (*Figure 8*).
Create tutorials.
Creating tutorials will increase the ease to learn as well as the interface’s efficiency and functionality. Due to the limited access to make changes to the third party interface, written/video tutorials will allow Special Collections & University Archives to share tips for users to use the search interface in an efficient and effective way. Special Collections & University Archives should consider tutorials covering the following topics: general search, advanced search, specific searches (manuscripts, pictures, people, etc.), functionalities within an item detail (bread crumbs, components, identifiers, materials, etc.), left side filters, and sort by. Additionally, tutorials should be created on how to locate an item physically and how to view the item in the reading room.

Conclusion
The Special Collections & University Archives Website & Archival Finding Aids Usability Study focused on the effectiveness, efficiency, error tolerance, engagement, and ease of use of the two interfaces through the analysis of anticipated common tasks, tree jack testing, and department card sorting. The study revealed opportunities for both interfaces to improve users’ session usage. In addition, the study identifies opportunities for further studies after recommendations have been considered in fall 2016. The following recommendations should be addressed to enhance the interface’s effectiveness, efficiency, error tolerance, engagement, and ease to learn.

Website

- Add a “Contact” page to the website.
  a. Update the “Library Directory” subpages formatting to be consistent with the landing page.
b. **Link the “Employees by Department” subpage to the landing page.**
c. **Add a department “jump-to” to the “Library Directory.”**

- Fix broken image on “Reproduction & Use” secondary page.
- Evaluate the “University Archives” collection label.
- Make the navigational label and sub-label boxes clickable.
- Ensure consistent labeling of collections throughout website.
- Evaluate navigation labels

**Archival Finding Aids**

- Create an overview of the Archival Finding Aids search interface.
- Create a glossary of terms.
- Create a legend.
- Create tutorials.

To ensure the success of the Special Collections & University Archives’ website and Archival Finding Aids search interface, further assessment methodologies and usability studies should be conducted as the service matures to ensure continued functionality, efficiency, and desirability.

**Works Cited**

