E2: Heuristic Evaluation
A Usability Analysis of John Jay College's Lloyd Sealy Library Digital Collections Website

Megan Koontz
LIS 644: Usability Theory and Practice
# Table of Contents

EXECUTIVE SUMMARY 3
INTRODUCTION 4
METHODOLOGY 4
RESULTS AND RECOMMENDATIONS 5
CONCLUSION 7
APPENDIX: NIELSEN'S 10 HEURISTICS 8
WORKS CITED 9
Executive Summary

The Digital Collections website of the Lloyd Sealy Library is intended, primarily, for academic research. As such, the website needs to accurately and efficiently return search results, support categorical browsing, and enable viewing of digitized materials. This study utilized the heuristic evaluation method to identify potential roadblocks to these three functions. Highly visible search results and clearly labeled collections are integral to effective navigation through the digital collection.

Using the heuristic evaluation method, researchers completed four pre-determined tasks (see page 4) to test the full scope of the site’s search functions. All tasks were assessed using Nielsen’s Ten Heuristics for User Interface Design (see Appendix). Once identified, issues were rated based on the severity of the problem and the lead evaluator used these findings to identify suggestions for optimizing the website’s functionality. These suggestions are:

**Ensure that all collections material is tagged within the “Browse by Subject” window.**
The Burton B. Turkus papers are displayed as a featured collection on the website but do not appear under either ‘B’ or ‘T’ within the subject-level browsing window. This is potentially confusing for users looking to explore the collection or find out if the library has other items related to Burton B. Turkus. For the purposes of our study, this is the only keyword which was explored and identified as problematic.

**Display a “No Results Found” or “Related Items” prompt when a keyword search cannot return any results.** Evaluators indicated that keyword searching sometimes resulted in a list of items which were tenuously related to the search terms. As no indication of the items’ relationship to the search query was given, users may ignore the suggested items list and move on to another portion of the collection, potentially missing valuable information.

Implementing these changes would serve to enhance the overall experience of users visiting the Digital Collections website, as well as expedite the process of finding and utilizing the library’s resources.
Introduction

The Lloyd Sealy Library Digital Collections website is described as the “gateway to the Library’s digital materials, including oral histories, images, books, and documents from our Special Collections.” As the primary point of entry for the library’s digitized holdings, the Digital Collections website must be easy to navigate in multiple ways, as well as informative. The trove of information available through the library is invaluable and, in the completion of a heuristic evaluation of the Digital Collections site, a few key issues were identified which could impede users in their navigation of the site. This report discusses those findings and offers solutions to alleviate or eradicate the identified usability issues.

Methodology

The results of this study were collected utilizing the heuristic evaluation method. Three usability researchers were recruited and asked to independently completed four assigned tasks in order to identify potential roadblocks within the John Jay College Lloyd Sealy Library Digital Collections website utilizing their expert knowledge. The website’s functionality was assessed using Jakob Nielsen’s Ten Heuristics for User Interface Design, which are outlined in the Appendix at the end of this report and have been adopted from Nielsen’s method of heuristic evaluation (Nielsen). The researcher responses were then compared to avoid duplicate error detection and summarized by the study’s lead investigator into a table which can be found on page 5 of this study. This approach was both time and cost-effective, as the goal of this research was to identify potential issues within the beta version of the website and did not necessitate a full user study.

TASKS

1: Browse the collection by subject

2: Browse the collection by object type

3: Search for "Burton B. Turkus"

4: Search for "judges"
Results and Recommendations

In the course of this study, the evaluators were able to identify 6 issues with the Lloyd Sealy Library Digital Collections webpage. Two of these were identified as major problems (Level 3), which means they have the potential to seriously disrupt the user’s ability to browse, search, and explore the digital collection. Four problems were identified as minor (Level 2) issues, which can confuse, misdirect, and frustrate users but are not likely to completely upset the navigational flow on the site. These findings are summarized in the table below:

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>WHEN/WHERE IT OCCURS</th>
<th>HEURISTICS VIOLATED</th>
<th>SEVERITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Selecting a letter when browsing by subject forces the screen down, changing the mouse position, and obscuring the header.</td>
<td>Browse—→Browse by Subject</td>
<td>H3, H4, H7</td>
<td>2 (Minor)</td>
</tr>
<tr>
<td>2. View options on search results page are not readily visible so visitors may not even understand that they have those options.</td>
<td>Browse by Subject Results Page</td>
<td>H7</td>
<td>2 (Minor)</td>
</tr>
<tr>
<td>3. Relevancy of search results is unclear and it seems that many unrelated items show up when doing keyword searches.</td>
<td>Results page of keyword search utilizing search bar.</td>
<td>H3, H7</td>
<td>3 (Major)</td>
</tr>
<tr>
<td>4. Keyword searching and alphabetical browsing selections do not reflect the actual collection holdings. Burton B. Turkus cannot be found under B or T and a keyword search for his name shows only the “Burton B. Turkus Papers” collection.</td>
<td>Results page of keyword and browse searches for Burton B. Turkus.</td>
<td>H2, H3, H4</td>
<td>3 (Major)</td>
</tr>
<tr>
<td>5. Microscope function utilizes the cursor to focus on a section of the image for enhancement rather than enlarging the entire image. Zoom window is tiny and therefore not useful.</td>
<td>Enlarged image view in lightbox.</td>
<td>H1, H2, H4, H10</td>
<td>2 (Minor)</td>
</tr>
<tr>
<td>6. Browse function does not support the selection of multiple subjects.</td>
<td>Browse—→Browse by Subject</td>
<td>H7</td>
<td>2 (Minor)</td>
</tr>
</tbody>
</table>
Based upon analysis of the identified issues, it is recommended that the library implement the following changes prior to launching their full website in order to avoid potential limitations to users exploring the collection. These suggestions are related to the two problems identified as “Level 3,” or severe, on the table in the beginning of this section:

**Ensure that all collections material is tagged within the “Browse by Subject” window.**
The Burton B. Turkus papers are displayed as a featured collection on the website but do not appear under either ‘B’ or ‘T’ within the subject-level browsing window. This is potentially confusing for users looking to explore the collection or find out if the library has other items related to Burton B. Turkus. For the purposes of our study, this is the only keyword which was explored and identified as problematic.

**Display a “No Results Found” or “Related Items” prompt when a keyword search cannot return any results.** Evaluators indicated that keyword searching sometimes resulted in a list of items which were tenuously related to the search terms. As no indication of the items’ relationship to the search query was given, users may ignore the suggested items list and move on to another portion of the collection, potentially missing valuable information. This issue could easily be alleviated by labeling indirectly related items clearly at the top of the results page, as seen below:
Conclusion

The general layout of the Lloyd Sealy Library’s Digital Collections website is perfect for the purposes of the interface. Simplicity and clear labeling are key to the success of an academic resource such as this one in order to ensure that information is found and disseminated as efficiently and easily as possible. Implementing the suggested changes within this report would greatly enhance the overall user experience for searching the website and aid in minimizing user confusion and navigational errors. The use of the heuristic evaluation method for this study saved time and money while producing compelling insights which can be employed to improve the usability of the website.
Appendix: Nielsen’s Ten Usability Heuristics

Nielsen’s Ten Usability Heuristics

H1: Visibility of system status
The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

H2: Match between system and the real world
The system should speak the users’ language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

H3: User control and freedom
Users often choose system functions by mistake and will need a clearly marked “emergency exit” to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

H4: Consistency and standards
Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

H5: Error prevention
Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

H6: Recognition rather than recall
Minimize the user’s memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

H7: Flexibility and efficiency of use
Accelerators – unseen by the novice user – may often speed up the interaction for the expert user, such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

H8: Aesthetic and minimalist design
Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

H9: Help users recognize, diagnose, and recover from errors
Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

H10: Help and documentation
Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user’s task, list concrete steps to be carried out, and not be too large.
Works Cited