

HEURISTIC EVALUATION REPORT

*The Lloyd Sealy Library Digital Collections at John
Jay College of Criminal Justice*

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Executive Summary

The **Lloyd Sealy Digital Collection** exhibits items from the library's Special Collections that pertain to criminal and justice events in New York City's history in the form of digital photographs, audio files of oral history, as well as digitized documents and transcripts.

In order to gain more knowledge on how to improve the user's experience while browsing the digital collection, the developers of the digital collection requested usability theory students in the **Master's program of Library and Information Science at Pratt Institute** to conduct a *Heuristic Evaluation* and analysis.

This report details our findings and proposes some adjustments to the interface of the website that will further encourage users to interact and explore the site without complications or confusion.

Three major and **three minor** usability problems in the site's search and viewing features were uncovered by the evaluators and their issues prompted two design critiques: *Clarity* and *Feedback*

With these two design critiques in mind, we recommend certain alterations to the infrastructure and display of the website to help *clarify* terms and functions available as well as provide proper *feedback* from necessary actions the users take to browse and search items.

Introduction

This report details our findings and recommendations to enhance usability of the **Digital Collections of the Lloyd George Sealy Library** at the **John Jay College of Criminal Justice**.

By means of a grant from the Metropolitan New York Library Council (METRO) through the New York State Regional Bibliographic Databases Program, the **Lloyd Sealy Digital Collection** was launched to digitize and exhibit items from the library's Special Collections that pertains to criminal and justice events in New York City's history in the form of photographs, oral history, documents and transcripts. While it's in a BETA testing state, the creators of the site have requested students in a Usability Theory class at **Pratt Institute** to conduct a Heuristic evaluation in order to gain more knowledge on how to improve the user's experience while browsing the digital collection.

A *Heuristic Evaluation* first comprises of a specific task or scope that the leader and participating evaluators must take into account while navigating the website. Evaluators are then instructed to review the site according to Nielsen's heuristics guidelines, report any usability problems they encounter during the 25 minute evaluation as well as rate the severity of the problem.

Methodology

In this 25 minute evaluation, three evaluators were instructed to follow two tasks:

- 1) They had to find a collection of interest on the homepage and browse the collection for a digital item of interest.
- 2) They were instructed to search for a specific item and, in this case, the key term provided was “photograph of Martha Place”.

These tasks prompted evaluators to take on the role of two types of users: the *novice* user with no particular goal but to browse the collection; and the *experienced* user in the field of criminal justice who is researching for a particular purpose. This concept of differing user roles was expressed by the leading evaluator to the participating evaluators at the time of the evaluation.

Thus, by providing two tasks and identifying two types of users that focus on different special features and areas of the site, we were able to explore the site with far greater depth and we were able to compile a much more diverse list of usability problems because of the various paths in which each evaluator could take to “browse” and “search” a collection.

Keeping in mind Nielsen’s 10 usability heuristic for user interface design (Fig. 1), each evaluator recorded their findings in a “Problem Description” handout and identified each problem description, when/where it occurred, the heuristics it violated and rated the severity of the problem (Fig. 2).

USABILITY HEURISTIC FOR USER INTERFACE DESIGN	
H1	Visibility of system status
H2	User-friendly language and conventions
H3	User control and freedom
H4	Consistency and standards
H5	Error preventions
H6	Memory recognition rather than recall
H7	Aesthetic and minimalist design
H8	Help users recognize errors
H9	Help and documentation
H10	Flexibility and efficiency of use

Fig. 1

PROBLEM SEVERITY RATING	
1	Cosmetic Problem
2	Minor Problem
3	Major Problem
4	Catastrophe

Fig. 2

Findings & Recommendations

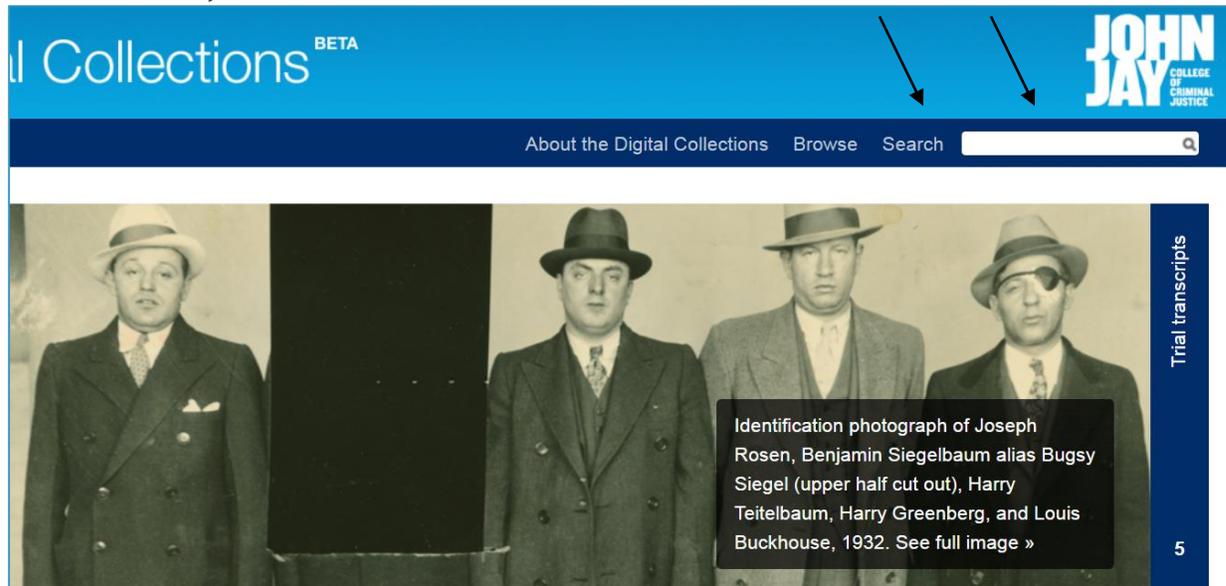
After reviewing, separating and consolidating the data from the “Problem Description” handouts, 15 usability problems in the interface were exposed by the three evaluators. A table detailing the problems is available in the appendix.

Of the 15 problems, 8 problems were given very low severity ratings and were deemed by the lead evaluator as “cosmetic problems”. Thus, they are not of immediate attention for this report. Three usability problems were rated as “minor problems” and three usability problems were rated as “major problems”.

These 6 usability problems prompted two design critiques that the site can improve on for better ease of use and to reduce confusion between user interactions with the collections. This three design critiques are *Clarity* and *Feedback*. The remainder of this report will discuss the problems and critiques fully as well as provide some recommendations to fix the problems.

Design Critique: Clarity

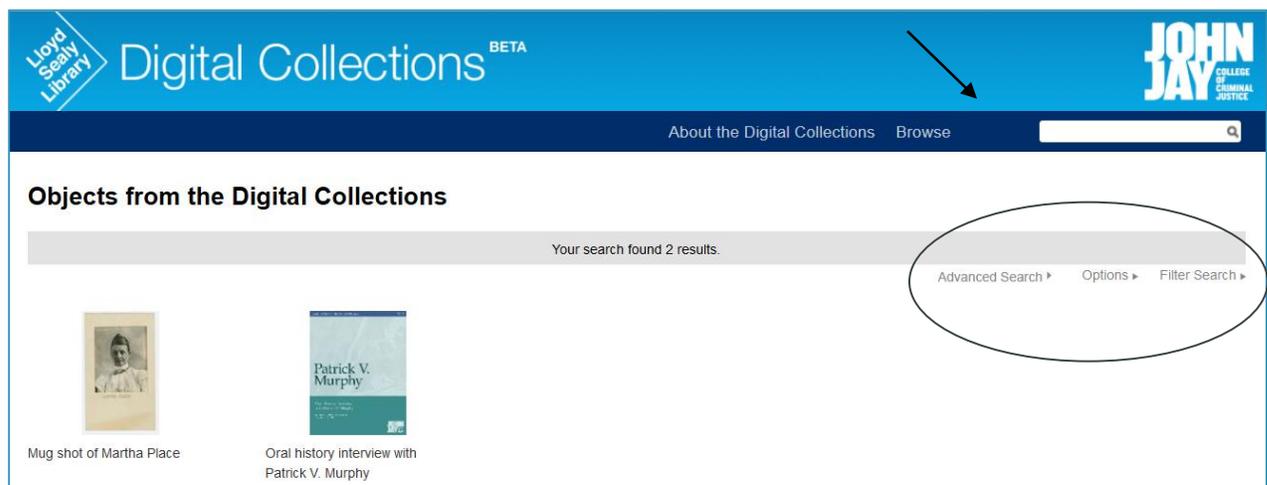
Evaluation of the Search Bar and Search Menu Link



On the homepage, each evaluator took a different route to search for the mug shot of “Martha Place”. One evaluator expressed it was not clear whether the word “Search” on the homepage is a label to the search bar or an actual link to the search page. Another evaluator did identify it as a menu tab but recommended that it should be labeled as “Advanced Search” because it offers more search features than the search bar.

Recommendation

There are two options the web developer could do to reduce confusion: remove “Search” menu tab entirely from the homepage, keep the search bar as is, and enable an advanced searching feature in the search results page; or identify the differences between the two features by labeling the menu tab as “Advanced Search”. The first option is preferable because the search bar is more identifiable to users, both novice and experienced, and will be utilized more frequently than clicking the search menu tab. Also, it gives the user an opportunity to refine their search results later if necessary. Below is an example image with the first option implemented.

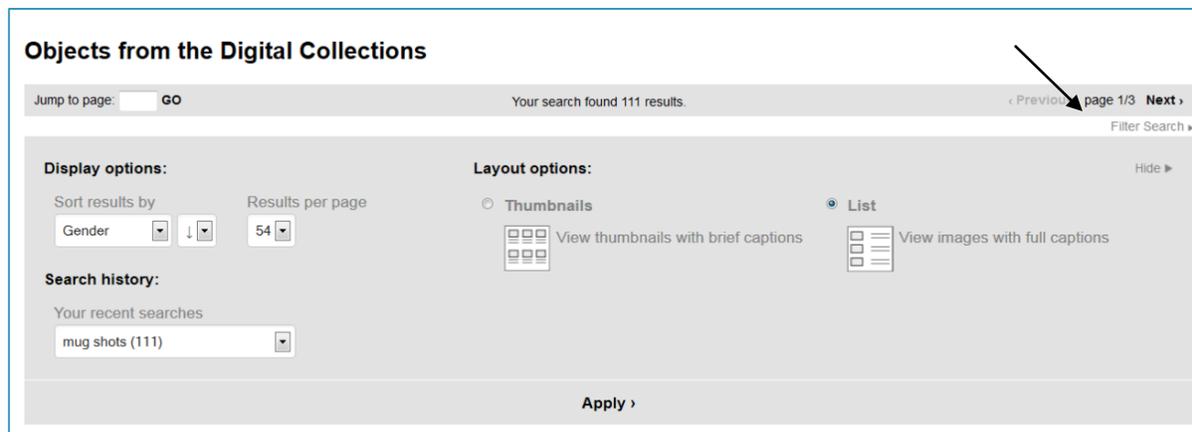


Evaluation of the Options and Filter Search Links

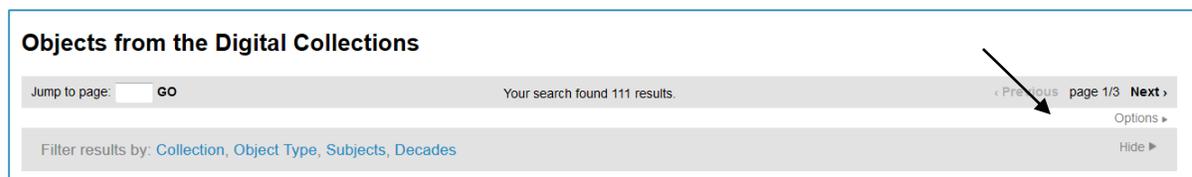
All three evaluators expressed uncertainty while using the “Option” and “Filter Search” features. One evaluator believed the label terms vaguely defined the desired action. “Options” has many features within that gives the users the ability to *sort* and *display* the results but this is not immediately apparent. On the other hand, users would understand that “Filter Search” is about filtering the results but the way to choose filter options is complex and overwhelming.

Another evaluator also believed live changes would be helpful instead of selecting options and hitting an apply button. Having this feature as two separate steps allows users to make mistakes and frustration in their search.

Also important to note, an evaluator mentioned the links disappear when chosen and this could disorient the users because it does not allow them to recall which link they clicked on, “option” or “filter search”. This problem can be seen in the images on page 7.



**After clicking “Options” link*



**After clicking “Filter Search” link*

Recommendation

One way to fix this problem is to make all options and features visible on the homepage, live change without having to hit apply, and concurrently label the features for better clarification of the desired action. The best example of this feature would be the **Digital Public Library of America (DPLA)** website. As you can see by the image below, the DPLA website displays all the features directly on to the search results page as a top header and a side menu bar with their appropriate label. Additionally on the DPLA, users are able to continue scrolling down the page to view other refine options (by “Date”, by “Language”, by “Subject”).

The screenshot shows the Digital Public Library of America (DPLA) search results page for the query "crime". The page features a navigation bar with links to Home, Exhibitions, Map, Timeline, Bookshelf, and Apps. A search bar at the top right contains the text "crime". Below the search bar, the results are displayed in a grid. A "Refine" sidebar on the left allows users to filter results by format, with options for text (6240), unspecified (1704), image (1533), and moving image (226). The main results area shows a list of items, including a photograph of a woman held hostage during a robbery in Atlanta, Georgia, with detailed metadata and a thumbnail image.

If this option requires too much time and resources to implement, than another alternative is to only apply the 'layout options' and 'display options' directly to the search results page and completely remove the "Filter Search" feature since it closely relates to the features in the "Browse" menu tab.

Evaluation of Subject and Object Type Features

While browsing the "Browse the Collection" page, the options to browse by "Collection", "Object Type", "Subject" and "Decades" is informative for users but at times redundant or ambiguous.

Evaluators noticed certain terms in "Object Type" are better suited as subjects. For example, clicking 'Crime Scenes' in the "Object Type" category actually redirects users to *photographs* of crime scene, therefore, these items should be categorized under the "Object Type" - 'Photographs'.

Finally, the evaluators also noticed that terms in the subject category were either subject headings or names of individuals. Using subject headings are, of course, necessary for research but may be too formal for the novice user who is just browsing the collection. Evaluators were also aware that the names were ordered **First, Last** among the subject headings. Users, both novice and experienced, may not expect this arrangement at first and could skip a name subject unintentionally if it is not realized.

Recommendation

Currently, the digital collection only has 7 collections and they can all be accessed directly from the homepage and the designated image icons on the Browse page. Thus, having a browse by "Collection" can be removed until the collections exceed a larger amount. The terms in the categories should be re-evaluated to provide better consistency and reduce mistakes users may have interpreting the definition of the categories and terms. Additionally, a distinction between *subjects* and *subject headings* should be made to avoid confusion along with separating names of historical figures into their own category.

Design Critique: Feedback

Evaluation of Advanced Search Results

While using the “Advanced Search” feature, the leading evaluator noticed feedback is minimal when the fields have been entered and submitted. The page refreshes to the top but does not give any inclination that results are available. It is not until the user scrolls down far enough that the results are visible under the *search* button in a type of footer shadow box.

The screenshot shows the 'Advanced Search' interface. At the top left is the 'Lloyd Seely Library' logo. The main header is blue with the text 'Digital Collections BETA'. Navigation links include 'About the Digital Collections', 'Browse', and 'Search'. The search form is titled 'Advanced Search' and contains the following fields:

- Object Title:** A text input field containing 'Martha Place'.
- Individuals and Organizations:** An empty text input field.
- Description:** A large text area with a small icon in the bottom right corner.
- Subject Heading:** An empty text input field.

**Image of webpage on computer screen after pressing search button*

The screenshot shows the search results page. At the top, there is a 'Date' filter section with a 'Date' input field, a 'Type' dropdown menu, and 'Search' and 'Reset' buttons. Below this is a dark grey bar with the heading 'Objects from the Digital Collections' and a message 'Your search found 2 results.' Two search results are displayed as small thumbnails with titles: 'Portrait of Martha Place' and 'Oral history interview with Patrick V. Murphy'.

**Image of webpage on computer screen after scrolling down*

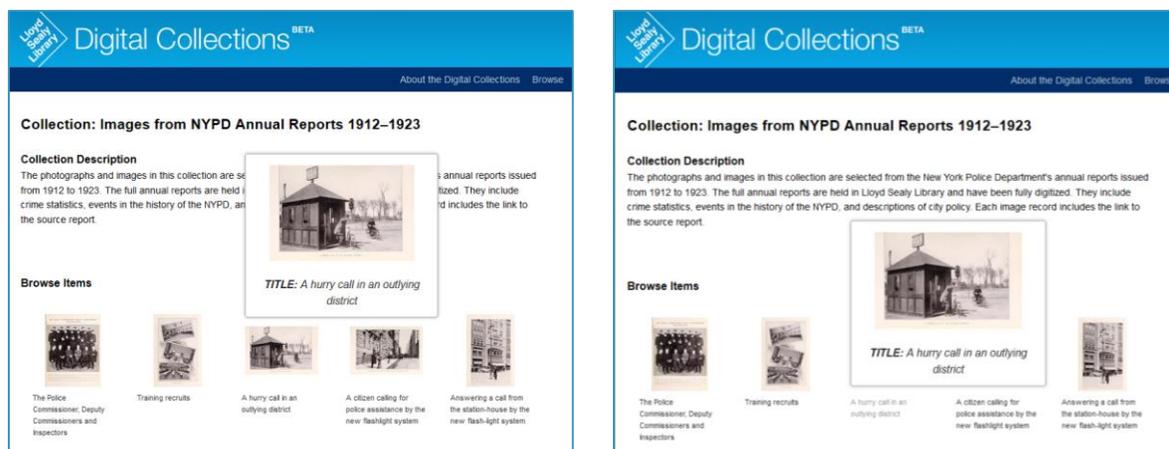
The evaluator also noticed the icons are very small, compared to the icons viewed in the search results when using the search bar, and the font color and size are completely hidden by the dark background.

Recommendation

The best recommendation for this problem is to have exactly similar displays of the search results whether the user is searching on advanced search or the search bar. Search results should replace the advanced search fields completely to ensure better feedback for the users, otherwise users will assume they typed their search incorrectly or that the website is not working. This, in turn, eliminates the footer shadow box and allows the item icons and titles to be more visible and accessible on a white background.

Evaluation of Quick View Image Icon

When the mouse hovers over an image icon, a quick view pops up for a better observation. Unfortunately, this feature is fastidious and obstructs the user from viewing other icons during their search. Examples are shown below on what happens when the mouse hovers over the icon and then hovers over the icon title.



As you can see on the first image, the quick view box is above all the icons. But once the mouse hovers over the title on the second image, the quick view re-oriens its position and consequently obstructs the view of other image icons. The quick view can also become very frustrating for users to maneuver because any movement from icon to title to another image icon can cause rapid visual disturbance and displacement of the quick view box.

Recommendation

Removal of the quick view feature should be considered because it does not add any value to the searching and browsing experience. The image icons are currently a decent image size and users are already able to view a larger image of the item after they click the hyperlink. More so, the quick view box just disturbs the visual display of the collection and removing it will eliminate the visual clutter and rapid visual changes the quick view creates.

Evaluation of Photo Image Viewer

The photo image viewer plays an important role for users to interact with the collection's items but the evaluators did find some issues with the icons and features provided.

First, the zoom in and zoom out icons are easy to understand but the other icons are not as evident. Without some sort of guidance or caption that identifies what these icon features do, users will have to fumble around to comprehend the action. This is especially true for this icon  which is still not clear what function this serves.

The microscope icon  is intuitive but users would not know it has been applied and activated without hovering over the image, at which point a small microscope viewer appears on the left-hand side. Again, this does not allow for accurate feedback that users are using the correct action necessary for their goal at hand.

Recommendation

In the DPLA website, while viewing an image in the exhibitions page, users are able to view the image in a similar shadow box with full screen view. Below you will find an example of how the DPLA uses icon captions to inform users of what each icon feature entails.



This is an easy solution the site could apply to give users a better idea of the icon's function.

Conclusion

According to the website, the **Lloyd Sealy Digital Collection** strives to “[provide] open access to primary materials documenting nearly a century of investigation, arrest, judgment and incarceration of many infamous and unknown criminals in New York City”. Their efforts have brought about a very unique and engaging collection for users of all backgrounds in education and technology to explore.

This report proposes some adjustments to the interface of the website that will further encourage users to interact and explore the site without complications or confusion.

By way of a heuristic evaluation and analysis, usability problems in the site’s search and viewing features were uncovered by the evaluators to be addressed by the web developers. The report recommends some alterations to the infrastructure and display of the website to help clarify terms and functions available as well as provide proper feedback from necessary actions the users take to browse and search items in order to create a more enjoyable and stress-free environment for the users.

Appendix

The analysis in detail of each problem found by 3 evaluators, ranked by severity.

Problem	Heuristic	Eval 1	Eval 2	Eval 3	Final Rating
"Search" menu link and search bar are unnecessary to be on the same menu bar; also unclear that the "Search" menu link is the advance search feature	4		2	3	3
In the search results page, unclear why there are two separate menu items for "options" and "filter" and they are too close together	1,4,5,7	2		3	3
When in "Advanced Search", would not have known results were available because search fields did not disappear and the results are too low on the webpage with very small icons and text matches the background.	1,6			3	3
On "Browse the Digital Collection", definition of the menu labels "object type" and "subject" is unclear and the labels within are classified in a confusing manner; i.e. "object type" has 'crime scenes' but would expect that in "subjects" and names are organized by first, last name but not separated by other non-people subjects and subjects are written in LC subject headings which may be confusing for casual users	2	2	2		2
Quick view image box is not a hyperlink to collection and actually can be irritating when switching around from above the image to below	1,7		1	2	2
In image viewer, icons are difficult to understand without a description caption and do not give accurate feedback that they are turned on	1,3	2	2	2	2
Number of items in a collection is not easily identifiable to the user on webpage and should have option to view all on one page	1,7	3	1		1
Was not immediately interested in the visual icons on the bottom of homepage, clicked on "browse all collections" to find description of collections; was more interested after reading descriptions	2		2		1
Font size of links in "browse" and "search" filters are too small	4		2		1
Collection description is cut off mid-sentence in the collection page; [read more] is spaced too far away from description to know if that is the rest of the sentence.	7,8		1		1

Back of images is placed too far away to the right of the webpage; should be closer to the front of images	6			2	1
Permalink feature opens to the same page (duplicate); could just open a text box with permalink to copy	1,7			2	1
Bookmark and sharing options on "Patrolman investigating..." are overwhelming when it is a whole list; could already make available the popular ones and then use list if not immediately available	6			2	1
Not able to click image in slide show to re-direct to collection; "NYPD Annual Report"	7			2	1
The feature titles on the slide show is hard to read; maybe refrain from being vertical	8			2	1

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