

Grass Roots UX Testing at the [...] Libraries: Our Triumphs and Pitfalls

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Abstract

This paper provides a case study on how consistent UX testing can improve the digital experience for library patrons. Every month for the last year, we planned and carried out various UX testing on the [...] Library website. Our research included a comparative analysis of other library websites and user testing of our own library website. The comparative analysis granted us insight about the services featured on other library websites, and the information architecture of those sites. From our own testing, we discovered areas of our site that serve our users well, and other areas where there are pain points. This testing allowed us to come up with tangible solutions we were able to apply to our website.

Introduction

UX is becoming a growing focus in Libraries, and practitioners are striving to create usable and equitable experiences across all services offered by the Libraries. In today's largely digital world, there is an increased level of scrutiny on digital tools and assets. The library website is often the main point of contact for many who utilize the services that we offer. As such, it is important that the website is consistent with what users expect from the library.

Users have their own preconceived notions about how the library site should function. Utilizing various UX research methods helps us to understand what our users think about the website. Over the last year, we conducted monthly UX testing on our library website to improve how our website serves library patrons and the greater university community. This testing allowed us to discover areas of the library website that were not serving our users well enough. Various methods of UX research used in combination allowed the team to get the most valuable information, and in turn, get the most effective and useful results.

Literature Review

There is a need for more consistent UX in libraries as UX becomes a larger focus in libraries. The state of UX in libraries is not as mature as other aspects of the library. Young, Chao, and Chandler present a study into the methods and maturity of UX practices in academic libraries. The study reveals the most and least common UX research methods in academic libraries, and offers recommendations to improve UX maturity. (Young et al., 2020) The authors distributed a survey to UX professionals in academic libraries, divided into two parts. The first part asked about UX methods based on the UX Research Cheat Sheet by Nielsen Norman Group. (Farrell, S., 2017). The first part of the survey showed that the most common UX methods are surveys, usability testing, and user interviews. The second part asked about the level of UX maturity based on an eight-point scale proposed by Nielsen Norman Group. (Nielsen, 2006) The results showed that 75 percent of participants had a UX maturity level between stages three and five.

Seale, Hicks, and Nicholson use a critical lens to examine library UX practice in an effort to bring library UX practice more in line with critical practices in libraries. (Seale, 2022) The authors advocate for more thoughtful library UX practice that focuses more on users. They look to LIS and critical and feminist perspectives on practice, embodiment, and power, arguing that this would benefit UX. In 2014 there was a shift in library UX that resulted in more focus on UX research and the creation of UX positions at libraries. Seale, Hicks, and Nicholson emphasize that shift, notably how it steered libraries towards closely associating with active user engagement, especially with the digital interfaces. (Seale, 2022) This research article closely ties UX research with quality assurance of the products, which are informed by engagement with the library patrons on a constant basis. They elaborate on the changing user demographics and the importance of having a dialogue with anyone and everyone who is willing to participate. Seale, Hicks, and Nicholson propose to draw on research from several disciplines that manifests UX in libraries and in doing so, laying the groundwork for the future of UX in academic libraries.

Academic libraries are embracing and fostering the culture of UX inquiry and research. Godfrey elaborates on the importance of standing usability teams and an on-going plan for UX research. (Godfrey, 2015) This article explores the creation of web usability teams to foster the culture of usability. Godfrey states that establishing a permanent group dedicated to UX research and testing is a first step to developing a culture of usability, followed by creating a continuous plan to incorporate UX research to a myriad of services offered by the libraries. (Godfrey, 2015) UX research and testing is a perpetual and iterative process, and

strongly supports the notion of “you make something, test it, fix it, test it again”. (Godfrey, 2015)

A/B testing is one of the most widely used UX testing methodologies, providing quantitative feedback. With this feedback, researchers can find the most suitable solution for library products and services. This methodology dates back to 1960 at Bell Systems, where engineers experimented with several versions of the touch-tone phone (Deninger, 1960). Young presents a case study outlining the effectiveness of a website-focused application of A/B testing using the Montana State University Library website. The case study discusses A/B testing as a method, noting its effectiveness to address complex UX problems with data driven solutions. (Young, 2014) Young emphasizes how an effective A/B testing process follows an adapted version of the scientific method. For the study, users were presented with multiple versions of the Montana State University Library homepage. The researchers captured the click-through rate, drop-off rate, and homepage-return rate. This process helped identify the layout that provided headings that are more meaningful to the library patrons.

Comparative Analysis

We conducted a comparative analysis of all academic libraries from the Big 10 Conference to help inform the development of the [...]. Our library website is a digital presence for the library and a portal to search & discovery of our resources. By analyzing the websites of the libraries from our peer institutions, our team is trying to gain insights on several programs

and services offered by library websites, information architecture, and improve the experience for all our patrons when trying to access the said programs and services. We considered several library websites for the comparative analysis, which are displayed in Table 1.

Table 1. The list of library websites that were included in the comparative analysis.

Institution	Website
University of Illinois Library	https://www.library.illinois.edu/
Indiana University Libraries	https://libraries.indiana.edu/
University of Iowa Libraries	https://www.lib.uiowa.edu/
University of Maryland Libraries	https://www.lib.umd.edu/
University of Minnesota Libraries	https://www.lib.umn.edu/
University of Nebraska Lincoln Libraries	https://libraries.unl.edu/
Northwestern University Libraries	https://www.library.northwestern.edu/
Ohio State University Libraries	https://library.osu.edu/
Penn State University Libraries	https://libraries.psu.edu/
Purdue Libraries	https://www.lib.purdue.edu/
Rutgers University Libraries	https://www.libraries.rutgers.edu/new-brunswick

UW-Madison Libraries	https://www.library.wisc.edu/
NCSU Libraries	https://www.lib.ncsu.edu/
MIT Libraries	https://libraries.mit.edu/
University of Texas Libraries	https://www.lib.utexas.edu/
GVSU	https://www.gvsu.edu/library/
Georgia Tech Library	https://www.library.gatech.edu
Cambridge University Libraries	http://www.lib.cam.ac.uk/
East Lansing Public Library	https://www.elpl.org/
NYPL	https://www.nypl.org/
Henry Ford Museum	https://www.thehenryford.org/
Biodiversity Heritage Libraries	https://www.biodiversitylibrary.org
National Library of Medicine	https://www.nlm.nih.gov/

Criteria & Findings

Academic and public library website homepages were analyzed to learn about how effectively the real estate on the page was used. We identified 5 different categories that were most common among the websites that were compared. Below are our findings for each of the categories.

Header

- All the libraries that are mentioned above have university or library branding in the header region.
- University of Illinois Library, University of Iowa Libraries, Northwestern University Libraries, Grand Valley State University(GVSU), and East Lansing Public Library include a site search in their header region.
- University of Maryland Libraries, University of Michigan Libraries, University of Nebraska Lincoln(UNL), North Carolina State University Libraries and University of Minnesota Libraries have links or buttons to donate or support the their library
- Henry Ford Museum has their branding in the header region and a rotating events section in their sub-header region.
- Grand Valley State University(GVSU) included the hours in the header section next to the search bar.
- University of Michigan has links next to their branding to their Hours, Account, and Ask a Librarian pages.

Main Navigation

- Indiana University Libraries, University of Michigan Libraries, University of Maryland Libraries, University of Nebraska Lincoln Libraries, and University of Texas Libraries use mega menus for their site navigation.
- NewYork Public Library, Henry Ford Museum, Biodiversity Heritage Libraries, Grand Valley State University(GVSU), University of Minnesota Libraries, Ohio State

University Libraries, and Rutgers University Libraries use links for their main navigation. Remaining Libraries use dropdowns or a combination of dropdowns and links for their main menu

- All libraries have 5-7 main menu items with some exceptions. Biodiversity Heritage, Rutgers University, University of Texas Libraries and National Library of Medicine have 4 main menu items while Cambridge University Libraries has 10 main menu items.
- University of Illinois Library has their main menu placed above the header
- Rutgers University, North Carolina State University, and Henry Ford Museum have their main menus as part of the header, while all others are placed below the header.

Search

- UW-Madison Libraries has their main search searching their catalog.
- University of Nebraska Lincoln Libraries have their search set to searching their catalog and select databases.
- University of Iowa Libraries and University of Michigan have their main search searching several sources and the results in a bento box format.
- North Carolina State University Libraries, University Of Texas Libraries, NewYork Public Libraries, and Biodiversity Heritage Libraries have a single search bar with radio buttons to select from several sources offered by the library.
- University of Illinois Library, University of Maryland Libraries, MIT Libraries, Ohio State University Libraries, and Penn State University Libraries have a tabbed layout to select from from several sources offered by the library.

- University of Minnesota Libraries, Northwestern University Libraries, Purdue Libraries, UW-Madison, and Georgia Tech Library offer a dropdown list of sources next to the search box to select from from several sources offered by the library.
- Many of the libraries have site search as the part of their main search box with a few expectations. North Carolina State University Libraries, University of Illinois Library, University of Iowa Libraries, and University of Nebraska Lincoln Libraries have a separate site search section.
- MIT Libraries have site search in the footer region.

Hours

- Northwestern University Libraries have tabs for hours of each branch library.
- MIT Libraries, University of Illinois Library, Ohio State University Libraries, Penn State University Libraries, and Purdue Libraries have the link to their hours listed as a part of their main navigation.
- University of Illinois Library has a quick link for hours that expands into a large section showing hours of their various branches.
- Indiana University Libraries and University of Texas have a dropdown which contains the list of all their branches displaying today's hours.
- University of Iowa Libraries has a large two-column section with "profile cards" for all the branches and their hours.
- University of Michigan has their hours in a right column under the hero image.
- University of Minnesota Libraries have their hours located in the first section of the page under the header with links and today's hours of the main and branch libraries.

- University of Nebraska Lincoln Libraries has a section for Today's hours with a scroll bar displaying today's hours of two branches at a time.
- Georgia Tech has current hours displayed under the search bar.
- North Carolina State University has their hours in the sub-header region with a link to the full list of hours.
- NewYork Public Library, Biodiversity Heritage Libraries, and National Library of Medicine have no dedicated hours section on their homepage.

News, Events, and Exhibits

- University of Iowa Libraries, University of Illinois Library, University of Michigan, University of Nebraska Lincoln Libraries, Northwestern University Libraries, Ohio State University Libraries, Penn State University Libraries, Georgia Tech Library, and Purdue Libraries have a section for News with a link to view more news articles.
- Indiana University Libraries, and University of Texas Libraries have a carousel of news and events on their homepage.
- University of Maryland Libraries has a combined list of news and events listing 3 items on their homepage.
- Rutgers University Libraries has links to news, events, and workshops in the top navigation section.
- University of Minnesota Libraries have a combined section for news, events, and exhibits.
- NewYork Public Library has news, events, and exhibits as the main sections of their homepage.

Donate/Support the Library

- University of Maryland Libraries, University of Michigan, University of Minnesota Libraries, Northwestern University Libraries, Ohio State University Libraries, and North Carolina State University have a “Give” button in the header region of their homepage.
- University of Illinois Library, Indiana University Libraries, University of Iowa Libraries, University of Nebraska Lincoln Libraries, MIT, East Lansing Public Library and University of Texas, have a dedicated button in the footer region of the Library homepage.
- Northwestern University Libraries, Georgia Tech, and Penn State University Libraries have a link in both the header and footer region of their homepage.
- Purdue Libraries have a link in their quick links section of the homepage
- UW-Madison Libraries has a link above the header on their homepage.
- NewYork Public Library has a “Give” button in the navigation section on their homepage.

Social Media Icons

- NewYork Public Library, National Library of Medicine, Purdue Libraries, UW-Madison, Penn State University Libraries, Ohio State University Libraries, Northwestern University Libraries are some of the Libraries that have custom icons for major social media platforms while most of the other libraries use default icons

to link to various social media platforms.

UX Methodology & Research

The [...] Libraries' Strategic Plan provides a foundation for our mission of the main website:

Intuitive but not over-simplified; engaging but not distracting; informative but not overwhelming; inclusive and accessible; modern and sustainable. The Strategic Plan emphasizes our values on data-driven decision making, inclusivity, accessibility, and optimization of the Libraries' resources. These values all direct our choices in the design and functionality of the website and how we test it.

Recruitment & Participants

We make a concerted effort to conduct our usability research on a diverse pool of participants. We recruited participants by way of email listserv, social media, staff email, or via guerilla recruitment at a table with free candy at the entrance of the Main Library.

Participants have so far included:

- Experience Architecture students (undergraduates)
- Library student employees
- [...] Library faculty & staff
- Community users (guerrilla testing)

In all recruitment methods other than guerrilla recruiting, participants are able to sign up for their preferred time of testing. Our testing sessions almost always take place with the participant and at least one of our testing team in person; video calling enables us to cater to most of our participants' schedules when some research team members can only join remotely. Our testing sessions usually see 6-12 participants, as volunteers and time allows.

Testing Methods

We also gather our data and perform testing in a variety of ways, ensuring we get the most relevant data for the problem we're trying to solve. User Journey Mapping is among our most-used methods, as it can be combined with other methods like A/B testing to get qualitative as well as quantitative data. In our User Journey Mapping exercises, a participant is asked to complete a series of tasks, and notetakers write down the participants' actions, thoughts, verbal expressions, and feelings they have while completing the task at hand. Also noted are any opportunities for improvement that the participant mentions or the team thinks of during testing.

Our team then debriefs, discussing the findings of our testing and sometimes creating visual affinity maps to group similar feedback within connecting themes. We analyze the problems and pain points revealed during testing and propose solutions, which are often prototyped and tested again.

We used this form of usability testing and user journey mapping to test the functionality and design of several of our pages, including our home, search, hours, spaces, and branch library pages.

We also used a more hands-off methods of gathering feedback, most notably with our “Graffiti Walls”. We placed a large print-out of the new Libraries’ homepage in two locations of the Main Library, accompanied by sticky notes and writing utensils. We prompted passersby with a written question asking for their thoughts. This allowed open, anonymous feedback from our visitors, staff, and faculty. This was our least successful testing method, as it garnished the least amount of useful feedback. Our moderated testing provided more fruitful feedback than unmoderated guerilla research.

Our team also conducted A/B testing during our research, comparing task completion speed rates along with the user journey of two different presentations of the same content. This has helped us format our Library Spaces page as well as our Bento Box search results.

This research is iterative and ongoing, as not only are there always improvements that can be made to a product, but technology and user patterns are ever-evolving and it is vital to keep up with these changes for the success of a sustainable web presence.

Task Creation

When creating tasks for usability testing, we go through a user task flow and note any points of potential confusion from the perspective of a variety of users. We make tasks around the UX writing of areas of our site, the calls to action, and the steps in a particular task. We make sure not to ask any leading questions so our data is viable - in other words, we use wording that does not lead participants to having any biases towards feeling one way or another, or towards taking one action over another. This ensures that our participants are giving us feedback directly from their experience. For examples of usability tasks we use in our testing, see Appendix A.

Results

Findings

The last year of research and testing produced valuable insight into areas of our site that can improve for our users. We present the results from our findings from testing, the recommendations we made, and the solutions we decided on. These findings are organized based on the area of the website that was impacted.

Home Page

Finding #1

The purpose and destination of the link in the hours section is unclear. On our library website homepage, we have an hours section with a link to view “Full List of Hours” (*Figure 1.*). During testing, our patrons were unclear on the purpose of the link. Some expected to view the hours of all branch libraries, while others expected to view more hours of the main library, excluding branch libraries.

Recommendation:

- Update the language of the hours link from “Full List of Hours” to “See more hours” to better convey the function, purpose, and destination of the link on the homepage.

Implementation:

We changed the link text (*Figure 2.*), which provided more context to the user informing them that they can view more hours for the Main Library. Our team experimented with adding the branch name in the link, “See more Main Library hours,” but we ultimately opted for something shorter in length. There are several branches and units with longer names at the library, and including the unit or branch name in the link.

Finding #2

The “What’s going on” section (*Figure 3.*) is redundant on the homepage. Our test participants indicated that this section is confusing and showing redundant information, and that it is taking up too much space on the homepage. Our participants reported that, “[participant] like the [right side] better than the What’s goin on section,” and that “It’s going to look lame and outdated.”

Recommendation:

- Remove the “What’s going on” section on the homepage, which has redundant information and looks out of date. Replace this with a Services Spotlight section to highlight the services offered by the [...] Libraries.

Implementation:

We replaced the “What’s going on” section with a Services Spotlight section that features some of the services the library offers (*Figure 4.*). With this change, we are hoping to make patrons aware of services at the library. We decided on the new Services Spotlight section over other options in order to align with the library and university’s strategic plans.

Branch Home Pages

Finding #1

The header navigation is not intuitive to our patrons. We noticed that our participants used the back button or the links in the main menu to navigate to the branch homepage when they are already on the branch subpages of the site. Our website has links in the header section (*Figure 5., Figure 6.*) which link to the homepage as well as to the branch homepage. However, the function for these is unclear or totally lost, and users end up using the back button instead.

Recommendation:

- Clearly indicate that the text in the header can be used to navigate to the library homepage or to the branch homepage, either with differences in text styling or in text placement.

Implementation:

We are currently in the design development phase of working on a solution for this finding. Our solution for this is to implement a sticky menu for the entire library website, and provide an additional navigation area on the branch and unit pages as necessary. Before we implement any solutions, we will do another round of testing with users on a prototype to gain early input on the direction we take the design.

Finding #2

The branch homepage headings (*Figure 6.*) are too similar to the homepage. When navigating from the homepage to a branch library page, our participants indicated that they had trouble knowing if they are on the branch page or still on the main library page as they looked too similar and not giving any visual cues.

Recommendation:

- Update the style of the branch homepages so that they are not too similar to the homepage.

Implementation:

As a team, we are working on different designs to improve navigation based on this finding. Our latest experiment includes a primary sticky menu for the entire site, with an additional menu bar on the branch library homepages (*Figure 7*). We believe that this will clarify what pages navigation menus correlate with, and may prevent website users from constantly using the back button over the site's navigation. We plan to do further user testing on this solution.

Search

Finding #1

The tabs on the page are easily missed as they are getting lost in the visual clutter. On the search page we have tabs to switch between the bento layout and the individual source (*Figure 8.*). During the test, our patrons missed these items due to the visual clutter, as they were displayed in between the search and results section.

Recommendation:

- Highlight the tabs on the search page using a background, and highlight the active tab.

Implementation:

To fix the problem of patrons missing the tabs on the search page, we added a background to the tabbed area to make it stand out from the rest of the page, and added delineators between the links. We also highlighted the active link with a bold underline to make it clear to the patron which page they are on. Adding these touches to the links on our search page makes it easier for patrons to recognize the search navigation area.

Finding #2

Bento boxes that are lower on the page are frequently missed. Some of our bento boxes, especially the Books & Media and Articles box, can get really long (*Figure 10.*). This pushes

the boxes below them further down the page, making the user scroll to see results from other sources. This causes patrons to often miss these other boxes on the bento box search page.

Recommendations:

- Make the bento boxes smaller and scrollable to reduce the scrolling on the page and increase the visibility of the boxes that are pushed down by long result sets
- Reduce the space between the header and search box so that the results are moved up and visible to the user without scrolling.

Implementation:

We resized the bento boxes to all be the same height and width (*Figure 11.*). This change brings more of the search result categories into the patron's viewport, making the boxes less likely to be missed. We also changed the width of the boxes to allow for more whitespace between them. This makes each box easier to distinguish on the page as a distinct search category.

Finding #3

The help text for each search box is unnoticed, and often missed by patrons. Each of our search boxes have a text blurb indicating the number of results and the source that they are fetched from (*Figure 12.*). Our test participants indicated that this information is useful and

getting lost in the visual clutter, making the user scroll to see results from other sources, which were often unnoticed.

Recommendations:

- Change the display to use badge formatting to indicate the number of results in each search box, and move the help text under the count so it's not getting lost in the visual clutter.

Implementation:

We updated how we displayed the help text and result count within each search result box on the bento box page. We separated the result count from the help text, moving the result count into a badge. This badge is more prominent and highlights the information patrons want to immediately be able to identify. Removing the result count from the description for the search box also makes the description easier to parse on a glance. Our patrons noted during testing that this important information was getting lost, and this solution provides a remedy for that.

Hours

Finding #1

The functions of the branch dropdown and the “Go” button on the calendar page (*Figure 14.*) are unclear to patrons. Our test participants were unsure about the functionality of the

form elements that enabled them to select different library branches and dates. Participants expected the view to automatically update when they changed the value in the dropdown, instead of needing to click on a button to update the results.

Recommendations:

- Update the layout for the form elements to select library branch and date form so that they are not in a single line.
- Change the text on the “Go” button to “Apply” to indicate that the button needs to be clicked in order to apply the selection.

Implementation:

After this testing, we made several changes to the form on this page. We changed the layout of the form elements and updated the text on the button from “Go” to “Apply”. Changing the layout of the form elements places them in an easier location for patrons to quickly parse the form. Separating the form elements to different lines also clarifies the function of these elements, since they are no longer all grouped together. We also updated the text on the action button to make it more meaningful to patrons. There was noted confusion on what was meant with “Go”, and patrons seem to understand “Apply” much better.

Finding #2

Useful information about each branch is missing, hampering the user experience.

Participants indicated that they would like to see more information about the branch on the hours page so they can pull up the directions or call the branch.

Recommendations:

- Add the branch phone number and location under the branch name on the hours pages so users can call or locate them easily.

Implementation:

Before going through this round of user testing, we did not have the phone number or address for the library branch shown on the hours page (*Figure 16.*). After this testing, we added the branch phone number and address to the hours page (*Figure 17.*). Adding this additional information makes it easier for patrons to contact or locate the branch libraries without leaving the hours page.

Spaces

Finding #1

Navigation from an individual page to the space page that lists all spaces was non-existent. Participants were perplexed when they used the spaces interface to find a space but it had no way of getting back to the spaces interface without using the default browser functions.

Recommendations:

- Add a persistent button on the individual space page which takes the user back to the all spaces interface.

Implementation:

We added a button on each individual space page that returns the user back to the spaces page that lists all of the spaces available at the library. Adding this button gives the user a clear way to return to the space listings, and no longer leaves the back button as the only way for a user to go back.

Finding #2

The function Max Seating Capacity and Max Grouping Size was confusing. Participants indicated that the Max Seating Capacity and Max Grouping Size filters (*Figure 19., Figure 20.*) are confusing and expressed support for removing them.

Recommendations:

- Remove the Max Seating Capacity and Max Grouping Size filters from the filter section on the Spaces page.

Implementation:

This testing revealed that we needed to make some changes to the filters on the spaces page. Users in testing pointed out that the filters for Max Seating Capacity and Max Grouping Size caused confusion, so we removed those filters.

Finding #3

The filters section is too long on a mobile device. When using the interface on a mobile device, the filters section is too long and the participants have to scroll to view the results.

Recommendations:

- Add a persistent and sticky section on the spaces page for mobile screens which shows the selected filters and gives them an option to remove them.

Implementation:

This is one item we have yet to implement as of this writing, but we have a plan for what we want to improve on the spaces page. We are planning to add a persistent sticky section at the top for mobile screens on this page that will display the currently selected filters. We will conduct additional testing on this page after we make these updates.

Limitations

Overall, our methods effectively produced valuable information for our team throughout the research and design process. When selecting the sites for the comparison, we chose sites that we felt captured a representative sample of institutions that qualified as direct, indirect, parallel and partial "competitors", with a primary focus on other Big Ten and R1 Libraries. We felt that this was the best strategy for the analysis, however, we acknowledge that this may exclude sites outside of these categories that may have provided additional information for our team.

The bias of subjectivity was another factor that needs to be accounted for in our research. Our methods called for only one person to assess each site, and as a group we aggregated the data for analysis. This approach allowed us to have a more in-depth analysis of each site, as each person could focus on a smaller subset of sites to review. However, this method did lend itself to the subjectivity of each of the reviewers. Having more than one reviewer for each site may have been helpful in curbing the chance of subjectivity bias.

Bias also came into play in the interpretation of each person's view of the scope of the categories of evaluation. We performed our analyses separately so as not to influence each others' responses, but this also allowed for a range of interpretations. For example, even though we made our best efforts to adhere to a shared understanding of each category, the exact interpretation of the definition of "page layout" could vary slightly from person to person.

While our methods provided significant information, there are certain barriers to entry for each site that our team could not cross. This altered our ability to go evaluate every site in exactly the same way. For example, some of the library sites that we analyzed prohibit access to sections of their site to non-affiliated users, or users without login information. This was most notable in the "search" category, where a handful of institutions do not allow full view of search results to be displayed without proper credentials. In and of itself, this was valuable information about user interactions on each site, though it did impact our ability to analyze each site in precisely the same way.

Notable for our user testing is our recruitment of participants. Our team made efforts to recruit testing participants from a variety of backgrounds, and guerilla testing in particular saw a variety of participants from different groups. However, we did see a larger student response rate from Experience Architecture (MSU's user experience degree track) students than from other groups. Our team's historical collaboration with this degree track provided us with greater access to students from this area of study. We also engage library student employees as research participants as well, though we do not use library student employees from our own unit as research participants. While the engagement of these participants resulted in a wealth of information used in the redesign of our site, (and their focus and experience in our fields may have positively impacted the quality and depth of the information they provided), we acknowledge that a significant portion of our student responses are from a minority of Colleges and degree programs from across campus. We

continue to perform research and focus on recruiting participants from across campus and beyond.

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Appendix A: Survey Questions

Spaces Page

1. Without clicking (but you can scroll), please tell us what kind of information you see on this page.
2. Please find where to study in the Hollander MakerSpace Flex Space.
3. What kind of computers does this space have?
4. Please navigate back to the spaces page.
5. Please clear your search.
6. How many spaces are located in the Gast Business Library?
7. How would you check the availability of a reservable space in the Business Library?
8. Say you are an instructor looking for an instruction room in the Main Library that can accommodate 30 students and has dimmable lights. Please show us how you would find an appropriate space.
9. Say you are an instructor looking for an instruction room in the Main Library that can accommodate 32 students and has dimmable lights. Please show us how you would find an appropriate space.
10. If you wanted to remove any of these search facets to expand your options, how would you do so?

Search Page

Articles Metadata Display test

Start the user form the Articles search page:

1. From the library articles search page, search for “Michigan” and can you tell us why you can't see all the result titles.
2. Can you tell us what the next step is to see the result titles
3. What can we do to improve this workflow

Distinction between Books & Media boxes and Articles box.

1. On the MSUL homepage open the search dropdown
2. What kind of results would you expect to find by using the dropdown option for Books & Media vs the dropdown option for Articles
3. Search for “User experience”. Identify any differences between the results you see in the Articles box to what you expected.
4. Identify any differences between the results you see in the Books & Media box and what you expected.
5. Ask about the usefulness of the helptext
6. Identify the formats of each result in the Books & Media box.
7. Identify the formats of each result in the Articles box.
8. Ask if the results between the boxes are confusing

Bento Layouts (6 w/ tabs and 7 boxes)

1. Using the All sources option in the main library search, search for School Gardens Collection and find the collection.
2. Follow up: Which one do you find intuitive.

Top Tabs/Gray box

1. Search for the School Gardens Collection and using the gray tabs find the collection.
2. Scroll (testing scrollable boxes vs non-scrollable boxes)
3. On the bento page search for European Research Guide find European American Studies Research Guide
4. Notes: Repeat the same task on production and ask them their preference

Tooltips

1. Can you tell us what sources are being used for the articles box.
2. Can you tell us
3. Notes: Repeat the task on a different env which has the old design of help texts

Test the linked title to all results on the bento page.

1. How would find more results of any of the boxes
2. Ask for suggestions/improvements
3. What are your impressions/expectations of the information provided in the purple area of the box

DSL Homepage

1. Using the DSL homepage, show us how you would book a project room.
2. Using the DSL homepage, show us how you would book a class room.
3. Using the DSL homepage show us how you would get help for data/digital scholarship project
4. Using the DSL homepage identify whether the computers have Adobe Premier Pro in the Digital Scholarship Lab
5. From the DSL homepage, find the location and hours of the Digital Scholarship lab for Jan 29th.

Most used pages on a mobile device

Homepage

1. Can you find out the date, time, and location of the Software Carpentry: Programming with Python workshop?
2. Can you find today's hours for Starbucks?
3. From the homepage can you show us how to access your library account?

4. From the homepage can you navigate to the business library homepage?

Hours

1. Can you find the hours for Starbucks on March 4th?
2. Can you find the hours for the Music Library on March 4th?

Spaces

1. You have a study group of 5 people and are looking for a space to meet. Your group needs a whiteboard. Can you find a space in the main library that can accommodate your group?
2. Can you find an individual study space in the business library?

Appendix B: Figures

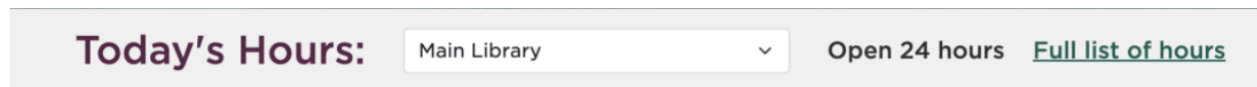


Figure 1. Full list of main library hours

—

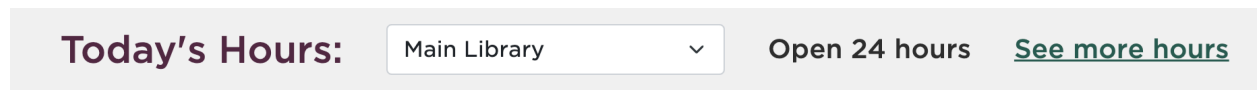


Figure 2. See more main library hours

—

What's going on

News

[Giving Tuesday](#)

February 23, 2023



Happy #GivingTuesday! Are you looking for a way to give back to [redacted]? The @ [redacted] and the @ [redacted] would love support o...



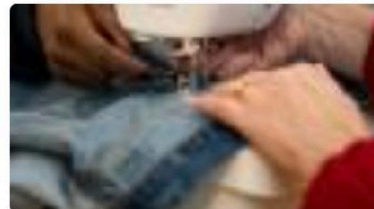
News

[Happy snowy Friday](#)

February 01, 2023



[redacted] News: Happy snowy Friday! Cuddle up in some comfy threads and check out this piece by [redacted] featuring the...



Exhibit

[Clason Maps](#) Physical & online exhibit

January 26, 2023 – February 02, 2023

2 West

Collectors of Clason state road maps issued between 1923 and 1931 are presented with challenges around determining map...

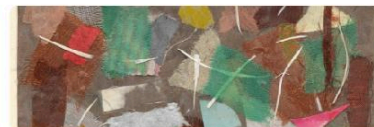
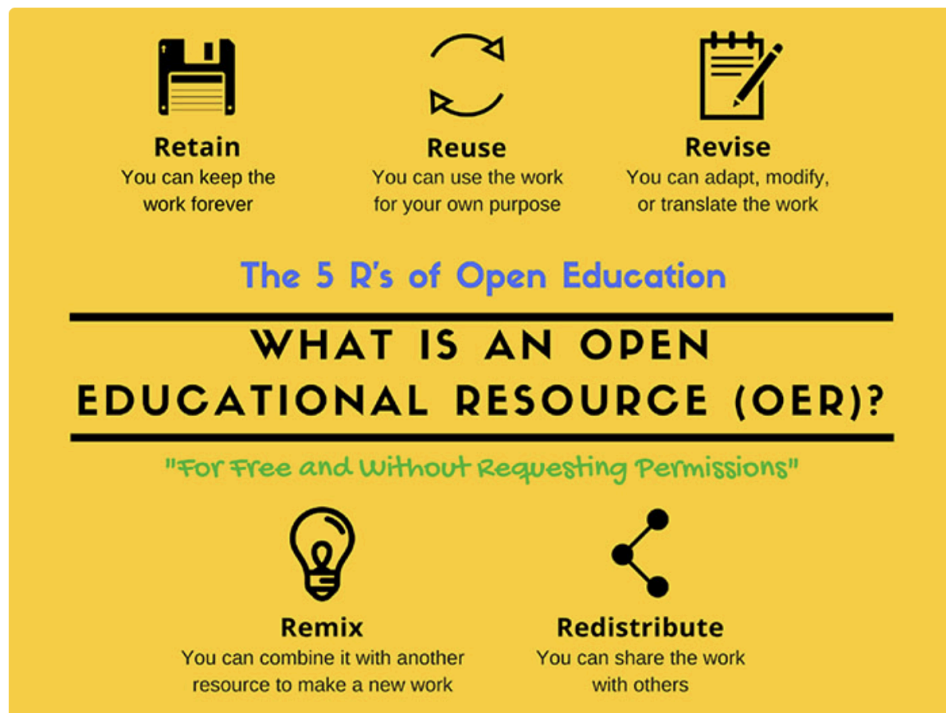


Figure 3. What's going on section

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Service Spotlight



Open educational resources (OER) are teaching, learning, and research resources that are copyright-free (public domain) or have been released under an open license that permits others to reuse, revise, remix, retain, and redistribute them.

Figure 4. Service section

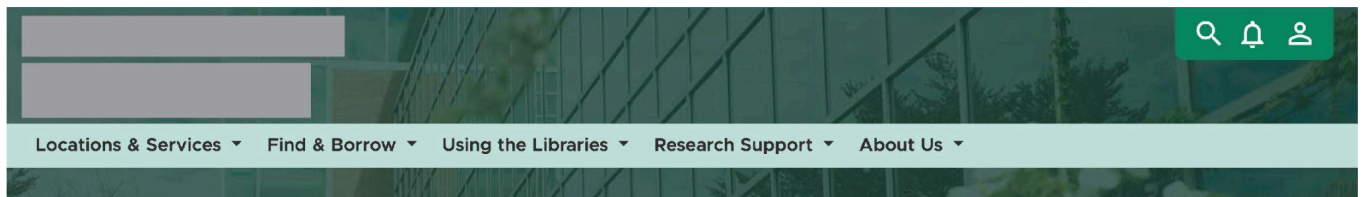


Figure 5. Main navigation menu

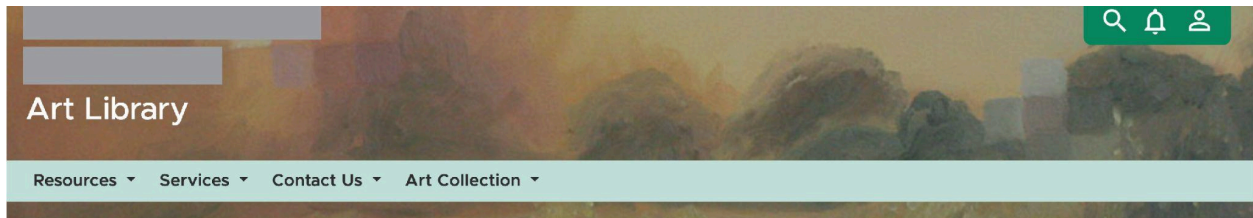


Figure 6. Branch library main navigation menu

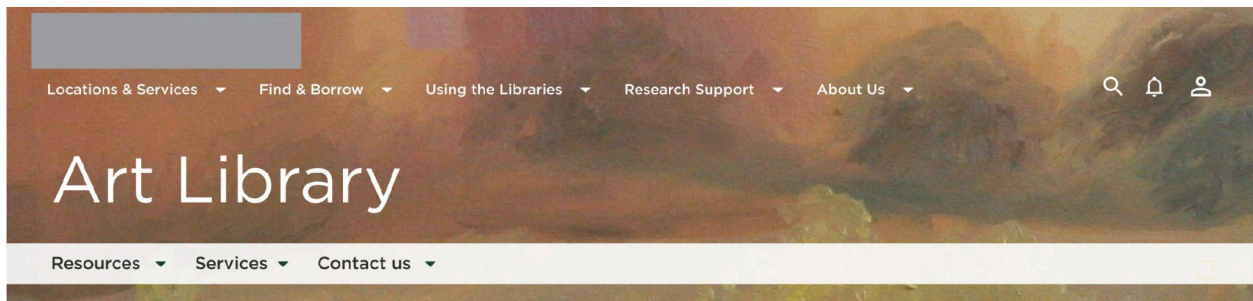


Figure 7. Branch library navigation with main library navigation sticky menu



Figure 8. Search tabs with no highlighting

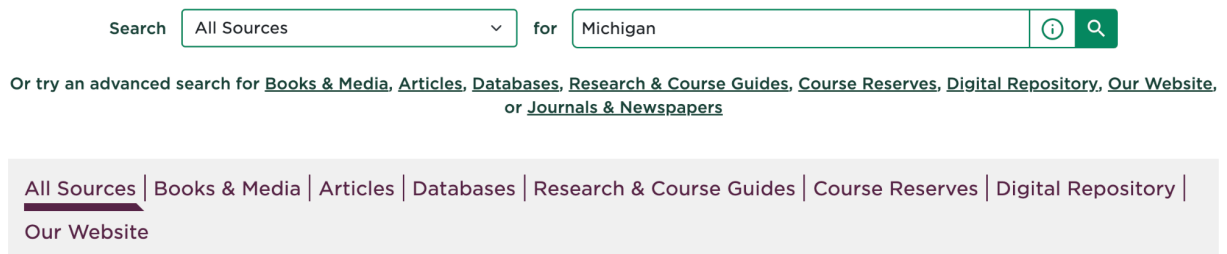


Figure 9. Search tabs with highlighting

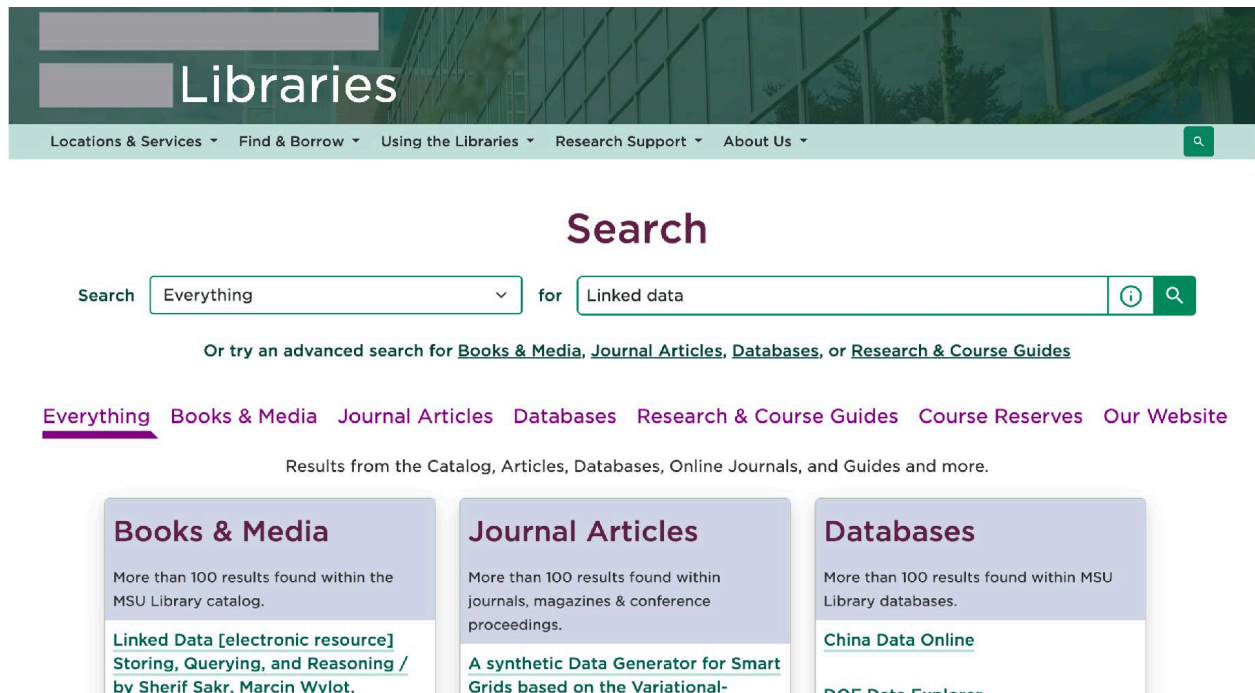


Figure 10. Bento boxes before resizing

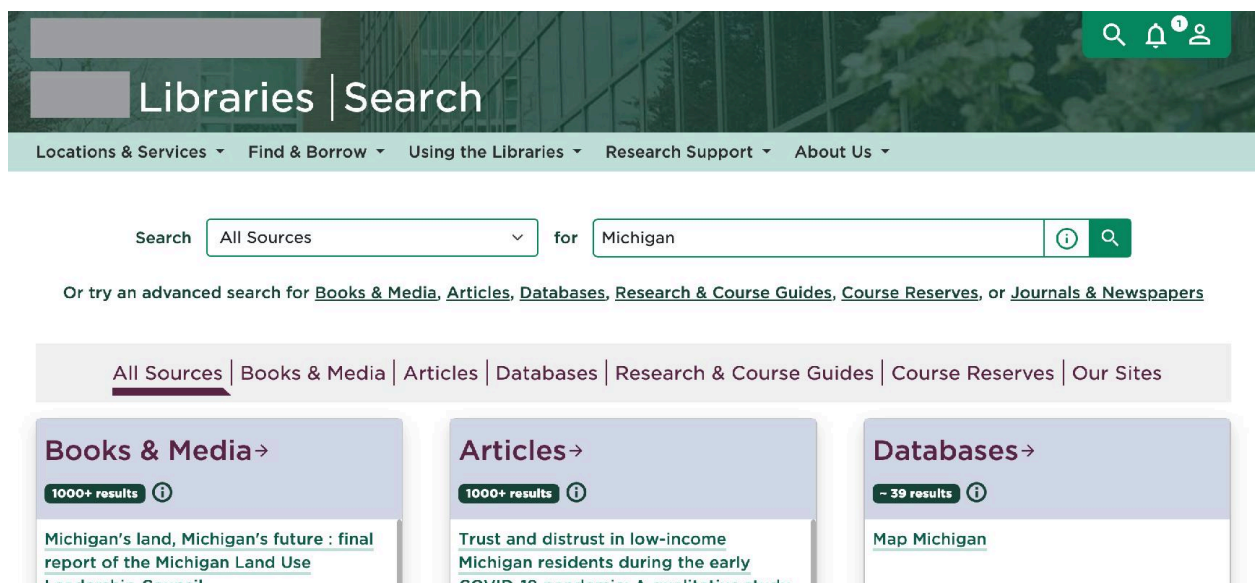


Figure 11. Bento boxes after resizing



Figure 12. Books and media bento box header

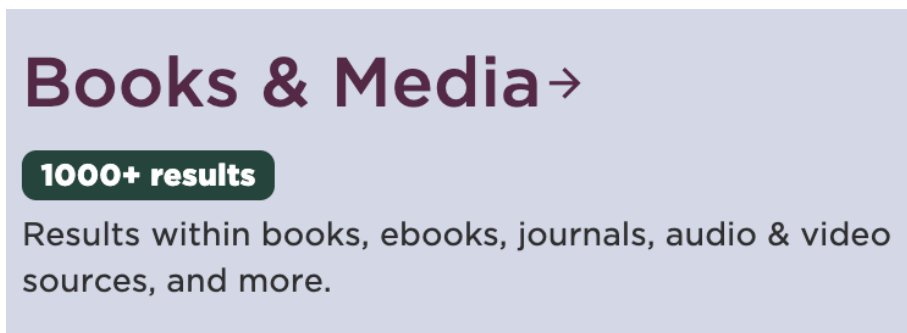


Figure 13. Books and media bento box header with results counter badge

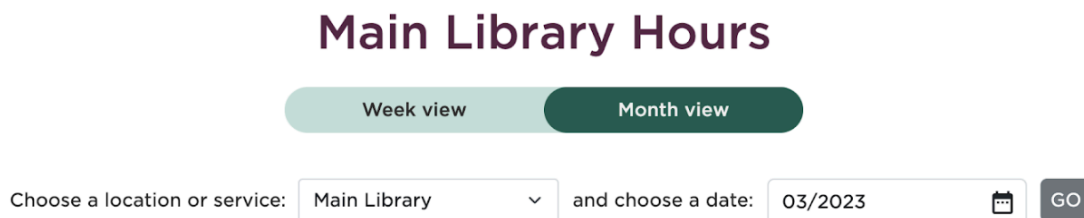


Figure 14. Main library hours

Location & Service Hours

Week view

Month view

Choose a location or service: Main Library

Choose a date: 04/2024



Apply

Figure 15. Location & service hours

—

Location & Service Hours

Week view

Month view

Choose a location or service: Art Library

Choose a date: 04/2024



Apply

Art Library



April 2024



Figure 16. Location & service hours with branch name

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Location & Service Hours

Week view

Month view

Choose a location or service: Art Library

Choose a date: 10/2024



Apply

Art Library



October 2024



Figure 17. Location & service hours with branch information

[Browse all Spaces](#)

Art Library



Learn more about MSU Libraries' policies on [meeting space use](#)

Building: Main Library

Location: 3rd Floor, West wing

Seating Capacity: 40

Category:
Individual Study

Features:

Computers

- Macintosh Computers
- Windows Computers

Figure 18. Art library spaces page

☐ Main Library

Space type

- ☐ Event Space
- ☐ Group Study
- ☐ Individual Study
- ☐ Library Instruction

Max seating capacity

Displays spaces having less than or equal to the selected seating capacity

30



Max group size

Displays spaces having less than or equal to the selected group size

Select max group size



Figure 19. Spaces filters for seating capacity and group size

- ☐ Gast Business Library
- ☐ Main Library

Space type

- ☐ Event Space
- ☐ Group Study
- ☐ Individual Study
- ☐ Library Instruction

Max seating capacity

Select max group size

1

4

5

6

7

Select max group size

Figure 20. Spaces filter dropdown for max group size