New Website Design: Usability Testing

Crystal Trice

Abstract
To guide decisions for their website redesign (wccls.org), the Washington County Cooperative Library Services web team employed several types of usability testing. The results from surveys highlighted the most frequently performed web functions, card sorts helped to group and name content, wireframes visualized the placement of content, and click testing facilitated site navigation design. Details of each type of test are shared as well as lessons learned and future usability testing plans.

Keywords: usability; testing; website; survey; needs assessment

Introduction
Washington County Cooperative Library Services (WCCLS) in Oregon has been planning a website redesign for several years. Located in the Portland area, WCCLS partners with the County, nine other cities, and two non-profit associations, serving around 550,000 total residents. The County provides the majority of operational funding, central support services (such as technology and website hosting), and outreach to special populations.

Besides wanting a more modern web presence, there were three main reasons for rebuilding our website: (1) improving the user experience and the retrieval of information, two concerns based on feedback from patrons and staff; (2) making the website mobile-friendly – 30% of our website visits come from mobile devices; and (3) having a secure website in Drupal 7 – our previous website used Drupal 6 as its Content Management System (CMS), which was headed for end of life (i.e. no more security updates). The wccls.org website is the primary portal for the catalog and online resources shared by all member libraries.

To manage this project, we had planned to hire an Information Architect but were unable to reach an agreement with a vendor. We couldn’t change our deadline because of Drupal 6’s end of life cycle, so this meant we had to conduct our own usability testing to help us design the information architecture of our new site, and we had to do it quickly. We started testing in January of 2015 and needed to wrap up the majority of our testing by the end of May to meet our time constraints.

During the same time frame, the WCCLS web team shrank from three people to two, which meant we had to select usability testing options carefully. Our goal was to get the most helpful data we could within our time and staffing limitations.
**Website testing participants**

Google Analytics indicated that library staff members comprise 20% of our website visits. While staff have valuable input as stakeholders for our new website, the vast majority of our visitors come from elsewhere. We wanted to learn what vocabulary our patrons use and not rely on library jargon for naming content in our new site.

**Step 1: Discovering the most frequent tasks done on our website through a survey**

Google Analytics showed us the top 10 (or so) webpages that people visit (See Figure 1), but we wanted to see if that data matched user’s perceptions of what tasks they perform on wccls.org.

We used SurveyMonkey to ask visitors to rate the top five tasks they perform on our website. We advertised the survey on our website and through social media outlets, and had 75 responses. Both staff and patrons ranked the following tasks as the most common (See Figure 1):

1. Searching the library catalog
2. Accessing E-books
3. Retrieving member library information
4. Retrieving personal library card information
5. Accessing online resources (reported only by library staff)

![Figure 1: Results](image)

These top five tasks became the focus of our new homepage. That is what people report wanting to do most often when they visit our site, and we wanted to make sure they could do these tasks easily. These same tasks appeared in a different order in Google Analytics, but still near the top totals for page visits.

Next, we needed to learn how to label our online content to make it easy to find.
Step 2: Grouping and naming content through card sorts

To help determine the information architecture of the new site, we wanted to know how people naturally group information and label such groupings. We decided to employ a kind of usability testing called card sorting, which can be done live or online. First, we took a sampling of content from across our website and created 35 individual cards, such as “teen events” or “library meeting rooms” (See Figure 2). Then, we hosted two live sorts in our member libraries. We required registration and limited each sort due to room size; it takes a lot of table space to sort cards, even when they are the size of business cards! We had 14 total participants, including both library staff and patrons.

During the card sort, we invited people to organize cards and give category names to each grouping. (This is called an “open” card sort.) Each sort took approximately one hour, with 35-40 minutes for each person to sort his or her cards. We asked participants to write new labels or questions on the cards as needed, which gave us valuable feedback about confusing library terms. Participants were eager to discuss the experience afterwards, which we recorded on chart paper. Our discussion questions included (1) what cards were confusing, (2) what cards were surprising, (3) what cards were missing, and (4) what cards aren’t needed?

To record responses, we used an online product called Optimal Sort, which allowed us to print content cards with barcodes. After the sort, we typed in each participant’s category names, and scanned in the corresponding cards for that grouping. Using Optimal Sort also helped with analyzing the data and saved us time from creating and interpreting massive spreadsheets. Although Optimal Sort has a monthly subscription fee ($109 at the time of our testing), we maintained access to our data after canceling our subscription.

We selected category names based on the open card sort data (See Figure 3), but we wanted to ensure that those labels worked for most people. To accomplish this, we held an online version of the card sort, also through Optimal Sort. This time, we predetermined category names and asked participants to match the content cards to these categories. (This is called a “closed” card sort.)
We invited people to participate in the online card sort through our website and social media, and had 44 participants. We learned that several of the category names we liked (“Download it”, “Check it out”) actually confused our patrons. When we changed the category names to “E-books” and “Library Card,” participants could consistently group the content.

Figure 3: Similarity Matrix – the higher the score, the greater correlation between content, e.g. all of the content cards listed have high scores except for the WCCLS blog, which indicates that users would expect to find this content grouped together on our site.

After both card sorts, we understood which category names would facilitate successful navigation on our website. However, we still needed to know where to place these category names on our new homepage.

**Step 3: Evaluating wireframes of the new homepage**

Using a combination of the survey and card sort data, we created two simple wireframes for the new homepage. Wireframes are minimalistic visual guides that depict the page layout for content, but generally ignore stylistic choices such as font or color. Instead, wireframes focus on arranging content on a page to prioritize space allocation (See Figure 4).

We used Gliffy to create wireframes, but any graphics program would work, as well as hand-drawn sketches. We posted the wireframes on a section of our website that requires log-in, and invited staff to write comments. We took their comments and created a third wireframe based on their helpful suggestions.

Now we had the bones of our new homepage! We also had an idea of where all our content should live, based on the card sort groupings. Next we wanted to know where people would click to perform a variety of tasks, by testing these groupings in a different way.

**Step 4: Creating navigation through click testing**

We created a set of common tasks that site visitors might perform, and then asked participants to click where they would begin each task, e.g. “You want to find out
when the next storytime is,” or “You are headed to Italy for vacation and want to start learning Italian.” For click testing, we used Chalkmark, another online product from Optimal Workshop, because we liked its heat map results (See Figure 5). We posted the click test on our website and social media, and had 118 participants. As a result of the test, we tweaked some of our category names and decided to post some content in more than one location. For example, our News Blog is listed under both “About WCCLS” and “Events” because participants looked for it in both places.

**Step 5: Fine-tuning through paper tests**

As we added content to our new site, we sometimes had specific concerns that needed usability testing. We decided to do paper testing because the development site was only visible in our administrative office, which is not located in a member library. We printed screenshots of our website and asked staff for help.

For the teen page, we asked YA librarians to recruit a few teens to circle where they would click for three specific tasks (See Figure 6). We emailed the test details so that staff could print out the usability test and then send it back to us through interoffice mail, or scan and send by email. We received only 5 completed tests for teens, but they confirmed our thought process about that page. Additionally, we requested staff stay after committee meetings to help name content that proved tricky in previous usability testing. We provided screenshots and explanations, and asked staff for their ideas. Approximately 30 staff members participated, with helpful feedback for some of our thornier, lingering questions, like how to clarify labels and icons.

**What we learned about usability testing**

After this experience, we know there is still much to learn about usability testing. However, we did pick up some helpful tips along the way:
• Gain buy-in from stakeholders through usability testing. Seeing your work in progress gets people excited about your new design. They enjoy feeling a part of your work, and transparency builds trust.
• Test the usability tests. We piloted the tests in our Automation office before opening them to the public/staff, leading to many improvements.
• Iterate. We used smarturl for each online test so we could tweak the same public short URL to point to updated test URLs. This gave us much more “bang for the buck” because we could test changes as we progressed.
• Publicize the project through social media.
• Develop short tests when possible. We received the most results from online tests that took less than five minutes. However, there were times when a more thoughtful approach was warranted.
• Reserve lots of time to analyze data. Even when using an online product for analysis, the results are not always clear. When in doubt, test some more!
• Take the library staff’s feedback with a grain of salt. Granted, they are experts in their field, but they are not “typical users.” We often found that library staff experienced the website differently from patrons. For example, changing the “Locations” menu to “Locations & Hours” actually lowered the likelihood of clicking the correct category.
• Use online tools to save time. All of our testing could have been done in person or by paper but would have demanded considerable staff time. Further, paper tests are limited because they do not simulate a true experience of the website. (However, paper tests are simple to perform and can give useful results, so don’t rule them out completely.)
• If conducting live and low-budget testing, make sure a member of the web team
is present. Often the biggest gains from this kind of testing are in the discussions that may not be related to a specific test.

**Future testing plans**

Usability testing hasn’t stopped since our website went live in September. We have a few sections of the site that we weren’t able to develop as much as we’d like due to time constraints. We plan to work with our subject matter experts in those areas (Español and Youth Services) to develop strong content. We hope to include focus groups and specific usability testing with the populations they serve.

We also plan to develop a schedule for regular usability testing sessions as described in Steve Krug’s (2009) *Rocket Surgery Made Easy*. This method alerts us to problems within our website. Essentially, the steps include (1) recruit patrons, (2) ask them to complete a series of tasks, (3) record where they click and their impressions, and (4) analyze notes and record one or two areas to fix on the site.

**Author Information**

Crystal Trice is the Training and Projects Librarian at Washington County Cooperative Library Services. She has been a librarian for 16 years, on both the East and West coasts. She currently lives near Portland, OR, with sixty chickens, thirteen turkeys, four geese, and one husband.

**References**

