

Test in Place: Card Sorting for a Website Redesign while Stuck at Home

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For the last several months, IUPUI's UL has been in the information gathering stages of updating the library website. This process involved multiple UX activities, including a series of rapid contextual inquiries, surveys, and a comparison of peer websites. However, a key activity, card sorting, was not completed when the Shelter-in-Place orders took effect for IU. The shift to working from home was challenging, but through the use of an online tool and marketing on the library social media accounts and website, the activity was completed in a timely and effective manner.

Card sorting activities are used as a method of designing the structure of a website, especially in regards to menus and the organization of its web pages. It's one of the easiest activities to perform and offers a great deal of insight into how users think about your site. It can also give the researcher information on how webpages are labeled and the mismatch between what experts think is clear and what users actually do.

In a card sort, a participant is given a set of cards, each card representing a webpage or cluster of webpages. The participant is then tasked with sorting these cards into groups that they feel are appropriate. There are two main types of card sorts: open and closed. In an open card sort, the participant must create their own groups and label them as they see fit. In a closed card sort, the participant is given the set of cards and labeled groups from the beginning and must place the cards in these predefined groups (Spencer, 2009, p. 26). Typically, an open card sort is done first, and the groups that are created in that activity are used to inform the groups provided in the closed card sort.

Card sorts are popularly done physically, with a set of index cards and a big table for participants to work on. This was the original plan for the library, with four participants expected to complete both the open and closed card sorts (for a total of eight participants). Conducting a physical card sort has multiple advantages, as the researcher can be in the room to give encouragement and to also note the biggest points of frustration for the participant.

This, of course, is impossible to do in person as the COVID-19 response has left the campus empty and the offices closed. In order to conduct the card sorting activities, an online solution had to be found.

Through some research and comparing products, it was decided to use OptimalWorkshop, a web-based suite of tools focused on UX testing. It was chosen because of the clean and

easy to use interface, the ability to see abandoned tests, and the analytics tools that are provided with the suite.

The open card sort for the library website began on Sunday, April 5, the day before the extended spring break ended, and lasted for 6 days, before being unpublished on Saturday, April 11. It contained 93 different cards, most of them taken from the library's current navigation. An "On Homepage" group was provided to the participants, as it was important for participants to recognize that this was an option.

The number of cards provided to the participants to sort was quite large. It was decided to go forward with the 93 different cards as it was felt that it was an accurate representation of the content and services provided by the library. It was also hoped that because participants could take as much time as they wanted, even taking breaks, the number of cards would not be a barrier.

In the time that the card sort was available, 49 individuals attempted the card sort, with 10 completing it. Out of those 10, only 7 participants created appropriate categories. Of these, participants created a median of 9 groups.

In addition to completing the card sort, participants were asked to provide their relationship to IUPUI (undergraduate student, graduate/doctoral student, faculty/staff, and guest of IUPUI) and how often they interact with the library and library website (daily, a few times a week, weekly, monthly, once per semester, and this is my first time). This information was collected to provide more context for a participant's answers, especially in regard to the language that they choose for the groups. Participants were also given the opportunity to comment on the process and any other thoughts they had while performing the card sorting activity.

The analytics tools available in the Optimal Sort suite were used to make sense of the results. For the open card sort this was done through its standardization features, which allows the researcher to create standardized groups by combining the groups the participants created. This is done at researcher discretion, but Optimal Workshop provides a percentage of agreement between the created groups, allowing the researcher to see what groups are most likely to match user expectation.

In addition to this analytic work, researchers can benefit from looking at the names of the groupings and using those in further testing. For this project, a participant used the term, "Amenities" to group cards such as "Lockers," "Lactation Room," and "Graduate Study Carrels." This term was then used in the closed card sort as it seemed an appropriate and simple label for some of the spaces and services that the library offers.

The following week a closed card sort was created and linked from the library's homepage. Like the open card sort, this activity was available for six days. It contained the same 93 cards and a total of 14 groups that the cards needed to be sorted into.

In total, 43 individuals attempted the closed card sort, with 16 completing it. It was expected that more participants would complete the closed card sort, as it takes less mental energy to sort cards into predefined categories than create them from whole cloth. Again, participants were asked to fill out the questionnaire to provide context and were given the opportunity to leave comments.

To analyze the amount of agreement between the way participants grouped the cards the “Popular placements matrix” tool that is provided with Optimal Workshop was used. This tool displays a spreadsheet with the columns representing the groups provided to the participants and the rows representing the cards. Each card is given a percentage based on how many participants sorted that card into that particular group. Optimal Workshop even goes the extra step and arranges the cards to see the most popular cards in a group together.

Popular placements matrix [?](#)

	Quick Access - O...	Borrowing and A...	Collections	Departments an...	Guides	Help	Policies	Research	Rooms and Rese...	Technologies	Amenities	About
Site Search	81%					19%						
IUCAT	75%		13%	6%				6%				
OneSearch	69%					6%		25%				
E-Books Portal	44%		25%					25%		6%		
WorldCat	44%		13%					44%				
Make a Gift	31%					13%	25%					31%
On-Demand Services	25%	19%	19%	6%		13%		6%		6%	6%	
Renewals	6%	94%										
Holds	13%	88%										
Fines		75%					25%					
Loan Periods & Borrowing Limits		69%					31%					
Book Drops		56%					6%				25%	13%
Interlibrary Loan	19%	50%		6%		6%		19%				
Course Reserves Request	13%	38%	13%		6%			6%	25%			
Library Cards for Guests	6%	31%				13%	31%				19%	
Proxy Account for IUPUI Faculty	19%	31%				6%	13%	6%		19%	6%	
Accessing Materials Off Campus	13%	25%			6%	25%	13%	6%		6%		6%
Encyclopedias/Dictionary/Thesa...	6%		81%		6%			6%				
GIS/Maps/Atlases			81%		13%			6%				
Special Collections			75%	19%				6%				
Physical Reference Collections			69%	19%				13%				
College/Career	6%		38%	19%	13%	6%		13%			6%	
City/State/Country	6%		31%		6%			25%			6%	25%

Figure 1. Screenshot of the “Popular placements matrix” for the closed card sort.

Roughly 70% of the card provided to the participants had an agreement rate of 50% or higher. For these cards they will be placed in that group when it comes time to redesign the website.

Of more interest are the cards that were grouped in a large number of groups or were grouped in similar numbers between the two different groups. Some notable examples are “Library Cards for Guest” (grouped into “Borrowing & Account” and “Policies”), “Accessing Material Off Campus” (“Borrowing” and “Help”), and “Library Instruction” (“Help,” “Reservations,” and “Amenities”). Some of these cards may end up appearing in multiple groups, but before making that determination, they will be looked at again through other testing methods such as surveys and interviews.

One of the challenges with UX is recruitment. If a task is only 10-15 minutes, providing students with simple snacks such as candy bars or chips can suffice as incentives, but for anything taking longer than half an hour it is encouraged to provide a more substantial incentive, like a gift card to Amazon or a university bookstore.

Originally, it was planned to give participants a \$25 Amazon gift card for their time, but due to the online and anonymous nature of the online card sort, it was decided to not provide incentives and see if individuals still took the time to respond. Despite the lack of incentive, the tests were still completed by more participants than was originally envisioned. In the future, if this is done again, the possibility of conducting a moderated online card sort with an incentive will be explored.

In conclusion, pivoting to an online method of card sorting proved to be fruitful and a possible replacement for a mediated in person card sorting activity. Even with the lack of incentives, library patrons were willing to dedicate time to the process and aid the library in making some critical design decisions. Going forward, a blended approach will be explored, with both moderated in-person card sorts compared to unmoderated online card sorts.

References

1. Spencer, D. (2009). Card sorting: Designing usable categories. Retrieved from <https://ebookcentral-proquest-com.proxy.ulib.uits.iu.edu>