

Usability Test: Library Spaces Page Report

Recommendations

1. Always keep all items under each filter box and rank them by the number of spaces available, especially for feature filter. Currently, if participants select an item under library or noise level filter, some features (e.g., food-free) are no longer available under features. Hiding unavailable features would make participants unaware of or miss out those options if they do not review features at first. Unavailable features could be shown with "(0)" at the end of the text.
2. Provide multi-selection function for noise level and library filter, like the current setting for features.
3. Create a reset button to help clear the selections with one click.
4. Change the text of the tag on the space cards from "Group Study Allowed" to "Group Study".
5. Add "Food Allowed" tag on the space cards if the space allows food, or add a "food allowed" item under features filter. Currently, the features filter only has "food-free" and participants cannot tell from the results whether a space allows food.
6. Consider testing the scroll bar on various platforms as there appears to be some inconsistency which may be due to device error. Currently, it is hard to use the mouse to select the scroll bar and drag up and down. But after using the mouse wheel to scroll, the scroll bar becomes wider so it is selectable and movable by left mouse key. Participants had difficulty in using this feature.
7. Make the cards of places listed in the results clickable. The effect after clicking could be a pop-up box showing the larger picture of the space with detailed description, or showing the information page like the one for [Bostock Library, 1st Floor](#) (if choose to do so, we recommend to still keep the text and link at the bottom right). During the test, many participants tried to click the picture or zoomed in to see the picture clearly, making the cards clickable could support user perceived affordance.
8. Match the pictures in the results with the actual space. For example, the picture of places between Perkins and Bostock does not match with the actual space. Participants are using pictures shown on the page to decide whether these rooms have the features they need (e.g., whiteboard), so it is important for the image on the website to be current and accurate.

Background

This study was conducted to test the usability of the newly designed [Library Spaces Page](#) which collects spaces in Duke University Libraries. It was developed and conducted by Manhua Wang and Robin Knight, with the guidance of Emily Daly and Thomas Crichlow. On November 22th 2019, we began our lobby testing by working with a pilot participant, a student employee from the library's service desk, and then proceeded onto the lobby for usability testing. We were located outside of the Perkins Library where we recruited 7 participants. Robin Knight moderated the first four participants and Manhua Wang moderated the rest three ones. Each participant was given a voucher for a coffee or snack in exchange for their time. For result analysis, we also count our pilot test as we did not modify the script after that, resulting in a total of 8 participants.

Questions we hope to answer through this study:

- 1. How easy or difficult in general is it for a patron to use the Library Spaces page to find a place to study?*
- 2. How easily can participants use this page to find a place for individual study? With different noise level requirements or other needs?*
- 3. When looking for a group study location, are participants able to use this page to find a place which permits conversation? Permits snacks? Accommodates technology needs of the group?*
- 4. How might participants go about using this page to find a quiet, low-stressed space which is not necessarily to be a study space?*

Participants

Roles at Duke:

- 4 undergraduate students
- 4 graduate students

Had participants used library website to find or reserve individual or group study rooms before?

- Yes: 6/8
- No: 2/8 (both undergrad students)

[If yes] What were their most recent experiences?

- 2 participants mentioned that they noticed the page has been changed;
- 4 participants complained about their experiences in reserving a room: 1 participant mentioned the confusion in selecting booking period in booking system; 1 participant stated that the new system no longer provided the list of people who reserved the room -- the information she thought important; 1 participant mentioned overwhelming confirmation emails after successful booking; and the other 1 participant raised that the study rooms in Edge was not bookable through library website
- 1 participant thought the system itself was confusing

Key Findings

1. How easy or difficult in general is it for a patron to use the Library Spaces page to find a place to study?

1/8 stated that she felt not being able to see the time regarding how long a particular group had reserved a room was potentially problematic for her. The participant stated that previously, she had been able to see this information and use a room in which a group had neglected to show after their 15 minute mark. She feels not being able to do this will cause confusion between students as the original group may try and use the room anyway, regardless of being past the 15 minute arrival rule.

1/8 felt he got stuck previously in 30 minute reservation blocks and was not able to reserve a room for an extended period of time.

1/8 participants initially described his experience using places to study as not being a smooth process. Later he described his new experience as much smoother.

4/8 preferred the newer version to book a place to study.

4/8 participants felt the new page was not confusing and overall easier to use with one person stating it was self-explanatory and another stating that the separation by noise level was a good idea.

2. How easily can participants use this page to find a place for individual study? With different noise level requirements or other needs?

Preference for study place

5/8 participants described their preference for an individual place in the library.

3/5 participants mentioned “quiet” in the description of their individual study needs and specified by using terms such as: “without interruption”, “nothing too loud”, and “away from elevators”. Other features that they preferred were “with (or without) windows”, “large tables”, “natural light” and “small rooms”, “usually bridge (the space between Perkins and Bostock)”. 1 participant mentioned that he would avoid conversational study zone where it was too loud if he was trying to kill time, and would go to Perkins or Bostock to study.

2/8 participants claimed that it depended on whether it was for group or individual. They stated that they would book a study room (e.g., the Edge) if it was for group study; and if for individual study, one of them would only need a table and the other one would go to a quiet spot.

1/8 participant said he would go to a group study room for group meetings like management and marketing course.

Find a place that satisfies their needs

All participants used the filter function to narrow down the list of places in order to find an ideal place and they all found the one matched with their preferences.

4/8 participants used the filter for noise level first. 3 of these 4 participants then reviewed the items within features filter: 2 of them chose one or more features and then chose a location under library filter, and the other participant went straight to choose a library.

2/8 participants started with selecting one item under features filter and then one location item under library filter, respectively. The remaining 2/8 participants started with choosing a location under library filter and then an item within library filter.

Our findings suggest that participants tended to select noise level **first** among all characteristics they considered.

Besides that, participants had different preferences on places. All of them chose a location restriction and all of them chose the Perkins & Bostock Libraries -- either Perkins, or Bostock, or Between Perkins and Bostock Libraries. It is noteworthy that most participants (6/8) chose the location information **last**.

Features are another important filter item for participants: 6/8 participants chose at least one item under the features filter.

3. When looking for a group study location, are participants able to use this page to find a place which permits conversation? Permits snacks? Accommodates technology needs of the group?

Find a group study room for presentation

All participants used the filter to narrow down the space results list and 6/8 participants believed they found a study room fulfilled the requirements we provided in the scenario.

4/8 participants started with selecting “group study” feature and 2/4 participants then chose a location under library filter and selected a study room. 1/4 participant also typed “screen” in text filter and chose to go to the Edge.

2/8 participants first selected a location under library filter. One of these 2 participants also selected “reservable” feature and decided to go to the Edge. The other participant found a reservable study room downstairs at Perkins.

1/8 participant typed “screen” in the text filter and clicked the “Reserve a Study Room” at the top of the page and used the booking system. She decided to go to the Edge.

The remaining 1/8 participants started with selecting “conversational study”, and then “group study” and then “Perkins”. She then typed “screen” into the text filter but got zero result, the same went for typing in “smart”. She then stated that she thought an interview

room would have a screen for presentation so she chose “interview” under features filter and got Perkins B09. However, this room could only hold 2-4 people.

Our results reveal that most participants will first select the “group study” for this task, suggesting the high relevance of this feature to the task from their perspective. Based on participants’ comments, most of them are finding spaces according to their memory and preference: “I usually go to the Edge”, “I’m finding a place downstairs in Perkins”. And when they got the results, participants tend to use the picture provided by the website to decide whether the space has technologies that they need.

Find a group study room for presentation and is also food-allowed

6/8 participants claimed that they found the places they needed but 3 of these 6 participants were unsure about that. 2/8 participants stated that they did not find a place for presentations that allows food.

5/8 participants continued to take actions from their previous search. 2/5 participants browse the items under the features filter to make sure they did not miss any food-related items (at that time, the “food-free” item is not visible). 1/5 participant add a “conversational study” filter and he mentioned that he brought food everywhere. The remaining 2/5 participants reviewed the picture -- one zoomed in and the other did not -- to decide whether they could bring food, and they believe they could bring food to the spaces they chose before.

3/8 started a new search. 2/3 participants first selected an item from the noise level filter. One of them selected “absolute quiet” and she mentioned that unless it said “no food” she would go there. The other participant selected “conversational study” and then “group study”, he also typed “food” and “eat” in text filter but got zero results, so he gave up and claimed that he could not find a room meeting the requirements. The remaining 1/3 participant noticed the “food-free” feature when she first reviewed the items after refreshing the page. She then selected “group study” and “conversational study”, and typed “food” into text filter. After getting zero result, she typed “screen” and tried “food” again but did not get any result. She made another attempt by selecting “conversational study” first and she noticed the “food-free” option is unavailable; then she unselected “conversational study” and chose “food-free” before giving up.

The findings from participants’ results show that currently there is no explicit information about whether a space allows food, but there is an option for “food-free” spaces. Most participants would assume that places with no “no food” or “food-free” sign allows food. In addition, we noticed that items under the features filter are not always visible to participants.

4. How might participants go about using this page to find a quiet, low-stressed space which is not necessarily to be a study space?

All participants used the filter function and found a quiet place they would like to go to.

6/8 participants used the page to find a space not for studying. Among 5/6 participants who chose Oasis, 3 participants first selected “absolute quiet” noise level and 2 of them reviewed the page and found Oasis, the other participant also selected “wellness” to find Oasis. The remaining 1/6 participant who did not choose Oasis also selected “absolute quiet” at first and then “Perkins” under library filter, he claimed that he would go to somewhere in Perkins.

2/8 participants still found a quiet place for study. One of these 2 participants used “absolute quiet” noise level and then select “food-free” feature. But she mentioned that she almost always studied in the actual study room and was not like the absolute quiet rooms. The other participants choose “considerate study” noise level and “reading room” under features filter.

It is worth noting that among 4 participants who chose “absolute quiet”, 3 of them surprisedly noticed the “food-free” option at this point. This indicates the need to keep items available within the features filter even though there is no room with that feature available in the results list.

Our results indicate that most participants would think about Oasis when they need a place to relax; however, they seldom notice the Meditation Room, which is also available for them to relax.

Appendix A: Library Spaces Page script

Hi, do you have a few minutes to help us today with a usability testing? We're with the Duke library system and would like your opinion on how you interact with our website. If you have a few minutes, we'd love for you to look at a webpage and let us know how helpful you find it. We also have a voucher for free coffee or snack.

Awesome! Thank you for volunteering to participate in our study. My name is **[name]** and I will be walking you through our task today. This is **[name]** and she will be taking notes. I will mostly be reading from a script to ensure each testing session is as consistent as possible.

We're planning to launch a new site and would like to hear your feedback.

We only have a few general questions to ask and 5 tasks, it should only take around 10-15 minutes. Don't worry about going too fast or too slow. There are no right or wrong actions here because we're testing the website, not you. This is less about finding the correct information and more about the process in which you search. Feel free to provide opinions and feedback; it won't hurt our feelings.

Do you have any questions so far?

We have just a few questions to begin with.

[Ask Pre-Test Questions - see appendix]

We would like to record each of your sessions to allow us and other library staff members who are not here today to debrief later and benefit from your sessions. The recording will only record your screen actions and not your voice or face. If you are willing to let us have the recordings, here is the consent form, please read and sign it.

[Hand Consent Form & comments]

Now, let's begin our test.

[Show the participant the [Library Spaces Page](#) and start screen recording]

Please tell us what you're thinking while doing these tasks so that we can get an idea of your thought process.

Task 1

For this task, think about the kind of study space you'd like to use here in the library. Can you briefly describe the kind of space you'd like to study in?

[record their response]

Now, use this page to see if that kind of study space is available.

[record their steps of finding the place and comments]

Did you find what you were looking for? **[record their answers]**

Task 2

For this task, imagine that you and four of your classmates have a group presentation due next week. Your group of five wants to find a place with a screen to practice and a white board to brainstorm. Can you use this page to find a suitable place?

[record their steps of finding the place and comments]

Can you find a place to study as a group which will also permit everyone to bring their own snacks if they wish?

[record their steps of finding the place and comments]

Did you find what you were looking for? **[record their answers]**

[if the answer is not yes, follow up with] Why not? Is there anything that you need not in the room?

Task 3

The semester is almost over and as your exams are approaching. You want to find a quiet, low-stress place. Please use this page to find a quiet, low-stress place in the library.

[record their steps of finding the place and comments]

Did you find what you were looking for? **[record their answers]**

Appendix B: Pre-Test Questions

1. Which of the following describes you best?
 - a. Undergraduate student
 - b. Graduate student
 - c. Doctoral candidate
 - d. Faculty
 - e. Staff
 - f. Other: _____

2. Have you used the library website to find or reserve individual or group study rooms before?
 - a. Yes
 - b. No

3. [If yes] Could you briefly describe your last experience finding or reserving a study room?

