WRIT 4501: Usability and Human Factors in Technical Communication



# Hennepin County Law Library Usability Test Report

Prepared by: Designing While Inspired

Sarah Gleason,

Kate Sharp,

Cole Schlotthauer,

Erick Ti,

Ben Kronberger

Fall 2022

# **Table of Contents**

Executive Summary	4
Purpose and Research Question	4
Methods	5
Results	5
Discussion	6
Recommendations	6
Introduction	7
Participants	8
Targeted Participants	8
Actual Participants	8
Methods	9
Background Questionnaire	9
Tasks and Scenarios with Post-Task Questions	9
Debriefing Interview with Product Reaction Cards	9
Results	10
Scenarios	10
Scenario 1	10
Scenario 2	11
Scenario 3	11
Scenario Time Completion	12
Post-Task Rating	13
Debriefing Interview	13
Product Reaction Cards	14

Usability Test Report	3
Discussion	15
Scenarios	15
Scenario Time Completion	16
Post-Task Rating	17
Product Reaction Cards	17
Conclusion	18
Recommendations	18
1: Alter headers and descriptions	18
2: Use common website conventions	19
3: Better clarify accessibility in terms of subscription and in person versus on site usage	20
4: Standardize page layouts to improve consistency and predictability	21
Works Cited	23
Appendix A: Demographic Questionnaire and Participant Responses	24
Appendix B: Tasks, Scenarios, and Post-task Questions	30
Appendix C: Quantitative Data	32
Appendix D: Product Reaction Cards and Debriefing Interview Questions	33
Appendix E: Qualitative Responses	35

# **Executive Summary**

To:Hennepin County Law LibraryFrom:Designing While InspiredSubject:Executive Summary of Usability TestSemester:Fall 2022

This executive summary shares an overview of the purpose and research question, methodology, results, and recommendations from our team's usability test on the Hennepin County Law Library (HCLL) website.

## **Purpose and Research Question**

Our usability test focused specifically on the users' ability to navigate, interpret, and apply information on the specific identified pages — "CLE" page, "Online Research" page, and page locations which include contact/hours information. Our research questions for usability testing included determining:

- What is confusing to our users, both attorneys and the general public about the CLE page?
- Are users able to understand what specialized legal databases are available to HCLL patrons, and how they can access these databases?
- Is the contact/hours information easily findable on each page?

Our specific research question was as follows: How does the presentation of content on the HCLL website impact how users navigate the website, interpret the information, and apply what they've learned to seek out further resources?

Efficiency was measured by the amount of time it took for the participants of this test to complete the tasks that they are presented with. Critical and noncritical errors were counted, as well as the participants' satisfaction based on their comments and ratings, which they recorded after each scenario and after they completed the entire test.

## Methods

There were four methods of information gathering used during the test. The background questionnaires gathered some basic demographics. Participants supplied information such as gender, age, education level, occupation, and experience with Hennepin County Law Library website use (Appendix A).

During the test, participants were asked to complete ordinary tasks relevant to what the Hennepin County Law Library audience may search for on the website. After participants completed the

## Usability Test Report

scenarios, they were given post-task questions. All of the questions asked them to rate the ease or difficulty of the task. When the test was over, the participants were given a debriefing interview as well as a product reaction card. The debriefing questions asked participants about their impressions of the site. These questions were more in depth than the post-task questions. The product reaction card provided participants with thirty six adjectives and asked them to pick five words that best described their experience with the website (Appendix D).

## Results

All 5 participants completed scenarios for a 97.3% completion rate. Time-on-task varied between an average of 2:30 minutes (Scenario 3) and 2:50 minutes (Scenario 1); generally, all scenarios were completed in under 4 minutes. Participants generally rated tasks between 2-5 on a five-point scale. When given a list of words to select to describe their usability experience, participants selected positive words such as:

- Simple
- Straightforward
- Easy-to-use

Overall, participants were able to complete tasks without difficulty. However, participants encountered the following issues, which are fully explained in the report:

- Participants consistently tried to use the catalog to find database related information and struggled to distinguish between the two categories of databases
- Participants were frustrated that they would navigate through multiple pages to find the correct resource, only to discover that they did not have access to it remotely or as a non-subscriber
- Website was far more intuitive to navigate for experienced users than novice users
  - Our participant who was unaffiliated with the legal system seemed confused with the CLE section of the website
- Participants were thrown off by aesthetic related issues such as inconsistent page designs across the website and text that was too small
- Participants struggled to find key information in large blocks of text, particularly on the CLE and database pages.

# Discussion

In summary, we sought to better understand how the presentation of content on the Hennepin County Law Library website affects the navigation, understanding, and application of information by users. From our research we were able to discern areas of greatest difficulty for users to understand and interpret, and to assess the specific concerns of the client. *It is our belief that the content on the website can at times be overly technical, which affects the interpretation and understanding of that content by users. The structure and organization of this content is its strength, however, as the users were comfortable navigating the website and were able to anticipate locations of information based on known web conventions.* **These facets combine to** *make a website that is traversable but occasionally obtuse.* While our pool of participants was relatively small and of a narrow demographic, we feel that the results from this testing are

## Usability Test Report

adequately indicative of greater issues with recognizing and understanding the content presented to them rather than issues of being able to find it. The intention of hosting specific material for a broad audience is better supported when the material is made accessible to users of all levels of understanding - in the sense of content but also terminology and explanation thereof.

### Recommendations

Based on our results, we have suggested the following recommendations:

- Alter headers and descriptions so the user can better understand what information they're looking for and when they've found it
- Use common website conventions in a way that the user would expect to interact with them.
- Better clarify accessibility in terms of subscription and in person versus on site usage
- Standardize page layouts to improve consistency and predictability

# Introduction

This report describes the results for conducting a usability test during the development of Hennepin County Law Library website (hclawlib.org). The HCLL website offers specialized resources for legal experts and interested members of the general public. These resources include courses on specific Continuing Legal Education (CLE) courses, access to external legal and non-legal databases, and an internal catalog of material. Many of these resources are only available to those physically within the law library or those whose employer (law firm) have paid to have off-site access; this increases the importance of the ability of users to find the HCLL hours, address, and contact information on the website.

Our report will address our purpose and methodology during usability testing, and results and recommendations for Hennepin County Law Library.

Our usability test focused specifically on the "CLEs", "Online Research", and "About" webpages for understandability, discoverability, and identification. Our research questions for usability testing included determining:

- Clarify the CLE page what is confusing to our users, both attorneys and the general public?
- Are users able to understand what specialized legal databases are available to HCLL patrons, and how they can access these databases?
- Is the contact/hours information easily findable on each page?

In terms of efficiency, we addressed whether or not participants were able to complete tasks and we measured the time of the task-to-completion for each task. We anticipated a benchmark of 1 minute for Task 1, 3 minutes for Task 2, and 2 minutes for Task 3.

In terms of error frequency, we recorded both critical and noncritical issues. Critical issues were those that deterred participants from successfully completing a task, whereas noncritical issues were those that slowed down but did not prevent successful completion of the task. We anticipated a benchmark of an 80% critical issue-free rate. In other words, we expected that, at most, 20% of the users would experience critical issues, which deterred them from successfully completing their task.

In terms of user performance, we asked participants to describe their impressions and experiences in a debriefing interview. We also asked them to rate the difficulty of each of the tasks, as a post-task question, on a scale of 1 to 5, 1 being *very difficult* and 5 being *very easy*. We anticipated an average benchmark of medium user satisfaction.

Our research question was as follows: How does the presentation of content on the HCLL website impact how users navigate the website, interpret the information, and apply what they've learned to seek out further resources.

### **Participants**

### **Targeted Participants**

According to the client information provided to us from Hennepin County Law Library website users include public users who may not be as experienced with the law, as well as attorney and professional users. General members of the public who use the website are likely between the ages of 18-60+, can come from any educational background and usually have a singular question they are looking to answer. On the other hand, the group of professional users may include lawyers, judges, court employees or other similar occupations, usually know what they are looking for, and are generally above the age of 25+ due to most having gone through law school. Users would be characterized by tasks they wished to accomplish, rather than demographic.

### **Actual Participants**

We recruited five participants for this usability evaluation. For easier reference, we will refer to all of our participants as P1, P2, P3, P4, and P5. The participants were all recruited through email. All the participants were all between the ages of 21-29. Only 1 of the participants have had previous experience and familiarity with the Hennepin County Law Library website. The other 4 participants had no previous experience nor were they familiar with the site.

## Methods

The website was evaluated through a usability test that asked representative users to complete realistic web tasks. The usability test involved participants who were likely users of Hennepin County Law Library websites. Procedures included a background questionnaire, tasks based on scenarios and post-task questions, and a debriefing interview with Product Reaction Cards. A "think aloud" protocol was used throughout the test. These procedures are described more fully below.

## **Background Questionnaire**

Participants completed a demographic and background information questionnaire. The questionnaire asked about demographic information, experience, and familiarity with the Hennepin County Law Library website (see Appendix A).

## Tasks and Scenarios with Post-Task Questions

The participants were provided a task description, asked to read it out loud, and start the task. Time-on-task measurement began when the participant started the task. Once the participant completed a task, they completed the post-task questionnaire and elaborated on the task session with the moderator (see Appendix B). The moderator instructed the participant to 'think aloud' so that a verbal record existed of their interaction with the web site. The logger observed and entered user behavior, user comments, and system actions in the data worksheet.

## **Debriefing Interview with Product Reaction Cards**

After all task scenarios were attempted, the moderator asked participants about their impressions of the site and testing experience. The interview included four broader questions about the participants' experience of the site across all scenarios, as opposed to their experience of one particular scenario. These questions were calibrated to address our client's curiosities about users' overall impression of their website (see Appendix B). Part of the interview involved asking participants to select words from the "Product Reaction Cards" that described their experience (see Appendix D). Thirty six Product Reaction Cards were chosen from a list of 118 based on our understanding of what cards were most likely to apply to the context of a website. A mixture of positive and negative terms were chosen with an approximate ratio of 45% positive to 55% neutral/negative. The full set of 118 product reaction cards has a different ratio of word valence with "60% of the cards being positive words and 40% being negative or neutral words" (Barnum, 2020 ch. 6). We chose to adjust the ratio of words in an attempt to counterbalance our prediction that participants would tend to blame themselves for negative experiences with a website — as opposed to finding web design choices culpable for negative experiences.

# Results

## Scenarios

We asked participants to rate the difficulty of each of the tasks on a scale of 1 to 5, 1 being *very difficult* and 5 being *very easy*. Please refer to Appendix B for our scenarios and tasks.

## Scenario 1

Participant 1 (P1) was able to complete this scenario with little difficulty, rating all tasks 5 out of 5. The participant was able to easily locate the hours and location of the Hennepin County Law Library through the Contact page. The participant was then able to navigate to the About page in order to find the same information. The task relating to finding physical resources in the library proved more difficult, but as a product of the way the prompt was given to them. The other notable outcome of this participant's completion of Scenario 1 was confusion about finding specific information while scrolling through the About page.

Participant 2 (P2) was able to complete this scenario the fastest, being able to find contact information and hours in several locations almost immediately. Resources available in person were the only hesitance during this scenario for P2, but they were able to find applicable resources in more than one place without being prompted to do so. They then encountered little difficulty in finding information about loan periods, and were able to report the requested information. This participant rated these tasks 5 out of 5.

Participant 3 (P3) encountered the most difficulty with this scenario, being the participant to take the longest to complete all the tasks. This participant was able to find contact and hours information in more than one place with little difficulty. They encountered issues when searching for in-person resources, getting stuck in the Catalog directory. This participant was only able to identify CLE's as a possible in-person resource. They were then able to find information about loan terms with little to no struggle, ultimately rating each task in this scenario a 5 out of 5.

Participant 4 (P4) completed this scenario very efficiently, finding contact and location information immediately in the footer, and then again on the About page. When prompted to find an in-person resource, they were the only participant to do so using a map of the library that they found on the site. Finding information about loan terms took slightly longer, after confusion about the content housed in the dropdown menus on the site. The participant rated all tasks in this scenario 5 out of 5.

Participant 5 (P5) was also able to complete this task with little to no difficulty. They found contact and location information in the site footer once prompted, and noted small text once finding this information again on the Contact page. They were then able to cite two resources that could be accessed in-person, by utilizing the About page. The participant rated each task in this scenario 5 out of 5.

## Scenario 2

Participant 1 (P1) encountered difficulty with this scenario, with an average rating for the tasks of 3 out of 5. They were able to locate a quick link for LexisNexis, but were unsure as to whether what they found was correct. The participant started the next task from the Home page and spent a longer amount of time searching through the Legal Databases section, was confused as to whether they'd found it, and was eventually able to report that the Lexis database is not available online.

Participant 2 (P2) was also confused by the quick links on the Home page, using the LexisNexis link correctly but confused by the difference between this database and the Lexis one. Upon returning to the Home page for the next task they attempted to search databases through the Catalog link in order to find the Lexis database, Returning to Home a third time, they used the search bar to lead them to the Legal Databases page, where after lots of scrolling and searching they were able to locate Lexis. The participant rated the tasks in this scenario an average of 3 out of 5.

Participant 3 (P3) was the fastest to complete this scenario, and rated it the highest with an average of 4.75. They were able to use the quick links to find LexisNexis, and were correct in locating it but not particularly confident of this. They then initially used the dropdown menu to find Legal Databases, and then returned to the home page in order to use the search bar instead. After scrolling around on the page, they were able to locate the database and complete the prompt.

Participant 4 (P4) was the first to attempt to sign in to the LexisNexis database after finding it, reporting that they felt unable to access it due to not being a subscriber. They were then able to use preview text seen earlier to navigate to the Legal Databases section, and upon finding Lexis asked about the difference between the two, concluding that task. The participant rated the tasks in this scenario an average of 4.25 out of 5.

Participant 5 (P5) easily found the LexisNexis database through the quick link on the Home page. Finding the Lexis database proved more confusing, with the participant exploring the Online Research path, Legal Databases, and spending time on that page scrolling until they felt they had correctly identified the database in question. The participant then rated the tasks an average of 4.25 out of 5.

## **Scenario 3**

Participant 1 (P1) had little difficulty with Scenario 3, due to a previously unknown familiarity with the term "CLE". They were able to locate the section housing the courses, find the one specified, and discern the requested information about it very quickly. The participant then rated each task in this scenario a 5 out of 5.

Participant 2 (P2) did not have previous knowledge of what CLE meant, but was able to find the courses page with little difficulty. The participant spent longer reading each entry and section

than some others, but was able to locate the course in question and report how and when to access it. The participant rated the tasks in this scenario an average of 5 out of 5.

Participant 3 (P3) had the most difficulty with this scenario, taking the longest to complete and rating it an average of 3 out of 5. The participant navigated first to the Catalog, then back to the Home page. Upon reaching the CLE page, they did not initially understand that CLEs are courses being offered. Upon finding the course, the participant was also confused as to where to find the information about course modality and offering.

Participant 4 (P4) completed this scenario efficiently, rating the tasks an average of 5 out of 5. They were able to navigate directly to the CLE page, and scrolled through the courses until they found the one in question. After some skimming of the information, they were able to correctly identify the course modality options.

Participant 5 (P5) was the fastest to complete this scenario, navigating directly to the correct page. They initially inspected the Live-streaming portion of the page, but then eventually were able to find the On-Demand courses with little difficulty. The participant then rated the tasks in this scenario an average of 5 out of 5.

# **Scenario Time Completion**

Chart 1 shows the scenario time completion for each participant.



# **Participant Scenario Time Completion**

Chart 1. Scenario time completion for each participant.

Table 1 shows the average time completion rate of each scenario.

	Scenario 1	Scenario 2	Scenario 3
Average Time			
Completion (minutes)	2:50	2:47	2:30

Table 1. Mean completion time by scenario.

## **Post-Task Rating**

**Table 2** indicates the participants' average rating for the difficulty of each task within the scenario on a scale of 1 to 5, with 1 being *very difficult* and 5 being *very easy*.

Participants	Scenario 1	Scenario 2	Scenario 3
P1	5	3	5
P2	5	3	5
Р3	5	4.75	3.5
P4	5	4.25	5
Р5	5	4.25	5
Mean	5	3.85	4.7

Table 2. Post-task ratings for each scenario by participant with mean ratings for each scenario.

## **Debriefing Interview**

When all tasks scenarios were completed, our facilitator asked a series of questions to assess the participants' overall impression of the website. The first question asked participants whether they were able to intuitively navigate the website. All five participants said that they were able to successfully navigate the website intuitively, some features mentioned that supported intuitive navigation were the large navigation headings that are all located in one central location at the top of the page. Participant 1 mentioned that the "information on the site was [organized] better than other similar sites they have used," making the navigation of this site more intuitive.

Question two asked participants if it is clear on the website that a number of resources are only available physically within the library. All five participants said that they found the messaging about in-person only resources clear, although Participant 1 stated that they "could've seen other people being confused if they don't read closely," Participant 4 said that "having stipulations first helps people not get confused with subsequent information," and Participant 5 stated that the information about in-person only resources was not provided "as early on in the search process as I would've liked."

Question three asked participants if they would make any changes to the process of searching for and finding classes on the website. Results on this question were mixed. Participants 1, 4, and 5 said that they would not make any changes to the process. Participant 1 stated that "the CLE's

page was nicely laid out" and "better than other CLE pages I've seen in the past." Participant 4 mentioned that they liked the "Open All" button so they "didn't have to click into everything" and could "see other events offered that might be interesting." Participants 2 and 3 suggested improvements for the CLE section. Participant 2 said that if they were not instructed to look for a specific course, it would have been harder to navigate the page; they suggested implementing "a highlight of upcoming classes to reduce time consumption and increase interest." Participant 3 stated that the CLE navigation button should be reworded so those unfamiliar with the acronym also understand what the tab contains.

The final debriefing question asked participants if they felt there were clear paths on the website to contact librarians. All five participants answered that they did feel there were clear paths to contact librarians on the website. Participants mentioned specific features such as the "Ask a Librarian" link, the contact information located on all pages, and the address to ask questions in-person. Three out of five participants specifically mentioned the "Ask a librarian" link.

## **Product Reaction Cards**

After participants completed the testing, we asked them to complete a "Product Reaction Cards" to describe their overall experience. Each participant chose five words from 36 words total. **Table 3** shows the frequency of words mentioned. "Straight-forward", "easy to use" and "simple" were the most mentioned words, each was mentioned three out of five times. There were five words mentioned twice: trustworthy, efficient, reliable, informative, and familiar.

Number of Times Mentioned	Word							
1	modern	useful	technical	outdated	jargon-filled	instructive		
2	trustworthy	efficient	reliable	informative	familiar			
3	straightforward	easy-to-use	simple					

Table 3. Frequency of words chosen to describe the Hennepin County Law Library website.

# Discussion

The results provide us with data and evidence which helps answer our research question: How does the presentation of content on the HCLL website impact how users navigate the website, interpret the information, and apply what they've learned to seek out further resources?

## Scenarios

Scenario 1 was designed to address the concern about whether users can learn information about the library itself as an in-person resource. Users were asked to find hours and location information, as well as to identify any resource that they could access physically in person. This task took the longest on average across all the scenarios, but was rated the highest by participants in terms of ease of use with an average rating of 5 out of 5 for all tasks among all users. This scenario also introduced the website to the participants, allowing them to gain an understanding of the structure of the site and to learn how they might navigate for future tasks. The presentation of the information across multiple locations allowed users to locate hours and contact information they were able to find was less accurately interpreted, perhaps due to the phrasing of the prompt, but ultimately utilized in a variety of ways to accomplish the given tasks. Many users came back to the pages they found in order to begin new tasks later in the overall test, and most users re-used the tools and practices that they were able to discover during this scenario.

Scenario 2 was designed to address specialized databases and how well users are able to find and understand them. This task was rated the lowest in terms of ease of use among all the scenarios, with an average of 3.85 out of 5 across all tasks from all participants. This scenario also yielded the most issues that were marked to be of high importance- primarily surrounding the task to find the Lexis database. Users were generally confused by the presentation of both the LexisNexis and Lexis databases, both as to the difference between the two and to where each can be found and accessed. Once found, users were unsure as to whether what they had found was correct, and unsure as to whether the information that they were hypothetically searching for would be found in these databases. The accessing of each database was also often unclear to users, with one being available only in the library and the other being available to subscribers through an internet portal. The navigation to each of these resources was muddled by their presentation, either in a quick link, buried in another section, or of similar obfuscation. The presentation of each of these resources also left users confused as to what the databases actually contained and whether it was useful to their hypothetical scenario.

Scenario 3 was designed to address concerns about CLEs and their presentation. This scenario took the shortest amount of time on average, and was rated a 4.8 out of 5 for all tasks across all participants. While the majority of our participants were not already familiar with the term CLE, they were able to discern that they might be related to the "course" they were looking for. Once opened, the section then was able to be better understood as a collection of classes, but the initial use of the acronym threw users off. After reaching the correct page, users didn't encounter many other fundamental issues that weren't related to how clear the modality of each class was. While the sections for class offering styles were titled and separated out from each other, this did not

always translate to the correct interpretation from our participants. The presentation of the courses and related information was in a style consistent with existing web conventions, and this allowed users to easily page through the list of available courses. As mentioned, issues with understanding and interpretation came from the course descriptions rather than the grouping of them, and could perhaps be alleviated by future reinforcement of the different kinds of course modality offered. Applying what they'd learned in previous scenarios, this scenario showed users finding the correct page through process of elimination and expected behaviors, highlighting some predictability of the website structure itself.

## **Scenario Time Completion**

Our benchmark time-on-task completion rate for each scenario was 1 minute for Scenario 1, 3 minutes for Scenario 2, and 2 minutes for Scenario 3. **Chart 1** shows the data of completion times for all the participants. The average times for each task were 2:50 minutes for Scenario 1, 2:47 minutes for Scenario 2, and 2:30 minutes for Scenario 3. These average scenario completion times are also reflected in **Table 1 (page 13)**.

We anticipated Scenario 1 to take the shortest amount of time for the participants to complete, but this scenario ended up taking the longest on average. The reason why we thought this scenario would take so much less time than others was because it mainly consisted of seeking basic information such as library hours, contact information and information on offered physical resources, which are all surface-level and simple aspects of the website. While users took the longest to complete this scenario, it wasn't due to participants having difficulties, but more due to the users taking their time to get to know the website's interface, which participants naturally did not rush through.

Scenario 2 ended up lining up closest with our benchmark time for that task, taking 13 seconds less for participants to complete on average. However, this scenario also included the longest time any of our participants took to complete all the tasks in a scenario, which was Participant 2, who took 4 minutes to complete all of the tasks. The average time taken to complete this scenario does not fully reflect the amount of difficulty people encountered while trying to complete these tasks. This scenario by far included the most struggles from participants and was the only scenario where we rated tasks high in terms of severity and impact. If this scenario had been the first one introduced to participants, it would have likely taken them longer to complete due to having to learn the website's interface while also experiencing the same difficulties.

Participants took 30 seconds longer to complete Scenario 3 than we had expected. While participants 1 and 5 completed the scenario in under 2 minutes, which was our benchmark time of completion, these two participants had prior experience with law libraries and were both involved with the legal system in their professional careers. This may explain how easily they completed this scenario, because the task involved finding information on CLEs, which both these participants were very familiar with. On the contrary, this task was exceptionally confusing for the third participant who was not well versed with legal discourse or law libraries, which is why the CLE topic may have been confusing for this participant. In fact, our only task that wasn't completed throughout the whole usability test was this participant during this particular scenario. This participant was the least experienced with the law, which makes sense why she

struggled and took longer to complete this scenario, which involved looking at perhaps the most jargon filled section of the website. The experience of this third participant during this scenario brought to light that the CLE section of the website is not as intuitive to navigate for users who are inexperienced with the law.

## **Post-Task Rating**

On a scale of 1 to 5, with 1 being very difficult and 5 being very easy, the participants were asked a series of quantitative questions in order to rate the different tasks in each scenario. Scenario 1 was rated the highest, with the average rating of each tasking being a perfect 5 out of 5. Scenario 2 was rated the most difficult with an average of 3.85 out of 5, and Scenario 3 was rated highly with a 4.7 out of 5. The full table of ratings and averages can be found in **Table 2** (page 13).

While Scenario 1 did take the longest for participants to complete, their ratings for it indicate satisfaction with their experience getting familiar with the site and its interface. The next highest rating was Scenario 3, which had all participants rate it a perfect 5 out of 5 except for P3. This could be indicative of edge-case behavior or a particular individual struggle, but as a representative of the community with little to no experience with legal terminology their lack of understanding and confidence in their findings helped to uncover more nuance in the scenario itself. Scenario 2 was rated the lowest by all participants, and had the highest variability in task ratings out of each of the scenarios. Scenario 2 also had the highest variability in time to complete, with the set of recorded completion times having a range of 1:57 minutes. With this high variability in all results, Scenario 2 uncovers the most opportunity for examining the different perspectives of users, and suggests an area that could be improved.

## **Product Reaction Cards**

The product reaction card results do not reflect the frustrations that users experienced, but do demonstrate that users are more likely to blame themselves for issues in navigation, interpretation and application of the information on the website rather than the design of the website itself. This is clear from the number of positive and negative words used by participants to describe the website: 12 words that participants mentioned during this section were positive, while only 2 of the words mentioned were negative. "Straightforward" was mentioned by three participants, which shows that the website is considered by users to have sufficient features which are consistent with standards common between many websites. "Easy to use" was also mentioned three times by participants, the implications of this word build on those from "straightforward" as sites that are easily usable share common features and norms with other sites, however, including global consistencies, "easy to use" also implies that the information is presented in a manner that is largely intuitively navigable, interpretable, and applicable for users. Interestingly, this does seem to conflict with several of the responses to post-task questions, for example Participant 4 used both "straightforward" and "easy to use" to describe the website, but was confused in Scenario 2 about whether they had correctly navigated to the LexisNexis database — showing that the participant struggled with interpreting and applying the information on the website. These inconsistencies between experience and overall impression may demonstrate a willingness for participants to forgive the website for usability issues and instead

blame themselves for perceived "user issues"; however, these usability issues must be addressed because repeated negative experiences with a website in which the user blames themselves for struggling to meet their objectives will nonetheless impress upon them a lasting memory of negative experience with the website. One notable word that was only mentioned once was from Participant 5, who described the website as "jargon-filled." This aligns with other findings from the test, which demonstrated that many users — even some of those with expertise in the legal field — are unfamiliar with terminology such as "CLEs" and unable to differentiate between the nuanced titles of "legal databases" versus "non-legal databases". Product reaction card data is reflected in **Table 3 (page 14)**.

## Conclusion

In summary, we sought to better understand how the presentation of content on the Hennepin County Law Library website affects the navigation, understanding, and application of information by users. From our research we were able to discern areas of greatest difficulty for users to understand and interpret, and to assess the specific concerns of the client. *It is our belief that the content on the website can at times be overly technical, which affects the interpretation and understanding of that content by users. The structure and organization of this content is its strength, however, as the users were comfortable navigating the website and were able to anticipate locations of information based on known web conventions.* **These facets combine to** *make a website that is traversable but occasionally obtuse.* While our pool of participants was relatively small and of a narrow demographic, we feel that the results from this testing are adequately indicative of greater issues with recognizing and understanding the content presented to them rather than issues of being able to find it. The intention of hosting specific material for a broad audience is better supported when the material is made accessible to users of all levels of understanding- in the sense of content but also terminology and explanation thereof.

# Recommendations

Our recommendations are based on the significance of our findings, what they imply, and what users wish had been incorporated to help them navigate the website, interpret the information, and apply what they've learned to seek out further resources.

# 1: Alter headers and descriptions so the user can better understand what information they're looking for and when they've found it.

During the usability test, our participants struggled with discerning "Catalog" versus "Online Research", differentiating between the "legal" and "non-legal" databases, and understanding what is contained in the "CLEs and Other Events" tab. To address this, we suggest altering headers and descriptions to be more specific, clarifying what information users can find in the section.

First, change the terminology of "Online Research", as this confuses users by implying that all resources under the tab can be accessed online, which is often associated with being remote. Some other terminology for this tab could be simply "Research", "Legal Research",

"Databases", or another phrasing that removes the online portion. Furthermore, while we would suggest to keep both the "Catalog" and the "Research" tab in the navigation bar as an accelerator for expert users, providing a landing page for novice users that has large links to each type of resource with a short description of what the resource offers and what credential is necessary to use said resource (see **Figure 1** on page 22) would help users to interpret and apply the information about these resources earlier in the research process and decrease navigation mistakes.

While having "CLE" in this header is important for expert users who will immediately recognize the terminology, it is unclear to novice users who do not have experience with the acronym. Based on Nielsen's second heuristic, "Match between System and Real World", we suggest changing the "CLEs and Other Events" button to include keywords familiar to novice users. "Never assume that users will understand an abbreviation or acronym at first read. Lead with the full phrase, what it means, and why it matters before condensing it down to a shorter mnemonic" (Kaley, 2018). Novice users did not reliably understand "CLEs" or associate "events" with "courses". Our team noticed that between the time we wrote our heuristic evaluations of the website and when we conducted our usability test, the terminology of this tab changed from "CLEs" to "CLEs and other events", and the main heading on the "CLEs" page changed from "CLEs and other classes" to "CLEs and other events." Based on the word associations that our participants utilized to find the CLE course in Scenario 3, we recommend adding the term "courses" or "classes" to the CLE button and readding it to the heading of the page itself, with our recommended heading and button label being "CLEs, Courses, and Events" (see Figure 2 on page 22).

# **2**: Use common website conventions in a way that the user would expect to interact with them.

Several key issues that users encountered during the usability test were global inconsistencies, meaning functions that do not align with industry standards and thus confuse users who are accustomed to the majority of other websites implementing these functions in a different way. Nielsen addresses this in heuristic number four.

"If your website presents these components in the same way as most other websites, then when people arrive at your site, they will know how to interact with them. When they don't need to learn new interactions, their focus will be entirely on the content, messaging, and services that you're offering." (Krause, 2021)

Specific to the HCLL website, the search bar, dropdown tabs on the "Online Research" navigation button, and an excessive amount of scrolling required to navigate the "Online Research" page detracted from usability as the users were not able to intuitively navigate and apply the information they found. Users trying to find resources using the search bar found that they were unable to search the content of webpages, only the titles. This is inconsistent with other websites and makes the search bar much less useful to the user. Many of the users had an

immediate instinct to use the search bar to find databases, so rebuilding the search bar to allow for searching web page content would improve users' ability to find the resources they need.

Next, the dropdown tab on the "Online Research" button in the navigation bar was confusing to users as they tried to navigate to find the databases. The options that the dropdown bar expands are not clearly defined, nor is this structure consistent with the other buttons in the navigation bar. Prioritizing internal consistency by removing this dropdown arrow and leading users directly to the "Online Research" page would improve the navigability of the website. Alternative organizational options to replace the dropdown arrow are discussed in recommendation four.

Finally, the "Online Research" page relies heavily on scrolling to navigate through the page rather than clicking, which is inconsistent with the other pages on the website as well as outside webpages. In contrast to the use of accordion menus to organize all of the other webpages on the HCLL website, this page expects users to scroll through to find different categories of information while also including a left sidebar to navigate to said categories. Since none of the other pages utilize the left sidebar, this navigation option was widely ignored by users. Furthermore, content on the page is not arranged in close-enough proximity to signal to the user that they should continue scrolling to reach more information. Due to the inconsistencies between the organization and navigation of "Online Research" compared to other pages on the site, users struggled to navigate through this page.

## 3: Better clarify accessibility in terms of subscription and in person versus on site usage.

This recommendation is tied to the issues we identified in Recommendation 1. Participants in our usability test expressed that it was frustrating to navigate through a number of pages and find the correct database, only to discover that they needed a subscriber credential or a physical presence in the HCLL to access the resource they needed. To address this frustration, we recommend adding greater clarity earlier in the search process about what resources are available online, in person, and to subscribers.

Because our usability test did not specifically address the subscriber page and usability of the database access, we recommend further usability testing of these portions of the website to address our preliminary findings in this area. We recommend that one scenario in this test should center around identifying the correct database for a specific topic, finding that database, and successfully interpreting under what circumstances it can be accessed. Another set of tasks that we recommend for further usability testing would be having the participants go through the steps of subscribing to the HCLL in order to ascertain the discoverability and ease of use for that function of the website.

Without the results of further usability testing on these specific pages and functions, our best recommendation with the data we collected would be the information we provided for redesigning the main "Online Research" page to include short descriptions of each resource and what is required to access them. Furthermore, we also recommend that a description of the HCLL subscription and alternatives to subscribing (attending the HCLL in-person) could be included on the main HCLL homepage so that novice users understand that the purpose of the website is mainly as a resource for those who subscribe and users physically inside of the HCLL building to access resources. One last recommendation is that the website should make

information about the resource limitations for visitors. Our participants did not find and identify the portion of the site that stipulates that on-site computer access is limited to an hour per day, and while this was not a required part of our test, our question about physical resources at the HCLL was intended to lead users through the accordion menus on the "About" page, find this and other pertinent information, and interpret this information based on their situation as a visitor. Clarifying this for future visitors would improve overall usability and satisfaction.

## 4: Standardize page layouts to improve consistency and predictability.

Many of the pages on the HCLL website follow similar layout conventions which the users were able to navigate intuitively; however, the "Online Research" page does not follow the same layout and users struggled to successfully understand, navigate, and apply the information found on this page. "Online Research" features a number of images as the background, a left sidebar of key links on the page, and main links leading to new pages rather than accordion links that expand more information. While "Online Research" is consistent with the homepage layout of large images as the background, its function is more similar to the other pages on the website because it holds secondary links to resources while the homepage does not hold content outside of the search bar, popular links, and carousel. Nielsen's fourth usability heuristic is "consistency and standards," and can be summarized as "users should not have to wonder whether different words, situations, or actions mean the same thing" (Krause, 2021). The inverse of this is also true: user's should not be wondering why similar words, situations, or actions mean different things.

In this case, the layout of "Online Research" is too similar to the homepage since they have different functions, and it is also too different from the other content pages on the website that have similar functions. Based on our findings, we recommend that "Online Research" be reformatted to match the other pages with main links for each type of resource "Databases", "Legal Resources" and "Ask a Librarian" that each hold accordion menus which expand the relevant information (see Figure 1 on page 22). This would also improve the inconsistencies of the "Online Research" button having a dropdown menu in the navigation bar because the subsequent links would be condensed and easily found on one page. Implementing this alongside Recommendation 1 would include creating a description for the resources including "Legal Databases" and "Non-legal Databases" that can be read when "Databases" is expanded which would help users identify and interpret which resource is best suited to their objective (see Figure 2 on page 22). To achieve this, the descriptions should clearly explain the key differences between this resource and the others offered. A crucial part of this recommendation is including the "Catalog" under the "Research" tab, possibly under the "Databases" accordion menu. Many users struggled with distinguishing between the resources offered by the catalog and the databases, so describing the catalog in this section would be supportive to novice users unfamiliar with these resources.

## Usability Test Report

LOGID	catalog	Research	Subscribe	CLES COURSES
Resea	rch			
Da	tabases	5 +		
Le	egal Res	ources	+	
As	ska lit	orarian	+	
				1000

*Figure 1. Preliminary prototype of "Online Research" page renamed and implementing accordion menus.* 



*Figure 2. Preliminary prototype of "Online Research" page with "Databases" menu expanded showing resources and short descriptions.* 

## **Works Cited**

- Barnum, C. M. (2020). Usability Testing Essentials: Ready, set ... test! Morgan Kaufmann, Elsevier.
- Hackos, J. A. T., & Redish, J. (1998). User and Task Analysis for Interface Design. Wiley.
- Kaley, A. (2018, July 1). *Match between system and real world (usability heuristic #2)*. Nielsen Norman Group. https://www.nngroup.com/articles/match-system-real-world/.
- Krause, R. (2021, Jan. 10). *Maintain consistency and adhere to standards (usability heuristic* #4). Nielsen Norman Group. https://www.nngroup.com/articles/consistency-and-standards/
- Nielsen, J. (2010). Usability Engineering. Morgan Kaufmann.

Norman, D. (2013). The Design of Everyday Things. Basic Books.

# Appendices

## Appendix A: Demographic Questionnaire and Participant Responses

## **Questionnaire:**

Age

- 18–20
- 21–29
- 30–39
- 40–49
- 50–59
- 60+

## What is the primary context in which you use a computer?

- Work
- School
- Personal
- Mix of the above
- Other, \_\_\_\_\_

## Which of the following best describes your attitude toward technology use?

- I do not like to use technology at all, and I do not feel I am good at it
- I do not like to use technology, but I will if I have to
- I am generally neutral, I don't have a habit of it but am not opposed to doing so
- I like to use technology, but I'm no expert
- I like to use technology, and feel that I am pretty good at it

## How often on average do you use a computer?

- Nearly constantly
- Several times a day
- Several times a week
- A few times per week
- A few times per two weeks
- Rarely

## How often do you use another device to access the internet?

- Nearly constantly
- Several times a day

- Several times a week
- A few times per week
- A few times per two weeks
- Rarely

# What is your most commonly used internet-accessible device?

- Smartphone
- Tablet
- Laptop Computer
- Desktop Computer
- Other, \_\_\_\_\_

# How comfortable are you seeking out resources in your community?

- Very Comfortable, I have a wide knowledge of local resources in my community and am willing to seek them out in person
- Comfortable, I may need to search the internet for local resources but I am then willing to access them in person
- Neutral, I may not know what is available to me and am unsure whether I would seek them out
- Uncomfortable, I do not know what is available to me in my community and I would prefer to just access resources from home
- Very Uncomfortable, I do not know what is available to me in my community and will only access what is available to me on the internet

# When was the last time you've physically visited a library?

- Within the last few days
- Within the last few weeks
- Within the last few months
- Within the last few years
- Many years ago

# How do you most commonly research a topic?

- Searching the internet for academic texts
- Searching the internet for informal texts
- Consulting academic physical texts
- Consulting informal physical texts
- Consulting with someone knowledgeable on the topic

# Which of the following best describes your attitude towards the legal system?

- I am entirely uncomfortable with the topic, and would consult a lawyer for anything that I may need to do with it
- I am uncomfortable with the topic, but would do some research before consulting a lawyer

- I am neutral about the topic, and would decide whether to consult a lawyer after I do research myself
- I am positive about the topic, and think that I could answer many questions about it myself after research
- I am very positive about the topic, and think that I could handle most things myself after a proper amount of research

## **Participant Responses:**



## What is the primary context in which you use a computer? 5 responses



#### Which of the following best describes your attitude toward technology use? 5 responses



#### How often on average do you use a computer? 5 responses



How often do you use another device to access the internet? 5 responses





What is your most commonly used internet-accessible device? 5 responses

How comfortable are you seeking out resources in your community? 5 responses



#### When was the last time you've physically visited a library? 5 responses



#### How do you most commonly research a topic? 5 responses



## Which of the following best describes your attitude towards the legal system? 5 responses



# Appendix B: Tasks, Scenarios, and Post-task Questions

# Scenario 1:

Your wife has filed divorce proceedings, and you decide you want to represent yourself. You know that many of the databases for you to find your information on are only available in person, so in order to perform your research, you would like to visit HCLL in person.

# Tasks, Scenario 1

- 1. Start at the Hennepin County Law Library's homepage <u>https://www.hclawlib.org/</u>
- 2. Find the location and hours of the HCLL.
- 3. Tell the moderator the hours and location to move forward
- 4. Find one physical resource that the HCLL offers
- 5. Tell the moderator the resource you found to move forward
- 6. Tell the moderator how long the loan period is for Minnesota Reference Materials
- 7. Return to the Hennepin County Law library homepage

# **Post-Task Questions**

- Rate how discoverable the information you were looking for was (1-5)
- Rate how well you understood your place on the site (1-5)
- How easy was this task to complete? (1-5)
- How confident are you that the information you found is correct? (1-5)
- What on this page did you see first?
- How many steps should it take to get to this page?

# Scenario 2:

You are a public user who wants to find out legal information on parking tickets. Someone tells you that the database that holds the information you need is called the LexisNexis Database. Find out how you can access the Lexis database.

# Tasks, Scenario 2

- 1. Start at the Hennepin County Law Library homepage: hclawlib.org
- 2. Find the LexisNexis Database
- 3. When you have found it, tell the moderator "I'm done"
- 4. Find how to access the Lexis Database
- 5. When you have found how to access it, tell the moderator "I'm done"
- 6. Return to the Hennepin County Law Library homepage.

# **Post-Task Questions**

• Rate how discoverable the information you were looking for was (1-5)

- Rate how well you understood your place on the site (1-5)
- How easy was this task to complete? (1-5)
- How confident are you that the information you found is correct? (1-5)
- What information on the site led you to the Lexis Database?
- How many steps should it take to get to the database?
- Who can access the Lexis database?

# Scenario 3:

You are a lawyer who heard the law library offered a course on Suicide Awareness & Prevention: You're unsure of when the course will be offered and want to find out the information in it. Find out where the course is.

# Tasks, Scenario 3

- 1. Start at the Hennepin County Law Library homepage: hclawlib.org
- 2. Find the course labeled Suicide Awareness & Prevention.
- 3. Read the description of the course aloud and say, "I'm done."
- 4. Return to the Hennepin County Law library homepage.

# **Post-Task Questions**

- Rate how discoverable the information you were looking for was (1-5)
- Rate how well you understood your place on the site (1-5)
- How easy was this task to complete? (1-5)
- How confident are you that the information you found is correct? (1-5)
- What information on this page did you see first?
- How many steps should it take to get to the course offerings?

# Appendix C: Quantitative Data

	Scenario 1		Scenario 2		Scenario 3	
Session		Post-Task		Post-Task		Post-Task
	Duration	Rating	Duration	Rating	Duration	Rating
Session One	3:04 min	5,5,5,5	3:01 min	3,2,4,3	1:54 min	5,5,5,5
Session Two	2:29 min	5,5,5,5	4:00 min	3,4,3,2	3:06 min	5,5,5,5
Session Three	3:28 min	5,5,5,5	2:03 min	5,4,5,5	3:36 min	4,3,3,4
Session Four	2:34 min	5,5,5,5	2:38 min	3,5,4,5	2:07 min	5,5,5,5
Session Five	2:39 min	5,5,5,5	2:16 min	5,3,4,5	1:48 min	5,5,5,5
	2:50.8		2:47.4	3.8,3.6,4,4	2:30.1	4.8, 4.6, 4.6,
AVERAGE	min	5,5,5,5 (5)	min	(3.85)	min	4.8 (4.7)
RANGE (MAX - MIN)	0:00:59	0,0,0,0	0:01:57	2,3,2,3	0:01:48	1,2,2,1

This table reflects data about Time On Task and responses to Post-Task questions:

## **Appendix D: Product Reaction Cards and Debriefing Interview Questions**

This table displays all of the possible product reaction cards as created by Joey Benedek and Trish Miner, Microsoft Corporation, 1 Microsoft Way, Redmond, WA 98052 joeyb@microsoft.com and trishmi@microsoft.com.

The complete set of 118 Product Reaction Cards <sup>1</sup>						
Accessible	Connected	Engaging	Impressive	Organized	Stimulating	
Advanced	Consistent	Entertaining	Incomprehensible	Overbearing	Straight Forward	
Annoying	Controllable	Enthusiastic	Inconsistent	Overwhelming	Stressful	
Appealing	Convenient	Essential	Ineffective	Patronizing	Time-consuming	
Approachable	Creative	Exceptional	Innovative	Personal	Time-Saving	
Attractive	Customizable	Exciting	Inspiring	Poor quality	Too Technical	
Boring	Cutting edge	Expected	Integrated	Powerful	Trustworthy	
Business-like	Dated	Familiar	Intimidating	Predictable	Unapproachable	
Busy	Desirable	Fast	Intuitive	Professional	Unattractive	
Calm	Difficult	Flexible	Inviting	Relevant	Uncontrollable	
Clean	Disconnected	Fragile	Irrelevant	Reliable	Unconventional	
Clear	Disruptive	Fresh	Low Maintenance	Responsive	Understandable	
Collaborative	Distracting	Friendly	Meaningful	Rigid	Undesirable	
Comfortable	Dull	Frustrating	Motivating	Satisfying	Unpredictable	
Compatible	Easy to use	Fun	Not Secure	Secure	Unrefined	
Compelling	Effective	Gets in the way	Not Valuable	Simplistic	Usable	
Complex	Efficient	Hard to Use	Novel	Slow	Useful	
Comprehensive	Effortless	Helpful	Old	Sophisticated	Valuable	
Confident	Empowering	High quality	Optimistic	Stable		
Confusing	Energetic	Impersonal	Ordinary	Sterile		

# Product reaction cards presented to the participants.

<sup>&</sup>lt;sup>1</sup> This table contains all of the words used on the product reaction cards described in the paper *Measuring Desirability: New methods for measuring desirability in the usability lab setting.* Permission is granted to use this Tool for personal, academic and commercial purposes. If you wish to use this Tool, or the results obtained from the use of this Tool for personal or academic purposes or in your commercial application, you are required to include the following attribution: "Developed by and © 2002 Microsoft Corporation. All rights reserved." If you choose to use these cards for your own research, we are very interested in your experience, so we can continue to refine the method. Please contact us and let us know how it works for you.

## Usability Test Report

Valuable	Reliable	Instructive	Slow
Inconsistent	Easy to Use	Insufficient	Straightforward
Cumbersome	Efficient	Intuitive	Time-Consuming
Simple	Familiar	Jargon-Filled	Simplistic
Complicated	Fast	Stupid	Technical
Confusing	Frustrating	Modern	Trustworthy
Unapproachable	Hard to Use	Outdated	Unhelpful
Discouraging	Inconsistent	Overwhelming	Useful
Distracting	Informative	Robust	Wordy

Debriefing Interview Questions

- Were you able to intuitively navigate the website, or did it take some getting used to?
- Was it clear that certain databases are only accessible by visiting the HCLL in person?
- Is there anything you would change with regards to finding and searching for a class?
- Did you feel like there were clear paths on the site to get in contact with librarians?

# Appendix E: Qualitative Responses

Interview Question	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5
Were you able to intuitively navigate to the website, or did it take some getting used to?	Pretty user friendly from other library resources she's used before. Information laid out clearly, better than other site's she's used for this before	Was able to intuitively navigate the website	Thinks it's easy to navigate	All pretty intuitive, likes the big headings up top to help with navigation (about and contact information) all headings organized in one central location	It was pretty intuitive for me
Was it clear that certain databases are only accessible by visiting the HCLL in person?	It was clear that the resources were supposed to be in person but she could've seen other people making the mistake because a lot of people don't read very closely	Clear that some resources are only accessible in physically because it is listed in several places	Thinks it's easy and clear to find that there are resources in person	Yes especially for lexis, having stipulations first helps people not get confused about subsequent information	Yes, but not as early on in the search process as I think I would've liked
Is there anything you would change with regards to finding and searching for a class?	No, nicely laid out. Better than other CLE pages she's seen in the past	Would have been harder to find courses "if I wasn't looking for specific courses it may have been harder. Maybe a highlight of upcoming classes to	Thinks this was harder, for classes she would have it as its own tab that says "classes/cour ses". So she thinks it could be more clear	Likes the "open all" button so she wouldn't have to click into everything, being able to see other events offered that might be interesting	No changes

This table reflects the responses recorded from the debriefing interview:

		reduce time			
		consumption			
		and increase			
		interest"			
	Felt like it was				
	easy to find				
	how to get in				
	contact with a				
	librarian.				
	Would use it				
	to find out				
	how to see				
	things in			Yes,	
	person by	Felt like it was		remembers	
	asking a law	easy to		the contact	
	librarian, or	contact a		information	
	especially for	librarian. "I	Felt there	on the right	
	a question	noticed the	were clear	sidebar on	
	about a	librarian help	paths to get	many pages	"Um, yes.
Did you feel like there were	divorce	when I was	into contact	as well as the	Contact page
clear paths on the site to get	proceeding.	on one of the	with a law	"ask a	had phone
in contact with librarians?	Would use it.	pages"	librarian	librarian" link	and emails"