

# Letter of Transmittal

TO: Shelly Hypes, Curtis Kularski  
FROM: Marian Cowhig Owen  
RE: Library app usability study  
DATE: April 12, 2023

Dear Shelly and Curtis,

My classmates in ENGL 4181/5181 and I have been working hard on usability testing, and we are pleased to share our results with you!

Attached you will find a formal usability report of UNCC's Ex Libris Library Mobile app. I tested the app with a group comprising students and guest users. Detailed results are available beginning on page 3 of this report, but highlights of my findings include:

- Testers appreciated the ability to customize the app's home screen, but there were several features they did not think were necessary and some features they wanted to add, including a clearly identified search tile.
- When reserving study rooms and registering for events, testers were not always confident that they had been able to successfully reserve/register; the system did not give a confirmation, so they were often left to guess whether their actions had gone through. Additionally, the filters in these areas of the app were not always accurate.
- Testers were frustrated at having to log into the app several times. This may be because the app pulls in pages from the library website, so users are logging into the app itself and then to the library website.
- If you expect guests from outside UNCC to use the app, it may be worth it to develop a guest-specific page for hours and events; on both these pages, guest users were shown information that was only applicable to the UNCC community.

This project was a lot of fun to work on; thank you for the opportunity! I have learned a lot about the library's offerings, so my library experience will be enhanced; in turn, I hope my findings help you as you further iterate the app for the UNCC community. Please don't hesitate to reach out if you need clarity on anything in this report.

Cheers,  
Marian Cowhig Owen  
Graduate student  
mowen18@uncc.edu

Cc: Dr. Gregory Wickliff



# Usability Report on Ex Libris Library Mobile App for UNC Charlotte's Atkins Library

Prepared by  
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for ENGL 5181  
April 12, 2023

Submitted to  
Shelly Hypes, Resource Development & Access Librarian  
Curtis Kularski, Head of Software Development  
Gregory Wickliff, Associate Professor of English

## Executive Summary

The J. Murrey Atkins Library at UNC Charlotte released its version of the Ex Libris Library Mobile app in spring 2023. Undergraduate and graduate students in English 4181/5181 were tasked with conducting usability testing to determine the app's strengths, weaknesses, and potential for future iteration.

For this report, five tests were conducted, with users assuming student and guest personas. Testers were asked to install the app on their own device and then perform a series of tasks. Testers were recorded and interviewed afterward to gather their feedback.

Detailed findings are available starting on page 3 of this report, but recommendations for changes to the app include:

### High-Priority Changes

- Adjust NinerNet home screen to make it easier to access library search module
- Add library search module to guest home screen
- Streamline login process so users can log in once to get to all areas of the app
- If possible, recreate library website content in the app for improved user experience and easier navigation (this will likely help with streamlining the login process)

### Ongoing Changes

- Tweak text on home screen tiles to clarify their content: Architecture, Chat, etc.
- Recreate in iOS the navigational features (Home button, etc.) that are present in the Android version of the app
- Consider removing the search icon from app navigation bar (on iOS), as it confuses users who want to search the library collection
- Create guest version of Events page and Hours page, so they can get accurate information about

when they can visit the library and what events they are eligible to attend

- Improve filtering for study rooms/events lists
- Add university name variations to app's login screen (University of North Carolina at Charlotte vs. UNC Charlotte, etc.)

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## Introduction

The J. Murrey Atkins Library at UNC Charlotte released its version of the Ex Libris Library Mobile app in spring 2023. Undergraduate and graduate students in English 4181/5181 were tasked with conducting usability testing to determine the app's strengths, weaknesses, and potential for future iteration.

As summarized by library staff, the goals of the app are:

- Make library services available to students from their phones
- Provide a tool that makes library interactions quick and easy
- Make the library more approachable for students and faculty
- Use the app to meet students where they are
- Encourage downloads and usage of the app

Though students, faculty, and staff are expected to make up the bulk of app users, the app also features a guest interface, which can be used by community members or visiting researchers.

For this report, five tests were conducted, with users assuming student and guest personas. Testers were asked to install the app on their own device and then perform a series of tasks. Testers were recorded and interviewed afterward to gather their feedback.

Detailed findings are available starting on page 3 of this report, but recommendations for changes to the app include:

### High-Priority Changes

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- Improve filtering for study rooms/events lists
- Add university name variations to app's login screen (University of North Carolina at Charlotte vs. UNC Charlotte, etc.)

## Procedures & Research Outcomes

### Recruitment & Test Environment

Testers were recruited from among UNCC colleagues, friends, and family. Some tests were conducted remotely and some in person, but in all cases, testers' screens were recorded via Zoom.

Tester	Persona	Device
J.L.: Female, early 20s	Undergraduate	iOS phone
D.O.: Male, mid 40s	Undergraduate	Both (downloaded app on his own Android phone, then tested app on an iOS phone)
P.Z.: Male, late 20s	Graduate	iOS phone
B.C.: Male, mid 70s	Guest	Android phone
K.C.: Female, early 40s	Guest	Android phone

**Table 1: Tester Demographics/Personas**

All testers used their devices in portrait mode, without prompting. In a larger test, we would have had some testers use their device in landscape mode, but it is possible that few would choose this unless directed. Additionally, in a larger test, we would have worked to test the app on tablets as well as phones,

Tester	Experience with Apps	Experience with Other Libraries' Apps	Experience with UNCC Library (web or in person)
J.L.: Female, early 20s	5	yes	5
D.O.: Male, mid 40s	5	yes	1
P.Z.: Male, late 20s	2	yes	3
B.C.: Male, mid 70s	4	yes	1
K.C.: Female, early 40s	5	no (but had used library websites)	1

**Table 2: Testers' Familiarity with Apps/Libraries**

and on both old and new devices.

Prior to installing the app, testers were asked about their experience with device apps in general, with library apps in particular, and with the UNCC library (in person or via the website).

### Tester Tasks

Testers were asked to locate the app in the App Store/Google Play and download it to their own devices. Testers with a student persona logged in with a NinerNet ID and were asked to do the following:

- Check library account (materials reserved, overdue materials, fines, etc.)
- Check library hours and reserve a study room
- Look for specific resources in the library collection
- Register for an event at the library
- Chat with a librarian

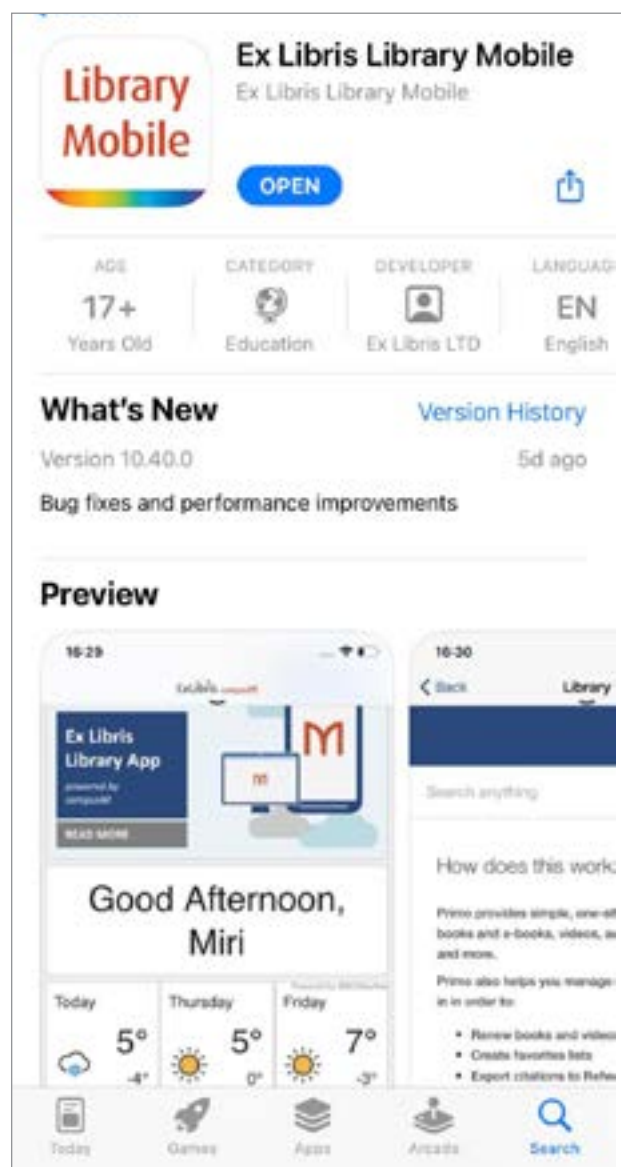
Testers with a guest persona were asked to do the following:

- Check library hours (at certain times of the year, guests are only allowed to visit during limited hours; testers were not told this but watched to see if they caught it)
- Look for specific resources in the library collection
- Register for an event at the library (not all events

are open to the public; as above, testers were not told this but watched to see if they caught it)

### Findings: Downloading & Installing the App

Some testers had trouble locating the app in the App Store/Google Play, as it was not clearly identified as a UNCC app. Moreover, the app is labeled Library Mobile when installed on either iOS or Android phones but listed in the App Store/Google Play as Ex Libris Library Mobile (see Figure 1).



One tester noted that the app listing in Google Play described it as having ads, which he found disconcerting: “Not a red flag ... maybe an orange or yellow flag.” The same tester noted that the app does not have any reviews despite its large number of downloads: “An app that’s been downloaded 10K+ times and has no reviews – that’s a little weird.” When this tester downloaded the app, he noted that his phone asked for permission to view media files. It was a permission the app should not have needed, but he did not find this worrisome: “Android is very particular about permissions.”

When logging into the app, another tester noted that the university was only listed as “UNC Charlotte” – if a user typed “UNCC” or something similar, the university might not come up as a result.

**Takeaway: Simple enough to install the app, but the app description did not make it clear that the app was for UNCC students; when logging in, other versions of the university name could be added as another keyword.**

### Findings: User Interface

Testers appreciated the app’s customizable home page, but noted that a few extra features would have been helpful. One wanted an easier way to keep track of saved items within the library collection. Two others noted that there was not a clear path to search the library collection. Users who are logged in via NinerNet have a tile at the top of the app home screen that links to the library collection, but it does not look like a link, so some testers skipped over that at first (see Figure 2). Guests do not have this tile, making it even more difficult to search the

**Figure 1: The app was listed in both Google Play and the App Store (shown left) as Ex Libris Library Mobile, but when installed on either iOS or Android phones, it was labeled as Library Mobile. Additionally, nothing in the description indicated that it was connected to UNCC.**



**Figure 2: App home screen shown at left for a NinerNet login using iOS. The white text “Search for books, articles, and more” is clickable, but that was not clear to users, so they were unsure how to search the library collection.**

cused research, suggested that subject librarians be added to the app home page, so that users who are doing intense research can gather resources quickly.

One iOS user found it difficult to get back to the app’s home screen after completing a task. The Done button was not very intuitive, and the Back button only progressed a page at a time, so it could take a while to get back to the home screen. There is a Home button at the bottom of the app’s home screen, but that whole bar goes away when accessing most parts of the app; the tester felt it would be helpful to have that there on all pages.

Users who tested the app on Android phones were able to use a Home button at the top of the screen, which made their navigation much easier.

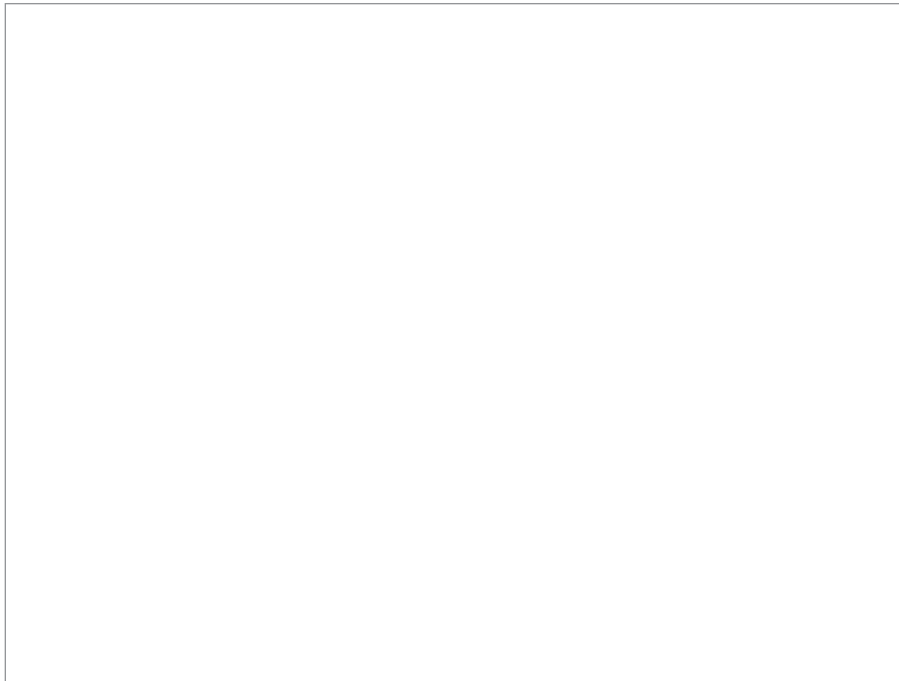
The bar at the bottom of the home screen presented another confusion to one iOS tester; he thought it was a way to search the library’s collection, but it turned out to be a search of the app itself. This tester was using the app as a guest; he was already frustrated at not being able to easily search the collection, and this added to his irritation: “The word ‘search’ is not on this page at all. And then the thing that might hint at a search is not a search at all.”

collection.

In general, testers felt that the ability to search the collection was a key part of the app, and without a clear, simple way to do that, the app was far less useful: “I think it’s missing one of the top 3 reasons someone would want to look at a library app.”

One tester, a graduate student who does more fo-

Testers differed on the importance of both the Social Media and Hours buttons. One felt that the Social Media button was unnecessary but said “having the hours ... right at the top is good.” In contrast, another thought Social Media was worth including but thought the information under Hours could be conveyed in another way that didn’t require its own button: “I’m skeptical about what [the Hours button] provides that’s not available in other features.”



**Figure 3: A tester and the researcher express frustration at needing to log in multiple times yet still not being successful.**

**Click in window to left to play (Adobe Acrobat Pro only).**

Testers felt that the Architecture and Archives & Rare Books buttons would not be used by most visitors. They also felt that the Area 49 button served little purpose, since there was no link from that page to an event listing.

One tester thought that the Architecture button linked to information about campus architectural features, not a particular academic program. The tester said the button’s label could be clarified: “As long as you’re going to have an icon on the page, add another word.”

Testers liked the ability to ask a librarian a quick question via the Chat button, but one noted that the button could have been more clear. He was not sure at first glance whether he’d be clicking into a customer service chatbox, a discussion forum, or a large text thread with other library patrons: “They might clarify the icon on that a little bit.”

**Takeaway: Testers wanted a more obvious/easier way to search the library collection; they said that feature would be far more im-**

**portant than some of the features on the grid currently.**

### **Findings: Technical Issues**

Testers expressed frustration with having to log in multiple times while using the app. “I feel like if I log in once, that should be enough,” one tester said. This may be a technical issue on the back end or it may be a case of logging into the app versus logging into the library website. In one case, the tester could not get access to the desired area even after several attempts. Whatever the cause, the difficulty hampered user experience (see Figure 3).

Additionally, the app was slow to load at times; for one tester, a “Loading Home” box floated over the app window for several minutes, making it difficult to complete tasks: “I could read the abstract if it weren’t for that Loading Home button.”

**Takeaway: App seems slow at times, and being required to log in multiple times (sometimes unsuccessfully) hampers user experience.**

### **Findings: Difficulty with Reservations & Registrations**

As mentioned above, testers felt that it should be easier to search the library collection for materials. However, once they found the search module in the app, the search itself was fairly straightforward and not too different than working on a desktop. Testers were able to search for material, request resources, download manuscripts, and save listings for later reference.

When it came to reserving study rooms or registering for library events, testers had more trouble. As mentioned above, issues with logging in complicated this for a few testers. Even when logged in, the systems were tricky to navigate.

One tester appreciated the ability to search for a study room by capacity or equipment; however, he noted that if you chose a date, then filtered by capacity or equipment, the date reset to the current day and you’d have to start the search over again. Additionally, a few searches offered rooms that did not meet the criteria.

The list of library events was not easy to filter; categories like “Information Session” and “Lectures & Presentations” seemed to overlap, and another category labeled “Lectures & Presentations, Information Session” was mystifying. Additionally, it was difficult to tell which events were for the public and which were just for the university community.

For both study room reservations and event registration, iOS testers were not always able to tell whether a reservation/registration had been completed successfully. There was sometimes a tiny blink on the screen, but no further confirmation. Testers said that a confirmation window, or a color-changing box on the screen, would be helpful.

One Android user, who was testing the guest interface, also found that she could not reliably register for events on the app. However, if she clicked through

to the library website, she had the option to log in with Facebook or Google, and she could then register for events even without a NinerNet login. If this feature is intentional, it would be helpful to include it in the app itself.

The same Android tester said that, as a guest, she would be unlikely to pull up the app specifically to search for events. But, she noted, if she got notifications from the app about events that were coming up, she might then open the app to learn more about events.

**Takeaway: When reserving rooms or registering for events, the app is not very good about confirming success; the filtering options for both of these sections could use improvement.**

### **Findings: Overall Impressions**

In general, testers were optimistic about the app but mixed about whether they would use it in its current form. The more likely testers were to use their phones for daily tasks, the more likely they were to say they would use the app for library tasks, and vice versa. One tester said that without certain features added/improved (specifically, an easier-to-find book search) the app wouldn’t hold much appeal to him: “It seems cut out for the job it’s trying to do – it just needs to put more focus on delivering the things that someone would want the app for.”

“It needs to put more focus on delivering the things that someone would want the app for.”  
- Tester, commenting on whether he would use the app in future

**Takeaway: Testers felt that the app needs a lot of revision, particularly regarding the collection search, but it has potential to be useful.**

## Recommendations

### High-Priority Changes

- Adjust NinerNet home screen to make it easier to access library search module
- Add library search module to guest home screen
- Streamline login process so users can log in once to get to all areas of the app
- If possible, recreate library website content in the app for improved user experience and easier navigation (this will likely help with streamlining the login process)

### Ongoing Changes

- Tweak text on home screen tiles to clarify their content: Architecture, Chat, etc.
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- Consider removing the search icon from app navigation bar (on iOS), as it confuses users who want to search the library collection
- Create guest version of Events page and Hours page, so they can get accurate information about when they can visit the library and what events they are eligible to attend
- Improve filtering for study rooms/events lists
- Add university name variations to app's login screen (University of North Carolina at Charlotte vs. UNC Charlotte, etc.)

## Appendix: Scripts for User Tests

### Script for UNCC Community

#### Introduction

Hi there, and thanks for helping me out today. Before we begin, let me go over the details of this project – I know I've told you a little, but I want to be sure I've given you all the information. As part of a class, I am performing user testing on an app for the UNCC library. The app was just released this semester, and the library staff asked our class to test the app with students, faculty, staff, and guests. My goal is to help the library staff determine what works well about the app, what needs improvement, and what users want to get out of a library app.

Today I'm going to ask you to download the library app on your own device, then perform a few tasks for me in your role as <persona type>. You can delete the app after our session, but it is a fully functional library app, so you may want to keep it to access library resources. If you do keep it and you have further thoughts after our session, please let me know what you think, and I'll pass it on to the library staff.

Sound good so far?

With your permission, I will be recording you today, both your screen so I can see what you're doing in the app and your comments as you work through the tasks. It helps me out a lot if you can narrate what you're doing – basically thinking out loud – and definitely tell me if you're having trouble with a task. The more commentary, the better! I promise these recordings will only be shared with my professor and perhaps with the library staff, to illustrate what we see when using the app. Do I have your permission to record you? <If yes, set up screen recording>

I have a few questions before we get started:

- How would you rate your skill with finding/

downloading/installing apps, with a 1 being not skilled at all and a 5 being extremely skilled?

- Have you used any other library's app before? Maybe at another university, or a public library?
- On a scale of 1-5, how familiar are you with the UNCC library outside the app? This includes the website and the physical library.

One last thing before we get into the nitty gritty of the app – I want to be clear that this testing process is not testing you, it's testing the app. None of this is intended to make you feel bad if you have trouble using the app – that's actually a good thing, because it means we've identified an area that needs some work. You are doing a huge service for me and for the library, so we thank you in advance.

Okay, let's get started!

#### Tasks

**1** First I want you to download the app. It will be in <the App Store / Google Play>, and you're looking for the app name LibraryMobile.

(If necessary) It may not look like a UNCC app.

Okay, now that you've installed it, please log in with your NinerNet credentials.

**2** Now that you've logged in, I want you to check your library account. Please confirm that your personal details are correct.

You should also be able to see what if any library requests are in progress, what you've checked out, what's due soon, and any fines you owe.

Okay, let's go back to the home screen.

3 So finals are coming up and let's say you want to reserve a study room. First, let's check the hours the library will be open the week of May 1.

Next, reserve a study room for any time the library is open that week. Go all the way through the process.

Now we want to confirm that the reservation is active.

And now, because we actually don't need that study room, let's cancel the reservation. And then go back to the home screen.

4 All right, now we're going to do one of the most common tasks at the library: We're going to look for a specific resource in the library collection.

Search for the book *No Ordinary Time* by Doris Kearns Goodwin, and reserve it for pickup at the Atkins library.

As you might have guessed, we're looking for biographies of Franklin Delano Roosevelt. We're going to be occupied reading the Goodwin book for a while, but we might want to create a list of resources about FDR to come back to. I want you to search for books about FDR and save them to a list.

Next, we're looking for a book review of any of these FDR bios. These will probably be found in academic journals. Pick a review and download it, if you can, or request a copy of it.

Finally, because we don't actually need that Goodwin book <or book review>, let's cancel that request.

And then go back to the home screen.

5 Next, we're going to look at the events held at the library. These are a mix of academic talks and workshops in the Makerspace section. Find

one you like and register.

And then, if you don't really plan to go to the event, let's cancel your registration. Then go back to the home screen.

6 Okay, last thing! The app has a chat function where you can ask a librarian questions. Find that and ask a librarian for help with something.

(If needed) Maybe ask if you can bring a snack or drink into a study room.

And you're done!

### Conclusion

Thank you, this was super helpful and you've given me a lot of great feedback to send to the library staff. Before we finish, I have a few general questions about your experience with the app:

- Are there any features of the app that seem unnecessary?
- Are there features you wish the app had?
- Would you use this app in place of the website interface and/or visiting the library in person?

That's it! You're free to delete the app now, but I know the library would love it if you keep using it. If you do keep using it and you have any other thoughts, please feel free to pass them on to me at [mowen18@uncc.edu](mailto:mowen18@uncc.edu)

### Script for Guests

#### Introduction

Hi there, and thanks for helping me out today. Before we begin, let me go over the details of this project – I know I've told you a little, but I want to be sure I've given you all the information. As part of a class, I am performing user testing on an app for the UNCC library. The app was just released this semester, and the library staff asked our class to test the app with students, faculty, staff, and guests. My goal is to help the library staff determine what works well about the

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Sound good so far?

With your permission, I will be recording you today, both your screen so I can see what you're doing in the app and your comments as you work through the tasks. It helps me out a lot if you can narrate what you're doing, and definitely tell me if you're having trouble with a task. The more commentary, the better! I promise these recordings will only be shared with my professor and perhaps with the library staff, to illustrate what we see when using the app. Do I have your permission to record you? <If yes, set up screen recording>

I have a few questions before we get started:

- How would you rate your skill with finding/downloading/installing apps, with a 1 being not skilled at all and a 5 being extremely skilled?
- Have you used any other library's app before? Maybe at another university, or a public library?
- On a scale of 1-5, how familiar are you with the UNCC library outside the app? This includes the website and the physical library.

One last thing before we get into the nitty gritty of the app – I want to be clear that this testing process is not testing you, it's testing the app. None of this is intended to make you feel bad if you have trouble using the app – that's actually a good thing, because it means we've identified an area that needs some work. You are doing a huge service for me and for the library, so we thank you in advance.

Okay, let's get started!

### Tasks

1 First I want you to download the app. It will be in <the App Store / Google Play>, and you're looking for the app name LibraryMobile.

(If necessary) It may not look like a UNCC app.

Okay, now that you've installed it, let's open the app and proceed as a guest.

2 Since you're not on campus, you'll need to make a special trip if you want to visit the library in person, so let's check what the hours are during the week of May 1. <Does tester notice that guests are only allowed at certain times?>

And now go back to the home screen.

3 All right, now we're going to do one of the most common tasks at the library: We're going to look for a specific resource in the library collection.

Search for the book *No Ordinary Time* by Doris Kearns Goodwin. <This takes a bit of digging on the Guest side. Does tester figure it out?>

As you might have guessed, we're looking for biographies of Franklin Delano Roosevelt. We're going to be occupied reading the Goodwin book for a while, but we might want to create a list of resources about FDR to come back to. I want you to search for books about FDR and email a listing to yourself.

Next, we're looking for a book review of any of these FDR bios. These will probably be found in academic journals. Pick a review and download it, if you can.

And then go back to the home screen.



**4** Next, we're going to look at the events held at the library. Find one you like and register. <Some events are listed as only being for the UNCC community, but they show up in the Guest portion of the app - see if testers notice this.>

And then, if you don't really plan to go to the event, let's cancel your registration. Then go back to the home screen.

**5** Okay, last thing! The app has a chat function where you can ask a librarian questions. Find that and ask a librarian for help with something.

(If needed) Maybe ask what the rules are about bringing water bottles.

And you're done!

### **Conclusion**

Thank you, this was super helpful and you've given me a lot of great feedback to send to the library staff. Before we finish, I have a few general questions about your experience with the app:

- Are there any features of the app that seem unnecessary?
- Are there features you wish the app had?

That's it! You're free to delete the app now, but I know the library would love it if you keep using it. If you do keep using it and you have any other thoughts, please feel free to pass them on to me at mowen18@uncc.edu.

## **References**

**Cowhig, Bruce.** Usability test/interview. Conducted over Zoom. 7 April 2023.

**Cowhig, Kelly.** Usability test/interview. Conducted over Zoom. 11 April 2023.

**Levison, James.** Usability test/interview. Charlotte, NC. 29 March 2023.

**Owen, David.** Usability test/interview. Charlotte, NC. 2 April 2023.

**Zendels, Phil.** Usability test/interview. Conducted over Zoom. 4 April 2023.

# MEMO

To: Dr. Wickliff  
From: Marian Cowhig Owen  
Date: April 12, 2023  
Subject: Project 2 Assessment

## Process & Goals

From my original planning sheet, my goals were:

As initially explained by Shelly and Curtis, my project is to conduct usability testing on the content, design, interactivity, and download process of the Atkins Library's newly released app. I will evaluate its current iteration and elicit feedback from users on features they would like to see added or changed.

Clients are specifically interested in:

- Increasing downloads and usage (some of this is a matter of external marketing, but already I have noticed some elements of the app and the library website that can be tweaked to make downloading easier)
- Providing services via the app that students/faculty/staff might otherwise use a desktop computer for, when applicable
- Making the library more approachable for the university community and for guests
- Making library interactions quick and easy

My recommendations include:

- Making it easier to search the library collection through an improved interface and/or a more obvious button. Currently this is fairly difficult if an app user doesn't know where to go, and I personally would not use the app to search the library collection. Addressing this will meet the clients' goal of providing services via the app that users might otherwise use a desktop computer for
- Streamline login process so users can log in once for all areas of the app. This will make library interactions quicker and easier.
- In general, keep the interface simple and remove unnecessary features (such as the social media button). The less noise the app has, the more approachable the library will seem.

## Self-Assessment: Strengths & Weaknesses

- **I felt comfortable working in InDesign**; I have some experience with it from previous employment, and the tutorial project from earlier this semester helped me get back up to speed. In general I am pleased with the final layout. **This project required me to learn new skills**, such as creating tables and editing/importing video clips. I am less pleased with those particular elements, but I hope to be able to refine those skills on future projects.
- I had a good rhythm going at the start of the project, but **I fell behind when it came to scheduling user tests**. I had grand plans to reach out to my network and recruit from beyond my immediate circle, but I was not able to fulfill that goal. I did complete the required 5 tests, and my testers did discover areas within the app that needed improvement, but **if I had this project to do over again I would spend much more time planning my tester recruitment**.
- I think **I also underestimated the amount of time this project would take**, and I was late on turning in several elements.
- All that said, **I am pleased with the final contents of the report**. My findings are grouped so that readers can easily navigate the report and focus on quick takeaways, but there are also tables, screenshots and one video clip so they can dig into my process if they care to. Between my own evaluation and my testers', I think **I have developed a list of recommendations that will vastly improve the app**.