I. Research Proposal Cover Page

Title of Proposed Research

"What lies beneath" a qualitative assessment of website usability and first-time student experience of library web resources

Abstract

The academic library website serves as an invaluable resource for connecting library patrons to scholarly databases and academic materials necessary for student success, and it serves as many patrons' main point of contact with the library. To provide equitable and high-quality service to its users, the library must ensure the website meets web content accessibility guidelines (WCAG), is intuitive to use, is easy to navigate, and demonstrates the principles of modern website design. To complete these goals, academic libraries must assess the quality of their websites across all these metrics. An assessment of the usability of library websites belonging to Florida Atlantic University, Florida State University, the University of Central Florida, the University of Florida, and the University of South Florida by examining the user behavior of undergraduate freshmen students will provide valuable data on the effective quality of library websites used by four-year degree issuing institutions in Florida. Study participants will be recruited from incoming undergraduate first time in campus (FTIC) freshmen from the Fall 2024 and Spring 2025 cohort. Participants will be tasked with performing several tasks that require the use of core library website functions, and then will complete a survey in which they assess the website's usability, accessibility, and design. The results of this study will be compared to website utilization rates across institutions to determine the correlation between different facets of website design and assess student usage.

Keywords: Usability, Accessibility, Retention, Student Success, Information Literacy

Project Start Date	Project Completion Date
August 22, 2024	Sep 30, 2026

Amount Requested	Proposal Submission Date
$217,500.00	April 22, 2024

Principal Investigators' Names & Affiliations

The research team will be comprised of the following: **Web Accessibility Executive Committee** (WAEC) and **Website Usability Taskforce Group** (WUTG). The WAEC will include the UCF Libraries Campus Dean, FSU Libraries Campus Dean, and USF Libraries Campus Dean. The WUTG will include Steven Gurney, USF Librarian; ▮▮▮▮▮▮▮▮, USF Librarian; ▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮, USF Librarian; and ▮▮▮▮▮▮▮▮, USF Librarian.

II. Statement of Need & Significance of Study

2.1. Needs Assessment:

As the digital age continues to shape how information is disseminated and received, it has become increasingly important for academic libraries to critically examine the usability of their websites. For students to achieve their desired learning outcomes, it is paramount for them to be able to locate pertinent resources in a timely and simple manner. Any failures on the part of libraries to incorporate usability features into their website may have negative consequences for universities. Chen et al (2023) note that, according to the International Organization for Standardization (ISO), when usability scores are low, this can lead to users being unable or unwilling to engage with systems, products, and services. In connecting this to Murray's (2014) research, a direct correlation exists between students who fail to utilize library resources and those who are more likely to withdraw (pp. 59-60). The correlation shows that "students who remained enrolled, logged into library resources at a much higher rate than those who withdrew" (Murray, 2014). In student's second years, this statistic became even more pronounced with as much as "60% of withdrawn students not logging into library resources at all" (Murray, 2014). Libraries should, therefore, seek to make their websites as usable and accessible as possible; this can be achieved in an evidence-based manner through the use of mixed methods testing and self-selective surveys to identify usability barriers.

2.2. Literature Review: Content Analysis:

Within the past decade, there have been many studies published investigating the best practices for library website design. In 2012, Aharony performed a content analysis study on 31 academic library homepages and determined differences between library websites created in 2000 vs 2010 (2012). Within the span of 10 years, marked improvement has been seen in the availability of content relating to e-resources, linkage to web 2.0 technologies, and increased focus on making websites more patron friendly. The findings of the study note limitations in the results, being based on the study of American library websites and cannot be generalized towards international library

websites. In a separate study of web content and design trends of Alabama academic libraries, Wilson noted that web design is a young field that changes rapidly as technology continues to morph (Wilson 2013). Due to the evolving standards for website design and the dynamic searching behaviors of patrons, it is difficult to maintain a set of standards for library website design.

Further research has revealed additional navigational complexities that also impact patron usability. "What patrons don't realize is that the library OPAC, is a conglomerate of various databases, discovery layers, libguides, and other web-based tools and it is difficult to enhance the u/x experience of the library website" (Conrad and Stevens 2019). This can produce a confusing website that is difficult to navigate, acting more like a portal that leads to multiple integrated databases. At the Pratt Institute, a study of user interface behavior was conducted through usability tests, examining website analytics as well as user behavior to develop a "think aloud" methodology to determine the user's thought process as they navigated the website (Dease 2020). The study led to a re-design of the library website architecture and prototyped a complete overhaul. The newly designed website launched in July 2019 took an active approach to better integrating library webpages and tools, using persistent design and improved navigation. The project, though small in scope, was implemented by a three-person team, including the Systems Administrator, E-Resources Librarian, and Digital Learning librarian. The successful library website redesign at Pratt Institute brings attention to the opportunities available for improving website usability, considering the limitations of the staff based at this small institution, having a full-time enrollment of around 5,000 students and a library staff of 30.

One of the goals of this study is to examine the accessibility of the Florida university library sites. When designing a quality website of any type, there are many factors that the designer must consider to ensure usability. However, for a library website, accessibility may be the most important consideration and ensuring all users can access the library website, even with a disability. Focus on accessibility has increased since the start of the COVID-19 pandemic, which made the entire human race more dependent on website technology (Campoverde-Molina, Luján Mora, & Valverde, 2023). Within the state of Florida, 25,000 university students report having a disability, and there are 30,000

international students most of whom English is a second language. When adding these two groups together, the total population equates to 55,000 Florida students with potential barriers to access (State University System of Florida, 2023). This study will take a snapshot of the overall average student experience, studying student patrons using library websites in 5 selected Florida State universities, to determine the sufficiency of library websites and whether their available accessibility tools are sufficient to maximize access for the diverse populations they serve.

2.3. Significance of Study

An academic library's usability may directly impact a university's student retention rate. Being able to navigate a library's web portal and being able to find suitable digital resources are important skills for students to have for the sake of their education. An insufficient understanding of a library's website poses a significant barrier to student success, and it should be the job of librarians and their respective universities to address issues of this nature. This warrants a deeper investigation into how students use library websites and what features of those websites aid or hinder website use. While previous studies conducted on website usability have addressed best practices for web design—such as selection of website content, linking to electronic resources and layout of navigational elements, website accessibility and u/x interface design—a study analyzing how well modern library websites use these principles to encourage website use has yet to be done. A systematic review of websites used by major four-year Florida institutions to this end has not been attempted at this time, and such a review would provide a valuable case study on the current quality of library websites and the connection of that quality to student retention.

2.4. Research Goal & Research Questions

A) Purpose: This study is meant to inform the decision-making process of academic libraries regarding how they consider the subjects of usability and accessibility. A more complete understanding of the average undergraduate's user experience will enable academic libraries

to make their web portals more navigable, thereby improving the user experience (UX). Universities intend to make changes to their library websites within the next five years. This study intends to provide them with information to assist their changes and to gauge how well said modifications were received.

B) Research questions:

    i.   Among undergraduate students, how often do students struggle to find the resources they are looking for on their libraries' web portals?

    ii.   Is there a particular aspect of online libraries students find challenging to navigate? Was this consistent across universities?

    iii.   If students struggled to find what they were looking for, why was this the case? Why did students feel this was the case?

    iv.   If the study's findings varied between trials, why was this the case? How did the surveys and data vary?

    v.   What changes to website design would most significantly impact students' opinions of their website's usability and accessibility?

III. Research Design

3.1. Overview

The main focus of this research study is to examine the website usability of several of the State University System of Florida R1 schools library websites by observing the experience of incoming first time in campus (FTIC) freshmen in the Fall 2024 semester using their college's website. To achieve this goal, the study will apply a Grounded Theory approach. Students will be tasked with completing scenarios to demonstrate how well they understand their university library's website, and then asked to take a survey rating how difficult they found each task and how usable they found the library's website during the scenario. The sampling method employed will be based on the non-probability convenience model and the subjects in each sample will be self-selected. Emails

will be distributed to all freshmen FTIC students at each participating university with the assistance of each university's liaison, and this study will seek to have as many student participants as our budget will allow.

The scope of this study has made the creation of various task forces and committees necessary. The **Website Usability Taskforce Group** (WUTG) will have four members with each one being a specialist in one of the key measurable dimensions of the study. The dimensions are Information Technology, Discovery, Systems, and Web Programming. The Taskforce will review these dimensions for each of the five schools and with the help of the Web Accessibility Research Committee, determine how well the university websites conform to the ALA's accessibility standards. Beyond this task force, the **Accessibility Research Committee** (ARC) will coordinate with their counterparts in the five designated R1 University Libraries of Florida. Gurney – FAU, Polson – UF, Worcester – FSU, and Knudsen – UCF. The USF librarians will share the responsibility of tracking the USF data. Each USF librarian will have two research assistants to assist with the research and data collection. Finally, The WAT will be reporting their findings to the **Web Accessibility Executive Committee** (WAEC) which is comprised of the Library Deans of the 5 largest schools in the state of Florida. Their names are as follows: Todd Chavez, Dean of USF Libraries; Linda Golian Lui, Dean of FAU Libraries; Judith C. Russell, Dean of UF Libraries; Gale Etschmaier, Dean of FSU Libraries; and Beau Case – Dean of UCF Libraries.

3.2. State University System of Florida

A) University of South Florida (Tampa): USF's total Freshman class for 2023 totaled at 6,900 students. USF library groups their accessibility services in the "Guide Me" section. This section is a kind of information booth where students can ask questions about USF's services. Some of the web accessibility services include Duxbury Braille software and a Visualtek machine that magnifies print pages. A more comprehensive review of their accessibility services can be found by using their URL:

https://lib.usf.edu/forms/ . The Florida University liaisons will be librarians Steve Gurney, Natalie Polson, Christopher Worcester, and Jakob Knudsen, based at the USF Library respectively.

B) Florida Atlantic University (Boca Raton) had a freshman class of 5,558 students in 2023 which was one of the school's largest influx of students in its history. The website for the S.E. Wimberly Library has several accessibility services including ADA services which focus on Physical Accessibility, Assistive Technology, Adaptive Technology, and Research Assistance. They also have a section to field student concerns about accessibility barriers, a disability research guide, and other resources. The URL for these services is here for review: https://library.fau.edu/access-services/ADA . FAU data collection will be co-supervised by USF librarian Steve Gurney with Mahesh Neelakanta, B.S, M.S. Each will have a paid assistant. FAU is a R1 university.

C) University of Florida (Gainesville) In 2023, the University of Florida (UF) had a freshman class of 6,550 students. The website for the George A. Smathers library addresses off-campus access, study spaces, research & consulting services, and general accessibility services. Accessibility Services » George A. Smathers Libraries » UF Libraries » University of Florida . UF data collection will be handled by librarian Natalie Polson of USF and Holly Kozlowski, Access and Resource sharing Program Manager. They will each have a paid assistant.

D) Florida State University (Tallahassee) In 2023, Florida State had a total of 3,446 freshmen students which included people from every county in the state of Florida and from all 50 states. The accessibility section of the Robert M. Strozier library website lists several services including HathiTrust Digital Library which provides an accessible text request service that is able to provide materials to students with print disabilities. They also have a curbside pickup for students with mobility issues. The Strozier library has a selection of Assistive Software which includes JAWS, Dragon Naturally Speaking, and Read&Write GOLD. To review the website's accessibility section, use the following URL: https://www.lib.fsu.edu/help/accessibility . FSU data collection will be managed by USF librarian, Chris Worcester and Nicholas Ruhs, Research Data Management Librarian. Each of them will have an assistant employed to aid them in data collection and analysis.

E) University of Central Florida (Orlando) In terms of enrollment, UCF is the state's largest university with a total enrollment of over 68,000 students in 2023, 8,226 of whom were freshmen. The John C. Hitt library is located almost in the center of the campus, and this—in a way—makes it an accessibility feature. The accessibility section of the Hitt Library's website includes services such as Research Assistance powered by the HathiTrust, accessibility software including ZoomText (Screen Magnification Software), and Kurzweil 3000 (Text to Speech) Software on all public computers and free software downloads for all students, faculty, and staff. UCF's Accessibility Services section can be reviewed on this URL: [Digital Accessibility • Student Accessibility Services • UCF](#). USF librarian Jacob Knudsen will liaison with Ven Basco, Computer Science Librarian. Each of them will have a paid aide to assist them with data collection.

IV. Project Resources (Personnel, Time, Budget)

4.1 Overview

The study will take place at the start of Fall 2024 and end at the end of Spring 2029. The study will incorporate three tiered committees. The top tier will be formed with each campus library dean representing the 5 main regions of Florida, Florida Atlantic University, FAU, University of Florida, UF, Florida State University, FSU, University of South Florida, USF and University of Central Florida, UCF. This group will form the committee known as the Web Accessibility Executive Committee. The second tier will be known as the Web Accessibility Research Committee, with representatives from USF, including Librarians, Steve Guerney, Natalie Polson, Christopher Worcester and Jakob Knudsen. Each USF Librarian will work with their local site Librarian partner from FAU, UF, FSU, USF and UCF. Four teams will compile data from their designated sites and include 2 research assistants to work on the data gathering, including the survey sampling and interviewing undergraduate students. The third tier will be known as the Website Usability Taskforce Group (WUTG), with project implementers including 5 representatives representing areas of IT, Discovery, Systems and Web Programming from FAU, UF, FSU, USF and UCF. The Web Accessibility Taskforce will create a web

accessibility checker, that will check the content of each University library website to track the following: broken links, readability of fonts, length of text, and whether elements can easily be converted into text for learners who are visually impaired.

4.2. Personnel

A. Campus Library Deans, 5 members, for a total of 1 week = $25,000

B. USF Research Team (2 librarians, 2 Research Assistants)

    a. Librarian for a total of 1 year = $10,000 x 2

    b. 2 Research Assistants x (0.375 (part time, 20 hours per week) x $15.00/hr) for a total of 6 months

C. UF Research Team (2 librarians, 2 Research Assistants)

    a. Librarian for a total of 1 year = $10,000 x 2

    b. 2 Research Assistants x (0.375 (part time, 20 hours per week) x $15.00/hr) for a total of 6 months

D. FSU Research Team (2 librarians, 2 Research Assistants)

    a. Librarian for a total of 1 year = $10,000 x 2

    b. 2 Research Assistants x (0.375 (part time, 20 hours per week) x- $15.00/hr) for a total of 6 months

E. FAU Research Team (2 librarians, 2 Research Assistants)

    a. Librarian for a total of 1 year = $10,000 x 2

    b. 2 Research Assistants x (0.375 (part time, 20 hours per week) x- $15.00/hr) for a total of 6 months

F. UCF Research Team (2 librarians, 2 Research Assistants)

    a. Librarian for a total of 1 year = $10,000 x 2

    b. 2 Research Assistants x (0.375 (part time, 20 hours per week) x- $15.00/hr) for a total of 6 months

G. Web Accessibility Taskforce – Developer Team

    a. 5 Systems Personnel, one for for each site = $10,000 x 5

4.3 Timeline (Aug 2024 to May 2026)

Fall 2024

- Aug 23, 2024 - formation of committees across all three tiers

- Sept 15, 2024 – survey is sent to 5 Florida Universities for sampling up to 50 incoming undergraduate (FTIC) Fall 2024 student population and enlisting research study participants

- Oct 31, 2024 – Fall focus groups are setup

- Nov 11, 2024 – Research assistants interviews focus groups and performs website user study. Notes the current website design and its contents and navigational structure.

- Dec 8, 2024 – Researchers assess gpa of each research participant

Spring 2025

- Jan 15, 2025 – survey sent to incoming Spring (FTIC) 2025 cohort, enlisting up to 50 study participants

- Jan 31, 2025 – Developer team meet to create web accessibility checklist based on WCAG standards and assess all 5 site websites for addressing user accessibility

- Feb 14, 2025 – Spring focus groups are setup

- April 15, 2025- Research assistants interviews focus groups and performs website user study. Notes the current website design and its contents and navigational structure.

Fall 2025

- May 31, 2025 – Website accessibility checklist is performed for each university website by the Web Accessibility Taskforce to gather data on whether each website passes and the rate of errors.

Spring and Summer 2026

- Web Accessibility Research committee librarians will review data compiled from focus groups and results of web accessibility checklist. Research paper will include additional new sections including findings, study implications and conclusions for follow up studies addressing gaps in current Research study.

Fall 2026

- Sep 30, 2026 – Research is presented to library personnel at each study site by campus deans and Research team. Recommendations are made for website improvements and current limitations.

The proposed overall budget is $217,500.00

Expense	Quantity	Cost
Gift cards for research participants	100	$30.00 x 100 = $3,000
Staff payroll	19 persons	$235,000
Computer equipment used for surveys	$700 x 5 computer units	$17,500

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Appendix 1: The Survey

Usability and Accessibility – A Community Survey for Academic Libraries

Librarians for Innovation Website Taskforce Committee

Steven Gurney, Jakob Knudsen, Natalie Polson, Christopher Worcester

This online survey has been created by Librarians for Innovation's Website Taskforce Committee: a group dedicated towards bettering academic libraries for the sake of students across the United States. Your feedback is vital in assessing the accessibility and usability features of your university's library website. This survey is a self-selected survey distributed via email at multiple Florida state universities that employs mixed methods quantitative and qualitative testing, and it has been designed with the purpose of understanding how students view their libraries' web portals. It is our intent to evaluate how well Florida university websites are received by academic communities. Any insight we receive as a result of this survey and the accompanying quiz is intended to be utilized to design more intuitive library websites.

In the event that you have not completed the timed, computer-based knowledge check, please finish it before proceeding to this survey. The survey questions listed below all reference questions that appeared on the quiz. Please note that in order to be eligible to receive your $30 Amazon gift card, **BOTH** the quiz **AND** the survey must be completed. However, please note that the demographic information requested at the end of this survey is completely voluntary, and you are not required to complete it in order to receive your gift card.

All respondents will remain anonymous in this study's published findings. If you would like to receive information in regard to our findings, please check the appropriate box at the end of the survey and be sure to leave your email.

I.

Usability of Library Website

During the quiz, you were asked to find information regarding the items listed below. On a scale of 1 to 5, with 1 being *easy* and 5 being *very difficult*, please indicate how difficult it was to find the following items:

1. The Library Website

   1 (easy)   2   3   4   5 (very difficult)

2. "The Elements of Style," by William Strunk Jr. and E.B. White

   1 (easy)   2   3   4   5 (very difficult)

3. The Interlibrary Loan Request Form

   1 (easy)   2   3   4   5 (very difficult)

4. The library's hours of operation

   1 (easy)   2   3   4   5 (very difficult)

5. The database, "Ulrich's Periodicals Directory"

   1 (easy)   2   3   4   5 (very difficult)

6. The "Peer-reviewed Journals," filter

   1 (easy)   2   3   4   5 (very difficult)

7. For one of the quiz questions, you were asked to locate an e-book titled *A Concise Dictionary of Paleontology* and to download a pdf for pages 109-134. Was accessing this e-book and   navigating it intuitive and easy for you?

            Yes   No

Accessibility

Please indicate if you strongly agree, agree, disagree, strongly disagree, or are unsure about the following statements regarding your library and its website.

1. The website's text is easy to read.

   Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree
2. The text and instructions on library services and programs is difficult to understand.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

3. The color palette and use of white space make the text hard to read.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

Website Design and Content Analysis

Please indicate if you strongly agree, agree, disagree, strongly disagree, or are unsure about the following statements regarding your library and its website.

1. The time it takes to find what you're looking for is excessive.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

2. You frequently need to ask the library staff for assistance.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

3. The library's website is modern and up to date.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

4. You are satisfied with your library's web portal.

Strongly Agree   Agree   Unsure   Disagree   Strongly Disagree

Please answer the following questions by either circling the apropriate item or writing in your answer.

4. How do you prefer to access the library website?

Desktop   Laptop   Cell phone   Other

5. Is there anything you either dislike about your library's website or something you would change?

Please explain in the provided text box.

II.

Voluntary Demographic Information

What is your name? _____

What age are you? _____

What gender are you? _____

Are you an international student? yes or no? _____

What is your native language? _____

Do you live on campus or do you commute to campus? _____

How do you use the library? Do you prefer in person visits or do you use the library website?

_____

_____

_____

If you have and would like to disclose a disability or impairment of yours, please do so below

_____

If you would be alright with us contacting you at the time of your graduation so that we may ask some follow-up questions about your undergraduate experience, please list an email address or some form of contact information below

_____