

User Experience and Accessibility Challenges of Electronic Theses and Dissertations

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Abstract

With the increasing digitization of scholarly works, it is crucial to ensure that ETDs are designed and presented to facilitate optimal user experiences for diverse stakeholders, including students, researchers, and the wider academic community. Furthermore, it is essential to address accessibility concerns to ensure equitable access to ETDs for individuals with disabilities. This research investigated the multifaceted challenges encountered in the user experience and accessibility aspects of ETDs. It examined user interface design, information architecture, searchability, readability, and multimedia integration. By analysing user feedback, conducting surveys, and studying existing ETD platforms, the research identified common pain points and limitations students and researchers face. Limitations of user experiences for ETDs, such as complex navigation, inconsistent layouts, and limited search functionalities, can hinder the efficient discovery and utilization of ETDs. Additionally, the research emphasises the need for enhanced accessibility features to accommodate individuals with visual, auditory, or cognitive impairments. These challenges may include the lack of alternative text for images, inadequate video captioning, or incompatible formats for assistive technologies. Addressing these issues is crucial to improve the accessibility and usability of ETDs.

The research emphasizes adopting user-centred design principles, responsive web design techniques, and inclusive accessibility standards to enhance the user experience and ensure equal access to ETDs for all users. It also underscores the significance of collaboration among stakeholders, including ETD platform developers, academic institutions, and accessibility experts, to develop guidelines and standards for creating user-friendly and accessible ETD platforms. The findings of this research have important implications for ETD platforms, academic institutions, and the broader scholarly community. By improving the user experience and addressing accessibility challenges, ETDs can become more accessible, discoverable, and beneficial resources for students, researchers, and other stakeholders in the academic realm.

Keywords: Accessibility, Electronic Theses and Dissertations (ETD), Information Architecture, Multimedia Integration, Readability, searchability, Survey research, User Experience (UX), User interface Design

1. Introduction

The digitization of scholarly resources has significantly transformed the academic landscape, with Electronic Theses and Dissertations (ETDs) emerging as crucial components of this evolution. ETDs offer a digital avenue for students, researchers, and the academic community to access and contribute to a wealth of scholarly knowledge. As the reliance on these digital platforms grows, ensuring an optimal user experience (UX) and addressing accessibility concerns becomes paramount. This research seeks to delve into the intricate realm of ETDs, specifically focusing on the UX and accessibility challenges users face.

In recent years, ETDs have become not only repositories of academic knowledge but also gateways to expanded learning experiences. However, alongside their potential, various challenges have surfaced, impeding the seamless discovery and utilization of ETDs. These challenges encompass issues related to user interface design, information architecture, searchability, readability, and the integration of multimedia elements. Additionally, the accessibility of ETDs for individuals with disabilities is a critical concern that necessitates comprehensive attention.

The overarching goal of this research is to identify, understand, and address these multifaceted challenges. By conducting a survey-based investigation, this study aims to gather insights directly from ETD users, encompassing students, researchers, and academics. The focus extends beyond identifying problems; it also endeavours to uncover the factors influencing these challenges and their consequential impact on effective ETD discovery and utilization.

By comprehensively exploring the UX and accessibility landscape of ETDs, this research intends to contribute to the enhancement of these platforms. The ultimate objective is to provide actionable recommendations that bridge the gap between existing challenges and optimal user experiences. This research is a crucial step toward fostering an environment where ETDs are not only repositories of knowledge but also platforms that seamlessly connect users with valuable scholarly content, irrespective of their diverse needs and abilities.

2. Objectives

- ❖ To identify and understand the user experience (UX) and accessibility challenges faced by users of Electronic Theses and Dissertations (ETDs) through a survey-based approach.
- ❖ To explore the factors influencing UX and accessibility in the context of ETDs, specifically focusing on user interface design, information architecture, searchability, readability, and multimedia integration.
- ❖ To assess the impact of these challenges on the effective discovery and utilization of ETDs based on survey responses.
- ❖ To provide actionable recommendations for enhancing UX and accessibility in ETD platforms based on survey findings.

3. Methodology

This research utilized a survey-based research method to gather data and insights regarding UX and accessibility challenges in the context of ETDs. The researcher has developed a survey questionnaire tailored to capture data related to the UX and accessibility challenges faced by users of ETDs from students and researchers of various fields. The survey included questions addressing user interface design, information architecture, searchability, readability, multimedia integration, and overall user satisfaction.

The questionnaire was administered to a diverse and representative sample of ETD users, such as students and researchers through an online platform. Collected quantitative data through survey responses, capturing participants' perceptions, experiences, and opinions regarding UX and accessibility challenges in ETDs. The survey data have been analysed using statistical techniques, such as descriptive statistics, to identify significant findings related to UX and accessibility challenges.

4. Data Analysis and Interpretation

The inferential data analysis technique has been used to analyse the collected data. The analysis has been used to derive interpretations of the study. The interpretation of the survey findings provided a nuanced understanding of the user experience (UX) and accessibility landscape within Electronic Theses and Dissertations (ETD) platforms, it is described under each study component as follows,

- ❖ **Satisfaction with User Experience:** Most respondents (75%) express satisfaction with the overall user experience of ETD platforms, indicating that these platforms meet user expectations. However, a notable portion (25%) remains neutral, suggesting potential areas for improvement.
- ❖ **Challenges Faced:** Respondents' challenges when using ETD platforms are varied. Text readability emerges as a prominent concern for 37.5% of participants, implying the need for improved font sizes and styles. The 25% of respondents facing difficulties with screen reader support and alternative formats underscore the significance of enhancing accessibility features for users with diverse needs.
- ❖ **Devices Used:** ETDs accessed via laptops by 75% of respondents reflect the growing popularity of portable computing devices. However, desktop and tablet usage (12.5% each) indicate a need for responsive design catering to various screen sizes.
- ❖ **Navigation Challenges:** Half of the participants (50%) encountering complex navigation suggests the need for streamlined and intuitive menu structures. Slow searching and inconsistent layout (25% each) highlight opportunities for optimizing search responsiveness and maintaining consistent design.
- ❖ **Perception of Search Functionality:** The positive perception of search functionality by 75% of respondents indicates that the search feature meets user expectations, contributing to effective information retrieval.

- ❖ **Multimedia Engagement:** The prevalence of multimedia content encounters (50%) within ETDs reflects their increasing integration. This suggests the importance of ensuring accessibility and usability for various multimedia formats.
- ❖ **Text Readability Satisfaction:** With 75% of respondents satisfied with the readability and presentation of text-based content, ETDs provide comfortable reading experiences.
- ❖ **Platform Organization:** The well-organized structure of ETD platforms, according to 75% of participants, reflects effective content categorization and navigation, contributing to enhanced user experiences.
- ❖ **Alternative Formats:** The experience of 25% of respondents facing issues with the availability of alternative formats highlights the necessity of providing various formats to cater to diverse accessibility needs.
- ❖ **Platform Continuity:** A small percentage (12.5%) having abandoned or discontinued using ETD platforms due to difficulties encountered signals potential usability issues that could drive users away.
- ❖ **Confidence in ETD Usage:** The high confidence level (87.5%) in effectively discovering and accessing ETDs indicates that users perceive ETD platforms as accessible and user-friendly.

5. Major Findings

1. Through the survey-based approach, we gained valuable insights into the challenges faced by Electronic Theses and Dissertations (ETDs) users. Participants highlighted various difficulties encompassing navigation complexities, readability issues, and accessibility barriers. These challenges collectively impact the overall user experience and hinder effective engagement with ETD platforms.
2. By investigating factors that influence user experience and accessibility in the context of ETDs, we discovered that user interface design, information architecture, searchability, readability, and multimedia integration play pivotal roles. Findings revealed that suboptimal user interface design, lack of clear information organization, limited search functionality, and readability concerns contribute to user frustration and hamper the accessibility of ETD platforms.

The survey responses shed light on the impact of the identified challenges on the discovery and utilization of ETDs. Participants who reported moderate to considerable difficulties in navigation and finding information expressed decreased satisfaction and efficiency when interacting with ETD platforms. Additionally, challenges related to readability and accessibility hindered the effective utilization of multimedia content, limiting its educational potential.

6. Recommendations

The researcher has identified challenges faced by students and scholars in accessing electronic theses, and the challenges have been used to derive actionable recommendations aim to address the identified challenges and enhance the overall user experience and accessibility of Electronic Theses and Dissertations (ETDs)

platforms. Recommendations for improving UX and accessibility in ETD platforms based on the survey findings are as follows,

a Navigation and Information Discovery

- ❖ Implement clear and intuitive navigation menus with well-defined categories to help users quickly find relevant ETDs.
- ❖ Incorporate a user-friendly search bar prominently on the platform's interface to facilitate efficient information retrieval.
- ❖ Offer customizable filters and sorting options to allow users to refine search results based on their preferences.

b Readability Optimization

- ❖ Provide options for users to adjust font size and styles to accommodate individual reading preferences.
- ❖ Ensure proper line spacing and sufficient white space to enhance the readability of text-based content.
- ❖ Employ a responsive design that adapts to various screen sizes, ensuring that text remains easily readable on different devices.

c Search Functionality Enhancement

- ❖ Conduct a usability assessment of the search feature to identify pain points and areas for improvement.
- ❖ Implement advanced search algorithms that consider synonyms, related terms, and contextual relevance to enhance search accuracy.
- ❖ Incorporate auto-suggestions and filters as users type in the search bar to aid in refining search queries.

d Multimedia Accessibility

- ❖ Provide captions, transcripts, and alternative text for multimedia content such as videos and images to ensure accessibility for users with disabilities.
- ❖ Use standardized formats for multimedia content that are compatible with a wide range of assistive technologies.
- ❖ Offer controls that allow users to adjust multimedia elements, such as video playback speed and volume.

e Enhancing Accessibility

- ❖ Conduct regular accessibility audits and usability testing with individuals who have disabilities to identify and address specific accessibility barriers.

- ❖ Incorporate semantic HTML coding to ensure compatibility with screen readers and other assistive technologies.
- ❖ Provide clear instructions for keyboard navigation and ensure that all interactive elements are navigable using keyboard input alone.

f User Feedback and Continuous Improvement

- ❖ Establish a feedback mechanism that allows users to report accessibility issues and provide suggestions for improvement.
- ❖ Actively involve users, including individuals with disabilities, in the design and testing of new features to ensure inclusivity.

g. Regularly update the platform based on user feedback and evolving accessibility guidelines.

7. Conclusion

This research has unveiled the multifaceted challenges affecting the user experience and accessibility of Electronic Theses and Dissertations (ETDs). Through survey insights, we identified navigation complexities, readability issues, and accessibility barriers as significant hindrances. These findings stress the urgency of optimizing ETD platforms, enhancing navigation, readability, and accessibility features. By bridging these gaps, we can create an environment where ETDs serve as seamlessly accessible repositories of knowledge, fostering inclusive academic engagement for users of all backgrounds and abilities.

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