



Evaluation of Universitas Indonesia Library Website Using UX Questionnaire and Usability Testing

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Abstract

A good user experience supports libraries in providing search and delivery services that meet user expectations and needs. This study evaluates the user experience of the Universitas Indonesia Library (UI) website by employing the User Experience Questionnaire (UEQ) and usability testing to ascertain how well it meets user expectations and needs. Utilizing a mixed-methods approach, it gathers quantitative data from 287 respondents via UEQ and qualitative insights from usability testing involving 5 participants. The findings from the UEQ indicate generally positive user experiences across most dimensions, with the exception of Novelty, which falls below the average benchmark in terms of Attractiveness, Clarity, and Novelty. Despite the positive feedback in several areas, the overall user experience of the UI Library website is deemed inadequate, highlighting a significant need for enhancements in user experience design. The paper elaborates on design recommendations derived from both UEQ results and usability testing observations. These recommendations are intended to guide improvements in the website's interface and functionality, ensuring it more effectively serves its academic audience. Further analysis of these recommendations is suggested to verify their appropriateness and potential impact on the user experience.

Keywords: library website; academic library; user experience questionnaire (ueq); usability testing; user interface

Abstrak

Pengalaman pengguna yang baik mendukung perpustakaan dalam menyediakan layanan pencarian dan pengantaran yang memenuhi harapan dan kebutuhan pengguna. Penelitian ini mengevaluasi pengalaman pengguna situs web Perpustakaan Universitas Indonesia (UI) dengan menggunakan Kuesioner Pengalaman Pengguna (UEQ) dan pengujian kegunaan untuk menentukan seberapa baik situs web tersebut memenuhi harapan dan kebutuhan pengguna. Dengan menggunakan pendekatan metode campuran, penelitian ini mengumpulkan data kuantitatif dari 287 responden melalui UEQ dan wawasan kualitatif dari pengujian kegunaan yang melibatkan 5 partisipan. Temuan dari UEQ menunjukkan pengalaman pengguna yang umumnya positif di sebagian besar dimensi, kecuali pada skala Kebaruan, yang berada di bawah rata-rata benchmark dalam hal Daya Tarik, Kejelasan, dan Kebaruan. Meskipun mendapat umpan balik positif di beberapa area, pengalaman pengguna secara keseluruhan dari situs web Perpustakaan UI dinilai tidak memadai, menyoroti kebutuhan yang signifikan untuk peningkatan dalam desain pengalaman pengguna. Makalah ini menguraikan rekomendasi desain yang berasal dari hasil UEQ dan pengamatan pengujian kegunaan. Rekomendasi-rekomendasi ini dimaksudkan untuk membimbing peningkatan pada antarmuka dan fungsionalitas situs web, memastikan situs web tersebut melayani audiens akademiknya secara lebih efektif. Analisis lebih lanjut terhadap rekomendasi ini disarankan untuk memverifikasi kesesuaian dan dampak potensial terhadap pengalaman pengguna.

Kata Kunci: situs web perpustakaan; perpustakaan perguruan tinggi; kuesioner pengalaman pengguna (UEQ); pengujian kegunaan; antarmuka pengguna

Introduction

User experience (UX) is a perception and response that originates when or before a user uses a system, product, or service (International Standard Organization, 2019). Good user experience supports libraries in providing search and delivery services that meet user expectations and needs (Massis, 2018). Massis also states that user experience enables libraries to provide more effective services by considering the unique needs of their community.

Universitas Indonesia (UI) library, one of the largest libraries in Southeast Asia, has a poor usability level on its website (Nuriman & Mayesti, 2020). Usability is the effectiveness, efficiency, and satisfaction of a system, product, or service-specific users to achieve specific goals (International Standard Organization, 2019). Poor usability will make it difficult for users to quickly and precisely find the information they need (Chow, Bridges, and Commander, 2014).

Usability is closely related to user experience. Nuriman & Mayesti (2020) used usability evaluation to examine user experience on the UI Library website. However, usability evaluation only focuses on examining usability goals and does not evaluate user experience goals (Kushendriawan et al., 2021). To describe the user experience of the UI Library website in more depth requires an instrument that also examines the purpose of user experience. The User Experience Questionnaire (UEQ) is one instrument that explores this purpose. In addition to UEQ, the UI Library website needs to be reviewed through usability testing to find the problems contained in the user experience of the UI Library website, as suggested by Nuriman & Mayesti (2020).

There is little research on evaluating user experience on library websites using UEQ. Maricar et al. (2021) provided one of the studies on the user experience on library websites using UEQ. This study concluded that the E-Library of the STIKOM Bali Institute of Technology and Business has user experiences with an average rating. Riche & Marpaung's (2021) research also examined user experience in libraries, namely the STMIK Mikroskil digital library. This study had the same results as the previously mentioned article; the STMIK Mikroskil digital library has an average user experience.

The number of studies on usability testing on library websites is inversely proportional to the number of studies evaluating user experience on library websites using UEQ. Usability testing has become a commonly used method to evaluate library website user experience. Kangko et al. (2017) conducted usability testing on the BNPB Library website. The research identified that this website has confusing navigation and challenging features. Damayanti et al. (2020), who tested the Malang City Library Mobile Library Application usability, found similar research results. Complicated navigation and an unattractive appearance are the results of the usability testing. Damayanti et al. (2020) list several page design recommendations to address the issues. Becker & Yannotta (2013) also used usability testing to create a website design for the Hunter College Library based on user needs and, at the same time, tested it. The process was carried out for two years and resulted in a successful website conforming to user experience principles.

This research advances the usability evaluation of the UI Library website by Nuriman & Mayesti (2020) through a dual approach: employing the User Experience Questionnaire (UEQ) to assess broader user experience goals and conducting usability testing to pinpoint specific user interaction issues. The primary research question driving this study is: How does the UI Library website's current user experience measure against established usability and user experience benchmarks, and what specific design recommendations can be developed to address any identified shortcomings? Our investigation reveals that while the UI Library website meets certain usability objectives, it falls short in providing a user experience that fully satisfies the needs of its diverse academic community, particularly in the innovative presentation of information and intuitive navigation.

The limitations of this research are recognized in the uneven distribution of respondents across faculties, which may influence the generalizability of the findings. To ameliorate this, future studies should strive for a more balanced representation across all academic disciplines. It is recommended that the design modifications suggested by this study be subjected to further usability testing. This subsequent testing should aim to validate the suitability and effectiveness of the proposed changes in enhancing the UI Library website's user experience, ensuring that the redesign aligns with user needs and preferences in a tangible and user-validated manner.

Related Works

Based on Nuriman and Mayesti (2020), the UI Library website is classified as marginal or between acceptable and not acceptable according to an assessment with a System Usability Scale (SUS) score. The SUS score obtained by the UI Library website is 61. Moreover, the UI Library website also received unsatisfactory assessment results based on the Net Promoter Score (NPS) value. These two scores indicate that the UI Library website does not yet have good usability and does not provide satisfaction to its users.

Usability is the effectiveness, efficiency, and satisfaction of a system, product, or service to enable specific users to achieve specific goals (International Standard Organization, 2019). Usability is closely related to user experience. Nielsen in Kushendriawan et al. (2021) states that high usability products provide the best user experience. However, usability only focuses on completing tasks or achieving goals carried out by a product or system (Kushendriawan et al., 2021).

On the other hand, user experience is a person's perception and reaction to using a product, system, or service (International Standard Organization, 2019). Kushendriawan et al. (2021) stated that user experience does not focus only on the product's usability but also on user subjectivity. Subjectivity is described as fun, interface aesthetics, and novelty.

Adopting user experience in libraries does not take long because libraries continuously support and adopt a user-centered philosophy (MacDonald, 2015). Generally, the library field deals with user experience in usability studies on library interfaces. Examples are the Malang City Library Mobile Library application interface (Damayanti, Wijoyo, and Rusydi, 2020), the University of Toronto Scarborough library website (Guay, Rudin, and Reynolds, 2019), and The Moraine Valley Community College library website (Swanson, et al., 2017). All the studies mentioned used usability studies with usability testing to update the new interface to address the problems found. Usability testing is a practice that asks participants to carry out several tasks whose behavior is observed by researchers (Moran, 2019). Generally, usability testing aims to identify problems, study user habits, and find opportunities for the tested product or system.

In addition to usability studies, library science also uses surveys and focus group discussions (FGD) to investigate user experience in libraries. The surveys commonly used are System Usability Scale (SUS) (Nuriman & Mayesti, 2020) and LibQual (MacDonald, 2015). SUS is a tool created by John Brooke in 1986 to evaluate the usability of hardware, software, websites, or applications (Brooke, 2013). This instrument consists of 10 items, and 1300 articles have used it. Meanwhile, LibQual is a survey created by the Association of Research Libraries (n.d.) aimed at libraries to improve their services. This survey has been published since 2000 and has been used by 1,340 libraries in 35 countries.

Meanwhile, the User Experience Questionnaire (UEQ) created by Andreas Hinderks, Martin Schrepp, and Jörg Thomaschewski aimed to measure user experience based on usability and user experience goals (Schrepp, Hinderks, and Thomaschewski, 2014). This questionnaire consists of six scales that describe aspects of user experience in general terms, namely the Attractiveness, Clarity,

Efficiency, Accuracy, Stimulation, and Novelty scales. Usability goals are represented by Efficiency, Accuracy, and Clarity, while Stimulation and Recency represent user experience goals. Meanwhile, Attractiveness is a pure scale influenced by usability and user experience goals (Kushendriawan et al., 2021). UEQ has been translated into 30 languages and is available in Bahasa Indonesia, translated by Santoso et al. (Santoso et al., 2016).

Kushendriawan et al. (2021) stated that the UEQ format supports users to directly express their experience (feelings, impressions, and attitudes) of the product. This is illustrated by the UEQ item, a semantic difference with a seven-point response scale consisting of a pair of terms with opposite meanings spanning the semantic dimension. The use of UEQ in user experience research is still minimal. Maricar et al. (2021) evaluate the user experience on library websites using UEQ. This study concludes that the E-Library of the STIKOM Bali Institute of Technology and Business has user experiences with an average rating. Riche & Marpaung’s (2021) research also examines user experience in libraries, namely the STMIK Mikroskil digital library. This study has the same results as the previously mentioned article; the STMIK Mikroskil digital library has an average user experience.

Methods

This study uses mixed methods, where Creswell (2017) defines mixed methods as combining quantitative and qualitative approaches. The quantitative method involves data collection with UEQ. Meanwhile, qualitative methods are used when conducting usability testing. This mixture of methods can enrich the data obtained to generate more suggestions. The UI Library Website (<http://www.lib.ui.ac.id>) is the object of study in this research.

The convenience sampling technique employed in this study involved selecting respondents from the Universitas Indonesia academic community who were readily accessible to participate. This approach was deemed appropriate for the exploratory nature of the research, as it allows for the efficient collection of data within a limited timeframe, from May 5 to May 10, 2022. The sampling method was not random; it targeted users who were current users of the UI Library website and who interacted with the dissemination channels used for the survey, namely instant messaging apps and social media platforms. Acknowledging the potential for sampling bias, this technique provided initial insights into the user experience of the library website, from which further, more rigorous sampling strategies can be developed for subsequent studies.

Table 1. Task for Usability Testing

Number	Task
1	Find a book entitled “Laskar Pelangi” and find information about its availability.
2	Find books on climate change and find information about their availability.
3	Find ebooks about history (history) and find information about their availability.
4	Find journal articles on mental health, download them, and find information about their availability.
5	Find one of the final assignments according to the participant’s study program and find information about its availability.
6	Log in on the website.
7	Find information on collections that are being borrowed and the deadline for returning them
8	Find information about student loan policies or limits and the loan period
9	Find information about library service times and the contact of the librarian
10	Find navigation to access the subscribed database by the library

The quantitative data gathered from the UEQ were processed using a specially designed Excel tool. This tool is programmed to analyze the UEQ data by computing mean scores and standard deviations for each UEQ scale, providing a visual representation of the user experience evaluation. The validity of this tool is established through its development from the cumulative experience and data of 468 UEQ studies involving 21,175 participants, as recorded on the official UEQ online portal. This rigorous compilation of UEQ data ensures a robust benchmarking process, enabling researchers to position their results within a broader context of user experience evaluations. The UEQ tool, available at the UEQ website (<https://www.ueq-online.org/>), is the standard for UEQ data processing and has been cited in the UEQ user manual by Schrepp et al. (2017), ensuring that the analysis aligns with established user experience research practices.

Results

Respondent Profile

Based on a survey distributed over five days (May 5 to May 10, 2022), 353 respondents answered the questionnaire and 287 of them were respondents who met the criteria. Of the 287 respondents, 85 respondents (29.6%) were male, and 202 (70.38%) were female. Table 2 describes the distribution of respondents from each faculty or program. The table shows that students from the Faculty of Humanities have the most respondents, namely 79 respondents (27.5%). Furthermore, it was followed by the Faculty of Public Health with 52 respondents (18.1%), the Faculty of Mathematics and Natural Sciences, and the Faculty of Administrative Sciences, which had 43 respondents (15%).

Table 2. Origin of Respondent Faculty or Program ($n = 287$)

Faculty	<i>N</i>	%
Economics and Business	1	0,3
Pharmacy	2	0,7
Law	7	2,4
Administrative Science	43	15,0
Nursing Science	4	1,4
Computer Science	7	2,4
Humanities	79	27,5
Social and Political Science	14	4,9
Medicine	1	0,3
Dentistry	1	0,3
Public Health	52	18,1
Mathematics and Natural Science	43	15,0
Psychology	8	2,8
Engineering	18	6,3
Vocational Education	7	2,4
Total	287	100%

Evaluation of User Experience with the User Experience Questionnaire (UEQ)

The results of user experience evaluation on the UI Library website using UEQ appear in Figure 1. The UI Library website scores a scale of 1.117 on Attractiveness, Clarity 0.860, Efficiency 1.058, Accuracy 1.118, Stimulation 1.010, and Novelty 0.131. The UEQ indicates that a score greater than 0.8 means a positive user experience. Thus, the website owned by the UI Library has shown a positive user experience on all scales, except for the Novelty scale.

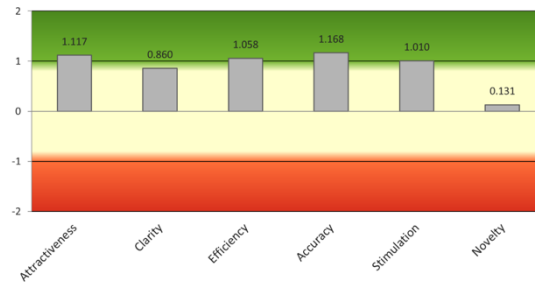


Figure 1. UEQ Analysis Scale Graph of the UI Library Website

However, two scales are below average in the UEQ benchmark analysis, namely the Attractiveness and Clarity scale, and the Novelty scale is classified as poor (Figure 2). Based on this analysis, the Novelty scale is the worst, 25%. Meanwhile, the UI Library website's Attractiveness and Clarity scales are between the best 50% and the worst 25%. Also, 25% of the best results are above average on the Efficiency, Accuracy, and Stimulation scales. This benchmark is based on the UEQ, which has collected data from 468 studies and 21,175 people.

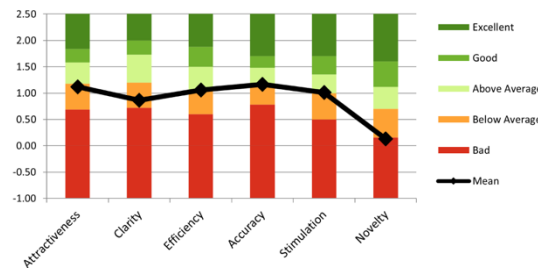


Figure 2. UEQ Benchmark Graph on the UI Library Website

The UEQ results of the UI Library website, particularly in the context of Attractiveness, Clarity, and Novelty, can be compared with findings in similar contexts. For instance, Schrepp, Hinderks, and Thomaschewski (2014) in their development of the UEQ highlight the importance of these scales in determining overall user experience. They suggest that a well-rounded user experience should balance all six scales, including novelty and clarity, to ensure user satisfaction. This perspective is crucial when considering the UI Library website's performance, where novelty scores particularly low, indicating a need for more innovative features.

Discussion

Evaluation of User Experience with Usability Testing

Usability testing was conducted with five participants, identified as Participant A through Participant E, who were selected from the User Experience Questionnaire (UEQ) respondents. The selection was strategically based on diverse criteria, including gender, academic clusters, and year of enrollment. Participant A is a male from the health sciences cluster who enrolled in 2021. Participant B is a female from the social and humanities cluster, enrolled in 2019. Participant C is a male from the science and technology cluster, with his enrollment dating back to 2019. Participant D is a female from

the social and humanities cluster who began in 2020. Finally, Participant E is another male from the science and technology cluster who joined in 2021. This selection ensured a varied group of participants across different academic disciplines and enrollment years, which enhances the reliability of the usability testing results.

Based on usability testing, the users' main difficulty is finding information related to library services (service time, librarian contact, and borrowing regulations). This difficulty is due to navigation that is still not clear. For example, a sub-menu entitled 'Regulation' only shows 'Ethics in the Library' on its first page. The regulations regarding borrowing are on the next page, but the pointer to the next page is just a hand icon pointing to the right, without a label, and placed and emphasized so poorly. Users need high focus to notice it. Besides, users can read the borrowing regulations in the "Membership" sub-menu. Another example is the placement of library service times which are only at the bottom of the home page. Four out of five participants in usability testing failed to find that part. These findings are consistent with the library's website scores below average in the Clarity indicator on the UEQ benchmark.

"Honestly, I have no idea why the loan regulation information is in the membership menu."
(Participant B, Female, Social and Humanities, Batch 2019)

"I didn't think it [borrowing regulations] would be in the membership. I think, earlier I checked the services, regulations, and then when I didn't find it I checked the public collection, I think that from the public collection there will be an information button about How to borrow or something like that. Then, I checked the landing page, I was afraid that it had been shown on the landing page all this time, but it wasn't there, I didn't think he was in the membership section."
(Participant C, Male, Science and Technology, Batch 2019)

"I'm not familiar with the menus in the navbar so I have to check one by one to find out the information." (Participant D, Female, Social and Humanities, Batch 2020)

"It's not clear in this section [previous and next icon], it's still not clear. It's also unclear here [About Us Dropdown]. Because this [previous and next icon] is not explained in detail, if for example, a person loses his direction, he will automatically open to "About Us" again. Because of this, there is no explanation regarding where the book is borrowed, I mean the rules for borrowing books and so on." (Participant E, Male, Science and Technology, Batch 2021)

Results show that users often find it difficult to search for certain types of collections. Searching for certain types of collections can be done through the 'specific' search field on the Home page or menu navigation on the intended collection. To find a particular collection, the search uses three fields and two choices of search logic (AND, OR, and NOT). Users who are not familiar with the search field will experience difficulties and errors filling in the column. Search barriers are also found on search changes when the collections found do not match. Users need to return to the homepage or search page to search again because there is no search field available on the collection search results page.

"When I search for eBooks, it's [the sub-menu] a bit on the edge, I was thinking "Where is it? There is no choice in the search column for the type of book, eBook or physical." So maybe it's

better to have an option for the type of book [in the search bar].” (Participant B, Female, Social and Humanities, Batch 2019)

“I’m confused why it creates different [a simple search field and a specific search column]. Why doesn’t it mean all of them are combined, the search uses keywords, there is only a choice, he can filter all or not. It’s actually the same, isn’t it.” (Participant C, Male, Science and Technology, Batch 2019)

Another finding is that most users do not know about the membership of the UI Library website. Some users do not know that they can download the digital books (e-books) available on the UI Library website if they register as library members. The user suspects that the UI Library website member account has been integrated with the UI account. However, UI Library website member accounts must be submitted independently and not associated with UI accounts. Some users mentioned that they did not know the procedure for applying for membership on the UI Library website.

“Honestly, I just found out that I have to become a member first to download and other features. But on the one hand, why don’t it automatically become a member, because we already have a KTM and that’s fine, UI students should automatically have the same facilities without registering again.” (Participant B, Female, Social and Humanities, Batch 2019)

“I didn’t know that download is had to log in first. I think it’s better if there is information or the file isn’t displayed, but it says you have to log in if you want to download it.” (Participant C, Male, Science and Technology, Batch 2019)

The usability testing findings on the UI Library website resonate with principles outlined by Nielsen in Kushendriawan et al. (2021), where high usability is linked to an enhanced user experience. This is particularly relevant in the context of information retrieval and navigation issues identified in the testing. Nielsen’s principles emphasize that usability is not just about making systems easier to use but also about creating a more engaging and satisfying user experience. This is echoed in the feedback from usability testing participants, underscoring the need for clearer navigation and more intuitive search functions.

The challenges and potential improvements identified for the UI Library website align with broader trends in library science, particularly in the integration of usability and user experience. For example, MacDonald (2015) discusses how libraries have been increasingly focusing on user-centered design, emphasizing the need for interfaces that are not only functional but also engaging and easy to navigate. The findings from usability studies on other library interfaces, such as the work done on the Malang City Library application interface (Damayanti, Wijoyo, and Rusydi, 2020) and the University of Toronto Scarborough library website (Guay, Rudin, and Reynolds, 2019), support this trend, showing how usability testing can lead to significant improvements in user experience.

Recommendations for Website Design for Universitas Indonesia Library

The UI Library website design recommendations in this study were based on the findings of the UEQ and usability testing results. This design recommendation focuses on the clarity of UI Library website navigation and searches for specific types of collections. This design recommendation resulted in one information architecture and two-layer views with design updates (Figure 3).

The First Design Recommendation is the Creation of Information Architecture

This recommendation is based on the low value of clarity on the UEQ and users' difficulty navigating usability testing. The new information architecture consists of three levels, sequentially colored in blue, green, and yellow. This information architecture is the basis for building drop-down navigation menus on the UI Library website. The most significant difference from this information architecture is the third level, which details each part. This third level will appear in the sub-drop-down menu. So, users can directly access the desired page and have difficulty searching on the main page.

The Second Recommendation is a Complete Update of the Home Page Design

The first changes made were to the design and placement of the search field. This search field appears in the middle, and the embedded selection column is the collection type selection column, not the library location selection column. The change in the selection column for this type of collection follows usability testing findings, which show users' difficulty finding specific types of collections.

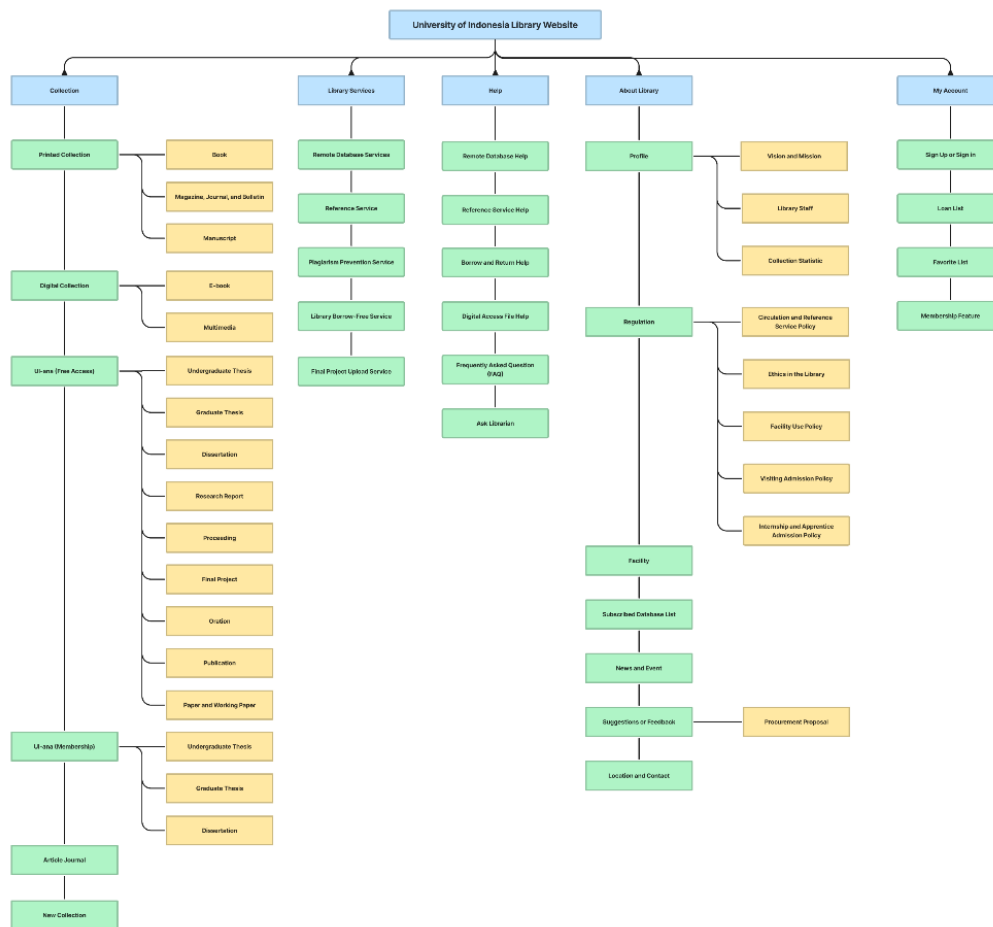


Figure 3. New Information Architecture

Then, there is a Quick Access section to make it easier for users to access the main features of the UI Library. These features include Remote Database, UI-ana (Theses/Dissertations), Literature Service, Help, and My Account. This quick access also is a response to the input in usability testing. Users think that the UI Library has good features, but these features are difficult to access through the UI Library website.

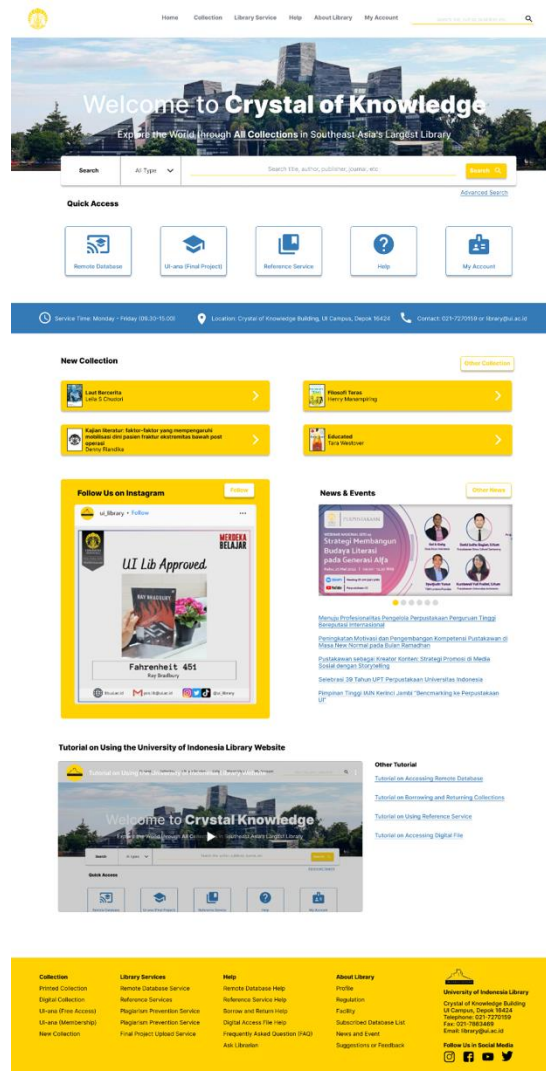


Figure 4. Home Page Design Recommendations

Under Quick Access, there is a UI Library contact time, location, and contact section, based on the usability test findings. The findings stated that users could not locate the service time, location, and contact of the UI Library. Then, there are the Latest Collections, Instagram, and News & Events sections. These parts are not much different from the previous design but have different shapes and placements. Next, there is the Tutorial section, created based on users on usability testing who are not familiar with

using and experience confusion when using the UI Library website. Other tutorials also accompany the tutorials provided in videos on accessing the services owned by the UI Library. Finally, the footer section consists of the pre-built first and second-level information architecture and identities regarding the UI Libraries.

The Following Recommendation is a Search Page Update

Usability testing found that users need to go back to the home page to perform another search. This requirement reduces the efficiency of the UI Library website. This update embeds a search field on the search results page so that users can easily update their searches without returning to the home page. Users can also use the search field provided in the navigation menu. The search field is accessible from all pages on the UI Library website. This search column existed in the previous design but has been updated with column expansion and more meaningful labeling to clarify its function and existence and with updates to the search field. The search results page updated the emphasis on collection availability. This update will help users more easily identify the availability of the desired collection.

The recommendations for the Universitas Indonesia (UI) Library website redesign, based on the User Experience Questionnaire (UEQ) and usability testing results, emphasize the importance of clarity in navigation and efficient search for specific types of collections. These recommendations align with broader trends in library science that prioritize user-centered design and usability. For instance, the emphasis on clear information architecture and intuitive navigation mirrors the principles highlighted in studies such as those by Damayanti, Wijoyo, and Rusydi (2020) on the Malang City Library, and Guay, Rudin, and Reynolds (2019) on the University of Toronto Scarborough library website. These studies underscore the importance of usability in enhancing the overall user experience, a concept supported by the International Standard Organization (2019) and echoed in Kushendriawan et al. (2021). The authors realize that this study has limitations. The respondents in the survey are still not evenly distributed in each faculty. Thus, this study cannot represent data equally from all faculties. There is a need for usability testing on the design recommendations generated to determine the suitability of the design recommendations created for the needs of the UI Library website users.

The UI Library's approach to redesign, focusing on a layered information architecture and a more user-friendly home page, responds directly to the issues identified in the UEQ and usability testing. This is in line with the findings of Nuriman and Mayesti (2020), who classified the UI Library website as marginal in usability based on the SUS score and NPS value. The redesign aims to address these deficiencies by improving navigation clarity and search functionality, which are fundamental to usability and user satisfaction, as indicated by Nielsen in Kushendriawan et al. (2021). The integration of a quick access section and a more efficient search process, for example, reflects an understanding of user needs and habits, a key aspect of effective usability testing as described by Moran (2019). Overall, these design recommendations signify a move towards a more user-friendly and efficient library website, aligning with the evolving standards and expectations in library science and information management.

Conclusion

The assessment of the Universitas Indonesia (UI) Library website through the User Experience Questionnaire (UEQ) and usability testing offered a nuanced view of its performance across various user experience dimensions. The UEQ analysis demonstrated an overall positive user experience, highlighted by favorable scores in areas such as Efficiency and Accuracy, suggesting the website's competence in facilitating user tasks with precision and speed. However, the analysis also uncovered areas needing significant enhancement, particularly in the Novelty dimension, which received a notably low score. This

deficiency points towards a lack of innovative features that could potentially enrich user interaction and engagement with the website. Moreover, the Attractiveness and Clarity dimensions scored below average, indicating that despite its functional effectiveness, the website may not fully meet users' expectations in terms of visual appeal and ease of navigation, which are crucial for a holistic and satisfying user experience.

Further insights were garnered from usability testing, which revealed specific user challenges in navigating the UI Library website. Participants reported difficulties in locating information related to library services, such as membership details and accessing specific collection types. These findings align with the UEQ results, where Clarity was identified as a weak point, underscoring the need for improvements in the website's navigational structure and information presentation. The disconnect between the website's current navigational aids and user expectations emphasizes the importance of intuitive design that facilitates effortless access to information. This aspect is particularly critical in academic library websites, where efficient information retrieval is paramount to supporting research and learning activities.

In response to these insights, the study proposes targeted design recommendations aimed at ameliorating the identified issues to enhance the overall user experience on the UI Library website. These include revamping the website's information architecture to improve navigational clarity, redesigning the home page to increase its attractiveness and user engagement, and refining the search results page to make information retrieval more intuitive and efficient. By addressing these specific areas, the proposed redesign efforts strive to bridge the gap between the website's current performance and the users' expectations, thereby ensuring that the UI Library website not only functions effectively as an academic resource but also provides a visually appealing and user-friendly interface that encourages exploration and discovery.

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