Evaluation of Web Elements of Selected Philippine Academic Library Websites

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Abstract: Due to the irreversible effects of COVID-19 pandemic, libraries worldwide have undergone a significant shift towards online accessibility of their resources, services, activities/events, and programs. Technological advancements have transformed how information is accessed and disseminated, underscoring the importance of library websites in supporting the learning, teaching and research endeavours of students, faculty members, and researchers. This study aims to serve as a roadmap for library practitioners, web developers, and similar stakeholders, who are planning to create and/or enhance websites for their respective libraries. This paper utilized an evaluative instrument for an academic library website developed by Wijayaratne and Singh (2015), to scrutinize the selected major Philippine universities' academic libraries. The findings of this study are expected to be valuable to academic librarians and future researchers in recognizing the significance of designing tailored websites for their institutions.

Keywords: library websites, library web content, library web design, academic library, Philippines

1. Introduction

Technological advancements have transformed academic libraries to offer advanced library and information services to their users. They have diversified their services using the latest technologies for information acquisition, collection, storage preservation, dissemination, organization, and sharing. Library websites aim to provide quality information to satisfy the user community, requiring quality web content such as text, images, sounds, and videos. A library website should function as the main gateway for virtual users and a one-stop-shop of information for all users. Academic library websites serve as virtual presentations to the world, providing a gateway to resources and direct links to the interface of each resource. There is no doubt that websites serve as a primary tool to communicate with library users. Thus, finding ways to

enhance user experience on the use of library websites should be considered by librarians (Factor, et al., 2023). The presence of quality web content and links to resources makes library websites more informative and serves wider users. Therefore, there is a need for analysis of library website web content to provide updated information to users.

The need to innovate and enhance the academic libraries' services for greater utilization and carry out its functions to different patrons is widely recognized and much desired. Libraries exist to make their collections available to the people they serve. With the increasing influence of the Internet in day-to-day life, libraries have recreated their presence on the web in the form of library websites (Pant, 2014). The library website serves as the library's virtual front door, providing a welcoming and accessible online presence that serves as a gateway to the library's resources and services (Peñaflor & Balbas, 2022).

Academic library websites need evaluation to determine whether users can derive useful experiences since visiting an academic library website is by voluntary action rather than compulsion (Abifarin et al., 2019, as cited in Peñaflor & Balbas, 2022, p.2). The evaluation of library websites may help in the optimization of the website's layout, navigation, and design which could enhance user satisfaction as well as improve users' resource discovery to search for and access library collections, databases, and other resources. A well-designed and maintained website enhances the credibility of the library and its resources, fostering trust among users and stakeholders. Furthermore, it could help in identifying and eliminating efficiencies, such as broken links or outdated information, thereby improving the overall efficiency of the library's online presence. Additionally, the evaluation may help ensure that the website aligns with the library's mission, goals, and strategic priorities, effectively supporting the needs of its users and community. Thus, the evaluation of library websites allows for benchmarking against industry standards and best practices, facilitating continuous improvement and innovation in online library services.

The study is deemed helpful for academic librarians who are planning to develop and/or redesign their own library website. It contributes to the expanding number of scholarly research on the evaluation of academic library websites within the Philippine context. Consequently, it offers potential utility as a reference for future researchers in library and information science and related disciplines.

The study aims to evaluate the library websites of selected major academic libraries in the Philippines and to serve as a guide that will aid library web developers in the creation of library websites for their respective libraries. The paper evaluates the selected major academic libraries' websites using the

evaluative instrument by Wijayaratne and Singh (2015), classified according to three (3) level priority elements: *Resources*[1], *Services*[2], *Links* and *Information*[3].

Specifically, the research aims to:
  (1) Examine the web content elements of selected major academic libraries' websites in the Philippines;
  (2) Determine the features that may be adapted by library web developers to design and/or redesign their library websites; and
  (3) Identify contents that may impact to enhance overall user experience in accessing library websites.

The results of the evaluation will help identify web content elements and features that may impact the library website's design and functionality.

2. Literature Review

2.1. Evolution of academic library websites

Academic library websites have undergone significant evolution since their inception in the early 1990s, transitioning from basic informational platforms to complex portals offering a wide array of digital resources and services. Initially, these websites served primarily to inform users about the physical library's services and collections (Blummer, 2007). As technology advanced, libraries began to incorporate commercial and local databases, electronic journals, e-books, and virtual reference services, which necessitated research into design and navigation to maximize the usage of these new content offerings (Blummer, 2007). Contradictions have emerged between the need to satisfy user needs and the requirement to adhere to university website guidelines, which sometimes conflict (Lombard & Hite, 2007). However, studies have shown that the design of these websites, particularly in specific regions such as Pakistan, is often inadequate, failing to effectively communicate with faculty and students and lacking uniformity in important features (Ullah, 2021). The role of library websites has expanded with the advent of online learning environments, providing essential research support and resources to both on-campus and distance learners (Sharma & Choudhary, 2022). The digital revolution has emphasized the need for academic libraries to maintain an online presence, with websites serving as digital gateways to library services and resources (Mierzecka & Suminas, 2016). Usability features such as navigation, interface design, and information architecture are critical for user satisfaction (Tella, 2022). The introduction of Content Management Systems (CMS) has

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empowered library staff to manage websites with less dependence on IT departments, with Drupal, WordPress, and Joomla being among the most popular CMS used by central university library websites in India (Sharma & Choudhary, 2022).

2.2. Importance of web content elements in library websites

Academic library websites serve as critical gateways for users to access library services and resources. The literature emphasizes the importance of web content elements in these websites, highlighting the need for satisfying user needs, adhering to university guidelines, and ensuring effective design and navigation (Blummer, 2007; Lombard & Hite, 2007). While academic libraries have expanded their online services, studies reveal that many still fall short in implementing basic web design and accessibility standards, which are crucial for user satisfaction and compliance with broader web standards (Wilson, 2015). Interestingly, despite the recognized importance of web content, there is evidence of a disconnect between the design and navigation of academic library websites and user preferences. For instance, research has identified that users prioritize functions such as supporting the usage of collections, promoting culture, and providing education through library websites (Mierzecka & Suminas, 2016). Moreover, the development of a library website model and associated tools for design and evaluation suggests a structured approach to improving web content elements, which can be tailored to different library types (Wijayaratne & Singh, 2015). Evaluations of structural effectiveness of library websites further underscore the need for improvement in design to enhance user experience (Abifarin et al., 2019). However, the literature also points to the infancy of online instruction and help services in some regions, suggesting that web content elements are not being fully utilized to serve library clientele (Wickramanayake, 2012). In the context of research support, academic library websites with dedicated sections for research help are shown to be valuable, particularly in regions like North India, where central university library websites are actively providing online resources and services to their research community (Sharma & Choudhary, 2022). Lastly, the use of Web 2.0 applications in academic libraries for information sharing and outreach demonstrates the evolving nature of web content elements and their importance in engaging users (Wakimoto, 2014).

2.3. Previous studies on evaluating library websites

Previous studies on evaluating library websites have highlighted the importance of assessing e-service quality and usability to meet user needs and adhere to institutional guidelines. To emphasize the significance of evaluating e-service quality from the perspective of university students, employing the analytic

network process (ANP) to prioritize criteria and measure service quality effectively. This approach is complemented by the identification of 12 web-based service criteria through the fuzzy Delphi method (Wu et al., 2013). A discussion of the potential conflict between satisfying user needs and adhering to university website guidelines, suggesting a need for balance based on librarians' perceptions (Lombard & Hite, 2007). The complexity of assessing website quality due to the diversity of websites, which identifies a lack of specific evaluation models for university websites and extends the Webqual 4.0 model to include six quality factors (Saleh et al., 2022). Moreover, resenting a multi-method approach to evaluate website usability, combining a standard checklist with a user questionnaire survey, and identifies six usability attributes for library websites (Pant, 2015). The evaluation of Destination Marketing Organizations' (DMOs) websites, providing an integrated overview of website evaluation in the tourism sector and assessing the effectiveness of DMOs' websites (Charoula et al., 2015). Other evaluations of public library websites using descriptive statistics and a spreadsheet protocol to assess online sources and staff responsiveness (Velasquez & Campbell-meier, 2022). A proposal of fuzzy-based framework, UNSCALE, for measuring and evaluating website usability, particularly for library websites, and tests its applicability on university library websites in Sri Lanka (Ramanayaka et al., 2018). Lastly, an intelligent method for library website evaluation using neural networks, aiming for a fast and accurate assessment (Sun, 2012). Assessing the quality of medical college library websites in Pakistan, revealing a general inadequacy in website design and a lack of uniformity (Ullah, 2021). These literatures reveal a multifaceted approach to evaluating library websites, encompassing e-service quality, user satisfaction, usability, and adherence to guidelines. The studies collectively underscore the need for comprehensive evaluation frameworks that are sensitive to the specific context of academic libraries and their users. The methodologies range from qualitative assessments to the application of advanced computational models, reflecting the evolving nature of website evaluation in the academic library context.

2.4. Key elements of effective library websites

Effective library websites are essential tools for meeting user needs and adhering to university guidelines, yet these objectives can sometimes be at odds (Lombard & Hite, 2007). Academic libraries are under pressure to demonstrate accountability and effectiveness, which extends to their online presence (Fagan, 2012). The literature suggests that user satisfaction, adherence to guidelines, and search engine optimization (SEO) are key elements of effective library websites.

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Interestingly, while user satisfaction is paramount, it must be balanced with university web guidelines, which may not always align with user preferences (Lombard & Hite, 2007). Additionally, the effectiveness of library leadership is linked to the success of library websites, as effective leaders can navigate these conflicting demands (Fagan, 2012). Moreover, SEO is identified as a critical factor for library websites, ensuring visibility and accessibility to users (Tavosi & Naghshineh, 2021). The effective library websites are characterized by their ability to satisfy user needs, comply with institutional guidelines, and maintain high visibility through SEO. Balancing these elements requires skilled leadership and a user-centered approach to website design and management. Future research could further explore the interplay between these factors and the role of leadership in achieving an effective online library presence.

2.5. Challenges faced by academic libraries in website development

Academic libraries have many obstacles when it comes to developing online content. These issues include making decisions about services and web design, comprehending user behavior, and evaluating Web Analytics (WA) results (Paul & Erdelez, 2013). In addition, it is essential for them to tackle challenges related to technical advancements, user conduct, budgetary limitations, and the need for enhancing human capabilities (Ashiq et al., 2020). The fast change in computing devices and user requirements requires the use of state-of-the-art technology in web design and development (Yang & Li, 2016). Curiously, many libraries have difficulties in implementing fundamental online design and accessibility criteria (Wilson, 2015), while others confront particular obstacles such providing web access for blind or visually impaired people (Kumar & Sanaman, 2015). Furthermore, the long-term viability of digital preservation in light of technology obsolescence and limited resources is a major challenge (Masenya & Ngulube, 2020). University libraries in places such as Kenya have budgetary limitations, a shortage of competent personnel, and the need for collaboration across libraries (Wawire & Messah, 2010). There is a significant difference in the extent to which Asian academic libraries have adopted Web 2.0 applications, suggesting a discrepancy in the deployment of technology (Balaji et al., 2019). Web designers at Malaysian public universities have difficulties in achieving a harmonious balance between usability and visual aesthetics (Affandy et al., 2018). These challenges require a strategic approach that includes effective decision-making, capacity building, and adherence to web design and accessibility standards. Addressing these challenges is crucial for libraries to fulfill their role as information gateways and support academic activities effectively.

3. Methodology

The research employed a descriptive methodology and web content analysis techniques to extract pertinent data, discern patterns and trends in the web content of selected academic libraries' websites. Four (4) notable academic libraries were chosen through purposive sampling, considering their standing and positions in Times Higher Education (THE), as well as their relevance to the research topic. The selected academic libraries were distinguished as samples with corresponding letters. The institutions that were represented are geographically located in the following areas in Metro Manila:

- **Library A and B** – Quezon City
- **Library C and D** – City of Manila

The authors devised an evaluative instrument for academic library websites, adapted from Wijayaratne and Singh (2015), comprising three (3) priority levels. Each selected academic library website was evaluated across these levels: initially, assessing available resources, followed by services offered, and finally, identifying links and information facilitating user access to other relevant functionalities and sites.

4. Results and Discussions

The evaluative instrument for an academic library website used in this study (Wijayaratne and Singh, 2015) are shown in the tables below:

Table 1.
Resources

First-Level Priority Elements	Library A	Library B	Library C	Library D

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1. E-databases such as e-journals, e-books	Yes	Yes	Yes	Yes
2. Tutorials on library-related topics	No	No	Yes	Yes
3. Research guides	Yes	No	Yes	Yes
4. Dictionaries and encyclopaedias	Yes	No	Yes	Yes
5. Online public access catalog (OPAC)	Yes	Yes	Yes	Yes
6. Interlibrary loan (ILL) service	Yes	Yes	Yes	Yes
7. Online technical support	No	No	No	Yes
8. Online feedbacks	Yes	No	Yes	Yes
9. Online renewal / reservation of library materials	No	Yes	Yes	Yes
10. Email reference	Yes	Yes	Yes	Yes
11. Web-based reference form	No	Yes	Yes	Yes
12. Virtual user training sessions	Yes	No	Yes	Yes
13. Virtual library orientation session	Yes	No	Yes	Yes
14. Online real-time chat reference	Yes	No	Yes	Yes
15. Document delivery service (DDS)	Yes	Yes	Yes	Yes
16. My Library	No	No	Yes	Yes
17. Online book requests	No	Yes	Yes	No
18. Links to Faculty / Regional libraries in the library network	No	No	No	Yes
19. Links to the course sites / study program sites	No	No	No	No
20. A link to the internal search engine	Yes	No	Yes	No
21. Links to free Internet resources in subject disciplines	Yes	Yes	Yes	No
22. A link to the parent institution's homepage in the library homepage	Yes	No	Yes	Yes

First-Level Priority Elements	Library A	Library B	Library C	Library D

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23. Links to information manuals such as library brochure	No	No	Yes	Yes
24. Links to free internet resources of general interest	Yes	Yes	Yes	No
25. Links to download necessary software tools	No	No	Yes	No
26. Links to popular internet search engines and web directories	No	No	No	No
27. Help guides and instructions for available online and in-house services	Yes	Yes	Yes	Yes
28. Contact information of the library	Yes	Yes	Yes	Yes
29. Library opening hours	Yes	Yes	Yes	Yes
30. Library staff directory	Yes	Yes	Yes	Yes
31. Copyright statement	Yes	No	Yes	Yes
32. Library holiday-calendar	Yes	No	No	No
33. Policies, rules, and regulations of the library	Yes	Yes	Yes	Yes
34. Contact details of subject specialist librarians	Yes	Yes	Yes	Yes
35. Details about available online and in-house facilities in the library	Yes	Yes	Yes	Yes
36. Last date of update	Yes	No	Yes	Yes
37. Library news / special events / library bulletin / notices	Yes	Yes	Yes	Yes
First-Level Priority Elements	**Library A**	**Library B**	**Library C**	**Library D**

38. About the library (library, history, departments, library network)	Yes	Yes	Yes	Yes
39. Frequently Asked Questions (FAQ)	Yes	Yes	Yes	Yes

As illustrated in **Table 1**, the websites of all four (4) chosen academic libraries primarily consist of web content elements that are mainly accessed by users. The most commonly available are *e-databases*, *online public access catalog (OPAC)*, *interlibrary loans*, *email references*, *document delivery services*, *help guides*, *contact information*, *library opening hours*, *library staff directory*, *policies, rules and regulations of the library*, *details about available online and in-house facilities in the library*, *library news/special events/library bulletins/notices*, *about the library*, and *frequently asked questions (FAQs)*. These elements play a significant role in facilitating the library's day-to-day operations, catering to the needs of both internal and external users.

On the other hand, data indicates that among the four (4) selected academic libraries, not all of them include the following web content elements: *research guides*, *dictionaries and encyclopedias*, *online feedback*, *online renewal/reservation of library materials*, *web-based reference form*, *virtual user training sessions*, *virtual library orientation session*, *online real-time chat reference*, *links to free Internet resources in subject disciplines*, *a link to the parent's institution homepage in the library homepage*, *copyright statement*, *contact details*, and *last date of update*. These findings highlight the potential for defining and integrating such web content elements within the context of each academic library's institution. It underscores the recognition that organizations possess distinct and specific needs.

Additionally, certain web content elements including *"my library,"* *online book requests*, *a link to an internal search engine*, and *links to information manuals*, are observed to be less prominent on the websites. These functionalities are likewise significant and have the potential to be integrated and promoted alongside other top features, thereby enriching the library's resources and visibility.

Consequently, specific web content elements such as *links to course sites/study program sites* and *popular Internet search engines and web directories*, are not

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available across all four (4) academic libraries. These elements are comparatively less prominent on the websites.

Table 2.
Services

Second-Level Priority Elements	Library A	Library B	Library C	Library D
1. Subject bibliographies / directories	No	No	Yes	Yes
2. Referencing tool	Yes	Yes	Yes	Yes
3. Course materials	No	No	Yes	No
4. Online registration for in-house user training sessions	Yes	No	Yes	Yes
5. Digital communication forums	No	Yes	No	No
6. Current content pages	No	Yes	No	Yes
7. Links to related sites such as other local / international libraries	No	No	No	No
8. Links to OPACs of other libraries	Yes	No	No	No
9. Vision / mission statements of the library	Yes	Yes	Yes	Yes
10. Floor plan of the library	No	No	No	No
11. Campus site map	No	Yes	No	No
12. Web master's contact details	No	No	No	No
13. Short biography of the staff members	No	No	No	No
14. Photographs of the staff members	No	No	No	No
15. Frequently used sites	No	No	No	No

Table 2 reveals that all four (4) academic library websites incorporate *referencing tools* and *the library's vision/mission statements*. This underscores the importance of these web content elements in effectively conveying and achieving the libraries' objectives. Referencing tools serve as a gateway for

users to access precise and pertinent information conveniently whenever needed.

In contrast, the *online registration for in-house user training sessions* is exclusively offered by three (3) academic libraries. This service enables users to actively engage and participate in any activity, event, and/or program organized by the library.

In addition, the findings reveal that *subject bibliographies/directories* and *current content pages* are present on two (2) out of four (4) academic libraries' websites. These elements act as supplementary sources of knowledge and information, aiding users in quickly accessing reference materials for their research requirements.

Moreover, the following services are offered in only one (1) out of four (4) library websites: *course materials*, *digital communications forum*, *links to OPACs of other libraries*, and *campus site map*. These functionalities provide users with additional avenues to gather information and access resource materials tailored to their specific needs.

Lastly, there are other web contents seemingly absent across all four (4) academic libraries. These include *links related to sites such as other local/international libraries*, *floor plans of the library*, *web master's contact information*, *short biographies and photographs of staff members*, as well as *frequently used sites*. Integrating the accessibility of these elements into other web contents would provide users with further information about the library in general.

In summary, the analysis of Table 2 highlights the importance of discovering other web content elements anchored to the specific needs of each library, while recognizing the potential to enhance resource richness by promoting less prominent features and services.

Table 3.
Links and Information

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Third-Level Priority Elements	Library A	Library B	Library C	Library D
1. Reading lists recommended by the faculties	No	No	Yes	Yes
2. Library glossary	No	No	No	No
3. Research publications of academic staff / post-graduate students (Institutional Repository)	Yes	Yes	Yes	Yes

Third-Level Priority Elements	Library A	Library B	Library C	Library D
4. Newspaper clippings (digitized)	No	Yes	No	Yes
5. New arrival lists	Yes	Yes	Yes	Yes
6. Online booking or user terminal (computers) available in the library	No	No	No	No

As depicted in **Table 3**, the primary features prominently showcased on the websites of four (4) academic libraries include *research publications of academic staff/post-graduate students (Institutional Repository)* and *new arrival lists*. These contents highlight the breadth of resources available in each library, offering valuable support to users in their pursuit of knowledge and information.

Conversely, *reading lists recommended by faculties* and *newspaper clippings (digitized)* are available in select libraries but not universally across all. These elements represent supplementary channels through which users can access data, further enhancing the libraries' capacity to disseminate current awareness.

Lastly, certain distinctive features like the *library glossary* and *online booking or user terminal (computers)* are not available in all libraries.

5. Conclusions
This study sought to assess the web content elements and essential features of selected major academic libraries in the Philippines through an analysis of their respective websites. Evaluating the effectiveness of a library website is paramount in the digital era, as it serves as the primary gateway to meet user needs and enhance their experience.

Initially, the findings suggest that specific web contents and functionalities that are less prominent could be incorporated into other features to enhance its utility. On the other hand, it was noted that all four (4) selected academic libraries do not currently offer a virtual facility that would enable persons with disability (PWD) to utilize the website according to their specialized needs.

The monitoring and improvement of a website are clearly crucial, as it serves as a vital tool for users to access all library services and resources efficiently. Moreover, the consistent marketing and promotion of various web contents are essential to encourage users to fully utilize the website's functionalities. In summary, this study underscores the significance of website evaluation and will provide valuable information for academic librarians.

6. Recommendations

Building on the conclusions, the authors propose incorporating the following web content elements to enhance the library's outreach and online visibility:

1. Library virtual tour
2. Online booking or user terminals (computers) available in the library
3. Persons with disability (PWD) page
4. Room/seat reservations
5. System status dashboard

In addition, certain functionalities that are less prominent on the websites should be reassessed to ensure the optimal delivery of library services.

Therefore, the study suggests further research that delves into a more comprehensive analysis of the design features and technical aspects of library websites.

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