



## *Article*

---

### **Evaluation of two Academic Library Websites in Nigeria using the Heuristic Principles.**

**Babangida Umar Babayi**

*Ibrahim Babangida Library*

*Modibbo Adama University of Technology, Yola*

*E-mail; babayi@mautech.edu.com*

**and**

**Basaka Abubakar Aminu**

*Abubakar Tafawa Balewa University Bauchi*

*e-mail; basakaaminu@gmail.com*

#### **Abstract**

*This study evaluates American University of Nigeria (AUN) Yola, University Of Nigeria Nsukka library websites using heuristic method. The research design adopted for this study is the descriptive research design. Method of data collection was through observation, instrument for data collection is the heuristic checklist. Findings showed that the library websites were adequately designed and contained all the relevant information that will help the library users to navigate through the web easily and be able to access and retrieve relevant information. It was recommend that whenever the content of the website should be updated, that date should be reflected in the website as a date of last updated, Web forms should be provided for sending feedback, asking queries and getting help; Help should be provided for resources available through the website, and The visual appeal of the website needs to be enhanced by using appropriate background colours, a proper banner, use of relevant images and providing clear and distinctive navigation buttons in most especially public libraries.*

**Keywords:** Library Website, Heuristic Evaluation, Academic Library, Check list

## Introduction

Modern library websites are basic communication tools that disseminate information about libraries services, programmes and resources. They are also considered as online libraries that perform all the functions of a traditional library such as acquisition, selection, organization, reference and readers' services.

Academic libraries serve in institutions of higher learning. They support teaching, learning, and research. Academic institutions (e.g. Universities, Colleges) were among the early developers of websites to present themselves on the Internet (Astani and Elhindi, 2008; Sandvig and Bajwa, 2004). With the fast development of the Internet, the increasing use of www as an information-seeking, and the increasing number of educational websites, the importance of universities' websites increased (Kuch, 2006)

An academic library website is set up to promote the library and to enhance the visibility of the library; it is obvious that a library can only be useful when it is visible and accessible to the general public. Library website is an avenue for promoting and creating awareness about electronic resources in the library, it also save as electronic billboard for the publicity of the resources and increase visibility that will enhance access. It also point out that the website has become one of the academic library medium of communication between the library and its clientele, while the home page has become the focal point of sourcing information for research purpose with the available resources or collections in the library. The fact is that the contemporary users are informed about the library holdings without visiting the library personally, it is therefore pertinent for every academic library to have web presence in

the form of library website in order to fulfill their mission and vision, if the web page is properly designed, it will lead users to wealth of information, because library home page serves as a portal to services and resources offered by the library (Bothma, Cosijn, Fourie & Penzhorn, 2014).

An academic library website is the assembling of specific and descriptive information on the World Wide Web (WWW) for a particular user which could be presented as text, audio and video materials, database, graphic, links and in any other form of information presentation (Bothma, Cosijn, Fourie & Penzhorn, 2014). According to Avouris, Tselios, and Fidas (2003), academic library website portrays its virtual public face, acting as an index to the collections, services, and to some extent its staff. It is very necessary to note that users now visit the library website more often than they visit the physical library (Connell, 2008). The library website play significant role such as workstation for the users and the librarians by allowing the resources available to be searched electronically, it may also be in the form of subscribed database or digitized in-house databases. As the library website serve as the gateway to resources and services of the library, it is paramount to design it in such a way that it will be easy for visitors to navigate without much difficulties.

## Website Evaluation

The evaluation of library website is worthy judgment by its utility with several of the component element on the webpage that enhance browsing, navigation, search locations to get desired information. Website evaluation is the assessment of the worth and values of the site to its users, it is a measure of what is available against user's expectations. According to McGillis and

Toms (2001) website evaluation is a means of testing the services of the site against its effectiveness and efficiency.

Evaluation as used in this study is the process of determining the effectiveness of information found on the web toward the ultimate goal of making decisions about using the information or rejecting it based on certain criteria. According to (McGillis and Toms, 2001) website evaluation is a means of testing the services of the site against its effectiveness and efficiency. Visibility and matching the system with the real world situation are the real determinant to examine difficulty and means of evaluating the webpage.

### **Heuristic Evaluation of Library websites**

Heuristic evaluation is one of the most frequently evaluator-based usability evaluation methods. It involves having a number of evaluators assess the user interface, and judge whether it conforms to a set of usability principles, namely heuristics, (Nielsen, et-al 1994)

Heuristics steps and guide line were organized into ten major categories presented in tables these categories includes: Visibility of Systems status, Match between System and the Real World (Metaphor), Users Control and Freedom (Navigation), Consistency and Standards (Consistency), Error Prevention (Prevention), Recognition Rather Recall (Memory), Flexibility and Efficiency of Use (Efficiency), Aesthetic and Minimalist Design (Design), Help Users Recognize, Diagnose, and Recover From Errors Recover) and Help and Documentation.

The heuristic evaluation criteria, which is the visibility of the system status of the library website, matching the real world situation with the system or webpage, how

easy it is for the visitors to navigate within the website, platform convention, how errors can be prevented on the website, recognition rather than recall, flexible and efficiency of use, aesthetic and minimalist design, help user recognize, diagnose, recover from errors and helped and documentation process, exist within the webpage in terms of their structure and content. Visibility and matching the system with the real world situation are the real determinant to examine difficulty and means of evaluating the webpage (McGillis& Toms, 2001). Navigation and Consistency of the website are essential if the library want to maintain the role of its service provision to its clientele on time and at its fastest possible time (George, 2005). A very good suggestion that was made by McGillis and Toms (2001) on the usability study that will enhance the site performance is to minimize the number of text and increase link sources which are very vital since users do not wish to spend their limited time in reading. The basic function of the library webpage is to make some links closer to the website as well as rename and recognize certain tag names that will be understood by the users, and not just technical jargons that will be understood by only the professional librarians.

Researchers have carried out different aspect of the library website evaluation ranging from the content and usability. Astani and Elhindi (2008) in their study employed the heuristic evaluation method to evaluate the usability of the top 50 colleges and universities. The study was conducted by two experts who evaluated and rated the sites (based on Likert scale) against five characteristics: Information content, navigation, usability, customization, download speed and security. The authors indicated that the tested websites had usability problems related mainly to old

content and inappropriate layout. Hariri and Nourizi (2011) also evaluated and compared the usability of two Thai and two US academic websites, using web usability checklist that aimed to measure the usability indexes of the sites. The checklist was categorized into four major sections: Finding the information, understanding the information, supporting user tasks, and presenting the information. Each guideline of the checklist was presented as Yes/No question. The results showed that the sites had several usability problems including: Lack of a site map, old content, lack of navigational tools, and inconsistency problems. The results also showed that the Thai websites have additional problems, such as: Ineffective internal search functions and language problems (e.g. misspelling words).

Similarly, Kostaras and Xenos (2006) employed the heuristic evaluation method to evaluate the usability of the website of the Hellenic Open University using the ten usability heuristics suggested by Nielsen *et al.* (1994). They identified only 38 usability problems on the university website related to: Lack of navigational support links, inconsistency problems (e.g. a variation of font sizes was used), errors in the internal search function, and inappropriate design of menu. Pants (2013), however, employed heuristic evaluation, and user testing methods to evaluate the usability of Harvard University website. Nielsen *et al.* (1994)'s ten heuristics were used during the heuristic evaluation. The results identified some usability problems on the site, related mainly to: Lack of navigational tools, inconsistency problems, and inappropriate design of the home page.

Equally, this study evaluates American University of Nigeria (AUN) Yola and University of Nigeria Nsukka library

websites using heuristic method to identify their usability

## Objectives of the Study

The purpose of this research is to comprehensively evaluate library websites of two academic libraries. The major objectives for the research among others are to evaluate;

1. Visibility of Systems status in Academic libraries websites
2. Users Control and Freedom (Navigation) in Academic library websites
3. Consistency and Standards in academic library websites
4. Flexibility and Efficiency of Use (Efficiency) academic library websites

## Methods

Descriptive survey research method was employed for this study. In order to evaluate the two selected academic libraries websites using the heuristic evaluation method. The heuristic guidelines document includes ten set of comprehensive heuristics checklist, which represent pages students visit usually on a library website. The websites of these libraries under evaluation were accessed by the researchers using the ten elements Heuristic evolution checklist.

Two University library websites were evaluated; American University of Nigeria (AUN) Yola and University of Nigeria Nsukka Enugu Library websites. One is Private University and the other is a Federal University (Table 1). The study was carried out based on the ten Heuristic Evaluation checklist criteria.

**Table 1: Academic Libraries Website Evaluated**

Name of Library	Country	Category	Address (websites)
America University of Nigeria (AUN) Yola,	Nigeria	Private University	http://library.aun.edu.ng/
University of Nigeria Nsukka Library (UNN) Enugu	Nigeria	Federal University	http://unn.edu.ng/library

## Result

The result of the heuristic evaluation of University Library website is presented based on Yes (Available) and No (Not Available). **Table 2: Heuristic Evaluation of Two Academic Libraries in Nigeria**

Heuristic principles	University of Nigeria Nsukka Library (UNN)	American University of Nigeria Library (AUN)
1 Visibility of System Status	YES(AVAILABLE)	YES(AVAILABLE)
2 Match Between the System and the Real World	YES(AVAILABLE)	YES(AVAILABLE)
3 User Control and Freedom	YES(AVAILABLE)	YES(AVAILABLE)
4 Consistency and Standards	YES(AVAILABLE)	YES(AVAILABLE)
5 Error Prevention	YES(AVAILABLE)	YES(AVAILABLE)
6 Recognition Rather than Recall	YES(AVAILABLE)	YES(AVAILABLE)
7 Flexibility and Ease of Use	YES(AVAILABLE)	YES(AVAILABLE)
8 Aesthetic and Minimalist Design	YES(AVAILABLE)	YES(AVAILABLE)
9 Help Users Recognize, Diagnose, and Recover from Errors)	YES(AVAILABLE)	YES(AVAILABLE)
10 Help and Documentation	YES(AVAILABLE)	YES(AVAILABLE)

**Source; Field Survey, 2018**

From the above table, it shows that both the academic libraries websites under evaluation have similarities in website design

## Discussion

### Visibility of system status

The two library website satisfied the Visibility of system status. The American University of Nigeria (AUN) Yola and University of Nigeria Nsukka Library (UNN) Enugu library websites both have visibility of system status which gives the feedback features message after a library user has filled all the necessary information that is provided while filling form, the user will at the button of the page see a dialogue box where to click for submission. There is

information that which pop-up on the screen to inform the user that he or she has successfully registered for the library. After the successfully registration information, the user will be given the rules and regulations of the library and other services that the library offered to the registered user. In the both library websites under evaluation user log online after registration and they will be assigned library account that will enable them to search for materials online as stocked in the library, in that case user can ask/chat to a librarian or contact the librarian

## **Match Between System and the Real World**

The library WebPages visited under study was fully designed with language that all most all the phrases and words used are familiar and simple to their clientele. This will help library user to navigate and have direct access to the information that he/she may require easily. Both the academic libraries used English language as the official language that speaks by their library users. They put upcoming events in the library websites just to ensure that users at home are aware of the activities in the library, the AUN Library operate 24/7. This library webpage matches the real world because it follows real-world conversation and information on the webpage appears in natural and logical order.

## **User Control and Freedom**

The two library website under study, have a greater degree of control because they designed a medium where a library user can automatically click back to home page without encountering any difficulties there is also a dialogue box for “EXIT”. Also at the top menu bar of the page, there is information which may lead user to the resources or services that might be needed. This is in conformity with the heuristic evaluation criteria which suggested that a good library website should have a good and user control navigation.

## **Consistency and Standards (Consistency)**

There is consistency in what they are doing. The information on the library page of “ASK/CHAT A LIBRARIAN”, also In AUN Home page the library used “CLICK HERE TO CONTACT US” and “LEAVE THE MESSAGE HERE” while in UNN

also used “CONTACT US” is also the same way it is on the registration box. Therefore there is consistency in the way the library website is being developed and designed in both libraries under study. Even their announcements on upcoming events are also consistent with the way they designed their registration form. The user does not need to struggle in order to identify where he/she is on the webpage.

## **Error Prevention (Prevention)**

The two library website under review has an error prevention method. The registration form that is filled online has different fields where the user must supply information that is required on those fields, for example, in the field where a user ought to supply his/her correct or active email account and the user omitted a word in entering email address, when he/she wants to submit, the error prevention will not accept the registration form and it will inform the user where he/she made a mistake or the field that was skipped, the web will marked the uncompleted/error field with a red star alerting the user to fill the incomplete field before it accept the submission form. Therefore, the library website provides user friendly messages to assist user to perform and effectively utilized the website

## **Recognition Rather Than Recall (Memory)**

The two websites under study have the recognition rather than recall criteria. At every page of the library website, there is full information that users follow as instruction. The submenu use in the websites was colored red to inform user where he/she operates. So there is this recognition rather than recall, because these libraries can be accessed remotely without physical presences of the user.

### **Flexibility and Efficiency of Use**

There is efficiency and flexibility of the AUN library website and that of the UNN library website, this is because there are quick links dialog box that will enable the experience user to work effectively and faster and it can also help the inexperienced user to work with the help of the quick link provided. This means that less time is spent in the information retrieval and the navigation rate is also efficient.

### **Aesthetic and Minimalist Design**

The library websites depicts a good work of website designed; these websites were well designed because the websites were designed to accommodate so many users at the same time. There is a pop-up message that comes up each time a task is completed in order to notify the user on what action to take next or to assure the users of the successful completion of the task done. Most of the information is access via links that provide more detail, and also there are no much unwanted information's on the page that interrupt library user.

### **Help Users Recognize, Diagnose, and Recover from Error (Recovery)**

The two academic library websites (AUN and UNN) have excellent error messages alert that prevent user from submitting information with errors to the site. This implies that error message alert pop-up to notify user to recognize that there is an incomplete field that needs urgent attention before submission.

### **Help and Documentation (Help)**

Both AUN and UNN library webpages has a good link of "CONTACT US" that assist user for any help. The help icon is located at a strategic point and very visible. This is in

line with the heuristic evaluation which suggests there should be "ASK US" at each major home tab. Therefore, both library website evaluated has adequate ask us or chat with a librarian that will help user at all time.

In summary, based on the ten criteria of library website evaluation presented above, it was discovered that both AUN and UNN library websites are in line with the ten criteria's or are in conformity with what an ideal or a good library website should contain. These include visibility of system status, feedback features message, a greater degree of control, consistency, efficiency and flexibility.

### **Recommendations**

From the outcome of the evaluated library websites the following recommendation are made;

1. Academies libraries should have visibility of system status and provide a good site search facility that will enhance the efficiency and the effectiveness of the library website utilization
2. Academic libraries should design a web forms that will provide an avenue for sending feedback, asking queries and getting help
3. There should be consistency and visual appeal also there is a need for website to be enhanced by using appropriate background colours, a proper banner and use of relevant images
4. Management of academics libraries should dwell on efficiency, flexibility and Usability of their websites also evaluations should be conducted regularly to keep the library website up to the expectations of its users.

## Conclusion

It has been concluded that the libraries under study developed their library websites in accordance with the heuristic ten characteristics evaluation methods, specifically it has been concluded that both library websites have visibility of system status which gives the feedback features message. It is also concluded that the two

library websites under study have a greater degree of control, it has been also concluded that there is consistency in the library websites and there is efficiency and flexibility in both library websites under study

## References

- Astani, M. & Elhindi, M. (2008) an Empirical Study of University Websites; *Issues in Information Systems*, 9 (2), 460–465.
- Avouris, N., Tselios, N., Fidas, C. & Papachristos, E. (2003), “Website Evaluation: a Usability-Based Perspective”, *8th Pan-Hellenic Conference on Informatics, PCI 2001, LNCS2563*, Springer-Verlag, Nicosia, 217-231.
- Bothma, T., Cosijn, E., Fourie, I., & Penzhorn, C. (2014) *Navigating Information Literacy your Information Survival Toolkit*; Southern Africa; Pearson Holdings
- Connell, R.S. (2008). Survey of Web Developers in Academic Libraries, *Journal of Academic Librarianship*, 34,121-9
- George, C.A. (2005). Usability Testing and Design of a Library Website: An Iterative Approach. *OCLC Systems & Services* 21 (3), 167-80
- Hariri, N. & Norouzi, Y. (2011), “Determining Evaluation Criteria for Digital Libraries’ User Interface: a Review”, *The Electronic Library*, (29) 5, 698-722.
- Kostas, N. & Xenos, M. (2006) Assessing Educational Web-site Usability Using Heuristic Evaluation Rules in: *Proceedings of 11th Pan-Hellenic Conference in Informatics*
- Kuchi, T. (2006). Communicating Mission: An Analysis of Academic Library Websites, *Journal of Academic Librarianship*, (32)2, 148-54.
- McGillis, L., & Toms, E. G. (2001) Usability of the Academic Library Web Site: Implications for Design, *College & Research Libraries*, (62)2 355-367.
- Nielsen, et-al. (1994). Heuristic Evaluation, In: Nielsen J. & Mack R. L. (Eds.), *Usability Inspection Methods*. John Wiley & Sons, New York, 25–64
- Pant, A. (2013), “Development of Usability Assessment tool for Library Website Evaluation”, Paper Presented at International Conference on Digital Libraries, 27-29 November, The Energy and Resources Institute, New Delhi
- Sandvig, J. & Bajwa, D. (2004) Information Seeking on University Web Sites: An Exploratory Study. *Journal of Computer Information Systems*, 25(1), 13–22.