LAFIA JOURNAL OF LIBRARY AND INFORMATION SCIENCE
Volume 8, Number 2, 2025.
Available online ***https://journals.fulafia.edu.ng/index.php/ljlis***
ISSN:Print - 2814-0702, Online - 2814-0710
LJLIS

CHALLENGES FACING UTILIZATION OF WEB-BASED INFORMATION RESOURCES AMONG CLINICAL STUDENTS IN THE COLLEGE OF HEALTH SCIENCES, REV. FR. MOSES ORSHIO ADASU UNIVERSITY, MAKURDI,

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Abstract
This study investigated the challenges affecting the utilisation of web-based information resources among clinical students in the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, as well as strategies for improving their effective use. A descriptive survey design was employed, involving all 166 undergraduate clinical students through total enumeration. Data were collected using a structured questionnaire and analysed using mean and standard deviation. Findings revealed multiple challenges, including poor internet connectivity, high data costs, limited access to paid databases, inadequate digital literacy, information overload, and difficulty evaluating credible online sources. The study also identified several strategies for improvement, such as expanding free Wi-Fi access, increasing institutional subscriptions to academic databases, providing digital literacy training, implementing critical thinking workshops, and enhancing institutional support for navigating online resources. The study concludes that addressing these constraints will significantly enhance students' academic productivity, access to credible information, and overall learning outcomes. Recommendations were made to guide policymakers, university management, and librarians in enhancing effective utilisation of web-based information resources.
Keywords: Web-based Information Resources, Challenges, Solution, Utilisation, Digital Libraries

Introduction

Web-based information resources provide essential academic support by enabling access to digital libraries, e-journals, online databases, and other scholarly platforms. Ani et al. (2022) noted that web-based resources are the electronic representation of information available in various forms such as e-books, digital libraries, online journals, magazines, e-learning tutorials, and online tests. Due to their effective presentation with multimedia tools, these e-resources have become key sources of information. Web-based information resources are accepted worldwide as effective educational and research tools, offering several advantages and enriching the educational competencies of learners and researchers.

Utilisation of online or web-based information resources involves leveraging online tools and platforms to access and use information effectively, including search engines, databases, online journals, and other web-based services. However, despite their importance, utilisation remains suboptimal due to several barriers. Studies highlight factors such as inadequate infrastructure, limited ICT skills, and poor connectivity as major constraints (Owate, 2024).

Globally, the integration of web-based information resources in higher education has transformed access to information for academic and professional purposes. Yet, several barriers

persist in Africa, including poor internet connectivity, limited access to subscription-based databases, and inadequate training. These challenges are even more pronounced in Nigeria due to infrastructural limitations and underfunded educational systems. (Adeleke et al., 2020).

Statement of the Problem

In today's knowledge-driven healthcare environment, the ability to utilise accurate and relevant information is fundamental to effective clinical practice and academic success. Web-based information resources have the potential to enhance students' learning experiences and clinical decision-making capacities; however, these benefits can only be realised when students can effectively utilise them.

At the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, concerns remain regarding students' ability to effectively utilise these resources. Failure to address these concerns may lead to consequences such as poor academic performance, inadequate clinical decision making, reduced competitiveness, limited lifelong learning, and wasted institutional resources.

Objectives of the Study

The specific objectives of this study are to:

1. ascertain the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources, and
2. investigate the strategies to overcome the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources

Research Questions

The following questions were posed to guide the study:

1. What are the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi in the utilisation of web-based information resources?
2. What are the strategies to overcome the challenges encountered by clinical students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, in the utilisation of web-based information resources?

Review of Related Literature

This study is anchored on technology acceptance model (TAM) 1989.

Technology Acceptance Model (TAM) was developed by Davis (1989). TAM is one of the most influential theories used to explain technology adoption and utilization behaviors. The model proposes that two primary beliefs Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) determine an individual's acceptance and subsequent utilization of technology. Perceived usefulness refers to the degree to which an individual believes that using a particular technology will enhance their performance, while perceived ease of use reflects the extent to which the technology is considered free of effort (Davis, 1989). According to TAM, these perceptions

influence a user's attitude toward using the technology, which subsequently affects their behavioral intention to use it, ultimately leading to actual utilization. In the context of this study, web-based information resources (WBIR) such as online journals, databases, search engines, and e-libraries are viewed as technological tools whose utilisation can be explained through the TAM framework.

In the context of clinical students at the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, the adoption of TAM is appropriate because it provides a clear and validated explanation of how clinical students' perceptions of technology influence their behaviors, particularly in educational and information environments. By applying TAM, this study seeks to understand how clinical students' perceptions of the usefulness and ease of use of web-based information resources influence their actual utilization of these resources. This theoretical underpinning aligns with the objectives of the study, which investigates the challenges facing utilisation of web-based information resources among clinical students and their solutions.

The emergence of the Internet, especially the World Wide Web, is becoming the new technique for the delivery of information resources and services, which has led to a revolution in libraries and information centres. In this web-based environment, information resources and services can be accessed and delivered as and when required; therefore, the services of libraries are not confined within their physical walls, but are integrated into local, regional, national and international networks (Brar, 2016).

Web-based information resources, according to Sandeep and Chakravarthy (2022), are items that can be accessed remotely or locally over the Internet by using a personal computer, mainframe, or portable mobile devices. The basic and descriptive characteristic of WBR is that it embodies a wide range of electronic resources, can be easily be updated, transformed, upgraded and instantly shared, and it makes use of all the assets the World Wide Web can offer.

The use of digital libraries has seen steady growth over the past two decades. The effectiveness of digital libraries depends on user acceptance, which in turn is affected by users' perceptions. The concept of 'utilisation' refers to the extent to which a product can be accessed to achieve specified goals with effectiveness, efficiency, and satisfaction within a defined scope of consumption. Utilisation of Electronic Information Resources (EIRs) also denotes the act of making actual use of the available EIRs to support research and learning goals (Ikenwe et al., 2020). Furthermore, the utilisation of EIRs can be viewed as the capability to make practical and judicious use of the available electronic resources.

Challenges in accessing and using web-based information resources are factors that hinder their smooth access and utilisation. Despite the significant advantages of online information resources, users still encounter some difficulties. Several studies have investigated students' challenges with the use of these resources. Inadequate computer systems, slow internet speed and poor network service, frequent power failures, poor internet connectivity, insufficient guidance on the use of electronic resources, non-payment of subscriptions, and a lack of personal computers have also been identified as challenges affecting access to and the utilisation of web-based information resources (Owate, 2024).

Omeluzor et al. (2016), and Sohail and Ahmad (2022), in their various studies, stated some of the challenges facing the utilisation of web-based information resources. These challenges have been identified as poor information technology infrastructure development, a lack of knowledge

on how to use e-journals, a lack of facilities, a lack of time and awareness, a large amount of irrelevant information, the need to filter search results, download delays, failure to find information, inadequate or a lack of search skills, the high cost of access, the inaccessibility of some electronic resources, and difficulties in navigating electronic resources.

The level of success of any learning programme depends largely on the commitment of institutions in ensuring an enabling environment for their learners in accessing and using e-resources for teaching and learning.

According to More (2022), the following solutions should be considered for web-based information resource utilisation:

- Participating libraries must have the infrastructure to provide services to their users.
- A librarian should go a step further than simply providing internet access. They should take responsibility for evaluating web resources to provide effective assistance.
- A librarian must have a deep knowledge of web resources and search engines, which will give the reference librarian real power to answer questions.
- The librarian should create a web directory of internet resources so that users can utilise or refer to it whenever needed to provide the service.
- Library users should be properly trained and informed about the internet and search options.

Research Methodology

A descriptive survey design was used. The population consisted of 166 undergraduate clinical students, and a total enumeration method was adopted. Data were collected using structured questionnaires and analysed using mean and standard deviation.

Analysis and Interpretation

Table 1: Challenges Facing Utilisation of Web-Based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, Nigeria.

(n=166)

S/N	Challenges faced	SA	A	D	SD	$\bar{x}$	.	Remark
1	Internet connectivity issues affect my ability to use web-based resources.	54	88	20	4	3.16	0.72	Agree
2	Paid resources are not available to me.	43	75	33	5	2.94	0.80	Agree
3	The online information resources I need are often restricted due to paywalls or institutional access limitations.	39	91	29	7	2.98	0.76	Agree

4	Experience difficulties accessing web-based resources due to software/hardware limitations (e.g., computer, smartphone).	43	81	38	4	2.98	0.77	Agree
5	Limited internet access when using web and slow internet speed	44	86	29	7	3.01	0.78	Agree
6	Lack of knowledge on advanced search techniques	47	81	29	9	3.00	0.82	Agree
7	Difficulty in evaluating credible sources when using web	44	76	41	5	2.96	0.80	Agree
8	Lack of digital literacy skills for effective use of web	50	66	49	1	2.99	0.79	Agree
9	Overload of irrelevant information when using web	51	62	47	6	2.95	0.86	Agree
10	High cost of internet/data	81	57	24	4	3.30	0.80	Agree
11	Difficulty in accessing web-based information resources	58	53	49	6	2.98	0.89	Agree
12	Struggle with identifying credible and reliable online information	39	93	29	5	3.00	0.73	Agree
13	Lack of expertise in source evaluation	39	80	42	5	2.92	0.78	Agree
14	Websites not user-friendly	39	85	36	6	2.95	0.77	Agree
15	Issues with downloading full-text articles or reports	51	76	33	6	3.04	0.81	Agree
16	Limited peer-reviewed and scholarly resources	41	83	38	4	2.97	0.76	Agree
	Cluster mean					**3.08**	**0.79**	**Agree**

Source: Field Survey, 2025

Table 1 presents the mean and standard deviation scores relating to the challenges facing the Utilisation of Web-based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi. Each item reflects respondents' reports on the challenges in the utilisation of web-based information resources. The analysis of the data reveals that clinical students at the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, face a range of challenges in utilising web-based information resources. The overall cluster mean of 3.008 and SD =0.790 indicate that the respondents generally agreed with the listed challenges, suggesting that these barriers significantly affect their ability to fully benefit from digital academic resources.

A major issue identified is internet-related constraints, with students strongly agreeing that internet connectivity issues (Mean = 3.16 and a SD = 0.722) and the high cost of internet/data (Mean = 3.30 and a standard deviation of 0.804) pose significant limitations to accessing web-based information. Similarly, limited internet access and slow speeds (Mean = 3.01 and a standard deviation of 0.782) further compound this challenge, reflecting infrastructural weaknesses that

hinder smooth online research activities.

Another prominent barrier is restricted access to academic content due to paywalls and a lack of institutional subscriptions. This is seen in responses to items related to paid resources not being available (Mean = 2.94 and a standard deviation of 0.799) and online information being restricted (Mean = 2.98 and a standard deviation of 0.762). These results highlight the students' struggle to obtain full-text scholarly materials, which may limit their ability to conduct comprehensive research.

Technical and personal skill limitations also emerged as notable challenges. Students reported experiencing software/hardware limitations (Mean = 2.98 and a SD = 0.767), a lack of digital literacy (Mean = 2.99 and a SD = 0.790), and a lack of knowledge of advanced search techniques (Mean = 3.00 and a standard deviation of 0.824). These findings suggest a gap in the students' ability to effectively navigate and make the most of available web-based platforms.

Cognitive and evaluative challenges were also acknowledged. Students reported difficulty in evaluating credible sources (Mean = 2.96), struggling to identify reliable information (Mean = 3.00 and a SD = 0.730), and lacking expertise in source evaluation (Mean = 2.92 and a SD = of 0.778). The issue of information overload (Mean = 2.95 and SD = 0.859) was also mentioned, indicating that the sheer volume of online content can be overwhelming and counterproductive without proper search strategies and filtering skills. Lastly, some students pointed out challenges such as non-user-friendly websites (Mean = 2.95 and a SD = 0.773) and issues with downloading full-text articles or reports (Mean = 3.04 and a standard deviation of 0.773), which affect the usability and accessibility of online resources.

Table 2: Suggestions that will improve the Utilisation of Web-Based Information Resources by Clinical Students of the College Of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi, Nigeria.

(n=166)

S/No	Solutions	SA	A	D	SD	$\bar{x}$	.	Remark
17	Expand free Wi-Fi zones in educational institutions and public spaces.	84	90	11	1	3.43	0.65	Agree
18	Use open-access alternatives, rely on shared or free version of articles	103	51	11	1	3.54	0.65	Agree
19	Use institutional access (e.g., university login) and document delivery services for restricted articles provision	88	68	9	1	3.46	0.63	Agree
20	Increasing access to digital devices (e.g., laptops, tablets, smartphones)	90	69	6	1	3.49	0.60	Agree
21	Use alternative ways (e.g., ResearchGate, institutional VPNs) to access wide range of web-based resources with speed.	82	66	16	2	3.37	0.71	Agree

22	Workshops on advanced search techniques (e.g., Boolean operators, filters).	82	73	8	3	3.41	0.67	Agree
23	Training on evaluating credible vs. unreliable sources	97	60	7	2	3.52	0.64	Agree
24	Online courses on digital literacy skills.	99	60	6	1	3.55	0.60	Agree
25	Acquire literacy skills to be able to pick out relevant information from verse of information online and AI-powered recommendations for relevant sources.	101	55	10	0	3.55	0.61	Agree
26	Reducing internet/data costs by providing affordable internet packages for students and professionals.	93	68	5	0	3.53	0.56	Agree
27	Interlibrary loan services (resource sharing among institutions)	91	69	4	2	3.50	0.61	Agree
28	Increasing awareness about fake news and misinformation	98	56	12	0	3.52	0.63	Agree
29	Teaching critical thinking skills for evaluating online content	89	69	7	1	3.48	0.61	Agree
30	Simplified navigation for non-expert users, also, Institutions should provide more support for accessing web-based resources.	106	58	2	0	3.63	0.51	Agree
31	Provide institutional access to more academic databases (e.g., JSTOR, IEEE, ScienceDirect)	95	66	4	1	3.54	0.58	Agree
32	Promoting peer-reviewed and scholarly resources	94	67	5	0	3.54	0.59	Agree
	Cluster Mean					**3.50**	**0.61**	**Agree**

Table 2 presents the frequency, mean and standard deviation scores regarding the suggestions that will improve the Utilisation of Web-based Information Resources by Clinical Students of the College of Health Sciences, Rev. Fr. Moses Orshio Adasu University, Makurdi. Each item reflects respondents' suggestions that will improve utilisation of web-based information resources. The data shows strong consensus among clinical students regarding a wide range of strategies that would significantly improve their utilisation of web-based information resources. With a cluster mean of 3.50 and a standard deviation of 0.614, the responses indicate a high level of agreement that the suggested strategies are both relevant and impactful.

A key theme across the responses is the need for enhanced access and infrastructure. The highest agreement was seen in items suggesting the expansion of free Wi-Fi zones (Mean = 3.43 and a SD = 0.645), the reduction of internet/data costs (Mean = 3.53 and SD =0.558), and increased access to digital devices (Mean = 3.49 and SD = 0.600). These findings confirm that reliable and affordable internet connectivity and access to digital tools are foundational to the effective use of online academic resources.

Students also emphasised the importance of access to academic content, with high mean scores for using open-access alternatives (Mean = 3.54 and SD =0.579), institutional access and

document delivery services (Mean = 3.46 SD = 0.629), and interlibrary loan/resource-sharing services (Mean = 3.50 and a standard deviation of 0.611). This reflects their awareness of access barriers and their support for mechanisms that can circumvent paywalls and subscription limitations. Another strong theme was the need for digital literacy and information evaluation skills. Students strongly agreed on the need for training on evaluating credible sources (Mean = 3.52 and a SD =0.639), critical thinking skills for evaluating online content (Mean = 3.48 and a SD = 0.510), and awareness about fake news and misinformation (Mean = 3.52 and SD = 0.630). Furthermore, online courses on digital literacy (Mean = 3.55 and SD = 0.599) and workshops on advanced search techniques (Mean = 3.41 and a SD = 0.570) were widely supported, highlighting the value of structured educational interventions to build students' confidence and competence in navigating digital information.

One of the most highly rated items was the suggestion to simplify website navigation and provide institutional support for resource access (Mean = 3.63 and SD =0.510), indicating a strong demand for user-friendly platforms and proactive institutional engagement in supporting students' research efforts. The use of AI-powered recommendations and tools for filtering relevant content (Mean = 3.55 and SD = 0.609) was also favourably received, suggesting that students are open to modern technologies that can streamline their research experience and reduce information overload. Lastly, there was strong support for promoting peer-reviewed and scholarly resources (Mean = 3.54 and SD = 0.558), indicating students' preference for credible, high-quality academic content in their studies and research.

Discussion of Findings

The first Findings reveal that infrastructural, institutional, technical, and personal limitations significantly hinder utilisation of web-based information resources. These align with previous studies by Owate (2024) and Sohail & Ahmad (2022). According to TAM, limitations reduce perceived ease of use, thus affecting technology adoption.

The second findings indicate that clinical students of the College of Health Sciences Rev. Fr. Moses Orshio Adasu University Students strongly supported strategies such as infrastructural development, skill training, and improved institutional support. This highlights the need for coordinated intervention from universities, librarians, and policymakers.

This finding is in line with that of More (2022), who recommended the provision of electronic facilities to boost access to and the use of electronic information resources. The students' call for institutional improvements also reflects TAM's emphasis on organizational support and infrastructure enhancing both perceived usefulness and ease of use.

Conclusion

The study concludes that clinical students face significant financial, infrastructural, technical, and skill related challenges in utilising web-based information resources. These limitations restrict access to credible academic materials and negatively impact learning and clinical decision-making. Students demonstrated awareness of effective solutions, emphasising the need for institutional improvements and continuous capacity building. Strengthening digital infrastructure and providing academic support will enhance the effective utilisation of web-based information resources.

Recommendations

1. Improve Internet Infrastructure: Expand campus Wi-Fi and subsidise student data packages.
2. Increase Access to Databases: Subscribe to major scholarly platforms and strengthen interlibrary loan services.

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