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Assessing the University Virtual Library Spaces for Digital Information Services in Nigeria

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ABSTRACT

The university Virtual Library Space (VLS) is increasingly becoming a strategic source for information access. The digital libraries are opening up avenue to information for the virtual library users whose number is increasing exponentially. This current study assessed the use of VLS at the university library in Nigeria. A descriptive survey design was used with a population of 233 academic librarians at the federal, state and private universities in South-South zone of Nigeria. With a sample size of 213 (91.4 %) of the population who responded to the online questionnaire that were analysed, the findings shows that university libraries are at the threshold of increasing access to digital information with advancement in VLS. The finding showed that most university libraries in Nigeria have developed one form of virtual/digital space such as ILS, ERM, social media sites, library website, web catalog, institutional repository and library Blog. The findings revealed that more than 50 % of the respondents attested that they have used VLS frequently on daily, weekly, monthly and bi-monthly to disseminate digital information such as e-books, e-journals, dataset, lecture notes, students projects, e-thesis and dissertations, inaugural lectures, laboratory results and conference proceedings. The findings further showed that the major challenges facing the use of VLS at the university library were inadequate funding, lack of training, poor technical support, irregular power supply, poor internet connectivity, lower bandwidth and inadequate ICT infrastructure. The study concluded with specific recommendations to enhance the use of VLS at the university library for the benefit of library patrons.

Keywords: Virtual library space, Digital libraries, University library, South-south, Nigeria

1. INTRODUCTION

The advancement in technology is increasing the use of data, internet and other Information Technology (IT) tools to access digital information. The convergence of ICT is creating a community of library users who accesses critical digital information outside the physical library. The diversity of thoughts and users' behaviour leading to continuous access to information on the internet with the use of technology is raising a concern on how to engage the dynamic community of information users who are gradually shifting from the physical library towards the Internet for digital information sources. The library is any building or space containing collections of print and electronic information resources for use by community members[1] Some libraries are today facing existential challenges with the rapid technological growth in ICT coupled with the introduction of some advanced technology such as Artificial Intelligence (AI) and other innovative tools that are enhancing access, retrieval and information dissemination. Information is critical to library patrons for the preparation of academic works such as research, lecture notes, publications, assignments and examinations among others. Every researcher relies on relevant, current, authoritative and reliable information. Hence, the over-dependence of library users on available digital information on the Internet is increasing the need to know whether there are Virtual Library Spaces (VLS) at the university libraries in Nigeria.

Envisaging the foreclosing challenges on the physical library, library collections and library profession, especially with the recent wave of COVID-19 that affected information services, this study focuses on how the university library is developing VLS for its users. VLS is a critical component that complements the physical library. There are a variety of terms that are used in the Library and Information Science to describe VLS, including digital library, electronic library, e-library, and virtual library[2] This study considers VLS as described in[2] that provides its users with quick and simplified access to all electronic resources from a single point. In this study, the term 'Virtual Library Space (VLS)' is used to describe a collection of information sources in an electronic format that is accessible on the Internet such as Institutional Repository (IR), database, Blog, website and Online Public Access Catalog (OPAC) among others. The collections of a VLS may include digital collections of pictures, articles, maps, videos, websites, or library records. This paper therefore investigates the development of VLS for users' engagement among university libraries in Nigeria and is guided by the following research questions:

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1. Does the library have VLS on the Internet?
2. What kind of VLS does the library have on the Internet?
3. What are the available information resources on VLS?
4. What kind of request do librarians receive on VLS?
5. What is the frequency and kind of information that the library disseminates on VLS?
6. What are the challenges facing the development of VLS at the library?

2. LITERATURE REVIEW

The current library space is adjudged to serve mostly the traditional users who prefer to visit the library to access information sources such as books, journals and magazines. According to[3] the declining number of visits to the physical libraries suggests that library patrons are accessing information electronically without visiting a library. Many large libraries and universities are currently digitising information with a view of making it accessible to members and the general public[3]. Modern users are accessing the library via technology. The information sector is developing with several non-practitioners engaging in information service provision. Academic libraries and publishing houses are rising to their responsibility of providing additional free resources and curating personalised sources so that patrons can have uninterrupted access to content for learning[4].

The public library is changing rapidly due to developments in technology and the communication revolution[5]. With traditional the library in place and the introduction of VLS, the university library is playing a dual role of simultaneously providing access through the physical library and VLS. The learning demands, preferences and differences in information needs endear the library patrons to both virtual library and physical library[2]. However[6] stated that modern library users prefer virtual spaces, not somewhere they go physically for services but a place they reach from a remote location. Hence, reshaping the library space in this modern time requires the use of technology as its primary tool for learning and combinations of library collections and information technology in support of advanced research[6]. To achieve holistic information services, Wolff-Eisenberg[7] suggested that the goals and challenges of students should be the central point for organising the right kind of spaces to meet the needs of patrons. As a result of the high demands, libraries are deeply increasing their educational roles; redefining their associations with users; and rethinking the use of virtual spaces for people and collections[8].

The physical libraries are becoming less attractive to the information users in the digital age. There are diverse and convincing opinions about their future, services, goals and space in the 21st century[5]. Certainly, such debate is leading to the development of digital spaces that promote library services to its virtual community users[9]. The digital library curates all digital content and makes it accessible on the library website for users to access. Most libraries in South Africa consider digital libraries as essential pathway to high-quality information resources and educational content, including Open Educational Resources OER[4]. During the COVID-19 pandemic, digital libraries enabled university libraries in South Africa to stand out in providing online services, therefore ensuring that learning, research and teaching were not truncated[4].

The services of VLS span beyond the four walls of the library building. As long as the needs of the library users go beyond print to digital sources, the services of VLS are fast evolving. VLS development and designing can offer a rich learning environment[2]. A study that examined VLS in Nigerian universities showed that 50.8 % and 57.7 % of respondents who were lecturers used VLS for email and academic research. A lower percentage of the respondents, 36.2 %, 19.2% and 18.5 % used VLS to network with colleagues on their ongoing papers, access teaching materials and publish works[9]. VLS not only provides content but presents documentary services that are bound by time-related restrictions and are useful resources in the educational field for students, teachers and researchers[10]. VLS also provides resources, access and help in promoting visual literacy where users have the capacity to analyse and assess information within a visual environment[8].

The development of VLS is becoming prominent in this age of advancement in ICT. Before and during the COVID-19 pandemic, several university libraries were experimenting with new technologies to develop VLS to foster access and a sense of community among their users. For instance, Wolff-Eisenberg[7] noted that "Johns Hopkins Sheridan Libraries hosted a YouTube live stream featuring study tips, ambient music, and backdrops of the library. Also, Scottsdale Community College Library built out demos to show students how they can collaboratively study with others in Google Hangouts, WebEx, and Zoom." Similarly, the University of Maryland, Baltimore County Library also hosted Zoom study rooms with the plan of using Discord in the future[7].

The National Library of Nigeria (NLN) hosted some electronic information services including virtual library service, index to Nigeria newspapers, Online Public Access Catalog (OPAC) and National repository of Nigeria on its website[11]. The resources allow access to digital contents for the virtual information users. Research has shown that some university libraries in Nigeria, including University of Jos and University of Nigeria Nsukka among others are maintaining VLS on their websites while most universities in Nigeria are digitising their information resources such as students' projects, theses and dissertations, inaugural lectures and lecture notes, making them available on their VLS to boost the quality of education and information services in Nigeria[12]. Similarly, Otubelu[13] reported that the National Open University Digital Library has online

services with the presence of electronic databases such as AGORA, Bibliomania, Bioline International, British Library for Development Studies and Chemistry Central for their virtual library users.

Despite the growing needs of users for VLS and digital information in Nigeria, there are challenges facing its advancement. One of the major constraints of VLS in university libraries in Nigeria is funding. Financial constraint poses a major problem for the growth of digital libraries[14]. Shrinking budgetary allocation for the library reduces the prospects and projected achievements of VLS in Nigeria which limits access to a wide range of electronic publications and databases[14]. Besides, Nigerian libraries are known to suffer budget cuts following the economic crisis affecting the country. Currently, inflation and the high cost of ICT tools are making digital library development prohibitively expensive[12]. Technological challenge is another problem facing the development of university's VLS in Nigeria. According to Gbaje[15], the lack of a national fiber network backbone infrastructure was a major issue for the successful execution of VLS. Bandwidth and internet connectivity for higher education institutions and their Internet service are not stable and reliable[16]. Other challenges affecting the use of VLS include poor and inadequate telecommunication facilities, lower computer literacy, poor computer facilities, inefficient ICT infrastructure and lack of awareness[9]. Furthermore, technical skills in maintaining web servers that host locally digitised materials and other digital resources were challenges[9,14]. Similarly, a lack of technical infrastructure, epileptic power supply, network and Internet problems and librarians' lack of technical skills were found to be challenges for the development of VLS in Nigeria. In addition, inadequate training of academic librarians on ICT related skills is affecting their ability to manage VLS; coupled with poor technical support from developers and lack of efficient virtual resources were among the challenges facing the development of VLS in South-Eastern Nigeria libraries[17].

3. METHODS

3.1 Research Approach

The descriptive survey design was adopted for this study. The descriptive survey design is a reliable means that provides the opportunity to use data that is collected for a single research and helps to show how such data is used in a study. The use of descriptive survey design has shown some significant level of consistency in social science research[18]

3.2 Population

The population of the study consist librarians at the federal, state and private universities in the South-South geo-political zone of Nigeria. Reports on headcount from various libraries in the South-South zone of Nigeria show that there were a total of 233 academic librarians in the federal, state and private universities. This number was corroborated from the study of[19]. 'Among the respondents, 95 of them were from the federal universities, 93 of the respondents were from the state universities while 45 of the respondents were from the private universities given a total of 233.

3.3 Research Instrument

The instrument for data collection was a structured online questionnaire designed by the researchers using Google Form. The online questionnaire was used because it was easier to reach out quickly to all the respondents without the risks of travelling either by road or air and spending money on transportation. The instrument had seven sections (Section A to G). The seven sections focus on the demographics and the six research questions that were set to provide answers on this study.

3.4 Testing and Retesting of the Questionnaire

In order to ascertain the validity of the instrument, the researchers used pre-reliability tests such as face, content and construct checks. The researchers used the services of information professionals to ascertain the construct validity. The professional went through the instrument and made some minor corrections before she certified that the instrument was suitable for collecting data for the study. To verify the content validity, the researchers sent the instrument to 15 librarians at the Imo State University, located in the South-East geopolitical zone of Nigeria, who were not part of the population for the study. The 15 questionnaires were all returned and analysed using the Cronbach's Alpha correlation coefficient at the 0.5 level of acceptance, which gave a result of r = 0.81. This result indicates that the instrument was reliable and good for data collection for the study, since the test result was above the acceptance point of 0.5.

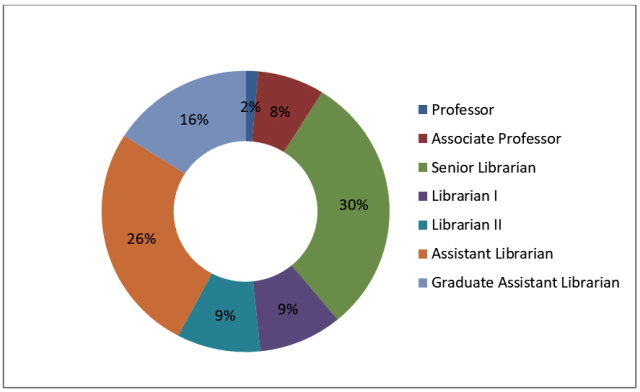
3.5 Distribution and Data Collection

The questionnaire was distributed to the respondents via the verified WhatsApp group of Nigeria Library Association (NLA) and individual verified WhatsApp and email addresses. The email addresses of the respondents were retrieved from an earlier attendance sheet of the Nigerian Library Association's annual conference and general meeting. The use of this method to send out the questionnaire directly to the respondents eradicated responses from unintended respondents. Out of the total population of 233 librarians who received the questionnaire, there were 213 responses, giving a 91.4 % response rate, and these were used for the analysis of this study. The data collected was analysed using SPSS (Statistical Package for the Social Sciences), version 16.0 for descriptive analysis. The result of the analysis is presented in charts, frequency tables, mean score and standard deviation for clarity and understanding. In Table 4, the mean scores are rated as follows: a mean of 0.1 to 1.9 is very low, 2.0 to 2.4 is low, 2.5 to 2.9 is high, and 3.0 and above is very high.

4. RESULT

Result showing the designation of the respondents

The result in Fig. 1 reveals that among the respondents, 3 (2 %) of them were professor, 16 (8 %) were Associate Professor, 64 (30 %) were Senior Librarian, 20 (9 %) were Librarian I and II respectively. It also shows that 56 (26 %) of the respondents were Assistant Librarian while 34 (16 %) were Graduate Assistant Librarian. The result indicates that the study has good representation of all categories of librarians in the South-South of Nigeria. On the qualification of the respondents, result shows that 34 (16 %) had Bachelors Degree, a higher number of the respondents 96 (45 %) had Masters Degree while 83 (39 %) of the respondents had Doctoral Degree.



N = 213

Figure 1. Designation of respondents.

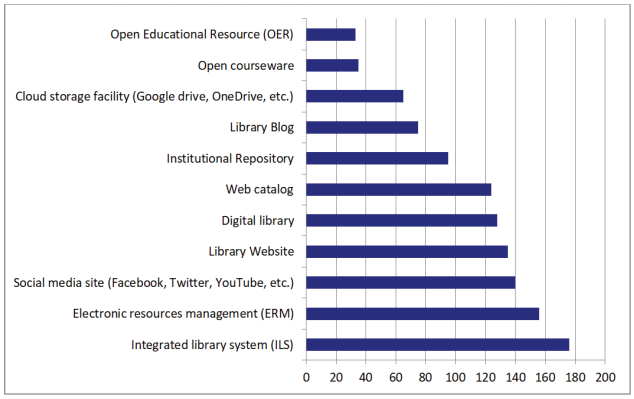
Providing information to the VLS is all an encompassing cutting across all the library departments; hence, the research sought to know the various departments of the respondents. The result reveals that 5 % of the respondents work at the Medical Library, 15 % of the respondents work at Special Collection and the Research and Development (R&D) units respectively. Another 14 % works at Acquisition Unit while 16 % of the respondents work at the Readers Services and Serials Units respectively. Result also shows that 8% of the respondents work at Open Access and E-Library respectively while 3% of the respondents were attached to the University Librarians' office. On the gender of the respondents, the result shows that 130 (61 %) of them were female while 83 (39 %) were male. The result reveals that there were more female librarians than their male counterpart which indicates a gender imbalance among the respondents.

5. FINDINGS

5.1 Research Questio: Does the library have VLS on the Internet?

The first research question requires the respondents to indicate if their library had VLS. The result shows that majority or 199 (93 %) responded in the affirmative while a lower number or 14 (7 %) responded in the negative. The overwhelming positive response signifies that a larger number of university libraries in South-South zone of Nigeria have VLS for their library users.

5.2 Research Question: What kind of VLS does the library have on the Internet?



N = 213

Figure 2. Showing the kind of virtual library spaces.

The result in figure 2 shows the kind of virtual library space that the university library maintains on the Internet. The result reveals that 176 (82.6 %) of the respondents agree that their library has ILS, 156 (73.2 %) of the respondents agree that their library had ERM. Another 140 (65.7 %) of the respondents indicated that their library had social media sites (Facebook, Twitter, etc.), 135 (63 %) of the respondents agree that their library had website while 128 (60 %) of the respondents agree that their library had digital library. The result also reveals that 124 (58.2 %) of the respondents agree that their library had Web catalog, another 95 (44.6 %) of the respondents agree that they had institutional repository while 75 (35 %), 65 (30.5 %), 35 (16.4 %) and 33 (15.4 %) of the respondents agree that their library had Library Blog, cloud storage facility, open courseware and OER respectively. This result implies that the university library maintains several VLS on the internet.

5.3 Research Question: What are the available information resources on VLS?

The result in Table 1 reveals available information resources on university VLS. The result indicates that majority or 89.2 % and 83.6 % of the respondents affirm that that e-books and e-journals were always and often available on their VLS. The result also shows that 89.2 % and 49.3 % of the respondents confirm that dataset and courseware were available. The result indicates that 73.7 % and 70.9 % of the respondents indicate that lecture notes and students' projects were always available. Another majority or 83.1 % and 73.7 % of the respondents indicate that e-theses/dissertations and inaugural lectures were always and often available on their VLS. The result shows that fewer respondents 36.6 %, 16.9 % and 30.5 % of the respondents strongly agree and affirms that laboratory results, video recording and image collection were always and often available while majority 63 %, 83.1 and 69.4 % indicate that the resources were rarely and never available. The result in Table 1 further shows that 78% and 79.4 % of the respondents state that newsletter and conference proceedings were always and often available on their VLS for their digital library users. This result implies that there were available electronic information resources on the university library VLS for its users.

Table 1. Showing available information resources on university library's VLS

Available information resources	Always available	Often available	Rarely available	Never available
e-book	157 (73.7)	33 (15.5)	13 (6.1)	10 (4.7)
e-journal	121 (56.8)	57 (26.8)	13 (6.1)	22 (10.3)
Dataset	154 (72.3)	36 (16.9)	-	23 (10.3)
Courseware	49 (23)	56 (26.3)	-	108 (50.7)
Lecture notes	75 (35.2)	82 (38.5)	10 (4.7)	46 (21.6)
Students projects	65 (30.5)	86 (40.4)	13 (6.1)	49 (23)
e-theses and dissertation	88 (41.3)	89 (41.8)	-	36 (16.9)
Inaugural lecture	75 (35.2)	82 (38.5)	10 (4.7)	46 (21.6)
Laboratory results	65 (30.5)	13 (6.1)	86 (40.4)	49 (23)
Videos recording	36 (16.9)	-	88 (41.3)	89 (41.8)
Image collections	59 (27.7)	6 (2.8)	48 (22.5)	100 (46.9)
Newsletter	96 (45.1)	70 (32.9)	12 (5.6)	35 (16.4)
Conference proceedings	109 (51.2)	60 (28.2)	6 (2.8)	38 (17.8)

N = 213

5.4 Research Question: What kind of request do librarians receive on VLS?

In Table 2, the result shows that 69.8 % of the respondents strongly agree and agree that they receive request for downloading of e-books and e-journals. Another 59.1 % of the respondents strongly agree and agree that they receive feedback about library services on their virtual library space. The result also reveals that 69.6 % of the respondents attest that they receive request for training on the use of library resources. Furthermore, the result in Table 2 shows that 83.1 % of the respondents strongly agree and agree that they receive requests to access electronic databases while 78.3 % of the respondents strongly agree and agree that they receive requests for support services and 74.4 % of the respondents strongly agree and agree that they receive requests for research materials on the library virtual space. This result signifies that VLS is a proven medium for receiving, responding and providing information services to the library users.

Table 2. Kind of request received on VLS

Request received on VLS	Strongly agree	Agree	Strongly disagree	Disagree
I receive request for downloading of e-books and journal articles	43 (18.7)	117 (50.9)	9 (3.9)	44 (19.1)
I receive feedback about the library services	41 (17.8)	95 (41.3)	22 (9.6)	55 (23.8)
I receive request on training in the use of library resources	54 (23.5)	106 (46.1)	31 (13.5)	22 (9.6)
I receive request to access electronic databases	63 (27.4)	128 (55.7)	17 (7.4)	22 (9.6)
I received request for support services	63 (27.4)	117 (50.9)	11 (4.8)	22 (9.6)
I receive request for research materials	85 (37)	86 (37.4)	11 (4.8)	31 (13.5)

N = 213

5.5 Research Question: What is the frequency and kind of information that the library disseminate on VLS?

The result in Table 3 shows the frequency of posting of information and services at the VLS. The result reveals that the respondents shared information and services daily, weekly, bi-monthly, monthly and quarterly on their VLS for their library patrons. This is evident as majority or 55 % and 22 % of the respondents share current awareness and SDI weekly and daily respectively to the users. Similarly, 23.1 % and 31.8 % also disseminate new arrivals on weekly and daily basis, 8.5 % and 13.8 % disseminate new arrivals quarterly and monthly while 18.5 % never disseminate new arrivals. The result in Table 3 also reveals that majority or 50.3 % of the respondents shared developing stories on technological advancement bi-monthly on their VLS. Another 45.3 % and 13.8 % of the respondents disseminate targeted information daily, weekly and monthly to users based on their information needs. The result further shows that majority or 41.1 % of the respondents create awareness for current issues/ events weekly while 18.5 % and 13.8 % did the same quarterly, bi-monthly and daily respectively. The result also indicates that majority or 45.3 % share e-books, articles, and other materials to users.

Table 3.

Information and frequency	Quarterly	Monthly	Bi-monthly	Weekly	Daily	Not at all
Current awareness/SDI to users	-	22 (8.5)	36 (13.8)	143 (55)	59 (22.6)	-
New arrivals	22 (8.5)	36 (13.8)	11 (4.2)	60 (23.1)	83 (31.8)	48 (18.5)
Developing issues on technological advancements	24 (9.2)	48 (18.5)	131 (50.3)	22 (8.5)	24 (9.2)	11 (4.2)
Information to users based on their needs	11 (4.2)	11 (4.2)	36 (13.8)	36 (13.8)	118 (45.3)	48 (18.5)
Create awareness on current international, national and local issues and events	48 (18.5)	11 (4.2)	36 (13.8)	107 (41.1)	36 (13.8)	22 (8.5)
E-books, articles, and other materials to users	22 (8.5)	-	48 (18.5)	118 (45.3)	48 (18.5)	24 (9.2)
Link to online resources such as (OER)	11 (4.2)	24 (9.2)	95 (36.5)	11 (4.2)	71 (27.3)	48 (18.5)
Link to the library portals, website and digital resources	11 (4.2)	11 (4.2)	36 (13.8)	36 (13.8)	166 (63.8)	-
Link to online public access catalog (OPAC)	24 (9.2)	11 (4.2)	36 (13.8)	11 (4.2)	178 (67.5)	-

N = 213

5.6 Research question: What are the challenges facing the development of VLS at the library?

The result in Table 4 shows that there are several challenges facing the development of VLS at the university library under study. The result reveals that inadequate funding (X = 3.5) was a challenge. Irregular power supply with X = 3.2 was also a challenge for the development of VLS while poor internet connection and bandwidth (X = 3.5) was a challenge. The result indicates that lack of technical knowledge and skill by librarians were less of challenge for the development of VLS (X = 2.2). However, inadequate ICT infrastructure with X = 2.8, lack of training with X = 2.7 and poor technical support with X = 3.0 were challenges for the development of VLS. With an overall X = 2.9 the result in Table 4 implies that the challenges are enormous and weighty and can hinder the development of VLS at the university library.

Table 4. Challenges of developing VLS at the university library

Challenges	*N*	*Min*	*Max*	*Mean (X)*	*Std. Dev*
Inadequate funding	213	1.00	4.00	3.5	0.80
Irregular power supply	213	1.00	4.00	3.2	0.99
Poor internet connectivity and bandwidth	213	1.00	4.00	3.5	0.94
Lack of technical knowledge and skill of librarians	213	1.00	4.00	2.2	1.28
Inadequate ICT infrastructure	213	1.00	4.00	2.8	1.11
Lack of training	213	1.00	4.00	2.7	1.11
Poor technical support	213	1.00	4.00	3.0	1.04
Grand Mean				2.9	

6. DISCUSSION OF FINDINGS

The adoption of digital platforms for the provision of information services at the library is increasing dramatically. There is evidence in Fig. 1 that university library has a host of VLS that are used to provide information services to virtual library users. The findings in Fig. 1 also reveal that there were above 100 of the respondents out of the 233 in this study who indicated that their library hosted Web-catalog, digital library, library website, social media sites, ERM and ILS. This finding is synonymous with the findings of[11] and[12] which indicate that libraries were utilising VLS to provide information to users. The findings reveal that university libraries are recognising the importance of VLS as a medium of communication and information sharing with library patrons. There is a high demand for VLS by library users who are internet savvy because of their learning demands and differences in information needs[2]. VLS is known for increasing access to multiple digital resources; hence, exploiting would help to boost the image of the library. Digital libraries are extremely important because it provide access to e-books, journals, and educational content such as OER with a high patronage by library patrons[4].

The findings in Table 1 reveal the information and sources that were available on VLS across the university libraries in this study. It shows that there were a number

of information resources on the VLS that can enhance the research activities of library users. The finding shows that e-books, e-journals, dataset, courseware, lecture notes, theses and dissertations among others were part of the information resources on the VLS. These findings substantiate the findings of[9] that has shown that research papers, statistical data and teaching syllabuses were available on VLS and were used by lecturers in Nigerian universities.

On the kind of request that the librarians receive on VLS, the findings in Table 2 show that VLS serve as a medium for librarians to receive requests that border on downloading of e-books, journal articles, research papers and training from the library patrons. The finding also reveals that librarians receive feedback from majority of VLS users about the library services. The findings indicate that majority or above 50 % of the respondents confirmed that they receive request from the library patrons on various needs. This means that VLS is a veritable means of engagement with library patrons. This finding confirms the assertion that VLS is useful in the educational field for students, teachers and researchers to communicate with librarians[10]. The use of VLS has been experimented with positive results in several libraries including Johns Hopkins Sheridan Libraries which hosted a YouTube live stream featuring study tips[7].

In Table 3, the findings show the frequency of VLS usage by the respondents. The findings indicate that the respondents dispatch information on daily, weekly, bi-monthly, monthly and quarterly basis to the users. The level of communication between the librarians and users may not be unconnected to the fact that modern library users prefer VLS[6]. The findings reveal that there were some variations in the amount of information that was communicated to the users. This may have been a result of the number of requests from the users. However, the finding shows that there was more engagement among the patrons on bi-monthly, weekly and daily compared to quarterly and monthly.

The finding in Table 4 shows that there were challenges affecting the use of VLS at the university library. These challenges can be classified into two: managerial challenges and technological challenges. Among the managerial challenges were inadequate funding and a lack of training and technical support. This finding substantiates the findings of[13] and[16] who found out that shrinking library budgets affected the development of VLS in university libraries in Nigeria. On the other hand, the technological challenges were a lack of ICT infrastructure, poor power supply and lack of internet connectivity. This finding corroborates with that of[9] and[14] who reported that lack of technical infrastructure, epileptic power supply, network and internet problems and librarians' lack of technical skills were the major challenges facing the realisation of VLS at most of the university libraries. These challenges facing the realisation of VLS are affecting the potential impacts of VLS on library patrons. With the overall mean of 2.9 which is higher than 2.5 acceptable mean, it shows that the challenges facing the development of VLS are myriad and overarching.

7. CONCLUSION

This study assesses VLS for digital information development at the university library in Nigeria. The adoption, maintenance and use of VLS at the university library in Nigeria is encouraging. The results buttress the fact that university libraries are utilising VLS to bring together several information resources and making information and services more accessible to online users. Indeed, virtual library is a database for electronic resources, enabling access to them. This study reveals that the use of VLS as a medium of communication helps to boost real-time information services to the information users through online engagements that contribute to revive trust in the library as a recourse for information access. The survival of innovative information services such as VLS in the library depends on managerial and technological factors. Those factors as shown in Table 4 are impediments in actualising VLS at the university library and may ridicule the good intention of the library towards providing information and services to its users.

8. RECOMMENDATION

From the foregoing, the researchers make the following recommendations:

1. The library management should encourage the librarians to increase the use of all available VLS for improved information services to online information users.
2. The university library should sensitize users on the importance of courseware, video recording and image collections to increase the use of VLS.
3. The university librarians should endeavour to increase the frequency of posting information as they unfold for the users on VLS.
4. The library management should put together training programmes for librarians to be acquainted with advanced technologies and VLS to enhance the delivery of virtual services to users.
5. University management should endeavor to improve funding for the acquisition of ICT facilities to enhance the provision of virtual services to library users.
6. The university management should ensure to provide a constant power supply to the library department using alternative sources of energy to enhance the use of VLS for effective information services to the virtual library users.

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