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Availability and accessibility of electronic information resources in federal college of education libraries in Northern Nigeria

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The study investigates the availability and accessibility of electronic information resources in federal college of education libraries in Northern Nigeria. The research adopted mixed research methods with a concurrent triangulation research design. The population of the study is 34, 846 library users and 12 college librarians. The sampled respondents were 378 and 9 college librarians. The research used interview and questionnaire for data collections. The data collected were analyzed using thematic analysis and descriptive and inferential statistics. The findings of the study revealed that electronic information resources were found to be available on the platform of e-databases, institutional repository, e-Granary and CDS. Majority of the users had access to e-journal, e-newspapers and audio visual resources available. E-manuscripts, e-dissertations/theses/projects, e-discussion and e-images available were not accessible by majority of the respondents. The libraries had invested in EIRs development and provision of good access is a prerequisite to maximum use of the resources to enhance research, teaching and learning. The study recommended that libraries should acquire resources that are relevant to all users and provide unlimited access remotely, and network facilities should be boosted. Also, training on search skills should be given to enable users have access and use the resources without difficulty. Lastly, the management of the college and their libraries should ensure that all the challenges, such as power outages, denial of access and network fluctuations are minimized in order to encourage access and use of the resources in the libraries.

Key words: Availability, accessibility, barriers, Electronic Information Resources, libraries, training.

INTRODUCTION

Availability of EIRs in academic libraries has changed the resources users access and use. They now tend to browse and use only what is easily accessible, because access to EIRs has decreased the time spent searching for information as deduced from the review of literature.

All categories of college library users need to be informed of the availability of different types and platform of EIRs and their relevance in supporting research, teaching and learning in the academic environment. This is important because once users are aware of the existence of EIRs

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which are relevant to their academic activities; they might access and use the resources properly. EIRs form one of many formats that the federal college of education libraries in Northern Nigeria collects to support its universal collections. The content of these sources varies from the bibliographic or factual to full text. As these libraries have worked to incorporate electronic information into their collections, services and operations, most of them have found that their existing integrated library systems (ILSs) are not capable of supporting these new resources. Thus, EIRs services are attracting users' attention in today's networked academic environment. Furthermore, provision of unlimited access to EIRs by the college libraries is also an issue of concerns on the use of the resources by patrons. EIRs provide access to information that might be restricted to users because of geographical locations and financial crunch. They provide recent information as they are regularly updated. Effective use of EIRs has a great impact on the quality of research output in any academic environment. Presently, many academic libraries in Nigeria have access to e-information resources in multiple ways. Interestingly, the emerging information environment at the global level now focuses more on the opportunities offered by the emerging ICTs that facilitate easy access to electronic information resources (Abubakar, 2010). The ability to access electronic information resources efficiently depends on basic computer and network skills, knowledge of what is available and how to use it and the ability to define a research problem. To access electronic information resources, several strategies are used by the library users, such as author, subject, title, keyword search / phrases, date of publication, etc. These electronic information materials are accessible from publishers' website or through aggregators' site at the subscription price offline, whereas some are available as complementary. Therefore, this prompts the conduct of this research by adapting interview and questionnaire as the instruments used for data collection.

REVIEW OF RELATED LITERATURE

The availability of EIRs is about information being accessible as needed, when needed and where needed. The objective of availability is to enable access to authorized information or resources. Ankrah and Acheampong (2017) revealed that there are different types of e-resources available at the UPSA Library, as itemized: Emerald, Wiley Online Library, Sage Journals Online, EBSCOHOST, JSTOR, Oxford University Press, Policy Press Journals, Taylor and Francis, and IMF e-Library. Availability of EIRs refers to ready access to information in electronic format with little or no stress to the library user. Availability of electronic information resources in the library is not just enough; users must

know of their existence to be able to use them effectively; and to put to use what is available. Users must possess requisite skills that will enable them exploit these resources and services. Ternenge and Kashimana (2019) reported that availability of electronic information sources relates to the provision for and inclusion of the resources in the collection of the libraries at the disposal of users in academic institutions. On the other hand, Ibrahim (2014) observed that the availability of electronic resources depends on the availability of funds as well as the demand for their use in libraries. Although, there are other factors that can contribute to the availability of EIRs in the libraries, such as awareness about the resources existence on the side of acquisition librarians, adequate knowledge on how to acquire them etc. In the words of Ternenge and Kashimana (2019), availability of electronic resources provides access to authoritative, reliable, accurate and timely access to information. In addition to this, the resources can enable innovation in teaching and increase timeliness in research. There has been a rapid increase in the availability of EIRs in academic libraries and with vendors. Almost all are available to the academic community through the Library Web Computers; some of these may be available from the user at home (Okoye and Ugwuanyi, 2012).

Olasore and Adekunmisi (2015) observed that libraries have transformed into digital and virtual libraries where books, journals and magazines have been transformed into e-books, e-journals, CDs and so on. Similarly, reference materials like encyclopedias, dictionaries, handbooks and so on as well as abstracting and indexing services are also available online. These have, however, increased global dissemination of information to individuals, most especially researchers. The number of EIRs available in the market is enormous. A major issue is whether these EIRS meet the needs of college library users. Therefore, this research found out the types of EIRs available in these libraries under study. Access to electronic information resources has changed the pattern of library services in the digital era. Libraries now have both printed documents as well as electronic information resources in their collections. The electronic documents can be stored, accessed and delivered as and when required; therefore; the services of libraries are not confined within the four walls but are integrated into local, regional, national and international networks. It is common knowledge that virtually all scholarly and academic journals, electronic databases, online library catalogues, grey literature and other relevant scholarly materials in all fields of knowledge are now accessible on the internet (Okiki, 2012). Due to the availability of equipment and connectivity, users can access and use a particular article because EIRs are not time or geographic-bound. E-resources can be reached, searched and retrieved simultaneously and instantly without consideration of the user's location. The active dissemination of e-information creates motivation to the

user and pushes them to use the e-journals if they are connected to the network. The dissemination mechanism needs the acceptance of new articles by the database (Rugengamanzi, 2013). Although, information access in Nigeria, according to Kamba (2015), was crippled as a result of failure from our libraries and information centres for not meeting the needs of the clientele mainly because of inadequate funds, failure to anticipate future needs and keep pace with technology. Chandran (2013) reported that the maximum 66 (53.65%) respondents accessed electronic resources twice a week, followed by 36 (29.26%) everyday and 15 (12.21%) once a week. Only 6 (4.88%) used electronic resources rarely. Most of the respondents (60.16%) spent "one hour" to access the electronic resources. Only 14.64% spent "more than two hours" to do so.

Again, Ani et al. (2014) revealed that respondents that access and use e-resources in research frequently publish more articles in international journals than those who do not. They concluded that the main obstacle to access to electronic information resources in the library is the lack of ICT infrastructure and that physical access to the ICTs that provide that information is clearly a more pressing problem than a lack of available information itself. Both library staff and library users need to develop both the necessary information seeking skills and basic ICT skills to find appropriate resources to meet their requirements. Access to electronic information resources may be remote access, which refers to the use of electronic resources via computer networks or direct access, which is the use of electronic resources via carriers (such as, discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment. Although there is continuing evidence for increased access to ICTs and online facilities in the developing world, physical access to suitable ICTs and reliable connections to the Internet remains challenging and costly for many libraries in the developing nations. Considering the above literature reviewed related to availability and access to electronic information by library users general, the researcher examined the availability and access to electronic information resources in libraries under study.

Statement of the problem

Electronic information resources in academic libraries witness a significant growth as a major part of library collections. Therefore, access to, and use of EIRs is very essential for library users. The shift from print information resources to electronic resources requires provision of unlimited access to the resources; creating awareness about the availability of the resources that will enable users to search and utilize the resources. This becomes necessary because the personal observation and enquiry made by the researcher revealed that many college

library users in the Northern Nigerian academic community cannot access the EIRs independently. They have to resort to the use of library and cafe attendants for most of the searches and online transactions. This however, indicated that access to EIRs is still not encouraging in academic libraries. This could be as a result of: insufficient ICT facilities, such as computers, slow internet connectivity; which discourages users from consulting the resources, lack of adequate skills in identifying, retrieving and using EIRs or shortage of qualified staff to assist users in accessing EIRs. In this regard, this research was conducted to investigate the availability and accessibility of EIRs to proffer solutions to the existing challenges of electronic information resources in libraries.

Research questions

The following research questions were addressed:

1. What electronic information resources are available in the libraries?
2. How accessible are electronic information resources in the libraries to users?
3. What access points of electronic information resources are available in the libraries?
4. What types of training were received by library users for accessing electronic information resources in the libraries?
5. What are the access barriers to electronic information resources in the libraries?

METHODOLOGY

Pragmatist research paradigm was used in the current study because of its combined philosophy and reality. Triangulation mixed research design was used to collect qualitative data through structured interviews and quantitative data, using a questionnaire in the libraries under study. The population includes 12 college librarians and 34,846 library users of federal college of education libraries in Northern Nigeria. The sampled respondents are 378 plus 9 college librarians. The Research Advisors (2006) sample size table is used, which states that, for a population of 25,000 – 49,999, a sample of 378 is reasonable at a 95% confidence and a 5.0% margin of error. The data collected from the questionnaire were sorted, scrutinized, edited and analyzed using descriptive and inferential statistics with the Statistical Package for Social Sciences (SPSS) (version 20.0). Accordingly, data collected through in-depth interview were reported using thematic analysis with themes and sub-themes.

ANALYSIS AND DISCUSSION OF THE FINDINGS

The questionnaire administered to the college library users and returned is presented in Table 1. Table 1 presents the response rates obtained from the respondents of the study. A total of 378 copies of the

Table 1. Questionnaire administration.

S/N	Library	QD	QR		QNR	
		N	N	%	N	%
1	FCE Yola	46	43	93	3	7
2	FCET Gombe	58	58	100	0	0
3	FCET Potiskum	30	28	93	2	7
4	FCE Zaria	26	26	100	0	0
5	FCET Bichi	48	44	92	4	8
6	FCE Kastina	61	55	90	6	10
7	FCE Kontagora	52	45	87	7	13
8	FCE Pankshin	40	36	90	4	10
9	FCE Okene	17	17	100	0	0
	Total	**378**	**352**	**93**	**26**	**7**

QD=Questionnaire Distributed, QR=Questionnaire Returned, QNR=Questionnaire Not Returned, N= Number, % =Percentage.
Source: Authors

Table 2. Schedule of the interview.

S/N	Name of college	Code	Participant	Time of interview	Interview method
1	FCE, Yola	P1	E- Librarian	10:10-11:00am	Face-to-face
2	FCE (Tech), Gombe	P2	Dep. College Librarian	10:30-11:25am	Face-to-face
3	FCE (Tech), Potiskum	P3	College Librarian	11:00-11:45am	Face-to-face
4	FCE, Zaria	P4	E- Librarian	12:00-12:56pm	Face-to-face
5	FCE (Tech), Bichi	P5	E-Librarian	09:35-10:28am	Face-to-face
6	FCE, Kastina	P6	E-Librarian	12:10-12:57pm	Face-to-face
7	FCE, Kontagora	P7	E-Librarian	01:32-2:24pm	Telephone
8	FCE, Pankshin	P8	College Librarian	11:30-12:25pm	Face-to-face
9	FCE, Okene	P9	E-Librarian	11:23-12:16pm	Telephone

Source: Authors

questionnaire were administered to the college library users. 352 (93%) were returned and found useable; while, only 26 (7%) were not returned. The researcher and research assistants made efforts to retrieve the copies of unreturned questionnaire but it proved abortive. The high turnover of responses from the respondents was ascribed to several follow ups made by the researcher and research assistants to the responding institutions when the instruments were administered.

The position of the participants and the date of the interview

Table 2 indicates the position of the participants, the code assigned to each participant, the methods of interview and the duration of each interview. The researcher interviewed all the nine participants of the responding college libraries and had to formally seek for permission from the college librarians in all the colleges under study to conduct the interview and administer the questionnaire. The librarians implored the participants and research assistants to give the researcher all the necessary support and cooperation in the data collection exercise. The interviews were held in the respective offices of the 7 participants face-to-face, while telephone interview was conducted with 2 participants. Their responses were analyzed according to the research variables.

Electronic information resources available in the college libraries

The researcher asked the participants on Electronic Information Resources (EIRs) available in their libraries. The list of EIRs and their platforms provided by them are presented in Table 3. Results in Table 3 revealed that e-book and e-journals were the most available EIRs in all the Federal College of Education libraries. In addition to e-books and e-journals, e-Newspapers, e-magazine, e-

Table 3. Available EIRs.

Participant	Types of EIRs	EIRs platform / Database
P1	E-books, e-journals, e-discussion e-newspapers, e-magazine, e-dissertation /thesis/project, e-conference /workshop papers, audio visual resources, e-images and e-manuscripts.	EBSCO Host, ERIC,AGORA, Hinari, JSTOR, OARE, Proquest, Lexis, Disestia, Academic Journal , e- Granary, Institutional Repository and CDs/DVD
P2	E-books, e-journals, e-newspapers, e-magazines, e-dissertation /thesis/projects and e-conference / workshop papers.	EBSCO Host, ERIC, Sciencedirect, Emerald, AGORA, Hinari, JSTOR, OARE, ARDI, Booksee, TEEAL, Google scholar and CDs/ DVD
P3	E-books, e-journals, e-newspapers and audio visual resources.	ERIC, OARE, Academic Journal, CDs/DVD
P4	E-books, e-journals, e-newspapers, e-magazine and e-dissertation /thesis.	E-Granary, ERIC, JSTOR, Academic Journal, Google Scholar and CDs/DVD
P5	E-books, e-journals and e-newspapers.	EBSCOhost, Jstor and CDs/DVD
P6	E-books and e-journals.	Ebrary, CDs/DVD and Institutional Repository
P7	E-books and e-journals.	Emerald, EBSCOhost, e-Granary, Academic Journals and CDs/DVD etc.
P8	E-books, e-journals and e-newspapers.	ERIC, JSTOR, EBSCOHost, Emerald, Academic Journal, TEEAL and CDs/DVD
P9	E-books, e-journals, e-dissertation /thesis /project, e-conference /workshop papers and audio visual resources	e-Granary, AGORA, Hinari, World library net and CDs/DVD

Source: Authors

dissertation/thesis/project, e-conference/workshop papers and audio visual resources, e-images and e-manuscripts were only available in the college libraries of the participants (P1, P2, P3, P4 and P9). On the platform of EIRs, majority of the college libraries had e-databases, institutional repository, e-Granary and CD Rom / DVD, which contained different collections of EIRs. This finding implies that all the libraries were providing information resources to support learning, teaching and research but the volume of their collections varies. The results reported above confirmed that the federal college of education libraries acquired electronic information resources of different types for the various academic communities. The findings of this study agree with those of Ankrah and Acheampong (2017) in a study "students' use of electronic resources in University of Professional Studies, Accra, Ghana", that there are different types of EIRs available at the UPSA Library, as itemized: Emerald, Wiley Online Library, Sage Journals Online, EBSCOhost, JSTOR, Oxford University Press, Policy Press Journals, Taylor and Francis, and IMF e-Library. Again, Okoye and Ugwuanyi (2012) in a study "management of electronic resources by Cataloguers in

Nigerian Federal University Libraries" revealed that there has been a rapid increase in the availability of EIRs in academic libraries to support research, teaching and learning.

Access to Electronic Information Resources in the library

Respondents were asked if they accessed available EIRs in their college libraries and their responses are presented in Table 4. Table 4 reveals respondents access the following EIRs in most of their libraries: e-newspapers (314/93%), e-journal (311/92%), audio visual resources (195/58%), e-magazine (193/57%) and e-books (189/56%). This clearly indicates that greater number of them had access to these resources for use which would positively impact the research carried out by those users. Although the aforementioned EIRs are accessible above average in most of the libraries, there are some which are accessible below average. Access to e-magazine (8/2%) and audio visual resources (8/2%) was recorded undecided by respondents from all college

Table 4. User Access to electronic information resources (N=338).

S/N	Variable	A	%	UD	%	NA	%
1	e-books	189	56	1	0	8	2
2	e-journals	311	92	2	1	3	1
3	e-dissertations / theses /project	64	19	2	1	11	3
4	e-Conference /Workshop papers	128	38	2	1	4	1
5	e-discussion	77	23	6	2	13	4
6	e-discussion	314	93	2	1	3	1
7	e-magazines	193	57	8	2	6	2
8	audio visual resources	195	58	8	2	4	1
9	e-Images	140	41	5	1	12	4
10	e-Manuscripts	72	21	8	2	15	4
	Total	1683	50	44	1.3	79	2.3
	X	168	50	4	1	8	2
	St.D	91	27	3	1	5	1

A=Accessible, UD=Undecided, NA=Not Accessible, %=Percentage, X=Mean, St.D=Standard Deviation.
Source: Authors

libraries out of their total that indicated awareness of the aforementioned resources. A fewer number indicated that they were undecided on accessing e-journals 2(1%) and e-newspapers 2(1%) in their libraries, respectively. This implies that these respondents had not tried accessing these EIRs in question to determine whether they are accessible or not. The study revealed low access to e-manuscripts (72/21%), e-dissertation/thesis/project (64/19%), e-discussion (77/25%), e-image (140/41%) and e-Conference/ Seminar/ Workshop papers (128/38%) in the college libraries under study. This may be due to various reasons, such as inadequate awareness, lack of skills and lack of infrastructure. This is because all the college libraries under study reported the availability of the resources. The findings also indicated that e-Conference / Seminar / Workshop papers (128/38%) as EIRs with low scores are usually accessible by most respondents from two college libraries like FCE Zaria and FCE(T) Gombe. This implies that despite the fact that these resources were acquired and the respondents were aware of them still they are not all fully accessible due to one challenge or the other such as inadequate internet facility and electricity supply. This finding is similar to the observation of Rugengamanzi (2013) that due to the availability of equipment and connectivity, users can access and use a particular article because e-resources are not time or geographically bound. E-resources can be reached, searched, retrieved simultaneously and instantly without consideration of the user's location. The active dissemination of e-information creates motivation to the users and pushes them to use the e-resources if they are connected to the network. The finding is contrary to that of Chandran (2013) in a study titled "Use and user perception of electronic information resources", which discovered that a maximum of 66 (53.65%) respondents accessed electronic resources twice a week, followed by

36 (29.26%) everyday and 15 (12.21%) once a week.

Access points of Electronic Information Resources

Respondents were asked where they access library EIRs. The result is presented in Table 5. The library customers access electronic information resources in their libraries with (231/68%) response scores, followed by the college premises (153/45%) either through hotspot (Wi-Fi) or cable connections; whereas, accessing outside the college premises has 68/20% response scores. Most of the respondents accessed the resources from their library. The research also discovered that very few library customers in FCE(T) Potiskum (2/7%) and FCE Kastina (24/45%) access the resources in their Libraries. However, majority of the library users in Potiskum (20/87%) access EIRs anywhere in the college through hotspot (Wi-Fi) or cable connections to offices, hostels, classes, etc. The hotspot access of FCET Potiskum could be from ICT directorate because Potiskum College Library affirmed that they have no access to wireless points and cable outside the library yet. None of the respondents mentioned other access points apart from the ones listed in the questionnaire. This implies that most of the respondents access electronic information resources in their college libraries. This could be due to the result of restriction and configuration from the EIRs service providers that the libraries agreed upon during acquisition of the resources.

Types of training received by library users for accessing EIRs

The respondents were asked if they were trained and the

Table 5. Access Points of EIRs (N=338).

S/N	Libraries	In the library		In college premises		Outside college premises	
		F	%	F	%	F	%
1	FCE Yola	37	86	23	53	0	0
2	FCET Gombe	43	77	30	54	9	16
3	FCET Potiskum	2	9	20	87	6	26
4	FCE Zaria	19	73	14	54	4	15
5	FCET Bichi	34	79	11	26	19	44
6	FCE Kastina	24	45	26	49	12	23
7	FCE Kontagora	32	78	12	29	6	15
8	FCE Pankshin	30	83	10	28	12	33
9	FCE Okene	10	59	7	41	0	0
	Total	231	68	153	45	68	20
	X	26	65	17	47	8	19
	St.D	13	25	8	19	6	14

F=Frequency, **%=** Percentage, **X=**Mean, **St.D=** Standard Deviation.
Source: Authors

Table 6. Types of training received (N=338).

S/N	Libraries	Library orientation		Conference / seminar		Workshop		Personal training		None	
		F	%	F	%	F	%	F	%	F	%
1	FCE Yola	37	86	12	28	9	21	15	35	0	0
2	FCET Gombe	30	54	23	41	25	45	4	7	0	0
3	FCET Potiskum	14	61	2	9	0	0	5	22	7	30
4	FCE Zaria	19	73	9	35	4	15	4	15	0	0
5	FCET Bichi	34	79	5	12	0	0	17	40	5	12
6	FCE Kastina	24	45	13	25	4	8	16	30	8	15
7	FCE Kontagora	32	78	6	15	6	15	18	44	0	0
8	FCE Pankshin	30	83	3	8	2	6	15	42	4	11
9	FCE Okene	10	59	2	12	0	0	6	35	1	6
	Total	230	68	75	22	50	15	100	30	25	7
	X	26	69	8	20	6	12	11	30	3	8
	St.D	9	14	7	12	8	14	6	13	3	10

F=Frequency, **%=**Percentage, **X =**Mean, **St.D=**Standard Deviation.
Source: Authors

type of training they received on *i*-skills. Their responses are presented in Table 6. From Table 6, it was discovered that the most common training attended by the respondents was library orientation (230/68%); majority agreed that library orientation was the main training they attended in respect of *i*-skills to access and use EIRs. While the training that was not common to them were personal training (100/30%), conference/ seminar (75/22%) and the last training is workshop (50/15%). This could be attributed to the fact that the libraries were not providing training to users on how to access and use EIRs through seminars/conference or workshop as observed by the researcher. But some of the respondents from FCET, Gombe (seminar/conference 23/41% and workshop 25/45%) might have attended the programmes organized by the colleges at large or other organizations apart from their college libraries. Considering the mean and standard deviation of the results on Table 6, majority of the respondents did not attend much training on *i*-skills needed to access and use the available EIRs in the college libraries. They were expected to acquire the techniques to search, manipulate and use EIRs in their libraries through workshops, conferences and seminars and not only depend on library orientations that were mostly organized once in an academic session.

Table 7. Access Barrier(s) to EIRs (N=338).

S/N	Libraries	Power outage		System failure		Low bandwidth		Limited Time		Lack of availability		Lack of search skills		Lack of assistance	
		F	%	F	%	F	%	F	%	F	%	F	%	F	%
1	FCE Yola	19	44	2	5	17	40	0	0	3	7	3	7	12	28
2	FCET Gombe	12	21	0	0	22	39	0	0	1	2	2	4	5	9
3	FCET Potiskum	19	83	6	26	20	87	0	0	22	96	12	52	1	4
4	FCE Zaria	19	73	2	8	4	15	0	0	12	46	3	12	7	27
5	FCET Bichi	40	93	4	9	39	91	0	0	30	70	15	35	18	42
6	FCE Kastina	43	81	2	4	33	62	2	4	26	49	13	25	8	15
7	FCE Kontagora	32	78	0	0	29	71	0	0	4	10	8	20	14	34
8	FCE Pankshin	33	92	3	8	12	33	0	0	17	47	5	14	15	42
9	FCE Okene	15	88	0	0	0	0	0	0	5	29	7	41	10	59
	Total	232	69	19	6	176	52	2	1	120	36	68	20	90	27
	X	26	73	2	7	20	49	0	0	13	40	8	23	10	29
	St.D	11	24	2	8	13	31	1	1	11	31	5	17	5	18

F=Frequency, %= Percentage, X=Mean, St.D= Standard Deviation.
Source: Authors

Access barriers to Electronic Information Resources in the library

The respondents were asked about the access and use barriers of EIRs in the college libraries. Their responses are presented in Table 7. There are access barriers experienced in accessing and using electronic information resources in the libraries under study. Majority indicated power outage (232/69%) and low bandwidth (176/52%) as a great setback for access and use of electronic information resources in their libraries. This could be attributed to inadequate power supply in the country at large by the power holding companies and the libraries had not provided alternative power supply either through provision of inverter, solar energy or standby generators that could supplement power supply to the libraries for effective and efficient access and use of EIRs. This was followed by lack of availability of relevant EIRs (120/36%) that was scored from all the libraries under study, although only a few below average from FCET Gombe (1/2%) and FCE Yola (3/7%) reported lack of availability of relevant EIRs as a barrier to accessing EIRs in their libraries. This could be as the result of the libraries acquiring the EIRs which were not selected by users/ faculty members based on their needs and relevancies for teaching, learning and research. Furthermore, low bandwidth was considered by fewer respondents from FCE, Zaria (4/15%), FCE, Pankshin (12/33%), FCET, Gombe (22/39%) and FCE, Yola (17/40%). Low bandwidth could be associated with network challenges by the service providers to the colleges or the libraries where the EIRs were accessed. Still, most of those from Bichi (30/70%) and Potiskum (22/96%) reported lack of availability of relevant electronic information resources as the major challenges affecting access and use of the

resources. Therefore, power outage and low bandwidth were considered by most respondents as the major access barrier experienced in using electronic information resources in the libraries under study.

Conclusion

The study concludes that the availability of EIRs in these college libraries indicated that they were not left out in the global trend to provide and promote access to current EIRs for teaching, learning and research. Provision of good access to EIRs is a prerequisite for their use by library users. In effect, it could be stated that the under utilization of some EIRs like dissertation/thesis/project, e-manuscripts, e-discussion, e-Conference/Seminar/ Workshop papers and e-Images that were available in the college libraries was as a result of their inability to properly provide good access to the information need of library users. Also, inadequate training on how to access and use the resources equally hampered the maximum utilization of such EIRs. Hence, all the stakeholders (government, institutions and individuals) involved in the provision, access and use of electronic information resources have roles to play in the development and addressing the challenges associated with access and use of EIRs.

Recommendations

The study recommends the following:

1. Libraries should acquire more electronic information resources that are relevant to the curriculum of the

institutions.

2. More funds in the budget should be allocated for the acquisition of more relevant electronic information resources.

3. The library management should improve or increase library instruction to users on the availability and accessibility of library electronic information resources.

4. Participate in consortium subscription of relevant and costly EIRs that libraries cannot afford individually, especially online databases.

5. The management of the libraries should ensure that all the challenges, such as power outages, denial of access, network fluctuations and system breakdowns, are minimized in order to promote access and use of the electronic information resources in the libraries.

6. Several access topologies should be configured in order to satisfy the increased demand from laptop owners, who need to access and use EIRs.

7. The Internet bandwidth should be upgraded to enhance the accessibility and use of EIRs, especially online resources.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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