Electronic Database: A Tool for Scholarly Research in Nigerian Universities

Tijjani Abubakar, PhD.,
University Librarian,
Ibrahim Badamasi Babangida University,
Lapai, Niger State, Nigeria
and
Mallam Katamba Abubakar Saka,
Department of Library and
Information Technology, Minna.

Introduction

The advent of information and communication technology has revolutionized the system of acquisition, storage, retrieval, preservation and dissemination of information. In present times, the use of computers to access different varieties of resources has become more convenient than ever before with the emergence of different categories of electronic database. Electronic database searching enables the scholar to access germane articles relevant to his/her field of study. Communication and publication patterns in various areas are being redirected in response to the opportunities for digital archiving and online distribution offered by the internet. Goodrum *et al* (2001) stated that the web has provided a new communication channel for traditional publication of scholarly research as well as dissemination of informal research discussion.

However, more significantly, the electronic database in form of CD-ROMs, online database, is revolutionizing the entire scholarly research process and changing the way that scholars exchange information in the universities. Also, the advent of CD-ROM technology in the early 1980s has been a blessing to researchers in the universities, particularly in the developing countries. This has tremendously supported the acute shortage of relevant and current journal titles in Nigerian universities, especially the electronic versions. Awogbami (1992) reported the diffusion of CD-ROMS in Nigerian Academic and Agricultural libraries. CD-ROMS are

very reliable, especially when it comes to the issue of durability and compactivity.

The Concept of Electronic Database

The term electronic database has been defined differently by different individuals from different perspectives. According to Zinkhan (2004) electronic databases are organized collections of information, data or citations stored in electronic format and searchable by the computer. It is arranged in such a way as to make it easy to obtain specific pieces of information. Electronic database usually contain publication and other resources that can be found in hard copy.

However, most electronic databases have similar features and functions, although the function of performing these functions varies from database to data base. It is also important to state that several examples of electronic databases are now available for use in the conduct of scholarly research in our universities, ranging from specialized database to generalized database. These databases are in most cases being accessible in our university libraries e.g. MEDLINE, AGORA, EBSCOHOST, LISA, HINARI, ERIC, JSTOR, INASP etc.Most of these electronic databases are available online and on CD-ROMs. Research has shown that there are over a million titles in different disciplines on CD-ROMs and diskettes which can be read, downloaded and printed out from the millions of databases available online).

(i) Bibliographic database: This contains citations and subject headings for publications such as books, periodical articles, video tapes or government documents, but not the full text of the cited articles. In other words, it only provides the scholar with the basic descriptive information about the indexed items such as author, title publisher, date etc. they do not contain the items themselves but give the researcher the clue to find the item, e.g. ALEPH.

(ii) Full text Database: As the name implies, it contains the complete text of a work, such as an article, book, poem or essay in the database itself, e.g. Lexis-Nexis etc.

According to Library Journal Survey, EBSCO host is the "overwhelmingly" most used for free online research tool in University in the United States, Euro and many other parts of the World. EBSCO

host is one of the most used for free Web sites in the World and is the Platform for many of the most well known academic databases such as: Academic Search", Business Source" and Communication and Mass Media complete.

EBSCO host offers more than 200 databases, licensing same of the world's best known secondary databases, such as AGRICOLA", ATLA Religion Databases" Biological Abstracts, CAB Abstracts, Econhit" ERIC, Inspoc, Georef, MEDLINE, MLA International Bibliography; The Philosophers Index, PSYCINFO, PSYL ARTICLES, RILM Abstracts of music literature, and more.

It is imperative to note that, no electronic database contains all the information that one needs for a research. Considerations such as subject coverage, publication coverage, data coverage, updates and timelines must be considered.

The Impact of Electronic Database on Scholarly Research in Nigerian Universities

Electronic database such as AGORA, LISA, HINARI, JSTOR etc. has enabled scholars in the university who could not have access to online and e-resources to search the CD-ROMs versions of the online database world. Formson (1999)observed that the absence of an information infrastructure, such as adequate telecommunication facilities for data transmission and skilled manpower, plus the expenses associated with online searching, have hampered the use of online information services in developing countries. With the increasing growth of electronic databases, different categories of scholars in the universities can now access current version of journal articles in the conduct of their research. For instance, Markert et al (1989) observed that physicians can also learn to use a computerized literature searching system and efficiently retrieve materials related to patients' care.

Also, Ogunyade and Oyibo (2003) found that online MEDLINE facilitates the retrieval of information from over 4500 journals published throughout the world on medicine and related area. The availability of the full text of publications and articles implies that this process and development with its recognizable advantages will be useful in the training of medical students. In the same vein, Wu and Anderson (2007) revealed that AGORA now provides a collection of 849 journals to more than 700 institutions in 63 of the 69 eligible countries and is designed to enhance

the scholarship of the many thousands of students, faculty members and researches in Agriculture and Life Sciences in the developing world. On this note, it is perhaps sufficient to state that, electronic databases available for scholarly research in the university, provides the digital content needed to stimulate the bridging of the digital divide in accordance with the ideals of the world summit of information society(WSIS).

Moreover, it is noteworthy to mention that the introduction of electronic database in variety of format has made faculty staff in the university more knowledgeable about different IT skills which to some extent facilitate the utilization of electronic resources vis-à-vis facilitate research and development in the university community.

Constraints to Electronic Database use in Scholarly Research in Nigerian Universities

In spite of the fact that the use of electronic database for scholarly research has to a large extent contributed positively to the growth of research and development in the universities, yet, there are some attendant problems associated with the use of these databases. Some of these problems are:

- High cost of electronic Database: One of the major problems affecting the full utilization of electronic database of all categories in the Nigerian universities is the continuation and sustainability of subscriptions to these databases, including those established by donor agencies. Today, University libraries in Nigeria with their budget crises due to the under funding of universities, cannot afford to continue subscribing to these electronic databases. Based on this dilemma, Ogunyade and Oyibo(2003) posits that over the years, the medical library of the university of Lagos has made efforts towards providing MEDLINE both on CD-ROMs and online, however, lack of funds to purchase the required computers limited these efforts. Other University Libraries also face similar problems that affect smooth and regular acquisition of their databases.
- Poor and inadequate telecommunication facilities: This is another great impediment to the utilization of electronic databases for scholarly research in Nigerian universities. Today, Nigeria as a nation, is witnessing what can be termed as a crises period in terms of adequate and reliable telecommunication infrastructure.

The telephone network system in Nigeria have been poor for decades now and thereby retard the efficient and effective utilization of electronic databases facilities and other internet facilities that are important to the growth and development of research. in Nigerian universities. To fully utilize, for instance, the content available through some of these databases like AGORA, HINARI, ERIC etc. much needs to be done to advance ICT's in the developing countries.

- Non availability of indexed documents: Non-availability of indexed documents identified through searching the bibliographic electronic databases tends to frustrate the users of these databases.Kanamagire(1994) and Oduwale(2000) reports that users often identified relevant sources of information through searching CD-ROM bibliographic databases only to be frustrated by the fact that their libraries does not hold the identified documents.Infact, this scenario affect not only the utilization of electronic database but including the choice of these databases.
- Other problems associated with the use of electronic databases in Nigerian universities include shortage of manpower i.e. library professional which is their primary responsibility to provide an enabling environment for effective interface between the client and the database. This entails providing necessary assistance on the use of the electronic database: poor computer literacy among the university scholars: non-compatibility of these electronic databases.

Research Methodology

45 staff working in electronic database section and 150 users across the sciences and humanities disciplines from the first three generation universities i.e. Ahmadu Bello University, Zaria, University of Ibadan, Ibadan, University of Nigeria Nsuka, were used for the study.

The study used a self-developed instrument with 21 items for electronic database staffs and 28 item instruments for library users. Both database staffs and users items are called Electronic Database (EDB) scale. The EDB is divided into two sections (Section A and B).Section A contains names of library, year of establishment, year of graduation, first degree, working experience, user's area of specialization. Section B addresses Availability, Use and access, ability of electronic database that

further explains users' level of satisfaction, relevancy, currency and acceptability of electronic database.

All the research questions focuses on the availability, use and accessibility level of satisfaction, relevancy and currency of electronic database in the three selected university libraries. Discuss the research methodology sampling procedure used for the study.

Table 1: Frequency of availability of Electronic Databases in ABU, UI and UNN

S/N	Database Availability	University		
		ABU	UI	UNN
1	AGORA			
2	MEDLINE	✓	✓	✓
3	EBSCOHOST	✓	✓	✓
4	LISA	✓	✓	✓
5	HIWARI	✓	✓	✓
6	ERIC	✓	✓	✓
7	JSTOR	✓	✓	✓
8	INASP	✓	✓	✓

Table I Shows the availability of Electronic Databases initiatives in the three selected University Libraries; ABU, UI, and UNN. All the three University libraries have the major EDB. This is possible according to Bozimo (2006) is due to growth of Electronic publishing and the internet and that the new international initiatives have been organized that hold the prospect of dramatic improvements in enhancing access to information resources in Nigerian University libraries.

Table II: Perceived information on the accessibility of the Electronic Database

S/N	Database	X	SD	S
1	AGORA	17.75	-124.3	15450.49
2	MEDLINE	13.50	-94.50	8930.25
3	EBSCOHOST	14.13	-98.87	9761.44
4	LISA	16.00	-112.09	12544.00
5	HINARI	17.50	-122.59	15006.25
6	ERIC	11.13	-77.81	6052.84
7	JSTOR	16.38	-114.64	13133.16
8	INASP	15.25	-106.7	11384.89

Database was measured on a 5-point scale.5 easily accessible, 3-accessible and 1-not accessible and the higher the (x) the more accessible the EDS.

The analysis shows that AGORA, HINARI, LISA and JSTOR are considered to be easily accessibly to users. Other EDS like ERIC, MEDLINE and EBSCOHOST seems not to be accessible despite their richness in terms of scholarly information contained in them. It is important to note that AGORA, HINARI and LISA that are easily accessible is as a result of regular workshops.

Though, the study shows that major Electronic Databases are available for the three university libraries. It is important to ascertain if they are accessible. The above table explains the mean frequency of how easy to use the Electronic Databases in these libraries. The mean perception score of respondents' accessibility on each electronic Database. Hence AGORA has the highest mean perception with 17.75.This might be attributed to the fact that there are so many agricultural research institutes, colleges/faculties/Universities of Agriculture world-wide. HINARI came second in terms of mean perception score of respondents' accessibility with mean frequency of 17.50.

Table III: Analysis of Electronic Database supporting Academic activities in the Universities.

S/N	Academic Activity	X	SD	S^2
1	Course work	17.75	-124.3	15450.49
2	Teaching	13.50	-94.50	8930.25
3	Research	14.13	-98.87	9761.44
4	Current awareness	16.00	-112.09	12544.00
5	Learning	17.50	-122.59	15006.25

Table 3 shows the mean frequency of database supporting academic activities in the Universities. The terran stand the same even with electronic database by supporting the core functions of the Universities, teaching, research and learning. Teaching and research has a mean of 17.75 and 17.50 respectively. Current awareness has a mean of 16.0.This shows that these Databases are purely scholarly activity journals, though; some of them may carry incoming conferences.

The interpretation of respondents' perception on accessibility to databases in table 2 is closely related to table 3, where the academic activities of the three universities include course work with mean frequency of 17.75 and learning, 17.50 respectively. It can be said that respondents' perception on accessibility on AGORA corresponds with course work i.e. mean frequency equals perception on accessibility. The same thing applies to HINARI and learning with 17.50. Thus, table 3 explains the academic activity of database of the 3 Universities.

Course work has the highest mean frequency of 17.75 and this could be attributed to the fact that course work is mainly for postgraduate students and that majority of information on database could be on coursework. Closely related to this was mean frequency of 17.50 and it is database on learning. Database on learning could be for faculty members, researchers, technical staff and students. The lowest from the mean frequency was 13.50, i.e. teaching, showing that this aspect in database is purely for teachers and is concerned with teaching.

Table IV: Analysis of the level of satisfaction with electronic Databases in terms of teaching, research and learning.

		Level of Satisfaction							
S/N	Electronic Databases	Not At All Satisfied %	FQ	Not Satisfied FQ %		Mostly Satisfied FQ %		Very Satisfied FQ %	
1	AGORA	24	16.56	36	24.0	72	48.0	18	12.0
2	MEDLINE	36	24.0	58	38.7	29	19.4	27	18.0
3	EBSCOHOST	19	12.7	20	13.3	64	42.7	47	31.1
4	LISA	35	23.3	64	42.7	41	27.3		6.7
5	HINARI	18	12.0	09	6.0	26	17.3	97	64.7
6	ERIC	51	34.0	78	52.0	12	8.0		6.0
7	JSTOR	63	42.0	48	32.0	15	10.0	24	16.0
8	INASP	18	12.0	31	20.7	32	21.3		46

The table provides analysis of level of satisfaction with Electronic Databases for supporting teaching, research and learning in the University. Among the eight items in the questionnaire, only HINARI, INAPS, AGORA and EBSCO satisfied users of these Databases in terms of teaching, research and learning with 97, (64.7%), 69(46%), 72(48%) and 64(42.76%) scores respectively.

The highest level of satisfaction with electronic databases for supporting teaching, research and learning in universities was discovered

from HINARI with 79(64.7%) indicating "Very satisfied". This was followed by 78(52%) respondents indicating "Not satisfied" with ERIC database. It was noticed that 72(48%) indicating "Mostly satisfied" with the use of AGORA database, while 69(46%) of the respondents further indicated to "Very satisfied" in using INASP database.

Very satisfied was discovered from the use of HINARI with 79(64.7%) respondents; mostly satisfied from the use of AGORA with 72(48%) respondents; while not satisfied from 78 (52) respondents who uses ERIC database. Highest respondents in terms of "Not at all satisfied" was discovered from 63(42%) in the use of JSTOR.

Table I: Analysis of the level of relevant of database of academic attainment

S/No	Electronic databases	Not relevant		Mostly relevant		Very relevant	
		Fq	%	Fq	%	Fq	%
1	AGORA	13	8.7	81	54.0	56	37.3
2	MEDLINE	76	50.7	43	28.7	31	20.7
3	EBSCOHOST	88	58.7	41	27.3	21	14.0
4	LISA	102	68	20	13.3	28	18.7
5	HINARI	24	16.0	65	43.3	61	40.7
6	ERIC	72	48.0	41	27.3	37	24.7
7	JSTOR	30	20.0	59	39.3	61	40.7
8	INASP	48	32.0	55	36.7	47	31.3

In terms of the relevance of database for academic attainment; 102 (68%) of the respondents who used LISA were of the opinion that it is "Not relevant" to the academic attainment and this category of respondents are likely to be users of LISA (students, researches, librarian is in the field of librarianship). This could be as a result of not finding the relevant information from LISA database. While 88(58.7%) of the respondents were of the view that the use of EBSCOHOST is not relevant to their academic attainment. This can equally be attributed to non-relevant of information and database to users. Mostly relevant of database for academic attainment was discovered from 81(54%) of the respondents in the use of AGORA database. This is due to the fact that there are several departments, schools colleges/faculties and universities

of Agriculture all over the world and there is tendency for information on database to be relevant to users information needs.

It should be noted however that 76(50.7%) and 72(48%) respondents indicates "Not relevant" of MEDLINE and ERIC databases for academic attainment. Respondents from 4' out of 8 databases (ME DLINE, EBSCOHOST, LISA and ERIC) indicated high respondents of "Not relevant of database.

Recommendations

In view of the fact that electronic database can provide information to Nigerian Universities that may play a crucial role in teaching research and development, and that many Nigerian universities cannot afford to establish some of these electronic database services as a result of acute shortage of fund, telecommunication facilities the following recommendations are made:

- That there is a dire need for international donor agencies to partner with electronic database publishers to come up with databases pertinent to the needs of Nigerian scholars. It is therefore, advocated that donor agencies should contact CD-ROMs publishers in particular to collaborate in the production of academic CD-ROMs in the areas of interest to Nigerian academics.

- That the Nigerian University authorities in conjunction with the management of university libraries should as a matter of policy subscribe to full-text electronic Database instead of bibliographic database. This will go a long way in reducing the levels of frustration being faced by the university scholars while searching bibliographic database.

- That the electronic database publishers should try to make their products and services user friendly. It is therefore, necessary to develop search retrieval systems that are simple to use, considering the levels of computer literacy of the majority of the potential users of these databases, particularly in developing countries

- That the university management in collaboration with philanthropist should solicit for more funding outside the government budgetary allocation to ensure an update of the Database and their availability.

- That the university libraries in Nigeria should as a matter of

urgent necessity come together to build a workable and efficient consortium to enable them pool resources together to access electronic databases

- Lastly, there is the need for the university community to acquire the spirit of information and communication technology by collaborating with some ICT training institutes. This will enable the university scholars to become conversant with any development in information and communication technology in the world.

Conclusion

The advent of information technology, including the use of electronic databases, has over the years facilitated the acquisition, retrieval and dissemination of information. This is quite different from manual searches using indexes, bibliographies and catalogues. Information acquisition for research and development is therefore difficult in developing countries such as Nigeria, where current journal titles are no longer available and accessible due to what is usually termed as serial crises, thus making it imperative for universities in Nigeria to acquire new technologies such as e-databases to augment research and scholarship among academics.

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