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ASSESSING THE IMPACT OF ELECTRONIC RESOURCES ON PRODUCTIVITY OF ACADEMIC STAFF OF COVENANT UNIVERSITY, NIGERIA.

BY
ADEYEMI, Aderonke O.
Centre for Learning Resources
Covenant University, Ota, Nigeria.

ABSTRACT

Electronic resources have changed the operations of academic libraries. Covenant University has the goal of enhancing the frontiers of knowledge through teaching and research. The study sought to determine the impact of Electronic Resources on academic productivity. It was discovered that regular users of electronic resource have higher academic productivity than non-regular users of electronic resources. Also noteworthy is the high demand for electronic resources by the junior academics more than the senior.

INTRODUCTION

In the present age of information explosion, current and right information is the key for personal and professional development. Several years ago, common use of the Internet and such formats as CD-ROM was seen as a thing of the future (Miller, 2000). A 1979 Collection Management issue forecasting for 2001, noted that the following predictions have happened: print costs have continued to escalate at rates beyond the general economy; demand has been created for access to electronic materials (Lynden, 1996). With the advent of Internet, users have more opportunities to access many free online journals, magazines and newsletters anytime and from anywhere for their academic and research purposes (Kode & Kode, 2003). Electronic resources have changed the operations of academic libraries. Electronic resources (e-Resources) have removed walls from libraries. The user can have access to more materials than can be made available in the print format. Ease and speed of access; and communication

is guaranteed by the use of e-Resources. The utilization of electronic resources have to some extent enhanced the academic productivity of teaching staff in Nigerian Universities.

According to InvestorsWord.com (2009) productivity is referred to as comparison of output produced by a given amount of input - typically, hours of labor. This is the view of productivity that can easily understood. For example, a worker stands at a machine and produces an average of ten units of products per hour. If the worker works faster, the tools are improved, raw material defects are eliminated, or anything else changes so that eleven units can be produced per hour, that's a 10% productivity increase. If we move off the factory floor and into the office, there are many jobs that lend themselves to this kind of productivity measurement. A person processing invoices or insurance claims forms, for example, can do five, or eleven, or twenty per hour; change the methods, add some training, improve the systems, etc. and those numbers should increase. Once again, we see a very evident productivity increase. This study therefore focuses on the intellectual output of academic staff of Covenant University as influenced by their use of electronic resources. These intellectual output include teaching, research and publications (chapters in books, journal articles, conference and proceedings).

COVENANT UNIVERSITY (CU)

Covenant University (CU) is a growing, dynamic vision-birthed, vision driven University, founded on a Christian mission ethos and committed to pioneering excellence at the cutting edge of learning. Presently the University has three colleges, with various departments. These are College of Science and Technology (CST), College of Business and Social Sciences (CBS), College of Human Development (CHD), and a Postgraduate School. which was established to meet an important manpower need of the University.

CU has taken a strategic university-wide approach to online teaching and learning through the use of the software, College Portal. Students' registration, book ordering, as well as the delivery of lecture notes is carried out online. The Covenant University library, fondly referred to as Centre for Learning Resources (CLR) is an information-age learning centre that

provides access to some online data bases to which the University subscribes. These include Journal Storage (JSTOR), EBSCO, AGORA, HINARI, OARE, MIT Open Courseware, Elsevier Science Direct and NUC National Virtual Library. The library also have access to certain free databases and book collections, such as AJOL, Project Gutenberg, to mention a few. The CLR has a stand-by generator that ensures constant availability of power to facilitate access and utilization of the electronic resources. The Multimedia section of the CLR holds over 40 computers with internet connectivity and a wireless arena where more than a hundred staff and students can gain access to the e-resources mentioned earlier. These resources are also accessible at the various college buildings, by lecturers in their offices and at the Cyber cafes distributed all over the University campus. The crux of this study is to examine the impact electronic resources have on the academic output of academic staff of Covenant University. To determine the extent of accessibility and utilization of electronic resources, as well as the status of the academics with the higher demand for electronic resources.

STATEMENT OF THE PROBLEM

Covenant University Library invests heavily in the annual subscription to electronic resources as well as provision of twenty-four hour functional Internet services.

This study essentially seeks to investigate the impact of these resources on the academic productivity of the University's academic staff.

OBJECTIVES:

❖ To determine the impact of electronic resources on academic productivity of the respondents

❖ To investigate the frequency of use of electronic resources among Covenant University academic staff

❖ To determine the degree of demand on the various electronic resources in the Centre for Learning Resources

❖ To ascertain the level of academic staff with the highest utilization of electronic resources

HYPOTHESES

Two hypotheses were raised for this study. Each was tested using independent t-test at 0.05 significant level.

Hypothesis 1: There is no significant impact of electronic resources on academic productivity of academic staff of the Covenant University.

Hypothesis 2: Senior faculty members use electronic resources for academic activities more than junior faculty members.

LITERATURE REVIEW:

According to Weitz (2006), an electronic resource is "a material (data and/or program (s) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g., CD-ROM drive) or a connection to a computer network (e.g., the Internet)." The Electronic Resources focused in this research include Computers, CD-ROM, Internet, Online databases (e.g. EBSCO, JSTOR), Email, Electronic Journals, and Electronic Books.

Computers are electronic devices which accept and supply information and are also used for accessing online databases, emails and the content of CD-ROMs. Oketunji, et al. (2002) revealed in a study, that there is progress in computerization efforts and access to the Internet in Nigerian libraries, predominantly in academic libraries.

Compact disc read only memory (CD-ROM) is an optical disc technology which can store large amount of data on disc. CD-ROMs are used to store bibliographic data, full text, numerical data and visual images. Data on CD-ROM are usually accessible through user-friendly menus displayed on the computer screen (Mosuro, 2000).

Green, (1999) and Ani, et.al. (2005) are of the view that the Internet, poses a historically unique chance for African universities to gain a more equal footing with their sister institutions in the more developed countries. It has transformed scholarly research and publication. The Internet has become a cheap and effective means of exchanging information (Omagbemi, 2004) Online databases are computerized stores of information

or libraries which are accessible through a host computer or across computer networks (Ajibola, 2000). Unlike the Internet, Online databases contain structured information on specific subjects which vary in format.

Electronic mail (e-mail) is the electronic equivalent of the ordinary mail that delivers letters to home or post office box. Ajibola, (2000) defined e-mail as "a data communication system based on computer - to – computer link up by telecommunication lines via modem to send messages to one recipient or several simultaneously. Mosuro, (2000) stated that e-mail can be used to answer questionnaires.

Electronic Journals perform an increasingly important role in research which engenders an ever increasing demand for new titles and back-runs. Reitz (2007), in Dictionary of Library and information Science describes e-journals as "digital version of a print journal, or a journal like electronic publication with no print counterpart made available via the Web, e-mail, or other means of Internet access".

Electronic Books bring about disintermediation and foster a direct dialog between author and readership. Vaknin, (2005) sited eBookWeb.org, as providing space for authors to have a personal page, which he referred to as some of the most popular pages on the site. On other Websites and through the publications themselves, authors are coming in closer digital contact with their readers through email or other forms of dialog.

The advantages of electronic resources have been highlighted by Mosuro, (2000), Ajibola, (2000) and Vaknin, (2005) as discussed below:

THEY PROVIDE FAR GREATER SEARCH POWER IN LOCATING INFORMATION.

They provide a new electronic intellectual environment within which intellectuals and decision-makers can communicate and confer. The Internet affords the opportunity for free online research literature, which gives it a great beneficial impact on research and education.

E-books provide a different reading experience, with hyperlinks within the e-book and without it - to web content, reference works, etc., embedded instant shopping and ordering links, divergent, user-interactive, decision driven plotlines, and interaction with other e-books. E-books bring about

disintermediation and foster a direct dialog between author and readership. For example, on eBookWeb.org, space is provided for authors to have a personal page. These are some of the most popular pages on the site. On other Websites and through the publications themselves, authors are coming in closer digital contact with their readers through email or other forms of dialog.

E-mail allows you to exchange formatted documents for use in publications anywhere in the world. It is easier to send messages or letters of the same content to many recipients simultaneously at little or no extra cost.

Vaknin, (2005); Miller, (2000) and Ferguson, (1988) have identified the challenges and limitations of electronics resources.

Electronic resources can offer prompt access to wide-ranging information, but the costs of electronic materials limit the library's ability to purchase other materials.

Redistributing funds previously used for collections into electronic resources and equipment risks impoverishing local collections.

The e-book or the CD-ROM, are both dependent on devices (readers or drives, respectively). Both are technology-specific and format-specific. Changes in technology - both in hardware and in software - are liable to render many e-books unreadable. And portability is hampered by battery life, lighting conditions, or the availability of appropriate infrastructure, for example electricity. There is no censorship of electronic resources. Individuals or organizations upload whatever information they generate to the Internet. There is no official body (no Government) to determine what should or should not be on the Internet.

The Internet has no central (or even decentralized) structure. In reality, it hardly has a structure at all. It is a collection of million computers connected through thousands of networks.

The Internet is an assortment of billions of pages containing information. The Internet is a "chaotic library" because it displays no discernible order, classification, or categorization. It therefore poses a problem for cataloguers. As opposed to "classical" libraries, no one has

invented a cataloguing standard (such as DDC, LC). Other challenges include irregular electricity power supply, funding, skilled personnel, and organizational politics.

METHODOLOGY

Questionnaire is the main instrument used to gather data for this study. Covenant University has about 400 academic staff, from which a sample of three hundred (300) was chosen by the researcher. Copies of the questionnaire were given out randomly to three hundred (300) academic staff of the various colleges during one of the weekly faculty meetings. Two hundred and fifty (250) copies of the questionnaire were returned out of the three hundred (300) administered. The data was gathered through the medium of questionnaire which was randomly distributed to the academic staff of Covenant University. Two hundred and fifty (250) copies of the questionnaire were returned out of the three hundred (300) that were given out. The high response rate was achieved because the researcher is a residential staff of Covenant University and attends the weekly faculty meetings regularly. The data analysis, findings and discussion are stated below:

DATA ANALYSIS

Table1:   DISTRIBUTION OF RESPONDENTS BY COLLEGE

COLLEGE	FREQUENCY	PERCENTAGE (%)
CST	124	49
CBS	84	34
CHD	42	17
TOTAL	250	100.0

Table 1 reveals that majority of the respondents (49%) are from College of Science and Technology (CST), followed by 34% from College of Business and Social Sciences (CBS), while 17% represents the College of Human Development (CHD). This trend is attributable to the willingness of staff of each college to complete and return the questionnaire. However, CHD has the lowest number of academic staff in the university. It is also noteworthy that majority of the lecturers in the sample have been in Covenant University for two (2) to three (3) years.

Table 2:   DISTRIBUTION OF RESPONDENTS BY SEX

SEX	FREQUENCY	PERCENTAGE (%)
Male	186	74
Female	64	26
TOTAL	250	100.0

Table 2 reveals that 74% of the respondents are male; while the remaining 26% are female.

Table 3:   DISTRIBUTION   OF   RESPONDENTS   BY QUALIFICATION

QUALIFICATION	FREQUENCY	PERCENTAGE (%)
Ph.D.	56	22
M.Sc.	194	78
TOTAL	250	100.0

Table 3 shows that 78% of the respondents have masters' degree in their field of specialization, which is the basic requirement for academic placement in Covenant University, the remaining 22% possess doctoral degrees.

Table 4: **DISTRIBUTION OF RESPONDENTS BY ACADEMIC
STATUS**

STATUS	FREQUENCY	PERCENTAGE (%)	
Professor	9	4	Senior Academics
Associate Professor	2	1	Senior Academics
Senior Lecturer	12	48	
Lecturer I	58	23	Junior Academics
Lecturer II	46	18	Junior Academics
Assistant Lecturer	123	49	
TOTAL	250	100.0	

The table depicts that of the respondents, 91% are Assistant Lecturers and Lecturer I, while 52.4% are of the Senior Lecturer to Professorship. Most of the Professors were not contacted due to there very tight schedule.

Respondents Access to E -Resources: Majority of the lecturers sampled claimed to have access to all the electronic resources, but in varying degrees.

Computers 96%, CD-ROM 39%, Internet 94%, Online Databases 56%, Email 96%, Electronic Journals 54%, and Electronic Books 56%. This is illustrated in the figure 1 below:

Figure 1:   Respondents Access to E -Resources

Electronic Resources and Teaching: The respondents of this study considered electronic resources as enhancing their teaching productively. Computers 96%, CD-ROM 18%, Internet 84%, Online Databases 34%, Email 76%, Electronic Journals 32%, and Electronic Books 16%. This is illustrated in the Figure 2 below:
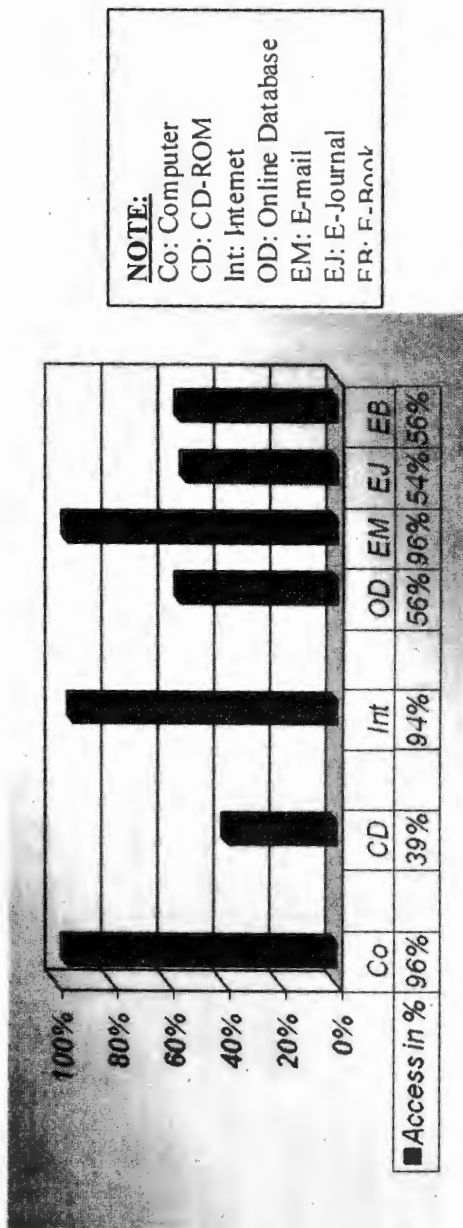
NOTE:
Co: Computer
CD: CD-ROM
Int: Internet
OD: Online Database
EM: E-mail
EJ: E-Journal
EB: E-Book

	Co	CD	Int	OD	EM	EJ	EB
Impact on Teaching	96	18	84	34	76	32	16
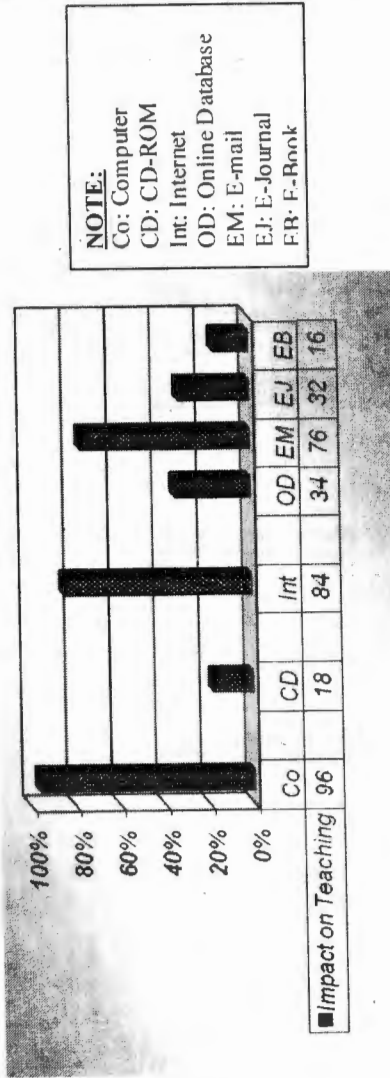
Figure 2: E-Resources and Teaching

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Electronic Resources and Research: It was also discovered that electronic resources enhance research activities. Computers96%, CD-ROM 18%, Internet 84%, Online Databases 34%, Email 76%, Electronic Journals 32%, and Electronic Books 16%. This is illustrated in the Figure 3 below:
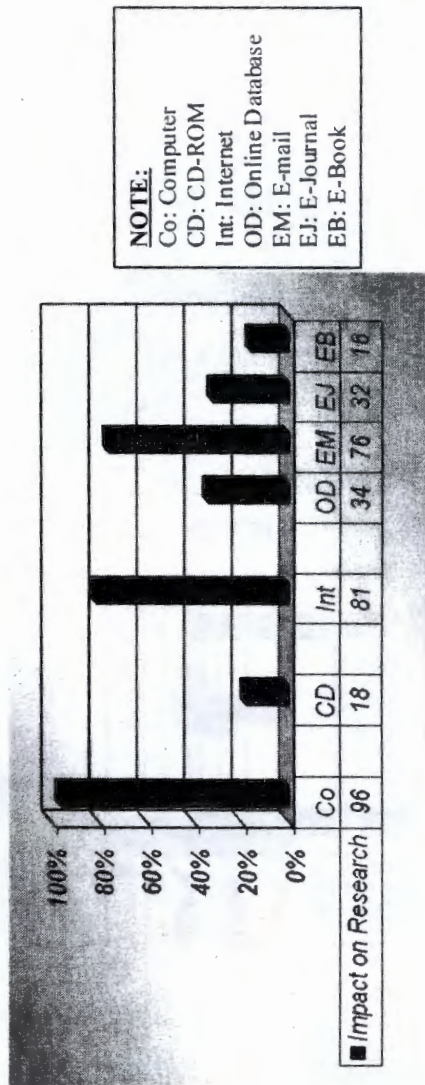
Figure 3: E-Resources and Research

E-Resources and Intellectual Output: The respondents confirmed that the use of electronic resources has enhanced their intellectual output measured by the number of publications. The average publication by each of the respondents within the last three years is two (2) conference proceedings, two (2) seminar presentations and two Journal publications. Some have more than two publications in some areas. Figure 4 below illustrates the overall weight of publications by all the respondents stated in percentages; conference proceedings (67%), seminar presentations (34%) and Journal publications (43%):
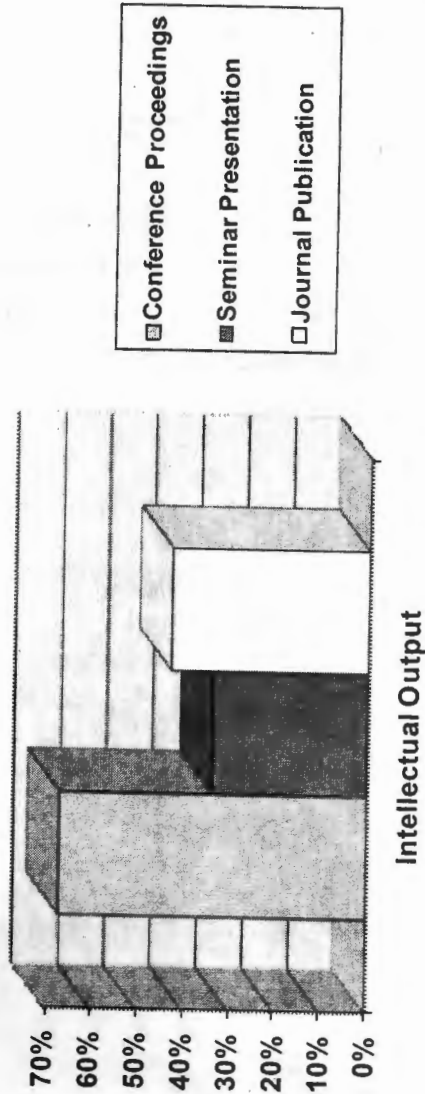
HYPOTHESES TESTING

Two hypotheses were raised for this study, each of which was tested using independent t-test at 0.05 significant level.

Hypothesis 1: There is no significant impact of electronic resources on academic productivity.

Summary of t-test of the impact of electronic resources on academic productivity.

Variations	N	df	mean	sd	t-observed	P
Academic productivity of regular users of electronic resources	100		12	0.42		
Academic productivity of non-regular users of electronic resources	150	248	8	0.08	11.78*	0.05

*Significant two-tailed test

Hypothesis 1 was tested using the sum of the quantity of publications of sampled lecturers as presented in the questionnaire. The mean difference of 4 was reported, which was found by subtracting the mean of group 2 from the mean of group 1.

In this study it was hypothesized that there is no significance impact of electronic resources in academic productivity. This hypothesis was tested by comparing the quantity of publications of daily users of electronic resources and non regular users. The hypothesis was not supported. The academic productivity of regular users of electronic resources (M = 12, SD = 0.42) was greater than the productivity of non-regular users of electronic resources (M = 8, SD = 0.08), $t_{(248)}$ = 11.78, p = .05. The implication of this findings is that there is a significance impact of the use of electronic resources on academic productivity. It implies that regular users of electronic resource have higher academic productivity than non-regular users of electronic resources.

Hypothesis 2. Senior faculty members use electronic resources for academic activities more than junior faculty members

Table 2 summary of t-test of impact of electronic resources in academic productivity.

Variations	N	df	mean	sd	t-observed	p
Senior faculty members.	23	248	2	0.31	14.64*	0.0
Junior faculty members	227		5	0.24		5

*Significant two-tailed test

Hypothesis two was tested using the sum of the responses to the use of electronic resources of sampled lecturers as presented in the questionnaire. The **mean difference of 3 (sign disregarded) was reported.** This is found by subtracting the mean of group 2 from the mean of group 1. In this study it was hypothesized that senior faculty members use electronic resources for academic activities more than junior faculty members. This hypothesis was tested by comparing the responses to the use of electronic resources for academic activities of senior and junior faculty members. The hypothesis was not rejected. Senior faculty members' use of electronic resources for academic activities (M = 2, SD = 0.31) was lesser than that of junior faculty (M = 5, SD = 0.24), $t_{(248)}$ = 14.64, p = .05. This implies that junior faculty members use electronic resources for academic activities more than senior faculty members. This could be due to the fact that junior faculty members are more inquisitive and require more publications for their promotion, and as such demand for resources that would make their research robust and current with minimum stress. Some members of the senior faculty could also be resistant to change etc.

CONCLUSION

The importance of electronic resources in a university aiming to be of world-class standard cannot be over emphasized. Covenant University has the goal of enhancing the frontiers of knowledge through teaching and research. The degree of availability and accessibility of (new) knowledge through the use of electronic resources will determine, to a great extent, the productivity of the academic staff. It was discovered that the use of electronic resources has remarkable impact on the teaching and research of the faculty members. Also of noteworthy, is the high demand for electronic resources by the junior academics more than the senior academics.

RECOMMENDATION

Individuals and organizations seek daily, ways of enhancing their relevance and productivity. The study therefore recommends:

- That there should be an increase in the electronic resources acquired. This includes increase in electronic journal subscription, online databases, CD-ROM, etc.

- More computers should be acquired at the Multimedia section of the university library as this would facilitate the access and utilization of the electronic resources provided.

- Whatever could cause an epileptic functioning of the Internet should be avoid. Everything required for its smooth running should be made available.

- Inter-library cooperation or the formation of consortia with other academic libraries will go a long way in providing access to more electronic resources and reduce the cost of purchase/subscriptions and renewal as this would be shared among participating institutions.

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