

The Web As Medium For Communicating Research Works From African Universities: Case Study Of A Nigerian University

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ABSTRACT:

Research publications from Universities in Africa are not easily obtainable. The point is made in this paper that the world-wide-web (the web) provides an efficient means of communicating research works from Africa to the outside world. This paper seeks to determine the extent to which such works are made available on the web and if they are visible by using a typical Nigerian university as a case study. The number of research works owned by the academic staff sampled is compared with the corresponding number found at the website of the university. Research works found on the website are evaluated for web visibility. The findings lead to recommendations that would ensure that research findings from Africa are effectively communicated using the web and areas for further research are highlighted.

Keywords: *Knowledge management, Web-based communication, Web visibility, Nigeria, Africa.*

Introduction

Hitherto, the challenge for researchers in many African institutions had been access to timely and relevant publications both from within their immediate regions and the world at large. The 1990's witnessed an upsurge in efforts to solve this problem. One of such was the collaboration between African, American, Canadian and British Universities in 1992, to create the African Educational Research Network (AERN) with the aim of coordinating efforts to support research capacity building in African universities and to increase access of the Northern universities to the information resources dealing with educational development in Africa (Ploghoft, 1995). In Nigeria, the National Documentation and Information Centre for Sciences and Technology (NADICEST) Project was founded in 1985 and one of its tasks was to create an inventory of Science and Technology Information (STI) resources in Nigerian libraries (Ike, 1992). At this time, Ike (1992:2) had expressed the fear that "research scholars working in such information isolation may be engaged on wasteful duplicated research programmes". Though this statement was made in the context of access to research information that is outside the researcher's immediate locality, the same is true for access by both local and international researchers to research output generated from within Africa.

This paper outlines the problem of communicating research works from Africa to the world at large and presents the web as an effective medium for doing this. The case

study undertaken to explore the extent to which research works at a typical Nigerian university are being communicated using this medium is presented, and recommendations necessary for fast-tracking the communication process are made.

Problem Of Communicating Research Works From Africa

Due to availability of well managed centralized electronic databases, computerized cataloguing, online indexing, and the Internet, researches from the more advanced countries are better able to communicate their research findings. However, the Association of African Universities (AAU) notes that “African research results are rarely indexed in major international databases” and that “the inability to learn about and access African material is frustrating to students and scholars both on the continent and overseas” (The DATAD Initiative). When literature reviews are being done, there is a paucity of cases or data from within Africa that can be cited. Requests for information on research outputs from Africa by researchers on the international scene (Mejabi, 1995) are difficult to meet because most of the reports are in the traditional printed form in library shelves.

Some disadvantages of not communicating the research works from Africa include:

- Duplication of research work and consequent waste of scarce resources.
- Ease of plagiarism
- Incomplete literature reviews
- Promotion of the notion that there is very little research of note being done in Africa
- Low ratings on citation evaluations.

As part of its contribution towards bridging this gap, the AAU, since 2000, has coordinated the Database of African Theses and Dissertations (DATAD) programme. The objective being to improve the management and access to African scholarly work by focusing on the indexing, abstracting and distribution of theses and dissertations completed in African universities. One of the programme’s long term objectives is to provide visibility and improve accessibility to the work of African scholars both within and outside the continent. Access to the full content of DATAD is available only by subscription and maintenance is a challenge going by the “call for consultancy ... concerning the new development of DATAD” which was posted on the AAU website in June 2008, as well as keeping the registration page for access to the database through the AAU website accessible 24/7. Over the years, the compilation of print bibliographies and a few computerised databases by a number of individual universities have not been sustained (The DATAD Initiative).

Even when databases such as DATAD are created, effectively communicating the content for global reach is still a challenge. This is where the Internet and the World-Wide-Web (the web) becomes the medium of choice. Digitalized information is easy to disseminate and can be used in many different ways over and over again. Due to the

global infrastructure that is the Internet, existing digitalized information that is properly uploaded becomes a large distributed virtual collection that is available at anytime to anyone who surfs the web.

There is, therefore, the need for information generated from within Africa, especially the output of academic research, to be made easily available on the global scene. A cost-effective way of doing this is to utilise the websites of African Universities. Since “visibility” and “rich files” are a major component of the web ranking of universities (accounting for 70% of the total weight) by Webometrics (Liu & Cheng, 2009), listing the publications of academicians and linking each cited work to its abstract or the full paper provides a cheap means of making such works accessible to others while improving the ranking profile of that university. The National Universities Commission (NUC), Nigeria, began sensitizing Nigerian universities to embark on this exercise, including the systematic digitization and upload of academic works cleared for non-copyright violation, since 2006.

The Web As A Medium Of Communication

The web is organised as a client/server information dissemination system. The web has many possibilities for information, communication, and interaction and those who shape communication on the web require knowledge and skills in combining language, text, graphics, sound, movies, and hypertext.

(<http://www.december.com/web/develop/character.html>)

According to Cloninger (2000), the web is first and foremost a medium of communication in contrast to a computer which is just a tool and not media, though it can read media, make media, display media, and broadcast media. He notes that the web is a global network of connected people and thus the content of a website has to be useful to the site’s audience and written in a “narrative voice” similar to “story-telling” because story-telling is still the most effective way to emotionally impact people.

Most Internet surfers, including scientists, use search engines to recover information which is as much as 95% with Google (Aguillo, 2009).

The web offers the following features and advantages (Schnell, 1996; <http://www.december.com/web/develop/character.html>):

- Location and time – Content on the web is accessible everyday, anytime, anywhere in the world as long as an Internet web browser is available and there is no server or network downtime.
- Associative linking – Web based hypertext fosters interlinking that connects works to networks of meaning and association resulting in links from one web work to another that is “live”. Authors can create works with paths through hypertext that can strongly bind their works to others on the web.
- Distribution – Content on the web much like the Internet that has no “top”, is distributed in a non-hierarchical manner. Content which is originally scattered

among the many networks of the internet, is further scattered among the many web servers on those networks, and the many individual webs on those servers.

- Storage and Copies – Compared to traditional documents that are bound by physical constraints of the printed form and which are accessible at physical libraries, web works which are stored electronically, can be available in unlimited copies to any web user at any time.

Schnell (1996) observed that electronic bibliographies designed for local use can be made available to the world via the web while Internet resources referenced in web documents can be updated as the resources move, change names, or are deleted. She also noted that works in progress can be made available for colleagues to comment on content and structure.

From the foregoing, it is clear that Universities in Africa and their academic staff need to embrace this medium for communicating their research works. An effective strategy for communicating these works from the universities is by listing all publications by academic staff on their respective university web sites and hyper-linking each citation to the full publication or its abstract or the URL if the journal is online, while respecting extant copyrights. Since most universities in Nigeria have their own websites, an examination of one of them was undertaken in order to have an indication of the extent to which academic staff are availing themselves of this channel of communication. The universities were sensitized on this strategy, in 2006, by the National Universities Commission (NUC), Nigeria. A university with strong web presence, as ranked by Webometrics (www.webometrics.info) and 4ICU (www.4icu.org), was selected as a case study.

The Case Study

The principal focus of the case study was (1) to determine the gap, if any, between the number of publications owned by respondents and the number listed on the university web site, and (2) to determine the number of such publications that were visible on the website.

The data collection was in three stages. Stage one involved the administration of a simple questionnaire which had the following two items:

1. Category: Please tick appropriately in the parenthesis below –
Professor/Reader () Senior Lecturer () Lecturer I / II ()
2. Please indicate in the space below, the total number of published journal articles that you have.

The number of journal articles listed for the respondent on the university website was noted in the second stage. The third stage, involved checking each listed publication for visibility. For the purpose of this study, a publication was regarded as visible if a hyperlink on the citation led to either an abstract or the full paper. In some instances,

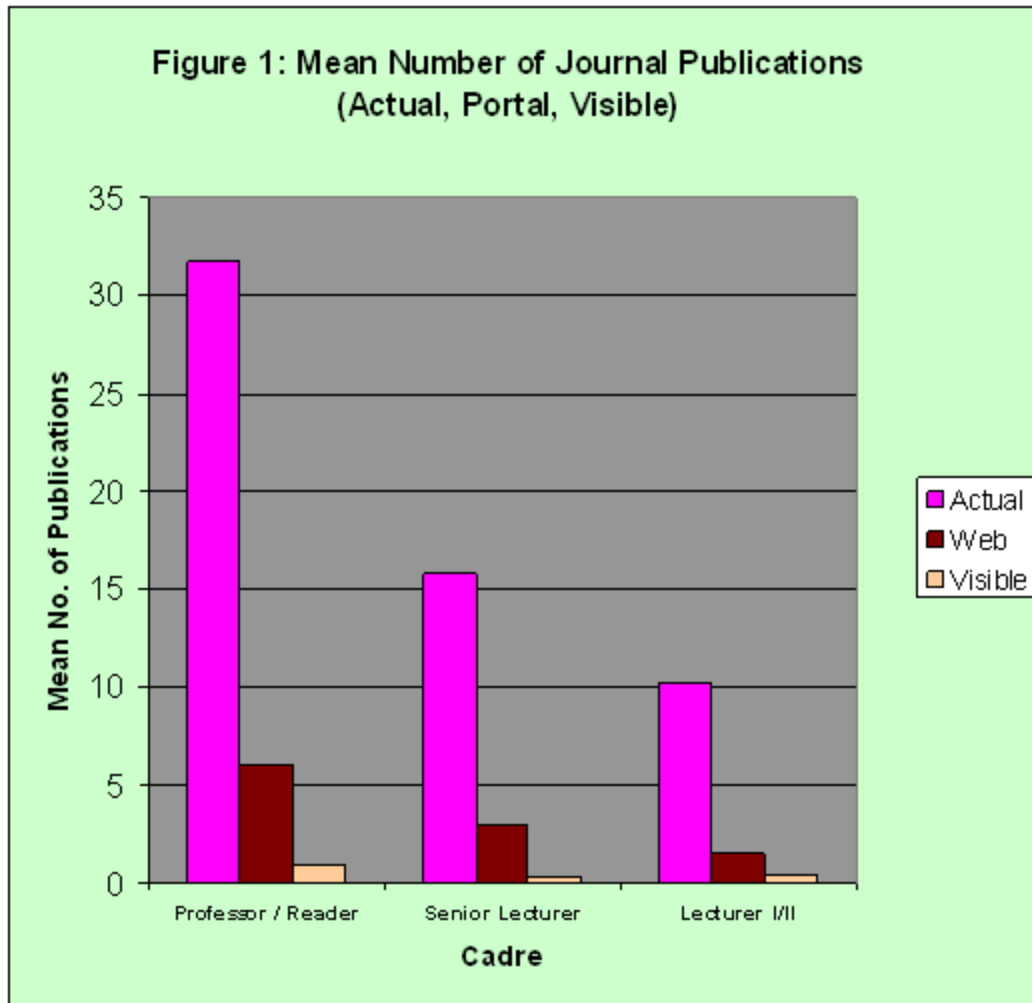
there were hyperlinks that led to error pages. The numbers from the three stages were tabulated under the headings: Actual (stage one), Web (stage 2), Visible (stage 3).

Questions of adequate sample size and representativeness are usually not of primary importance in an exploratory study (Green & Tull, 1990) and given the time spent browsing the web for stage two and three, a sample size of 50 academic staff across the three cadres shown in Table 1 was deemed adequate for the study. Respondents were drawn on a convenience basis until the quotas for the various cadres as shown in Table 1, were met. The questionnaire was administered in person.

CADRE	Frequency	Percent
Professor/Reader	10	20.0
Senior Lecturer	18	36.0
Lecturer I/II	22	44.0
Total	50	100.0

The mean number of publications for each cadre as declared by respondents (actual), found on the university website (web), and the number of the publications found on the website which were visible as abstracts or full papers (visible), are shown in Table 2 and presented as a bar chart in Figure 1.

Location	Cadre		
	Professor/Reader	Senior Lecturer	Lecturer I / II
Actual	31.70	15.83	10.27
Web	6.00	3.00	1.55
Visible	1.00	0.33	0.41



The graphical representation in Figure 1 shows a dramatic gap between Actual and Web listings and Visible publications, across all cadres. The gap is even more dramatic for the professorial cadre.

The data was further analysed using the paired T-test and the results are summarised in Tables 3, 4 and 5 for the Professorial/Reader cadre, Senior Lecturer cadre and Lecturer I / II cadre respectively. The results show significant differences in the means of the pair of Actual and Web and the pair of Web and Visible for each of the cadres.

		Paired Sample Correlations			Paired Samples Test		
Pairs		N	Correlation	Sig.	t	Df	Sig. (2-tailed)
Pair 1	Actual - Web	10	.825	.003	20.311	9	.000
Pair 2	Web - Visible	10	.272	.447	3.000	9	.015

		Paired Sample Correlations			Paired Samples Test		
Pairs		N	Correlation	Sig.	t	Df	Sig. (2-tailed)
Pair 1	Actual - Web	18	.411	.090	4.433	17	.000
Pair 2	Web - Visible	18	.400	.100	5.351	17	.000

		Paired Sample Correlations			Paired Samples Test		
Pairs		N	Correlation	Sig.	t	Df	Sig. (2-tailed)
Pair 1	Actual - Web	22	-.068	.765	7.109	21	.000
Pair 2	Web - Visible	22	.228	.307	3.306	21	.003

The results confirm the following:

- A significant gap exists between the number of publications owned by respondents and the number listed on the university web site.
- A significant gap exists between the number of such publications listed on the university web site and the number that was visible and therefore useful as an information source.

These gaps are quite pronounced for the professorial cadre and the implication is that the rich research output characteristic of this cadre has not been effectively communicated using the university web site and unless some of these works reside in other online repositories, they are effectively not available to others.

Recommendations

From the foregoing sections and the findings from the case study, the following recommendations are being made:

- As a first step, web sites of universities in Africa should have listings of complete and up-to-date publications by their academic staff using the usual standards for referencing. Without violating publisher's copyrights, each cited publication should be hyperlinked to the complete publication or at the least,

the abstract. For sustainability, academic staff should take responsibility for the up-to-date content of their works on the web.

- An annual or better still, a quarterly summary of published research works by academic staff and students, with hyperlinks to the publications, written in compelling “story-telling” style should be placed on university websites.
- The DATAD programme should be embraced by all universities in Africa as a repository for theses and dissertations emanating from African universities. To this end, the AAU should consider making access to the brief citations seamless (without the need for login and available to online search engines). Also, effort should be made to ensure that an online version of the abstracts is readily searchable by the common web search engines.
- The various national controlling bodies for universities, such as the National Universities Commission in Nigeria, and / or the AAU should look into the creation of a Database of Abstracts of Research Works from Africa.
- Journals published by African universities should subscribe to the relevant indexing / abstracting sources such as Scopus, Elsevier Bibliographic Databases, EMBASE, DOAJ, etc, so that the content would be visible worldwide. Librarians should champion this.
- African universities should consider publishing online, open source journals instead of the traditional printed format.

Areas For Further Research

A limitation of this study is that only one university in Nigeria was examined. An area for further research would be to study a representative sample of universities in Nigeria and even across Africa. Furthermore, a study of how visible research works from Africa are, could be undertaken using a more rigorous definition for visibility such as how much of these works are “hit” when relevant keywords are entered into common search engines such as Google. A study of the extent to which the “narrative voice” is used to communicate research findings through the African university websites could also be undertaken.

Conclusion

The web has opened up opportunities for a cost-effective way of communicating the research works from Africa. Effort should, therefore, be made by African universities and their academic staff to avail themselves of this medium and ensure that research works from within their universities are effectively communicated by ensuring that an up-to-date listing of publications, properly hyperlinked to content, are available on their websites. The work of the AAU on DATAD, if sustained with vigour and the database made easily accessible through common web search engines, is a breakthrough pathway for success in communicating the dissertations and theses from African universities.

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