

Changing Information needs of Online Collaborative Researchers: A Challenge for Reference Librarians

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Abstract:

Rapid changes, over the past decade, in the field of Information and Communication Technology (ICT), data generation and the infrastructure supporting data generation have greatly impacted the various phases of the research life-cycle. There are indications that given the opportunity, most researchers are enthusiastic about using these new technologies, tools and services to improve the outcome of their research efforts. The emergence of ICT has also repositioned academic library resources and services as well as having shifted the expectations of library user groups. The challenge now is for libraries, especially reference librarians, to provide the embedded information services that are needed in these changing environments.

This paper will report on a study which sought to connect with researchers engaged in online collaborative research activities in Obafemi Awolowo University, Nigeria. The research was conducted in order to identify the information needs and services they are expecting from the library. Purposive and snowballing sample techniques were used to identify eight collaborative research projects, from the thirteen Faculties in the University. Sixteen researchers, engaged in the research projects, were interviewed for the study. The interview responses were transcribed and analysed, based on the objectives of the study, using Microsoft Excel.

The study revealed that the researchers are involved in a wide variety of online collaborative research activities based in the university but with collaborators all over the world. The study identified that the information needs of the researchers included dissemination of information regarding available e-resources, the management of documentation of ongoing projects, among others.

From this study, it became clear that the information needs of our researchers have changed and that we could expect more researchers to be increasingly involved in online collaborative research. Thus it is understood that the services from the library must be improved to meet these changed information needs.

Keywords: Information needs, online collaborative projects, researchers, reference librarians, Nigeria.

Introduction

Information is a core asset in teaching, research and learning. Information could be knowledge acquired through study or experience and the transfer of such knowledge to the people that need it most. This brings about the fact that the library is the backbone of the educational system, hence the need for universities to have standard, adequate, well equipped and up- to-date libraries providing relevant products and services – also to the research community. Rapid changes over the past decade in the field of Information and Communication Technology (ICT), data generation and infrastructure supporting data generation have greatly impacted the various phases of the research life-cycle. There are indications that most researchers are enthusiastic about using new technologies and given the opportunity, they are willing to take advantage of collaborative online infrastructure, tools and services to improve the outcome of their researches (Bradbury & Borchert 2010). The challenge is also there for libraries to broaden their support repertoire to make provision for these research activities. They must, for example, ensure that information literacy programmes encompass the skills needed for online data and information retrieval, presentation, storage, use and re-use.

Every subject discipline is contextualized by a globalized world and Nigerian university libraries cannot afford to lag behind international trends. Library clientele (lecturers and other members of the university community) are becoming increasingly sophisticated in their search for information (Baro & Asaba 2010). Thus, the role of the reference librarian has been changing and evolving as well just to keep pace with the needs of library users. Library users rely extensively on the innovations brought about by ICT. In order for their information needs to be met effectively, they need more support in the sophisticated ways of searching for information and carrying out their daily endeavours (Maryann & Udejah 2014).

The purpose of this paper is to report on the presence of online collaborative research activities in Obafemi Awolowo University (OAU) and to explain how we plan to connect with researchers in order to address their information needs. The paper will explain the services the researchers are expecting from the library will justify the need for the reference librarian specifically to provide effective support for these activities at the university. This will include the library's efforts to develop policies that will ensure that the various information needs of researchers are adequately met.

Objectives

The objectives of this paper are:

1. to share information about the online collaborative research activities based at Obafemi Awolowo University;
2. to explain how we identified the information needs of online collaborative researchers in Obafemi Awolowo University;
3. to surface those activities that the library/reference librarian could implement to support online collaborative research activities in Obafemi Awolowo University.

Context

Today, reference librarians are struggling to keep their place as the major source of inquiry in the face of emerging digital technology. Digital technology has emerged not only in the way information is packaged, processed, stored, and disseminated, but also in how users seek and access information for their diverse needs. Lombardi (2000) notes that users will prefer more computer content, more and more computer indices, digitized finding aids, digital repositories of articles and online access to newspapers. The convergence of ICT and its implications for reference service in academic libraries has received the widest attention among the practitioners of library and information science. No library can be relevant in the era of ICT without Internet facilitated reference services (Baro & Asaba 2010). Before reference librarians can maintain a prominent position in their institutions, they must move from providing limited or local access to universal access. For academic libraries in developing countries to achieve this, expandability, flexibility and compatibility will be required (Tebbetts 1991). However in Nigeria, reference librarians are faced with quite a number of barriers to the adoption of ICT into the library services. Abubakar (2011) in a study of academic libraries in Nigeria in the 21st century noted some of the barriers as finance, power supply, erratic internet services, lack of hardware and software, non-availability of ICT and IT illiteracy among academic librarians.

Brown (2013) noted that for collaborative research, each of the phases depicted in the JISC research cycle (Figure 1), needs to happen online, that is, the results of the research process needs to be in a shareable, digital format. This becomes very difficult or close to impossible when systems are not integrated and/or not able to communicate with other systems. The generic skills needed by the reference librarians to embed in the research lifecycle according to Leiss and Lockhart (2015) are academic identity management, scientific writing, communication/collaboration, networking and legal issues. Academic identity management improves the visibility of the researcher and includes having knowledge of how to manage research tools like ORCID, Researcher-ID, Google Scholar Account and Scopus Author management. Scientific writing will include trainings at institutional, national and international level on issues like guidelines for research integrity and good scientific practices. Communication/collaboration would include video/tele/web conferencing technologies like instant messaging, wikis, blogs, online forum and social bookmarking skills. Networking would include knowledge and use of collaborative research links like Researchgate, academia.edu, LinkedIn among others. Legal issues would entail the reference librarians having an understanding of author's agreement, citations, plagiarism and data management issues.



Figure 1: JISC research lifecycle

(Source: Brown 2013)

There has been a natural migration to virtual systems that are easy to integrate in an easy to use manner. For research, these systems are commonly known as Virtual Research Environments (VREs).

Virtual Research Environments

JISC (2011) defines a VRE as what “helps researchers, from all disciplines, to work collaboratively by managing the increasingly complex range of tasks involved in carrying out research”. A VRE is both the access interface and the infrastructure that allow the researchers to conduct research online and that enables researchers to easily collaborate with peers and team members internationally (Van Deventer 2015). Characteristics of a VRE include collaboration tools such as wikis and online forums, hosting of documents (dedicated websites), discipline-specific tools like data analysis, data visualisation, computational tools, management of publications, and self-teaching tools such as presentations and slides (Brown 2013). VREs have become the most important fields where research is primarily carried out among team members spanning through institutions and countries providing easy access to information sharing and research outputs (Candela, Castelli, & Pagano 2013).

Collaboration and the creation of VREs are strengthened by collaborative research activities that are geographically distributed in an academic environment (Arcila, Piñuel & Calderín 2013). Furthermore, VRE infrastructure makes collaboration easy and helps in creating structure in specific multi-party projects by making use of the Internet. The Internet has changed the way research is being carried out and now often drives the work processes required for research. Allusions have also been made to the fact that, researchers are enabled to perform new forms of collaborative research activities irrespective of time and location, by the emerging technologies which have compelled new services for libraries (Sargent 2006; COAR 2013). Some of these services according to Confederation of Open Access Repositories (COAR 2013) include “development of research data management plans, hosting collaborative virtual research environments, managing institutional repositories, and disseminating research outputs through open access mechanisms”.

Heijne (2009) however argues that libraries need to support online research for the following reasons; information and data management which involve providing access, creating metadata, reusing, storing and preserving information and data; teaching experiences on academic skills needed for research; knowledge and research management support; organization of research outputs and the underlying data; and providing links to research outputs and data.

Products and services provided for researchers, lecturers and students

Obafemi Awolowo University Library known as Hezekiah Oluwasanmi Library (HOL) is the major repository of all academic resources which serve the needs of the staff and students as well as other external users. The library is an important unit in the execution of the University’s primary functions of teaching, learning, research and community service (Library Handbook 2012). Presently, the library holds over 700,000 volumes which spread across textbooks for different disciplines, journals and special collections. HOL also ensures availability and accessibility to local content and promotes dissemination and utilization of knowledge through initiatives like raising awareness on the benefits of open access in the international research communities. Presently, the reference section of the library is creating awareness through workshops within the University on the role of the library in enhancing the availability of local content online (Asubiojo 2015).

Methodology

This paper reports a study carried out in Obafemi Awolowo University, Nigeria. Case study design was considered appropriate in obtaining reliable information for the study from the researchers involved in online collaborative projects. Eight collaborative projects drawn from the thirteen Faculties in the University were identified (See Figure 2). Interviews were scheduled with the coordinators and other available team members on the projects using purposive and snowballing sample techniques. Sixteen researchers were interviewed and the interviews were digitally recorded with the permission of the respondents. The transcribed interview responses of all the respondents were analysed based on the objectives of the study using Microsoft Excel.

Findings and discussion

Research projects

It is worthy of note that the researchers who participated in this study engaged in quality collaborative research activities within Africa and beyond. They are involved in various projects in partnership with other team members in different fields and institutions all over the world. These collaboration research projects were mostly online-based. At least 50% of these projects were agriculture based, 25% were human and health related while the rest were in the basic sciences (Figure 2). This finding is in consonance with the literature that has shown that there is more collaboration between researchers in physical sciences than between those in the social sciences and humanities (Kumar 2014). Also, Markauskaite, L., et al. (2012) opines that experimental based disciplines tend to collaborate more than theoretical based disciplines. Therefore, the reference librarian needs to explore new services, roles, research support/partnerships and work collaboratively with the researchers (Heijne 2009; Leggott, Moses and Hooper 2014).

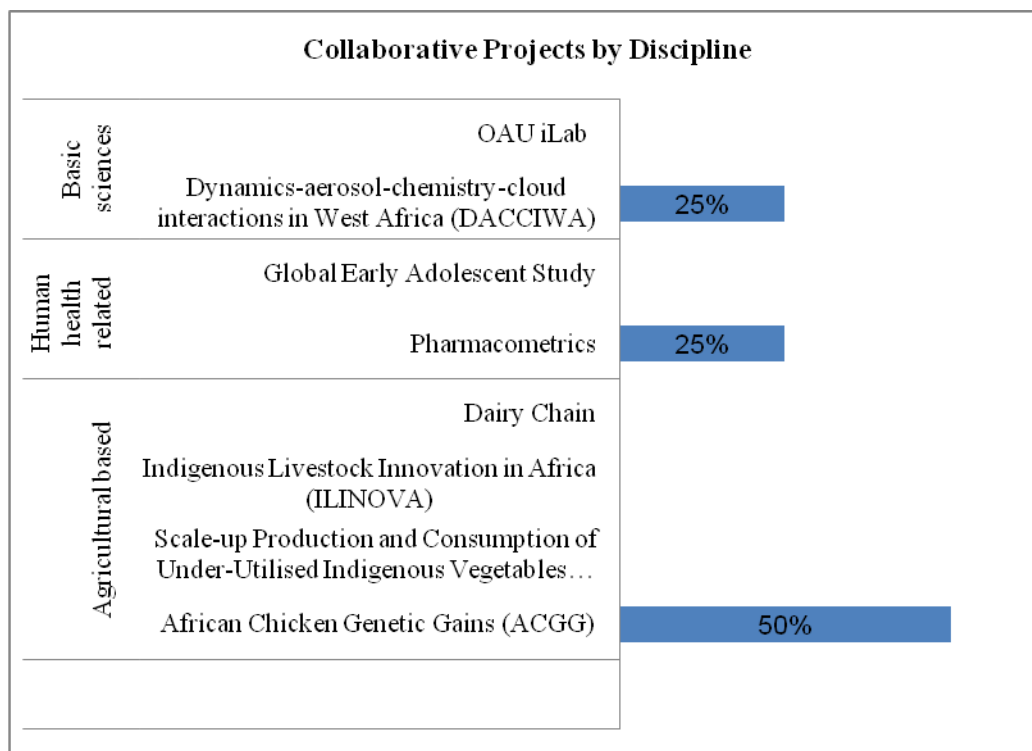


Figure 2: Collaborative research projects in OAU

Skills acquisition of online collaborative researchers in Obafemi Awolowo University

All the participants in this study acquired the necessary skills which empowered them to engage or manage this kind of research through postgraduate/post doctoral training, workshops and training sessions, continuous professional development programs and personal development. Also for many of them, training on the job was a very pertinent and crucial way for them to acquire the needed skills/practices. This clearly shows that most of the researchers acquired the skills with practice. It is a field that is just evolving and is not included in the curriculum of postgraduate training. Therefore, there is the need to advocate for the inclusion of online collaborative research methodology in the curriculum of

postgraduate programs with the reference librarian assisting with the training program. The lack of training is not unique to OAU as concerns for researchers' formal training in online research has been raised in an earlier study (Arcila, Piñuel & Calderín 2013).

Extent of the collaboration between researchers

To understand the information needs, the extent to which the researchers were collaborating with researchers outside Nigeria and to know if these collaborations deal with the sharing of resources (e.g. data, access to literature and equipment), the researchers were asked to explain what technologies their team used to communicate with each other, how the team members maintain reference lists and items to read, ensure that all know the deadlines for deliverables and share relevant new information with each other. These are presented in Figures 3-6.

The researchers primarily made use of Emails and Skype to communicate with each other. However, there were specialized tools, typical to each discipline, which the researchers made use of. The internet provided a networked infrastructure for collaborative technologies used by team members to communicate with each other (Harley & Blismas 2010). This trend showed that the technologies used by the researchers were linked to their areas of specialization while some cut across all disciplines.

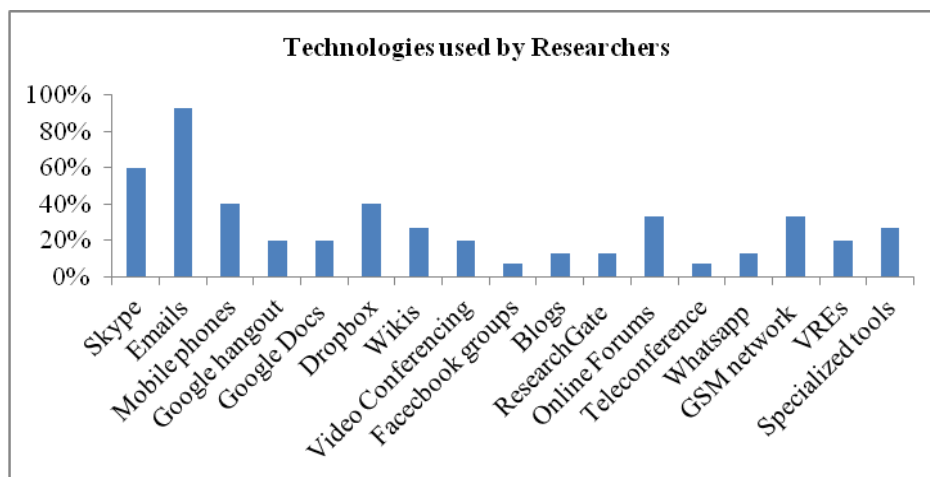


Figure 3: Technologies used by the researchers for communication

Most (80%) of the researchers do not have organised ways of maintaining reference lists and items to read (Figure 4). This might be due to the fact that they did not receive any formal training on how to manage reference sources. This is a matter that should definitely be addressed by reference librarians as this could be regarded as a standard information literacy skill.

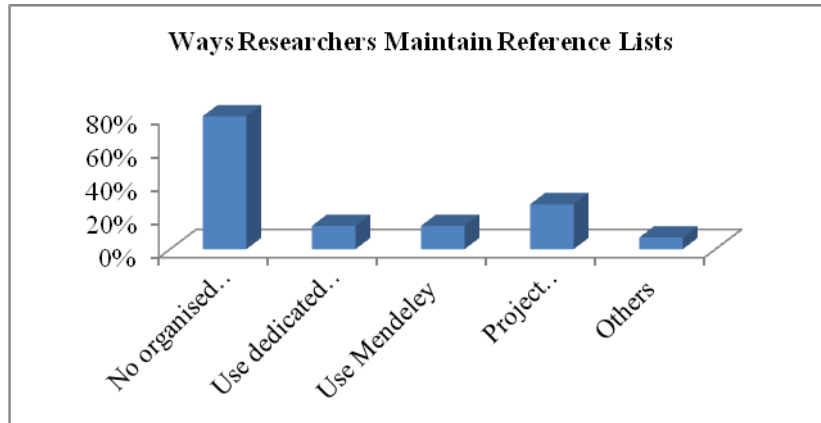


Figure 4: Ways researchers maintain reference lists and items to read

The researchers made use of shared calendar, emails, wiki-space and regular online meetings as ways of ensuring that all the team members knew the deadlines for deliverables (Figure 5). These are necessary for effective collaboration among the team members since they are not in the same geographical location and neither do they report into the same governance structure.



Figure 5: Technologies used by team members to know deadline for deliverables

The researchers also use tools like SharePoint, online forum, dropbox, wiki space and dedicated website to share relevant information (Figure 6). The tools used by the researchers are among those stated by Thomas (2011) that facilitates effective collaboration and communication among researchers irrespective of the location.

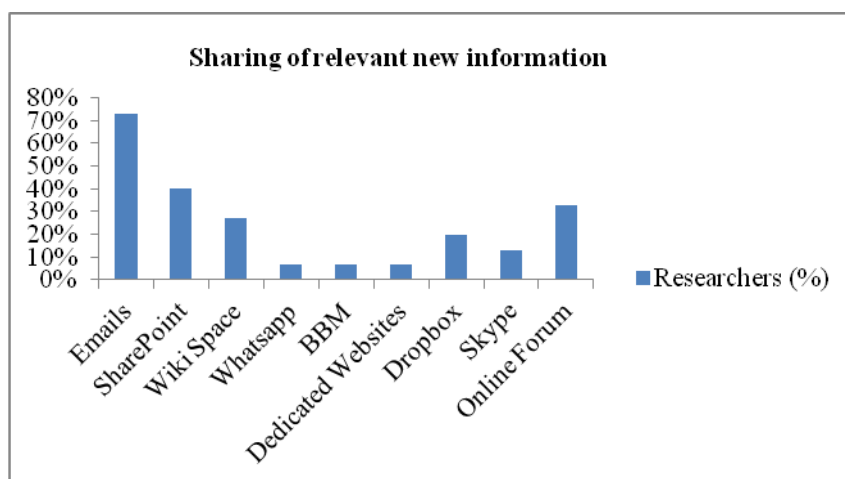


Figure 6: Sharing of relevant new information among team members

Support needed from the library for online collaborative research activities

The researchers mentioned the following as possible ways in which the library could support their online collaborative research activities: dissemination of information on eResearch resources available in the library, regular training and workshops on academic research, subscription to reputable journals, documentation of ongoing projects and links to the projects' own websites from the library's website, subscription to online communication tools and making them available to members of staff through the library's website, developing a data storage policy for research groups, and training students and staff on how to avoid plagiarism. All the researchers agreed that it would be helpful if they could use their journal articles directly from their workspace and get assistance with information overload. The researchers also thought that guidance on predatory publishing and training on the use of online communication tools would be very useful. Also the researchers want the library to engage them through regular training and workshops and wish for journal subscriptions that will be accessible via the library website. These aspects should be easy to address as the requirements are aligned with the existing library mandate.

Conclusion and Recommendations

This study has a far reaching implication for the University management, the practice of reference librarianship and other academic libraries. The University Research Committee (URC) will need to muster and sanction support for online collaborative research. The reference librarian will have to work with the staff of Information Technology and Communication Unit (INTECU) of the University for a successful engagement with the research community to be able to effectively support the online research activities of researchers and for sustainability. Furthermore, academic libraries must encourage their staff to gain experience and skills in managing researchers' publications, applying metadata, management of the institutional repository, providing advice on copy-right issues and encouraging publishing of research outputs in open access journals.

The Nigerian government should be informed so that it could recognise the growth of online research activities and the various collaborative projects in the country. Adequate infrastructures for power and internet connectivity are also needed for the smooth running of

all the research activities. Creation of national agencies for online research activities and regulatory bodies is therefore imperative.

Reference librarians must engage in continuous training for researchers in using more efficient tools such as Endnote, Mendeley and Refworks to manage reference lists and items to read and audit the collaboration tools already in use by the researchers with the aim of learning about the tools and to provide adequate services which might include subscriptions and trainings. The library will need to carry out a re-evaluation of their products and services to ensure that researchers have confidence in the library as an enabler of research. This is both a marketing challenge as well as ensuring that librarians have the necessary skills and know how to collaborate with the researcher as a trusted partner.

Also, the following recommendations are made specifically for the library:

1. There is a need for a guideline for the library to effectively support online collaborative research. This guideline should be developed as a matter of urgency.
2. Researchers are daily generating datasets, hence, a need also for the development of a data management policy for the University.
3. There is a need for the library to organize workshops for librarians, especially the reference librarians on how to support online digital research activities.
4. The library needs to subscribe to and create links on the library website to online tools which support online collaborative research. These tools may include Research and Professional Funding Organizations, major international organizations, scholarly journals through ScholarOne, Google Scholar among others.
5. Other services reference librarians could provide is to build relationships with the libraries of the researchers' networks in order to create a similar library network; raise awareness of communication tools for collaboration; have a closer look at the existing collaboration platforms to evaluate usage of tools and particular contributions to the researchers.

Acknowledgments

Omobolade Adeagbo acknowledges the funding received from the Carnegie Corporation of New York for her Master in Information Technology (M.IT) in the University of Pretoria, South Africa. She also acknowledges the grant received in support of her MIT program from Obafemi Awolowo University, Nigeria.

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