REVOLUTIONISING SCHOLARLY COMMUNICATIONS THROUGH INSTITUTIONAL REPOSITORIES: EMPIRICAL FINDINGS FROM UNIVERSITY (COLLEGE) IN MALAWI

Amoni Gray KAPASULE[1] and Winner Dominic CHAWINGA[2]

[1]*Senior Library Assistant, Kamuzu College of Nursing, Malawi*
Email: akapasule@kcn.unima.mw

[2]*Lecturer, Department of Library and Information Science, Mzuzu University, Mzuzu, Malawi*
Email: winnchawinga@gmail.com

Abstract

The study investigated an Institutional Repository (IR) at Kamuzu College of Nursing (KCN), one of the constituent colleges of the University of Malawi. A mixed methods approach which was implemented in two phases was adopted. In phase one, a questionnaire was sent to six library staff and 35lecturers at KCN. In phase two, follow-up interviews were conducted with the Head of an IR at KCN to seek clarification on some issues that came out after analysing the data collected in phase one. Results show that an IR at KCN was established to increase access to health information and to preserve institutionally produced documents. The contents of an IR at KCN according to the findings include research articles, dissertations, administrative forms, Ministry of Health Policies, Ministry of Education Policies, University of Malawi Policies, and Laws of Malawi. Some of the benefits that have come along with the establishment of an IR include: preservation of institutionally produced content and increased access to scholarly work by the wider college community. However, accessing an IR via intranet only, coupled with poor marketing of an IR, legal and copyright issues and unwillingness on the part of researchers (lecturers) to submit their works for depositing in an IR are the key factors that militate against the smooth running of an IR at KCN.

Keywords: Institutional Repository, Kamuzu College of Nursing, Lecturers, Malawi.

1. Introduction

It has been argued that digital technology has revolutionised not only the way information is packaged, processed, stored and disseminated, but also how users seek and access information (Anunobi & Okoye 2008). Technology has eased management and dissemination of information. In recent years, universities and research institutions have introduced institutional repositories (IRs) which have simplified the way information is processed, stored, disseminated and accessed by users within and outside the library. Lynch (2003) observed that IRs are being established in academic libraries, where digital materials created by the institution and its community members are managed, disseminated and preserved. It is a sole need of information providers or librarians that information be accessed anywhere in the world at any time; be it in hostels, offices, at home and even at the lake.

The introduction of IRs in universities has swept away a whole range of restrictions that prevented open access to knowledge, such as geographical barriers, time restrictions, and delays in distribution of physical materials and barriers that limited the range of sources accessible by any one individual (Pappalardo & Fitzgerald2007). Lynch (2003) defined a university-based institutional repository as "a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members". The definition of digital library is very much viewed from the librarians point of view as where content of digital libraries includes data, metadata that describe various aspects of the data (for example, representation, creator, owner, reproduction rights) and metadata that consist of links or relationships to other data or metadata, whether internal or external to the digital library (Borgman, 1999). Jain, Bentley and Oladiran (2010) argue that IRs are usually set up in universities to maximise the visibility and accessibility of comprehensive local research. This study investigated various aspects about the Kamuzu College of Nursing (KCN) Library IR in Malawi.

2. Research problem and questions

In 2008, the Kamuzu College of Nursing Library embarked on the project to develop an IR using Greenstone Software, with the sole aim of bridging the gap between information creators and information seekers. The first phase of this project targeted research reports, articles, thesis for post-graduates programmes and dissertations for undergraduate students. The development of this institutional repository at KCN was then changed in 2012 with management opting for a DSpace software. Ever since the project was launched, it has progressed at the snail's pace because of several factors which the researcher hoped could best be explained by conducting an empirical study. The study answered the following specific research questions:

- What are the reasons for the establishment of KCN IR?

- What are the content and operational issues involved in the development of IR at KCN?

- What are the benefits of IR at KCN?

- What are the challenges affecting the smooth running of an IR at KCN?

3. Literature review

A lot is written about institutional repositories (IR) by various scholars. However, this section reviewed literature related to the development and operation of university based IRs as informed by the research questions. The literature reviews reasons for the establishment of an institutional repository, operational issues involved in the development of institutional repository, the benefits of institutional repository and challenges encountered during development of an IR.

3.1 Reasons for establishment of IR

Universities are regarded as the main producers of primary research and therefore, it is of paramount importance that institutions of higher learning engage themselves in better ways of collecting, preserving and disseminating research output that are produced (Singeh, Abrizah and Karim 2013, 24). Lynch (2003, 1) argued that IRs allow universities to leverage and promote scholarly communication. According to Borgman (1999), researchers believe that IRs should be established to collect content on behalf of the user community whereas practicing librarians believe that IRs should be set up to exploit the power of emerging technologies in transforming

offering of library services. IRs have proved worth investing because according to Crow (2002) and Zainab (2010), IRs increase access to a wide range of scholarly information, promote dissemination of information and promote awareness amongst researchers about research-based literature. More importantly, Nyambi and Maynard (2012) advocate for the establishment of IRs because they are central to the long-term preservation of digital materials. It is clear from the literature that reasons for institutional development are mainly to increase accessibility to research-based literature and promote long-term preservation of digital materials.

3.2 Content and operational issues

A large body of literature also focuses on the content of IRs. According to the Scholarly Publishing and Academic Research Coalition (SPARC) (2002), Lynch (2003) and Genoni (2004) some materials contained in IRs may also include grey literature that falls outside materials formerly collected by libraries. Primarily, various types of materials that are worth including in IRs include preprints; working papers; theses and dissertations; research and technical reports; conference proceedings; departmental and research centrer newsletters and bulletins; papers in support of grant applications; status reports to funding agencies; committee reports and memoranda; statistical reports; technical documentation; and surveys (SPARC 2002; Abrizah, 2010).For example, a study conducted by Nyambi and Maynard (2012) about the current state of institutional repositories in Zimbabwe revealed that university IRs contained materials including peer-reviewed journal articles, published conference papers, books and book chapters, working papers, research reports and seminar papers.

In terms of operational issues, Jain, Bentley and Oladiran (2010, 6) reported that some operational issues to consider when setting up and running an IR include software, hardware, staffing and running cost; maintenance, upgrades and training. It is also argued that the success of an IR is dependent on the effort applied upon advocacy and public relations strategies, a well-developed advocacy programme to lecturers and senior management which is an on-going initiative (Jain, 2010). In Zimbabwe, Nyambi and Maynard (2012) reported that International Network for the Availability of Scientific Publications (INASP) offers sensitisation workshops, which look at how senior management can be encouraged to buy into the idea of having an IR and how the academic staff can get involved so that the IRs become usable. It is argued that marketing the IR is critical and librarians should be the first step in promoting the IR on campus because they are deemed central between an IR on one hand and researcher and user community on the other (Bauer, 2005; Abrizah, 2010, 5). Literature seems to suggest that librarians being developers of IR should take a leading role in promoting them to researchers and users about benefits of submitting research output and use respectively.

3.3 Benefits of IR

Literature suggests a number of reasons to lecturers that contribute research work to IR. Institutions of higher learning reap many benefits from IR project. Some of the benefits include increased visibility of the university thereby attracting high quality staff, students and funding. Centralisation and storage of all types of research output (published and unpublished literature), provide links which may offer virtual teaching environment and library catalogues of institutional records, track of and analysis of research performance, breaking down of publishers' costs and permissions barriers, alleviation of requirement to trust publishers to maintain information in the long term, without any commercial benefit for the authors and promotion of a philosophy of wider communication. (SPARC 2002; Foster and Gibbons 2005; Pickton & Barwick 2006; Kim 2007; Abrizah 2009; Casey 2012).

3.4 Challenges

Potential barriers to the success of IR include the costs, (time spent drafting policies, developing guidelines, publicising, training, supporting users and creating metadata, specialist IT consultancy) resistance from content creators to deposit work, sustenance of support and commitment, rights management issues, content creators' lack time to contribute to IRs, and lack of incentives (Lynch 2003; Pickton & Barwick 2006; Jain 2010; Abrizah 2010; Nyambi & Maynard 2012).

4. Methodology

A mixed methods approach which was implemented in phases was adopted. In phase one, a questionnaire was sent to six library staff and 35 lecturers at KCN. In phase two, follow-up interviews were conducted with Head of an IR at KCN to seek clarification on some issues that come out after analysing data collected in phase one. All four Departments under the Faculty of Nursing were considered for this survey. The Faculty of Nursing has four departments namely: Department of Maternal and Child Health, Department of Basic Studies, Department of Medical Surgical/Clinical, Department of Community and Mental Health. These Departments offer various undergraduate and postgraduate degree programmes including:- Bachelor of Science in Nursing and Midwifery, Bachelor of Science in Nursing, University Certificate in Midwifery, Masters of Midwifery, Masters of Reproductive Health, Masters of Child Health Nursing, Masters in Nursing Education, Masters of Science in Community Health Nursing and **Doctor of Philosophy in Inter-professional Health Care Leadership (KCN 2014).** A questionnaire was also distributed to six library staff (Librarian, Assistant Librarian, Senior Library Assistant and Library Assistants). Finally, follow-up interviews were conducted with the Head of an IR Section to seek clarifications on some inconsistencies and gaps identified after analysing the questionnaire data.

5. Results

5.1 Reasons for the establishment of KCN institutional repository and operations

Findings from both questionnaire and follow-up interviews show that an IR at KCN was developed to increase accessibility of library materials. Most of the library staff 5 (83%) recognise that IR was established for document preservation. Most lecturers agreed that an IR was set up so that others can learn from their materials/ research outputs. In summary, results show that the IR was specifically established at KCN to increase accessibility to research outputs, to promote use of the ICT infrastructure that the College has invested in, to enhance keeping of files and documents and image of the College through online visibility

5.2 Content and operational issues in development of institutional repository

Most library staff are aware of the types of materials contained in KCN repository. Five (83%) mentioned dissertations and four (66%) mentioned research articles. The Head of the IR mentioned that other information materials include, theses, dissertations, administrative forms, policy documents for the University of Malawi and for the Ministry of Education and Ministry of Health and Laws of Malawi related to health are some of the content materials found in the repository. These findings are not unique to the KCN IR because previous studies by SPARC (2002) Lynch, (2003) and Genoni (2004) indicated that such various types of materials

are considered worth including in institutional repositories. Different institutions have different unique materials for their repositories, but common to university based IRs includes thesis, dissertations, conference proceedings and research reports (SPARC 2002; Lynch 2003; Genoni 2004; Nyambi & Maynard 2012; Abrizah 2010).

The study further found that 5 (83%) library staff are aware that DSpace Software (this is an open source software which includes features and tools to manage, preserve and provide access to content on the web (Duraspace2012) is used at KCN IR. In terms of the hardware used, library staff had divided opinions: others mentioned of Dell Server whereas others mentioned HP server. During follow up interviews with an IR Administrator, it was established that it is the Dell server which is currently being used with Harddrive Space of 1TB, Ram 4GB, Processor 2.4GHz and Operating on Windows Server 2003 Service pack2. The institution is in the process of replacing the current software with the new one.

In terms of ways of access to the IR, the study revealed that the repository is accessed by KCN students and lecturers via the Local Area Network (LAN).This means KCN has not adopted an open access institutional repository that provides open access to their intellectual output that can be accessed worldwide. Hence, the IR Administrator commented to say "We are using open Access, however internally". After all, Singeh, Abrizah and Karim (2013, 25) commented that Open Access IRs are still a new and growing phenomenon in developing countries. Follow up interviews with an IR administrator showed that ICT personnel are engaged in setting up the IR and that the College work in partnership with the Malawi Library Consortia (MALICO) on the selection of suitable software i.e. DSPace.

5.3 Benefits of IR at KCN

The general reason lecturers express willingness to contribute to the IR is to make their published material more easily accessible to colleagues, students, the tenure and promotion committee (Casey 2012). However, the present study found that 22 (81%) of the lecturers contribute to the IR in order to communicate research results and 11 (41%) lecturers contribute their research findings to boost image of the university while 10 (37%) contribute to IR just to increase their personal recognition. The findings are not different from previous studies which indicate that the sole reason for contributing materials to IR is to increase accessibility (Abrizah 2009; Foster & Gibbons 2005; Kim 2007).

According to the data gathered from library staff, IR is benefiting the Library and the College as a whole in various ways which include an increase in dissemination of research output, easy access to information materials, value added service, for example, articles can be searched by author and this has helped to raise the profile of the library as an effective information provider, materials are kept safely (no physical damage), it has lessened work pressure on the thin library staff and it has helped to reduce shortage of space in the library for keeping hard copies.

5.4 Challenges faced

This confirms that IR at KCN is running on Intranet and not on Internet. Mohammed (2013,6) alleged that electricity supply is a major problem in developing countries which affects the development of projects like IRs. But this study observes that at KCN, this is not significant problem because according to the IR Administrator all computers in the library are backed up with uninterrupted power supply (UPS) and a standby generator which instantly picks up power

in case of power failure. There are poor marketing practices at KCN IR. As a result of inadequate marketing and communication to staff, students and researchers, embracing IRs becomes difficult (Nyambi & Maynard 2012, 61). Responding to how communication or updating other library staff on progress of IR affects operations of the IR, two library staff said they are not communicated or involved in the IR work. Therefore, lack of communication among library staff on developments of IR at KCN is a key challenge.

Pickton and Barwick (2006) observed that generating content for IR depends on the keenness of authors to deposit their work willingly. Three (50%) library staff said researchers are not willing to contribute. Results suggest that the majority of respondents indicate that knowledge producers are not willing to contribute to IR and this corresponds to findings gathered from lecturers where it was noted that only 7% of lecturers contributed to the institutional repository at KCN. But when asked to indicate if they were willing to deposit materials to the institutional repository once approached by library staff, 24 (89%) lecturers said they are willing to contribute to the IR.

Findings of this study show that 25 (93%) lecturers who participated in this study were reluctant to contribute their research outputs to the IR because of legal and copyright issues. Similarly, when asked how legal and copyright issues affect the development and operations of KCN repository, lecturers said they were concerned with publishers' policies that sometimes restrict circulation of articles they have published in journals that are based on subscriptions which adversely affect IR development at KCN. When lecturers were further probed to explain why they were reluctant to contribute to the IR, 15 (55%) lecturers said they were not aware of the service. Findings of this study are in line with observations made by Van Westrienen and Lynch (2005) Lecturers are sometimes unable to contribute their content to the IRs because of misunderstanding and uncertainty about intellectual property issues, difficulties to inform lecturers and persuade them to participate, how scholarly materials in IR would be used and acknowledged and lastly, lack of mandatory policies. According to follow-up at KCN, there are no mandatory policies for lecturers to deposit their content in the IR. This is from the perspective of lecturers, the following are the reasons they do not contribute their research out to an IR:

5.4.1 Lack of motivation

The study found that nine (33%) lecturers were concerned that there was no academic reward for contributing to KCN IR. However one lecturer who seems to know the reward gave important statement which reads: "published work remains my intellectual property and the fact that my manuscripts are published and can be archived into repository is emotionally rewarding".

5.4.2 Lack of self-archiving culture

Pickton and Barwick (2006) suggested that since lecturers lack time to self-archive, then mediated deposits service should be done for them. The IR administrator at KCN mentioned that mediated method is employed by KCN to collect articles from lecturers for depositing in the repository. Mediated method in this context entails efforts made by a library staff or any person rather than the creator of the document to deposit the material in the IR on behalf of the author which is different from self-archiving where owners of documents take initiative to deposit their materials to the IR.

This study has found that 13 (48%) lecturers have not developed a self-archiving culture. Since a good number of lecturers at KCN are affected with self-archiving culture, then it only confirms Hey's (2004) and Davis and Connolly's (2007) assertions that lecturers refrain from practicing self-archiving hence the need by library staff to deploy a mediated method.

5.4.3 Lack of technical skills

Results of this study indicate that 12 (44%) lecturers lack ICT skills. So, it is clear from this study that lecturers do not have ideal technical skills implying that they were not oriented on how depositing materials in the IR is done. But follow up interviews with an IR Administrator reveals that when a repository was being launched, the Library conducted seminars where lecturers were invited to appreciate what the IR is all about. To this end, Abrizah (2010) commended that librarians must keenly pursue their role as educators in training authors of intellectual works who will be contributing to the IR, training that would include helping the university lecturers learn to use IR software for self-archiving, creating documents that can be more easily maintained in a digital setting, training on issues surrounding digital preservation and providing guidance concerning metadata.

6. Conclusion

In conclusion, an IR at KCN has been established to increase accessibility of research findings and allow users easily access research findings, to raise the profile of the Library and the College and to archive both, published and grey literature. The type of informational materials contained in the repository includes theses, dissertations, and administration forms, policy documents for UNIMA, Ministry of Health and Ministry of Education. Accessibility to IR by students, lecturers and non-academic staff is through LAN interface implying that KCN has not adopted open access yet which can assist general public access IR via the Internet. An IR at KCN was developed in partnership with skilled staff from the ICT section and Malawi Library Consortia (MALICO). An IR at KCN is not affected by power interruption as is the case in other countries because of the presence of standby generator and UPS which provide electricity whenever there is power outage. Marketing of IR is poor and persistence advocacy is needed so that more articles continue to be added to the IR. It is noteworthy, that lecturers are aware of the IR but concerns about copyright refrain them from contributing their research outputs. Therefore, the study reveals more to be done by management to rectify potential barriers that can impinge on IR development at Kamuzu College of Nursing.

References

Abrizah, A. (2009) The cautious faculty: Their awareness and attitudes towards institutional repositories. *Malaysian Journal of Library & Information Science,* 14(2) pp. 17–37

Abrizah, A. (2010) Piloting an institutional repository at a research-intensive university:

Strategies for content recruitment and the role of the library. *World Digital Libraries*3(1) pp. 23–29.

Anunobi, Chimwe V. & Okoye, Ifeyinwa B. (2008) The role of academic libraries in universal access to print and electronic resources in developing countries. *Library philosophy and practice.*http://www.digitalcommons.unl.edu./libphilprac/189[accessed 15 November, 2015].

Borgman, C.L. (1999) What are digital libraries? Competing visions. *Information Processingand Management.* http://dawnz.yolasite.com/resources/What%20are%20digital%20Libraries.pdf[accessed 04 February, 2015].

Crow, R. (2002) The case for institutional repositories: a SPARC position paper.http://www.arl.org/sparc/bm~doc/ir final release 102.pdf[accessed 29 February, 2015].

Davis, P.M., and Connolly, M.J.L. (2007) Institutional repositories: evaluating the reasons for non-use of Cornell University's installation of DSpace. *D-Lib Magazine.* http://www.dlib.org/dlib/march07/davis/03davis.html. [accessed 13 June, 2015].

Duraspace, (2012) *DSpacebrochure.*http://duraspace.org/sites/default/files/DSpacebrochure.pdf[accessed on 07 July, 2015].

Foster, N.F. & Gibbons, S. (2005) Understanding faculty to improve content recruitment forinstitutional repositories. *D-Lib Magazine11 (1)*

Genoni, P. (2004) Content in institutional repositories: a collection management issue. *LibraryManagement.* http://dx.doi.org/10.1108/01435120410547968[accessed 15February, 2015].

Gibbons, (2004) Defining an institutional repository. Library Technology Report, July 1, 2004 www.techsource.ala.org[accessed 07 July, 2015].

Hey J (2004) Metadata issues for e-prints: experiences from setting up an institutional repository. *Paper presented at the ePrints UK Workshop,* Ashmolean Museum Oxford, 22 March, 2004. http://tardis.eprints.org/papers/HeyJessie_eprintsuk_oxford22mar04.ppt. (accessed 17June, 2015)

Jain, P. Bentley, G. & Oladiran, M. (2010) The role of institutional repository in digitalScholarlycommunications.http://www.ais.up.ac.za/digi/docs/jain_paper.pdf[accessed 25 May, 2015].

Kamuzu College of Nursing (2014) *Programmes.*http://www.kcn.unima.mw/index.php/submit-an-article/programmes[accessed 17September, 2014].

Kim, J. (2007) Motivating and Impeding Factors Affecting Faculty Contribution to Institutional Repositories. *Journal of Digital Information.* http://journals.tdl.org/jodi/article/view/193/177[accessed 7 May, 2015].

Lynch, C.A. (2003) Institutional repositories: essential infrastructure for scholarship in the digital age, ARL Bimonthly Report, No. 226. [www.arl.org/newsltr/226/ir.html[accessed 4 June, 2015].

Mohammed, A. (2013) Institutional digital repository: an option for scholarly communication in Nigeria. *International journal of Education and Research*http://www.ijern.com/journal/June-2013/33.pdf[accessed 15 August, 2014].

Nyambi, E. & Maynard, S. (2012) An investigation of institutional repository in state university in Zimbabwe. *Information Development.*28(1) pp. 55–67.

OCLC, (2003) OCLC environmental scan 2003: research and learning landscape: www.oclc.org/membership/escan/research/repositories.htm [accessed13June, 2015].

Open DOAR. (2008) The directory of open access repositories. http://www.opendoar.org/index.html[accessed June 4, 2015].

Pappalardo, K. & Fitzgerald, A. (2007) A guide to developing open access through your digital repository. http://eprints.qut.edu.au/9671/1/9671.pdf [accessed 15th August, 2014].

Pickton, M. & Barwick, J. (2006) A Librarian's guide to institutional repositories. *Rough borough University*. http://magpie.lboro.ac.uk/dspace/handle/2134/1122[accessed on 12 June, 2015].

Singeh, F.W., Abrizah, A. & Karim, N.H.A. (2013) What inhibits authors to self-archive in Open Access repositories? A Malaysian case. *Information development*. 29(1) pp 24–35.

SPARC (2002) SPARC Institutional Repository Check-list and Resource Guide.www.arl.org/sparc/IR/IR_Guide.html#management[accessed 23 February, 2015].

Van Westrienen, G. and Lynch, C.A. (2005) Academic Institutional Repositories: Deployment Status in 13 Nations as of Mid-2005.*D-Lib Magazine,* Vol. 11.

Zainab A.N. (2010) Open access repositories and journals for visibility. *Malaysian Journal of Library & Information Science.*15 (3) pp. 97–119.