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Creating an institutional repository at the University of Dar es Salaam: some experiences

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Abstract

The University of Dar es Salaam (UDSM) Library is establishing an institutional repository (IR) to preserve, and provide wider visibility and accessibility for, its intellectual outputs. In order to understand stakeholders' views a needs assessment survey was conducted. The objectives of the study were to assess users' levels of awareness of IRs, users' interest in the establishment of an IR, and users' recommendation on the types of materials to be included in the IR. In addition, the survey intended to take users' view on the modality of deposition, moderation, access and use of IR materials.

The sample was drawn from UDSM academic and administrative staff, and postgraduate and undergraduate students. A purposive sampling technique was used to select a sample from the population, and secondary data was collected using a documentary review. Primary data were collected using self-administered questionnaires. Research tools were tested to check validity, reliability and clarity. Both qualitative and quantitative data for the study were analysed and presented. Quantitative and Qualitative data were codified and analysed using SPSS and content analysis respectively,

The study reveals that most users at UDSM are not aware of the institutional repository. In comparison with other users, academic staff are aware of the IR and because of this, they use the IR to access and disseminate materials. Postgraduate students follow by using the IR to access materials; administrators use the IR to disseminate, in contrast to postgraduate students. Undergraduate students have low levels of awareness and few of them use IR for any purpose.

Materials that are mostly recommended for including in the IR are research reports, journal articles and theses and dissertations. Most respondents want "anybody to be allowed to freely access IR materials", "Anybody should use IR materials with acknowledgement" another is that "Individual should register first, to capture statistics". Most respondent agree that materials should first be peer-reviewed so as to qualify them for archiving in the repository. Furthermore most respondents recommend that faculties, institutes or the directorate of the research committee should be responsible for peer-reviewing. The majority of respondents (96%) see it is very important to have a UDSM-established institutional repository. Respondents recommend

strongly the creation of awareness of users in order to utilize the IR resources very effectively; they also recommend the set up of quality and reliable ICT infrastructure to enhance retrieval and dissemination of information

Introduction

The University of Dar es Salaam, through the Main Library, is establishing an institutional repository (IR) to preserve and provide wider visibility and accessibility for its intellectual outputs. The project is sponsored by the International Network for Availability of Scientific Publications (INASP) under its Small Grant Scheme. These initiatives started in October 2008 by formulating a business plan, followed by a needs assessment survey, Institutional Repository software installation; recently we formulated a repository policy.

This paper presents the results of the needs assessment which was conducted between January and March 2009. The survey was conducted in order to understand stakeholders' views on IRs. The study had the following objectives: first, to assess the user level of awareness of IR, and user interest in the establishment of an IR at UDSM; secondly, the study intended to seek users' recommendation on the types of materials they would prefer to be included in the IR if the institution were to establish it; and thirdly, the survey aimed at seeking users' view on modality of deposition, moderation, access and use of IR materials. The following is the report of the survey, showing methodology and results.

Methodology

This study adopted a survey research design. The study used questionnaires as a method of data collection.

Area of study and population

The study was conducted at the University of Dar es Salaam main campus. The population of the study involved all UDSM main campus staff (academics and administrators) and students (postgraduates and undergraduates).

Sample size and sampling techniques

The sample size of the study was 216, drawn from UDSM academic staff, postgraduate students, undergraduate students and administrative staff. The purposive sampling technique was used to select a sample from the population; this was the preferred method so as to ensure representation from all faculties, all categories of users and the inclusion of equal representation of both sexes. All UDSM main campus faculties were included in the sample, namely, the Faculties of Law (FOL), Education (FOED), Mechanical and Chemical Engineering (MECHE), Civil Engineering and the Built Environment (CEBE), Electrical and Computer Systems Engineering (ECSE), Informatics and Virtual Education (FIVE), Science (FOS), Aquatic Science and Technology (FAST), and Commerce and Management (FCM). The intention was to have four user groups and each user group had to be represented by 6 respondents, hence 24 respondents from each faculty, as indicated in Table 1 below:

Table 1: Distribution of respondents by user group, gender and faculty.

FACULTY	UG		PG		ADMN		ACADM			
	M	F	M	F	M	F	M	F	**TOTAL**	%
FOED	3	1	3	1	2	2	3	1	16	8
MECHE	2	1	3	1	1	2	2	2	14	7
FASS	3	3	3	2	2	2	3	3	21	11
FCM	2	3	1	3	2	2	1	3	17	9
CEBE	2	2	2	2	2	2	2	2	16	8
ECSE	3	2	2	3	1	2	3	3	19	10
FOL	3	3	3	3	3	2	3	2	22	12
FIVE	2	2	3	2	3	3	2	2	19	10
FOS	3	3	3	3	3	3	3	3	24	13
FAST	3	3	2	2	3	3	3	3	22	12
TOTAL	26	23	25	22	22	23	25	24	190	100

Source: UDSM-IR needs assessment survey

Data collection

A combination of methods was used to collect data for this study. Secondary data was collected using the documentary review method. Primary data was collected using self-administered questionnaires distributed to academics, students (both postgraduate and undergraduates), and administrative staff from faculties. The response rate for the study was reasonable, that is 190 (88%) out of 216 respondents returned the questionnaires, out of which 98 (52%) were male and 92 (48%) were female. Table 1 above shows the distribution of respondents by user group, gender and faculty.

Pre-testing

Before the study was carried out, questionnaires were tested with a group of 10 respondents, picked from library users, to check validity, reliability and clarity. Feedback from the pre-testing exercise was used to improve the instrument regarding the aspects mentioned above.

Data analysis and presentation

Both qualitative and quantitative data for the study were analysed and presented. Quantitative data was codified and entered into SPSS software package for analysis. Frequencies and cross tabulations were run. Data was presented in tables and in pie charts. Qualitative data was analysed using the content analysis method.

Limitations

This study was done during the time when undergraduate student were suspended following strikes and boycotting classes. We had to wait until they came back in February 2009 and this delayed the process of data collection for two weeks.

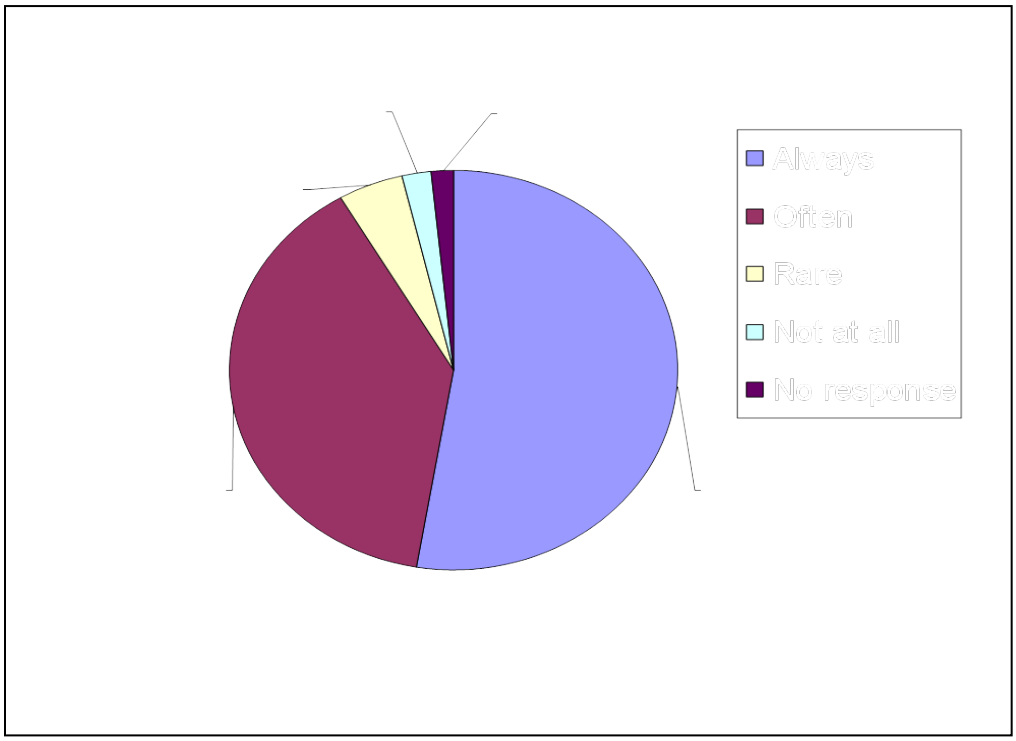
Results of the survey

The results reflecting the objectives of the survey are shown below

Users' IR levels of awareness

So as to determine user IR awareness, respondents were asked to indicate their frequency of Internet use, if they have ever heard about IRs before, and if they have ever used IRs to access or disseminate materials. Responses on frequency of Internet use are summarized in Figure 1 below.

Fig 1: Frequency of Internet use



From Figure 1 above, 100 (52.6%) respondents indicated that they always use Internet, 74 (38.9%) show that they often use Internet, 9 (4.7%) indicated that they rarely use Internet, 4 (2.1%) indicated that they are not using Internet at all, while 3 (1.6%) did not respond to the question. Basing on the findings, 174 (91.5%) of respondents have a higher frequency of Internet use. Higher frequency of Internet use is associated with high likelihood of being aware of IRs. Assumption is that those who frequently use the Internet are more likely to encounter IRs in the course of using it than those with a low frequency of use or those who don't use it at all.

Responses on whether respondents have heard about IRs before and whether they have used IRs to access or disseminate materials are summarized in Table 2 below.

Table 2. Users who heard and used IRs to access and disseminate materials

	Yes	%	No	%	No response	TOTAL
Heard about IR before	65	34	123	65	2	190
Use of IR to access materials	50	26	138	73	2	190
Use of IR to disseminate	36	19	151	79	3	190

Source: UDSM-IR needs assessment survey

From Table 2 above, 65 (34%) of respondents indicated that they have heard about IRs before; 123 (65%) shows that they have never heard about IRs before this survey; 2 respondents did not respond to this question. Moreover, 50 (26%) of respondents indicated that they have used IR to access materials; 138 (73%) shows that they have not used IRs to access materials; 2 did not respond to this question; 36 (19%) of respondents show that they have used IRs to disseminate information; 151 (79) have never used IRs to disseminate information; 3 respondents did not respond to this question.

Basing on the findings above, most of the respondents have never heard about IRs before and most respondents have never used IRs to access or disseminate information. This finding reveals that users' level of IR awareness is low, despite the fact that most of them frequently use the Internet. This situation can be explained by the fact that most users might be using the Internet to communicate via email and chat services, or to access information via other electronic sources of information such as databases, search engines, electronic journals and sources other than IRs. It is also true that most respondents who indicated that they are not aware of IRs probably do not realize that when they use Google and other search engines they actually get materials from various IRs without knowing it. Moreover, data reveals that for those who have used IRs before, more respondents have used it to access information than to disseminate information.

Further analysis on the same set of questions was done to determine awareness and use level by user group as summarized in Table 3 below

Table 3: Users who heard and used IRs to access and disseminate materials, by user groups

User group	Heard				IR use							
	Yes	%	No	%	Access				Disseminate			
					Yes	%	No	%	Yes	%	No	%
UG	11	22	38	78	8	16	41	84	5	10	43	90
PG	15	32	32	68	14	30	33	70	9	19	38	81
ADMN	13	29	33	71	9	20	36	80	10	22	35	78
ACAD	26	55	21	45	19	40	21	45	12	26	35	74
Total	**65**		**123**		**50**		**138**		**36**		**151**	

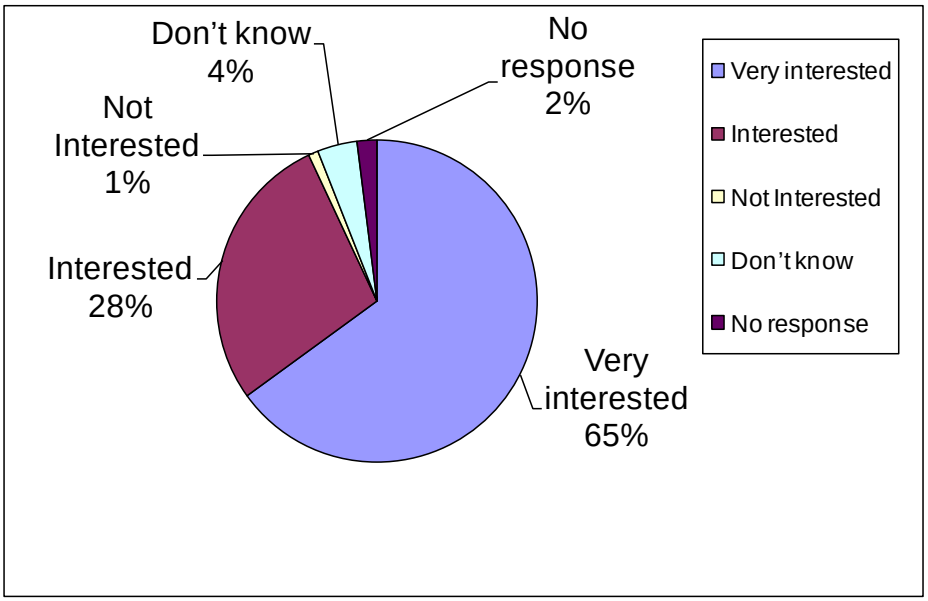
From Table 3 above, out of 65 respondents who have heard about IR before, 11 (22%) are undergraduates, 15 (32%) are postgraduates, 134 (29%) are administrative staff and 26 (55%) are academic staff. This shows that more academic staff have heard of IR before as compared to other user groups. Data shows that most undergraduate students and administrative staff have never heard about IR before as compared to other groups. In terms of IR use to access information across user groups, out of 50 respondents who have accessed IR before, 8 (16%) are undergraduates, 14 (30%) are postgraduates, 9 (20%) are administrative staff and 19 (40%) are academic staff. This data shows that more academic staff have used IR to access information, followed by postgraduates as compared to other user groups under study. In relation to IR use to disseminate information, out of 36 respondents who have used IR for that purpose, 5 (10%) are undergraduates, 9 (19%) are postgraduates, 10 (22%) are administrative staff and 12 (26%) are academic staff. This data shows that more academic staff have used IR to disseminate information, followed by administrative staff as compared to other user groups on the same aspect.

This means academics are more aware of the role of the IR as a key source of information. This can be explained by the fact that academics have a high demand for research information stored in international databases and also use the IR to disseminate and share their research findings with their counterparts.

Users' IR needs

Respondents were also asked to indicate if they are interested in seeing the establishment of IR. Responses are summarized in Figure 2 below.

Fig 2: IR use interest



Source: UDSM-IR needs assessment survey

From the figure above, out of 190 respondents, 124 (65%) show that they are very interested, 54 (28%) show that they are interested, 1 (1%) indicated not interested, 7 (4%) don't know whether they are interested or not, and 4 (2%) did not respond to the question. Based on the data, 178 (93%) respondents show interest in accessing and using an IR; this is an indication that users would like to have access to materials from an IR because of its multiple benefits in their academic and research activities. Therefore, this shows that 93% of the respondents are interested in the establishment of an IR. This is a clear indication that respondents would like to have access to materials stored in the IR which are current and relevant and also which can be downloaded instantly.

Material preference

Users were asked to indicate types of materials they would like to see included in the IR. Responses are summarized in Table 4 below.

Table 4: Types of material recommended

	Type of materials	Freq.	%
N=190	Research reports	154	81
	Journal articles	143	75
	Theses/Dissertation	123	65
	Administrative documents	120	63
	Conference proceedings	112	59
	Learning Objects	108	57
	Other materials accessed	9	4.7

Source: UDSM-IR needs assessment survey

From Table 4 above, out of 190 respondents, 154 (81%) prefer research reports, 143 (75) prefer journal articles, 123 (65%) prefer thesis and dissertations, 120 (63%) prefer administrative documents, 112 (59%) prefer conference proceedings, 108 (57%) prefer learning objects, and 9 (4.7) other materials such as newspapers, bulletins, newsletter, maps, and books (rare and out of print books). Based on the data, most preferred materials are research reports, followed by journal articles, theses and dissertations, administrative documents, conference proceedings and lastly learning objects.

Users' views on IR mode of operation

Respondents were asked different questions on how the IR should be operationalized in terms of deposition, access and use of IR materials. The responses are summarized in Table 5 below.

Table 5: Acceptable use of IR materials

	Acceptable use of IR	Freq.	%
N=190	Anybody should be allowed to deposit	60	32
	Anybody should be allowed to freely access IR materials	93	49
	Individual should register first to capture statistics	90	47
	Individuals should register for detection of unethical use	70	37
	Anybody should add notes or edit	40	21
	Anybody to use IR materials with acknowledgement	82	43
	Other uses	4	2

Source: UDSM-IR needs assessment survey

From Table 5 above, data show that 60 (32%) are of the view that anybody should be allowed to deposit material in the IR; 93 (49%) are of the view that anybody should be allowed to freely access IR materials; 90 (47%) have the opinion that individuals should register first, to capture statistics; 70 (73%) suggested that individuals should register for detection of unethical use; 40 (21%) indicated that anybody should be allowed to add notes or edit materials in the IR; 82 (43%) have the opinion that anybody should be allowed to use IR materials with acknowledgement, and 4 (2%) recommended other modalities such as more controlled submission procedures, access and use of IR materials.

Based on the data presented above, on the issue of deposition of materials the majority of respondents (68%) indicate that not anybody should be allowed to deposit material on the IR. On the issue of access most respondents (51%) indicate that not everybody should be allowed to freely access IR materials. Further on the access issue, most respondents indicated that those accessing IR should not have to register first for either the purpose of capturing statistics or for the purpose of detection of unethical use of IR materials. On the issue of adding notes and editing IR materials, most respondents do not support the idea of adding or editing IR materials. On the issue of acknowledgement, most respondents (57%) indicate that not everybody should use IR materials with acknowledgement.

Based on the findings above, respondents did not show consistency in choosing the modality of operationalizing the IR. This can be partly explained by the fact that most of them are not aware of IRs and also that the nature of the question was open to multiple answers.

Moderation of IR materials

Respondents were asked to indicate their views on the importance of peer review process for materials to be deposited in IR. Table 6 below summarizes the responses.

Table 6: Importance of peer-review

Importance	Frequency	%
Very important	121	64
Important	60	32
Not very important	2	1
Not important	3	2
No response	4	2
Total	190	100

Source: UDSM-IR needs assessment survey

From Table 6 above, 121 (64%) respondents indicated that peer reviewing is very important; 60 (32%) indicated that peer reviewing is important, 2 (1%) show that peer review is not very important, 3 (2%) indicate that peer review is not important, and 4 (2%) did not respond to this question. Based on the data above, 181 (96%) respondents have the opinion that peer review is important. This is due to the fact that peer review is the process of moderation which guarantees quality of the materials.

Respondents were asked to indicate who should carry out the review process; responses are summarized in Table 7 below:

Table 7: The review should be done by

	Frequency	**%**
Faculty/ Institute/Directorate research committee	64	34
Departmental research committee	47	25
Subject specialist teaching staff	31	16
Subject specialist librarians	17	9
Individual researchers	10	5
Other	2	1
No response	19	10
Total	**190**	**100**

From Table 7 above, data show that 64 (34%) of respondents want peer review to be conducted by faculty/institute/directorate of research committee; 47 (25%) want departmental research committee; 31 (16%) want subject specialist teaching staff to conduct the review; 17 (9%) wants subject specialist librarians to conduct the review; 10 (5%) want individual researchers to be involved in the peer reviewing; 2 (1%) indicated other reviewers such as special IR review committee; 19 (10%) did not respond on this question. Based on the data above, most respondents want faculty/institutes/directorate research committee to be responsible for peer reviewing of IR materials.

User comments on IR

Respondents were asked to give their general views on IRs: out of 190 respondents, 61 (32%) gave their comments. Most of the respondents strongly supported the idea of the IR as important and useful, considering the current situation of information availability. They also suggest that awareness creation seminars and workshops should be offered. The idea should be implemented as soon as possible and should include the entire University.

With regard to implementation, however, some respondents show concern that the process might be time-consuming, with high cost implications which need to be addressed to ensure effective and efficient functioning of an IR. In addition, the University should enhance the ICT infrastructure to increase IR accessibility; this also takes into consideration issues of user friendliness.

Respondents recommended that materials to be deposited should be relevant and that poor quality materials should not be deposited. In addition, they strongly recommended that all important and rare books should be deposited in the IR and an online laboratory should be incorporated. Respondents also commented strongly on the ethical use of IR materials.

Summary

This study reveals that most users at UDSM are not aware of the Institutional Repository. Compared with other users, most academic staff are aware and because of this they use the IR to access and disseminate materials. Postgraduate students follow by using the IR for access and administrators use the IR to disseminate, in contrast to postgraduates. Undergraduate students have low levels of awareness and few of them use the IR for access or to disseminate information; this is due to the fact that at their level they are not involved much in research activities. The establishment of an IR seems to be welcomed by many respondents and 93% are interested to see IR is established.

Materials mostly recommended for inclusion in the repository are research reports, journal articles and theses and dissertations. On the acceptable use of IR materials, the majority of respondents say that "anybody should be allowed to freely access IR materials" and "anybody should use IR materials with acknowledgement"; another comment is that "individuals should register first to capture statistics".

Most respondent agree that materials should first be peer-reviewed so as to qualify them to be uploaded in the repository. Most respondents recommend that faculties, institutes or directorate of research committees should be responsible for peer-reviewing. In general, most of respondents (96%) see it as very important that UDSM establishes an Institutional Repository. Respondents recommend strongly concerning the creation of awareness for users in order to utilize online very effectively; they also make recommendations about quality control and reliable ICT infrastructures to enhance the retrieval and dissemination of information.

Conclusion and recommendation

Given the current level at UDSM of users' awareness about IRs, there is a need to raise awareness about the IR as an important tool for scholarly communication. Users should also acquire the skills needed to effectively exploit electronic resources stored in local and international institutions. Establishment of an IR which preserves locally produced contents at UDSM is crucial in meeting information needs of a wide variety of users, faster and more efficiently. Materials to be uploaded in the IR should be determined by user needs and the capability of the software to be used. DSpace is capable of preserving all types of digital content including text, images, moving images, mpegs and data sets. A policy is needed to guide implementation of any IR to ensure its effectiveness, standardization and proper coordination of IR initiatives.