Awareness of Open Education Resources (OER) in Higher Learning Institutions

Perspectives from Undergraduate Students from the State University of Zanzibar (SUZA)

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Abstract. Open Educational Resources (OERs) has entered the world of academia and has inspired innovation in education since 1990s, yet OERs awareness in higher education (HE) remains very low in Tanzania. Educators in Higher learning institutions (HLIs) in Sub-Saharan Africa are striving to provide effective learning experiences to address the needs of university students in crowded classes with limited printed resources. OERs currently hold great promise for instructing university students because unlike traditional curriculum materials, OERs content can be copied, used, adapted, adopted and re-shared for free. This paper presents findings obtained from the baseline study conducted at the State University of Zanzibar (SUZA) to explore the students' OERs awareness. In the academic year 2014/2015, 352 out of 713 first year undergraduate students (randomly sampled) from three campuses participated in the study. Online questionnaire survey was employed and the data were analyzed. We first show that there is a serious gap in OER knowledge followed by a number of structural and contextual barriers. We further revealed that more than 40% of students are not exposed to OERs offerings. Overall the data revealed that the use of OER at university is low, however, there is potential for growth of OERs as many students have mobile and are using ICT for education. Most participants cited limited access, limited connectivity, and affordability to be significant barriers to wider adoption of OERs. There were also concerns about the limited ICT infrastructure at SUZA and the need to build the capacity of academics on OER integration.

Keywords: OERs awareness · OERs benefits · Pedagogic changes · Higher learning institutions · Zanzibar

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1 Introduction

This paper derives from the work of the Building Stronger University (BSU I & II) project 2011–2016, a collaborative project between the State University of Zanzibar (SUZA) and University of Copenhagen[1]. The purpose of this paper is to explore undergraduate perspectives from SUZA on Open Educational Resources (OERs) awareness in higher learning institutions. It summarizes the key findings from the project, together with its recommendations for policy, practice and further research.

2 Background

BSU project had several work packages, including the ICT in Education. The overall aim was to strengthen capacities among SUZA staff to develop, organize and manage online and blended research-based learning to support the development and delivery of high-quality education which will effectively improve student' learning outcomes at SUZA. Specifically, the package had three objectives. First, to enhance staff capacity to develop instructional design and organize course materials on the SUZA Moodle platform. Second, to enhance the utilization and integration of freely available externally produced OERs on existing accredited SUZA courses. Finally, to build staff capacity of the SUZA ICT department and School of Education to design evaluation studies on online/blended learning.

In this project, a core part of our professional role was to build capacity on the use of OERs in partnership with University of Copenhagen. Hence, 30 lecturers from different department got hands-on training on designing e-content, upload learning activities to the SUZA MOODLE platform and OERs integration into SUZA existing accredited courses. About eight (8) existing courses were piloted, designed for blended learning and then were uploaded to the SUZA MOODLE, namely Communication Skills, Educational psychology, Development studies, Sociology of Health and Illness, Educational Media and Technology, Waste Management, Interactive web design and Distributed System. Being part of e-learning and OERs team, we conducted an online survey with the support of colleagues from various SUZA departments to check students' OERs/MOOCs awareness. Collectively, we wanted to see the impact of lecturers training. focus on the awareness of OERs/MOOCs among students.

3 OERs and Higher Education

OERs are referred as freely and openly available digitized learning resources that can be adapted, modified, and re-used for teaching, learning, and research [1, 2]. Use of OERs, including open textbooks, represents a relatively new global opportunity to explore the creation of no-cost, adaptable teaching resources [3]. United Nations

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Educational, Scientific and Cultural Organization (UNESCO) in a Forum on the Impact of Open Courseware first introduced the idea behind OER for Higher Education in Developing Countries 2002 hosted by UNESCO in Paris, France [2]. The forum emphasized the need to release these kinds of resources in order to increase access to education specifically in developing countries [4].

Research in this new field of practice provides an opportunity for SUZA to engage to its usage so as to facilitate the increasingly demand of professionals in different specialization in Zanzibar.

Prior to the use if OERs in higher education few alternatives for educational resources were available. With advent of OERs, free available resources with intellectual property license OERs provide opportunity for a learner to access the materials, reuse, rework, remix and redistribute as wishes [5]. Early literature on the use of OERs indicates that awareness and use lead to costs savings for learners the access and usage of OERs in content delivery in classrooms have the potential of reducing cost and improving quality education opportunities [6–9].

Evidence also shows that use of OERs in higher education may lead to more innovative teaching and learning methods and improve learner outcomes as discussed in Colvard, Watson, & Park [10]. A number of pedagogic possibilities emerge when using OERs compared to more traditional, proprietary publisher resources.

4 Global, National and Local Initiatives of OERs/MOOCs

Awareness of OERs/MOOCs is not a new concept but is increasing worldwide. The low awareness and use of OER were reflected in the research literature at local, national, and global level [11]. Wright and Sunday [7] reported that inclusion of OERs could enhance the quality of education and improve access to education in low-income contexts. OERs are the learning material free available to everyone from the cloud, they are externally developed by best universities around the world. OERs include YouTube videos, MOOCs like Coursera, Udacity, Wikipedia and others. The adoption of cloud computing to embrace education is growing very fast, more and more institutions are migrating their computing services in cloud [12–14]. For example, Google apps, Google drive and Google plus are nowadays used in most university in Tanzania as collaborating tools between students or between lecturer and his/her students.

Furthermore, using OERs institutions staff can develop skills and competences to improve quality course content [15]. The skills that can be obtained in OERs can include content/subject matter, instructional methods or techniques, and teaching online approaches. Also, it offers a number of possibilities such as easy adjusting and using materials that are already used in real life practices and are shared with open licenses that allow easy re-use and modification [16]. Like any field, OERs also face some challenges such as lack of trust and awareness towards the materials, and distribution of open materials and services within the web which makes it hard for individuals to understand where to find what [16].

5 Scope and Contribution

The purpose of the study was to collect baseline data to determine the awareness of integrating OERs/MOOCs in teaching and learning by the students and seek students' opinions on the OERs/MOOCs awareness. To achieve the purpose, we formed a small group of academics who worked together to collect data that constituted the intervention of the study. The team was formed by a group of academics who demonstrated leadership in OERs/MOOCs research at SUZA and those who have the same goals and aspiration.

Our contribution was multifold: the paper was guided by two research questions (i) What are the students' knowledge about the use of OER/MOOCs? (ii) What are the students' opinions in relation to the use of OER/MOOCs? Our aim was to identify opportunities, challenges and barriers in OERs/MOOCs awareness, and then highlight participants' perspectives on OERs.

6 Data Collection

6.1 Data Collection Instrument

The data were collected using online questionnaire developed from Google form which consisted of both closed and open-ended questions. The questionnaire was administered to collect both quantitative and qualitative data from students. Students from various programmes offered at the State University of Zanzibar (SUZA) were asked to participate in this survey.

6.2 Sampling

For the purpose of this study, the second-year students in their second semester were purposively selected. Participation was voluntary based. The total number of 352 students participated in which 158 were male, and 194 were female students. The undergraduate programs involved are shown in Table 1.

Table 1. Number of students participated with their programs

S/N	Program	Acronym	Male	Female	Number of respondents
1	Bachelor of Arts in Geography & Environmental Studies	BAGES	02	03	5
2	Bachelor of Arts in History	BAHI	03	02	5
3	Bachelor of Arts in Tourism Management and Marketing	BATMM	04	01	5
4	Bachelor of Arts with Education	BAE	68	92	160
5	Bachelor of Information Technology Application & Management	BITAM	20	12	32
6	Bachelor of Kiswahili with Education	BAKE	07	30	37

(*continued*)

Table 1. (*continued*)

S/N	Program	Acronym	Male	Female	Number of respondents
7	Bachelor of Science and IT with Education	BITED	06	07	13
8	Bachelor of Science in Computer Science	BScCS	11	09	20
9	Bachelor of Science in Environmental Health	BScEH	11	09	20
10	Bachelor of Science with Education	BScED	17	21	38
11	Doctor of Medicine	MD	09	8	17
Total			158	194	352

Data Analysis
The data were analysed both qualitatively and quantitatively using descriptive analysis Data were organized, tabulated, and analyzed through various steps in descriptive analysis.

Ethical Considerations
Participants were given verbal information about the purpose of the study. Those who willingly consented to participate were involved in the survey. The participants were guaranteed confidentiality of their individual responses and the data generated from the survey. Data was collected through Google Docs, and, thereafter, recorded directly into an Excel file. The data collection was undertaken in 2014/2015.

7 Results and Discussions

The analysis of the data generated two broad themes namely (i) students' awareness on OER and (ii) usage of OER and MOOCs. These two broad themes are further broken down into several sub-themes to present the findings.

7.1 Students' Awareness on Open Education Resources (OER)

Data on research question 1 have shown that there are a number of issues on OER/MOOCs at SUZA.

Low Awareness on OER/MOOCs
The participants were asked if they are aware on Open Educational Resources (OERs) platform. The results indicate 54.5% (192) of students were aware about various OERs platforms and 45.5% (160) of students never heard about this concept. This implies that the concept of OER is not well-known to almost half number of the respondents (Table 2).

Table 2. Number of student awareness on OER

	Frequency	Percent
Yes	192	54.5%
No	160	45.5%
Total	352	100

Kind of OERs

When respondents asked on what kind of OER platform they normal use for learning at SUZA, 63.7% (132) of respondents identified the Wikipedia as highly used platform., Moreover the respondents acknowledged using other forms of OERs platform and widely dispersed as follows; YouTube 39% (81) and online tutorials 32.9% (68), MOOCs 11.1% (23), MIT 1.4% (3) and Khan Academy 1% (2). MIT and Khan Academy were least identified platforms (Table 3).

Table 3. Kinds of OER used by students with their frequencies

	Frequency	Percent
MOOCs	23	11%
YouTube	81	39%
Wikipedia	132	63.7%
Khan Academy	2	1%
MIT	3	1.4%
Online tutorials	68	32.9%
Other	11	5.1%

MOOCs Provider

It is well understood that MOOCs is one of the mostly preferable platforms for learning among the Universities in the globe. There are various MOOCs providers that are freely teaching number of disciplines that are relevant to some of our local courses. Therefore, the base line study was interested to find out which MOOCs provider was mostly applied by the respondents.

The results revealed that 66.7% (68) indicated they knew nothing about MOOCs providers, 26.5% (27) of the respondents are using Cousera, 6.9% (7) were using Future Learn 6.9%(7), Edx 2.9% (3), 1%(1) and 0% Udacity. It was reported that, computer Programming, Mobile Applications for Androids Handheld System, Introduction to Data Bases, Database Management System, Academic English and introduction to teaching are most subscribed courses by students for learning from various MOOCs provider (Table 4).

Table 4. Number of subscriptions of students in different MOOCs providers

	Frequency	Percent
None	68	66.7%
Coursera	27	26.5%
Edx	3	2.9%
Canvas	1	1%
Udacity	0	0%
Future learn	7	6.9%
Other	3	2.9%

MOOCs Integration

To understand respondents' attitudes towards integration of MOOCs learning material in the existing curricula of the University program, they were asked to show their preference, whether they like MOOCs integration in their course or not. The results indicated that 60.2% (74) of respondents agreed and 39.8% (49) dislike on the statement (Table 5).

Table 5. Preference of MOOCs integration by students

	Frequency	Percent
Yes	74	54.5%
No	49	45.5%
Total	123	100

On the other hand, the common reasons are illustrated in Fig. 1. The highest reason was to get learning material, and the lowest ranked reason was 'interest'.

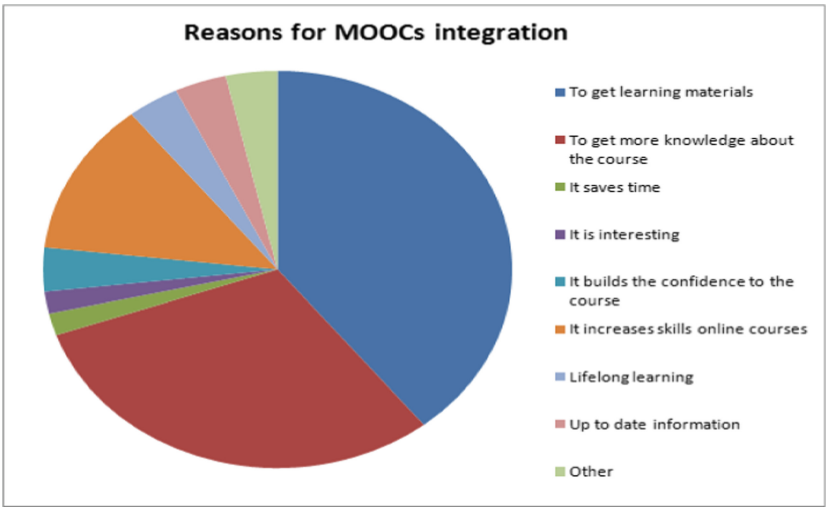

Fig. 1. Reasons for MOOCs integration

7.2 Usage of OER and MOOCs

Opinions on the usage of OER/MOOCs were identified by study participants from open-ended questions. The prominent ones were:

Contextual and Structural Challenges
The data from participants mentioned contextual challenges as limited understanding of OER, Relevance of ready- made OERs that do not fit the local context, limited knowledge and skills to use OER, technophobia and low motivation to use OERs. Some participant commented that:

> "I haven't enough skills and knowledge on how to access OERs and I do not know how to locate materials on the LMS portal. It takes long time for me to figure out how to use internet which is important aspect in the use of OERs."

Some participants were aware of OERs existence, however they pointed out that they do not have the skills and knowledge to access and use them.

Also, the data from participants also indicated that there is insufficient resources and infrastructure, unreliable internet at campus premises, technology affordability among students, few computer labs, limited computers, stable power supplies and ICT server. Another participant stated that:

> "First network problem such as wi-fi, inefficiency of computers because they lack a lot programs Microsoft word especially those which are library, computers are very few compare to number of students so when you such materials there are more than seven students waiting for you so these are big hindrance to me."

Proposed Solutions from Participants Perspectives
Data from participants acknowledged that "the uses of OERs has many advantages", therefore SUZA should take more efforts and strategies to ensure students can access online services anywhere. Additionally, the data cited from participants claimed directives, guidelines and policy would enable every student and lecturer to use OERs and register to MOOCs which are relevant to their courses. The data from participants also suggested that devices such as computers, tablets should be increased so as to give a great chance for students to use OERs and MOOCs. Failure to do that students might not benefit of this technology.

8 Lessons Learnt

Although there are a growing number of OER initiatives at the moment, low awareness on OERs/MOOCs hinder the development of e-learning and blended learning at SUZA. The general opinions of the respondents indicate there were diversity in their concerns and more emphasis were placed on issues like infrastructures, low of awareness on OERs, and accessibility [17] Based on this study, we learnt that there are many opportunities for further research into open educational resources [17]. There is also a positive outlook on the OERs/MOOCs and its pedagogical importance cannot be underestimated. In fact, some of the respondents' perspective on OER were seen to be very useful tool for making learners successful to the world. General speaking SUZA

Management should be emphasizing uses of ICT and lecturers should integrate OER in their courses and teach the students good ways to find and usage of OERs. Many articles reviewed for this study concluded that OER awareness in higher education requires a deeper understanding of the changes to teaching and learning that emerge from open practices [18–22]. More research on the use of OERs was needed to provide evidence of their effectiveness for both students and educators. Well-structured and ethically designed research is needed at institutional levels to determine whether intended goals for use of OERs/MOOCs are being met.

9 Conclusion

The advantages of OER to enhance education in Sub-Saharan countries are well documented. However, the perceived benefits cannot be realized if students are not aware of OERs and have limited access to use them. There is a need to invest in OERs to boost the usage of these resources in higher education.

References

1. OECD. Giving knowledge for free: the emergence of open educational resources (2007). http://www.oecd.org/dataoecd/35/7/38654317.pdf
2. UNESCO. UNESCO promotes new initiative for free educational resources on the Internet (2002)
3. Hilton, J., Wiley, D., Stein, J., Johnson, A.: The four R's of openness and ALMS analysis: frameworks for open educational resources. Open Learn.: J. Open Distance Learn. **25**(1), 37–44 (2010)
4. Plotkin, H.: Free to learn: an open educational resources policy development guidebook for community college governance officials. Creative Commons, San Francisco (2010). http://wiki.creativecommons.org/images/6/67/FreetoLearnGuide.pdf
5. D'Antoni, S.: Open educational resources: reviewing initiatives and issues. Open Learn. J. Open Distance Learn. **24**(1), 3–10 (2009)
6. Wright, Clayton R., Sunday, R.: Developing and deploying OERs in sub-Saharan Africa: building on the present. Int. Rev. Res. Open Distance Learn. **13**(2), 181–220 (2012)
7. Fischer, L., Hilton III, J., Robinson, T.J., Wiley, D.: A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. J. Comput. High. Educ. **27**(3), 159–172 (2015)
8. Juhary, J.: Perceived usefulness and ease of use of the learning management system as a learning tool. Int. Educ. Stud. **7**(8), 23–34 (2014)
9. Kaufman, R., Campana, A.: OER lesson from the field. Insights **32**(15), 1–14 (2019). https://doi.org/10.1629/uksg.464
10. Colvard, N.B., Watson, C.E., Park, H.: The impact of open educational resources on various student success metrics. Int. J. Teach. Learn. High. Educ. **30**(2), 262–276 (2018). http://www.isetl.org/ijtlhe/pdf/IJTLHE3386.pdf
11. Pounds, A., Bostock, J.: Open educational resources (OER) in higher education courses in aquaculture and fisheries: opportunities, barriers, and future perspectives. Aquac. Int. **27**, 695–710 (2019). https://doi.org/10.1007/s10499-019-00355-9

12. Mtebe, J.S.: Exploring the potential of clouds to facilitate the adoption of blended learning in Tanzania. Int. J. Educ. Res. **1**(8), 1–16 (2013)
13. Mtebe, J.S., Raisamo, R.: Challenges and instructors' intention to adopt and use open educational resources in higher education in Tanzania. Int. Rev. Res. Open Distrib. Learn. **15** (1), 249–271 (2014). https://doi.org/10.19173/irrodl.v15i1.1687
14. Mtebe, J.S., Raisamo, R.: Investigating perceived barriers to the use of open educational resources in higher education in Tanzania. Int. Rev. Res. Open Distrib. Learn. **15**(2), 43–66 (2014). https://doi.org/10.19173/irrodl.v15i2.1803
15. Wilson-Strydom, M.: The potential of open educational resources OER Africa (2009). http://www.oerafrica.org/understandingoer/UnderstandingOER/ResourceDetails/tabid/1424/mctl/Details/id/36389/Default.aspx
16. Pirkkalainen, H., Pawlowski, J.M.: Open educational resources and social software in global e-learning settings. In: SosiaalinenVerkko-oppiminen. Naantali: IMDL, pp. 23–40 (2010)
17. Yuan, L., Mac, S., Kraan, W.: Open educational resources – opportunities and challenges for higher education, pp. 1–34 (2008). http://wiki.cetis.ac.uk/images/0/0b/OER_Briefing_Paper.pdf
18. Trotter, H.: Opportunities and Obstacles for Open Education, University World News, 23 February 2018
19. Blomgren, C.: OER awareness and use: the affinity between higher education and K-12. Int. Rev. Res. Open Distrib. Learn. **19**(2), 55–70 (2018)
20. Mushi, M., Ruhwanya, Z.: The Potential of Open Educational Resources (OERS) in Higher Education Curriculum and Course Materials Development. The Open University of Tanzania (2018)
21. Jan, H.: Open Educational Resources: Opportunities and Challenges (2006). www.oecd.org/edu/ceri
22. Hoosen, S., Butcher, N.: Understanding the Impact of OER: Achievements and Challenges, OER Africa and UNESCO Institute for Information Technologies in Education (2019). https://www.oerafrica.org/resource/understanding-impact-oer-achievements-and-challenges