HARNESSING OPEN EDUCATIONAL RESOURCES IN TEACHER EDUCATION IN ZIMBABWE: THE CASE STUDY OF ZIMBABWE OPEN UNIVERSITY

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ABSRACT

Open educational resources are a new paradigm that is hugely impacting and changing the mode of scholarly communication in Zimbabwe. The paradigm is based on the notion and belief that Scientists, scholars and academicians need to publish their findings and have them disseminated as widely as possible so that mankind can benefit from their research efforts. It is a paradigm that aims at enhancing knowledge and information sharing at unprecedented levels. As economic hardships continue to pierce into every sector of life in Africa, the need to learn while earning has rocked the hearts of many and this has created a fertile ground for the expansion of open educational resources in teacher education movement. This paper seeks to assess the importance of open educational resources in teacher education focusing on Zimbabwe Open University. Zimbabwe Open University is believed to be the largest university in Zimbabwe. This has been caused by its emphasis in the promotion, sharing and use of open educational resources (OER). The study is premised on the understanding that it is becoming difficulty for students to get into Conventional Universities given the economic hardship we face in the country today. It is against such an understanding that the paper would want to establish the importance of vindicating open educational resources in teaching and learning in Zimbabwe. The study is also informed by the contention that in Zimbabwe, even the Conventional universities are now also opting for block release programmes so as to give opportunity to students to access education while working. Vital to note is the contention that Block release is a form of learning which call for open educational resources so as to allow a wide access to information. Be that as it may, open educational resources are growing into becoming the best mode of learning in Zimbabwe. The paper is a qualitative analysis of the importance of harnessing open educational resources in teacher education. Interviews, document analysis and personal observations are to be used to triangulate data collection for this paper.

Key words: Harnessing; open educational resources; teacher education

Introduction

As economic hardships continue to pierce their sting into every sector of life in Africa, the need to learn while earning is rocking the hearts of many. Such a move has created a fertile ground for the expansion of Open Educational Resources in teacher education. This paper seeks to assess the importance of harnessing Open Educational Resources (OER) in teacher education with special reference to Zimbabwe Open University (ZOU) which is by and large the only university in the country which stresses the use of OER in teacher education. The paper will start by giving the background of the study and then move on to the definition of OER. After this the paper will proceed to give a brief history of OER and thereafter look at how Zimbabwe Open University is using OER and the importance that is fostered by OER in teacher education in Zimbabwe. The paper will end by giving recommendations on the use of OER.

Research Questions

1. What is OER?
2. What importance has the use of OER played in ZOU?
3. What models of OER is ZOU using?
4. How is ZOU contributing teaching or learning materials to OER?
5. What strategies can ZOU put in place to overcome the challenges of accessing or using OER materials?

Methodology

The documentary analysis, interviews and personal observation were found appropriate for this study. The methods allowed the researcher to investigate the importance of harnessing OER in teacher education in Zimbabwe. The study examined the lecturers and students' perspectives and understanding of OER in ODL materials at Zimbabwe Open University.

Background of the Study

The educational system in Zimbabwe after independence in primary, secondary schools and institutes of higher learning has been helping people to acquire competences, knowledge and skills they needed as individuals in the political, economic, social and cultural life of the societies. As economic hardships were continuously affecting all circles of life in the country the zeal to learn within the conventional institutes was becoming almost impossible because people had to struggle to get money for their fees, learning materials and money to feed the family back at home. This was also exacerbated by continuous drought sprees that were and are experienced in the country. Upon realising that the traditional ways of providing learning opportunities are no longer adequate to equip teachers, learners and workers with the competences to become critical and discerning people, Zimbabwe Open University was established in 1999 to harness new paradigms in teacher educational systems. The major aim of Zimbabwe Open University was to provide learners with affordable learning materials. This move was further exacerbated by the introduction of ICT in the country which helped learners in all corners of the country even in remote areas to access information. The models that were and are used by Zimbabwe Open University include the production of modules, tapes, compact disks, you tube facilities, tutorial letters and hand outs that were and are made readily available to students upon registration. Vital to note is the contention that Zimbabwe Open University uses OER as its mode of Open and Distance Learning. At its inception, Zimbabwe Open University had only one faculty but now it has four faculties which are all in full swing in so far as the use of OER is concerned. Currently the university has 11 Regional centres countrywide. It is in light of this background that this paper intends to assess the importance of OER in teacher education in Zimbabwe as they are fostered by Zimbabwe Open University (ZOU).

Definitions of Open Educational Resources (OER)

There is no universally and authoritatively accredited definition of OER. However, attempts have been made to try and come up with different definitions of Open Educational Resources (OER). The William and Flora Hewlett Foundation defined OER as:

> *The teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge*

The Organisation for Economic Co-operation and Development (OECD) defined OER as:

> *Digitalised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. This includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open license.*

The Commonwealth of Learning has adopted the widest definition of Open Educational Resources (OER) and defined it as materials offered freely and openly to use and adapt for teaching, learning, development and research (*WikiEducator.org)*. The Wiki Educator project defined OER as educational resources in the form of lesson plans, quizzes, syllabi, instructional modules and simulations that are freely available for use, reuse, adaptation, and sharing (*WikiEducator.org)*.

Open Educational Resources have also been defined as digital materials that are designed to allow easy reuse in a wide range of teaching and learning situations. It is vital to note that OER movement originated from developments in open and distance learning (ODL) and in the wider context of a culture of open knowledge, open source, free sharing and peer collaboration, which emerged in the late 20th century.

OER are teaching and learning materials that are freely available online for everyone to use, whether you are an instructor, student or self-learner (OER Commons, 2007). Others have defined

OER as the open provision of educational resources, enabled by information and community technologies for consultation, use and adaptation by a community of users for non-commercial purposes (Tuomi, 2006).

In 2007 OECD defined OER as digitalised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research (OECD, 2007). OER from this definition is the accumulated assets that enable development of individuals or special capabilities for understanding and can be enjoyed without discrimination.

The working definition of OER in this paper is that Open Educational Resources (OER) comprise content for teaching and learning, software-based tools and services, and licences that allow open development and reuse of content, tools and services.

From the definitions given so far it is imperative to reiterate that the term OER covers a wide range of materials from whole courses to modules as small as a simple exercise, from videos of lectures to an entire lecture course, from a textbook to a single reading assignment. Rather, OER can include encyclopaedias, games, images, and video and be available on line or via broadcast, physical media. Because they are more open, these OER can be more easily revised, increasing the likelihood that they will reflect the state of the art on any given subject, making them particularly attractive for studying fast-changing subjects. This same openness should help reduce the time between the creation of knowledge and its incorporation into teaching materials, and similarly reduce the time lag between the production of teaching materials and their widespread availability.

A brief history of Open Educational Resources (OER)

Historically the MIT Open Courseware project is credited for having sparked a global Open Educational Resources Movement after announcing in 2001 that it was going to put MIT's entire course catalog online and launching this project in 2002 (Guttenplan,2010-11-01). In a first manifestation of this movement, MIT entered a partnership with Utah State University, where assistant professor of instructional technology David Wiley set up a distributed peer support network for the OCW's content through voluntary, self-organizing communities of interest, (David, 2003-09-04). The term "open educational resources" was first adopted at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries (Johnstone, 2005).

In 2005 OECD's Centre for Educational Research and Innovation (CERI) launched a 20-month study to analyse and map the scale and scope of initiatives regarding "open educational resources" in terms of their purpose, content, and funding. The report "Giving Knowledge for Free: The Emergence of Open Educational Resources, published in May 2007, is the main output of the project, which involved a number of expert meetings in 2006.

In September 2007, the Open Society Institute and the Shuttle worth Foundation convened a meeting in Cape Town to which thirty leading proponents of open education were invited to collaborate on the text of a manifesto. The Cape Town Open Education Declaration was released on 22 January 2008, urging governments and publishers to make publicly funded educational materials available at no charge via the internet *(Cape Town Declaration,* 2007.

Teaching and Learning Using Open Educational Resources at Zimbabwe Open University

Open educational resources can most easily be understood as part of a larger movement toward "opening" up education. Perpetrators of open education see new technologies as providing an opportunity to fundamentally rethink how we teach and learn using new capabilities and materials. As John Seely Brown put it, "We need to think about how technology, content and knowledge about how learning can be creatively combined to enhance education and ignite students' passions, imaginations and desires to participate in constant learning of the world around us.

The very nature of OER suggests changes in teaching and learning methods. In retrospect, OER blurs the lines between teachers and students. OER's invitation to collaborate and participate is consistent with what we are learning from educational research—that "collaboration and social interaction enhance students' learning experiences as well as the quality and degree of learning." OER can be student centered as it provides the opportunity to support multiple forms of learning with materials that can be customised and personalised.

By encouraging student-centered participatory learning, OER offers the opportunity to move away from teacher-controlled, discipline-based transmission of facts and knowledge. Learners are given greater control and are asked to take more responsibility, they can become more independent.

When OERs are created by multiple participants, they can foster the growth of communities to solve problems.

The experiments showed that while good lectures and good computer-mediated learning may be equally effective, electronic access is more efficient due to the flexibility it offers. Rather, electronic access to computer-mediated materials allows students to match the learning outcomes of those in traditional courses while taking only half the time to complete the courses. If the use of digital materials enables us to dramatically shorten the time needed to master a subject and match the learning outcomes of using traditional materials then it is very important. In an era where there are problems of high costs of living, high budget cuts, low salaries and unpredictable rains, there is need to use OER. People can save money through the use of cost effective OER materials. Traditional institutions that use outdated technology and inadequate teaching materials that cannot be updated, customised or personalised to meet diverse needs of learners, should opt for the use of OER. It is vital to note that OER affords teachers and learners to share content with each other and the rest of the world. Further, college textbooks are expensive, thus placing a growing financial burden on students. OER can be printed like traditional textbooks thus allowing learners to save. Zimbabwe Open University fully support OER which can provide feedback to teachers, administrators and others in aligning, modifying, and providing right educational content at the right time. Through the use of OER, learners can become active participants or even co-teachers in the educational process. OER promotes cross border and cross-cultural educational exchanges. As is the case with Zimbabwe Open University, there are a number of students who are learning from abroad. Their modules, assignments and other learning materials are posted to them through the internet. Written assignments are posted on the net and are marked on the net as well. This lessens the burden on students and is cost effective. Hylen (2006) reiterated that, if the content is not shared, institutions "can duplicate work and reinvent things instead of standing on the shoulders of their peers". This is not the case with Zimbabwe Open University because module writers and faculties do coordinate and consult each other on the content of the modules produced. A typical example is on the use of one module on Research Methods across the Faculty of Arts instead of each department having its own copy different from others. More to this, quality is an aspect that ZOU takes seriously hence it has established a Quality Assurance Unit. For ZOU, OER would benefit learners in remote areas by reducing costs and time.

McGill (2011) links OER to several other strategic goals in the UK and worldwide. At Zimbabwe Open University, OER engage a wider community and employers, sustain vulnerable subjects; enhance marketing and engagement of prospective students worldwide while also brokering collaborations and partnerships. Due to high costs of living in Zimbabwe, some people are no longer affording to leave their work and pursue their academic dreams. Apart from this, there is high competition for new students in Zimbabwe. To beat the competition, ZOU is using OER models which are cost effective so as to attract many new students.

Benefits of using Open Educational Resources

The importance of digital resources stems from the fact that these resources are fundamental to the knowledge society and economy. It is therefore essential that teachers and students become proficient with digital tools and services, and that they are aware of the various content licences. This proficiency is vital because within the digital realm content cannot be created, reused or shared without employing tools and services. Moreover, content licences are important because they define what the authors - who hold intellectual property rights (IPR) such as copyright - are willing to grant others who wish to benefit from the investment made in developing the content. There is an established understanding that easy access to educational resources is required to promote lifelong learning in people of all ages. The role of such access includes reducing social inequalities, fostering social inclusion of migrants, and supporting education in developing countries.

Additionally, when used in didactically sound ways, software-based tools, services and multimedia can allow innovative educational practices to emerge. For example, new educational opportunities may arise in a digitally enhanced collaboration between teachers and learners.

Again, open access to resources is an important element in educational innovation, but it is not the only solution. The decisive factor is that open educational practices should be fostered by the appropriate institutional culture. Such a supportive environment should include easily accessible and shareable tools, services and content. From a pedagogical perspective, OER promote self-directed

learning and there is much potential for collaborative knowledge development which abandon the teacher-centred paradigm of education.

Doug Belshaw (2011) points out that content created by students could become part of OER while considering the owner of that content. People involved in OER come from different parts of the educational community, organisational cultures and institutional practices. In sharing and reusing these resources, people involved should consider issues of a common co-curricular and assessment practices. At ZOU, some teachers have put their content on OER, however, others fear the amount of work involved and lack of financial benefit. More to this, all faculties at ZOU, have been given permission to adopt and adapt selected OER content which is an indication that the institution is to some extent using OER.

McGill (2011) identifies groups that benefit OER as follows; the global, national and subject communities, educational institutions, (including employers and professional bodies), individuals supporting learning or teaching and learners.

McGill also provides the Excerpt from OER Synthesis and Support Team Interim Report (2009) pilot of materials, freedom of access, learner-centred and self-directed learning. Learners can scrutinise the course materials prior to enrolling. This implies that the OER originator can benefit from student or user feedback and open peer review. Further, he or she gains reputation and recognition and can engage in collaborative approaches to teaching and learning. Other staff users can benefit from availability of quality peer reviewed material to enhance their curriculum and can collaborate with others on different approaches to teaching and learning. They can enhance their knowledge and skills on how to release content on OER.

The institution itself (ZOU) can get recognition and enhanced reputation for their output; have capacity to support greater numbers of students and share ideas and resources with other institutions. In addition other institutions make use of ZOU modules thereby putting ZOU at a better map in so far as education is concerned.

Employers, including those from commerce and industry, can have access to tailor-made content and can establish new potential partnerships with content providers' up skilling (McGill, 2011; Open Educational Resources InfoKit). The other benefit of OER is that they help people to acquire the competences, knowledge and skills needed to participate successfully within the political, economic, social and cultural realms of societies. As economic hardships continue to harmer on Zimbabwe, the teacher centred knowledge transfers are losing their grips. As a result of this, OER becomes essential to effectively equip students with the competences and skills for personal and professional achievements.

In an interview (15 June, 2013), Chirimuuta reiterated that OER as a mode of ODL used by ZOU equips students with core competences like self- direction and creativity, critical thinking and problem solving skills, collaborative team work and communication skills. Important to note is the idea that these competences are not always fostered and encouraged when educational institutions and teachers base their instructions on a model in which the teacher is regarded as the dispenser of knowledge. This being the case therefore, the conventional or teacher centred education system has to be changed and opt for the use of e-learning, new educational tools and web-accessible media. In a bit to cope with the current educational needs ZOU has adopted a new mindset to shift towards competence based and learner-centred education and it is able to do this through the use of OER. ZOU has allowed and created a framework to empower teachers and learners to make use of OER which is a real, rich and relevant learning model in countries which are economically crippled like Zimbabwe.

Zimbabwe Open University is harnessing OER in teacher education because they are fostered by an appropriate institutional culture and mind set and supportive environment including easily accessible and shareable tools, services and content.

The reasons why ZOU uses OER in ODL

There are a number of OER models that are being fostered by ZOU in its teaching and learning methodologies. To cater for foreign-based students in the region, continent and Diaspora, ZOU established ZOU Online in 2009. The Unit was tasked to download all ZOU modules then send them online to all students in the 11 Regional Centres who would access the content online and in ZOU libraries.

Vital to note is the contention that the OER content prepared by ZOU Online caters only for registered students. It was also supposed to provide the technical aspect to the Virtual Region. Due to

some challenges, ZOU Online is no longer functional; its duties have been taken over by ICT department.

In April 2010 ZOU launched The Virtual Region. Its mandate is the provision of modules online to foreign-based students in the region, continent and worldwide. The aim is also to use contra-vision or confer-tel in conducting lectures to foreign students through online computers, television and telephone. Initially, Virtual Region worked hand-in-hand with ZOU Online which provided the technical aspect. Now that ZOU Online has been replaced by the ICT department, the Region gets help from ICT. To quote the ZOU website:

The Zimbabwe Open University is a global power house in the field of virtual education.

The university is everywhere, radiating from the circuits of your computer, promising educational betterment at the touch of a button. The Zimbabwe Open University has the best online distance learning facilities and provides quality education to thousands of students within the country, regionally, and abroad (www.zou.ac.zw).

Zimbabwe Open University is employing OER in its Open and Distance Learning system because OER provide a long term conceptual framework for alliances in the creation of, sharing and provision of educational resources based on a strong emphasis of reusability (Kadada, interview, 15 June, 2013). This implies that OER create digital competences for the knowledge society beyond ICT through making available tools and content that allows learners to develop their critical thinking and creativity.

More to the above, ZOU utilises OER necessarily because they enrich the pool of resources for innovating curricula and teaching practices, including resources from public sector, information agencies, libraries, museum and other cultural organisations. This implies that the use of OER enriches learners with quite a vast pool of information which they will use for the smooth running of the society at large and organisations in particular. As expressed by ZOU students in a group interview (16 June, 2013), OER offer a broader range of subjects and topics to chose from and allow for more flexibility in choosing material for teaching and learning, that is content that can be easily modified and integrated in course material. For them, the models that are used by ZOU to disseminate information allow for engaging teachers in leveraging the educational value of resources through providing their own personal assessments, lessons learned and suggestions for improvements.

OER provide learning communities such as groups of teachers and learners with easy to use tools to set up collaborative learning environments. They also promote user centred approaches in education and lifelong learning, for example the modular system used by ZOU which calls for sharing and reuse of content that is useful to others.

The economic problems faced by Zimbabwe today are typical evidence of the fact that the societies are at crossroads and traditional educational ways are no longer that vibrant as before. This has forced most Universities and colleges in Zimbabwe to opt for ODL courses in the form of parallel programmes, block release and bridging courses so as to continue with business. Such movements have seen teacher education becoming more systematic, sustainable and tangible. This in turn implies that OER contributes to a transformation in teacher education that brings learning processes closer to what individuals need to participate successfully in a dynamic knowledge-based society. Vital to note is the fact that OER is there to foster the acquisition of certain competences needed by teachers and learners. This is so because of OER's priority in the learners instead of teacher-centred education. ZOU is also stressing on development of knowledge and skills required for tackling and solving problems instead of subject- centred knowledge transfer emphasised by traditional educational systems. Rather, the models used by ZOU like e-learning, module method and other tools provide a key to making teacher education and learning initiatives more effective, efficient and pervasive. Be that as it may, today is the time that Africa should shift decisively from the old paradigms to new ones that make life of learners more conducive and cost effective in the face of economic hardships.

Challenges faced by ZOU in harnessing OER in teacher education

Despite the attractiveness of OER, it faces a number of challenges. Some of these are lack of awareness of copyright issues, quality assurance and sustainability of OER initiatives.

Some authors might not want to lose their rights even if they allow use of their materials, they might want to be recognised. Some users might not be able to judge on "quality and relevance". On sustainability, there is competition for funding, some funds cease after some years. There is,

therefore, need to find funding that will sustain OER initiatives in the long-run (Hylen, Open Educational Resources: Opportunities and Challenges www.oecd.org/edu/cert/37350185).

The problem of lack of copyright awareness might also be a serious issue at ZOU if some module writers fail to acknowledge sources from which they obtain some material for the modules.

At ZOU, there is need to train staff in the technical aspects and use of software packages in OER. Staff should be convinced of the benefits of OER and ascertain whether or not the materials they are using can be remixed especially where illustrations like pictures are used.

Some concerns noted by respondents in an interview (ZOU staff) are that OER should be used with caution as some of them need to be authenticated. Others also noted that some sites are unreliable, and the fact that availability of Internet is erratic at ZOU (limited bandwidth) especially in the 10 regions due to inadequate resources and no availability of electricity is posing problems. Some feel that OER should only be used where ZOU cannot produce its own; there is fear that OER might stifle ZOU's development of learning materials that are relevant to its needs. Some imported materials might be "undesirable" as they might not agree with Zimbabwe's cultural beliefs and practices.

Recommendations

The following recommendations were made to ZOU in relation to provision of OER. ZOU should provide training opportunities to academics, writers and students. It should also maintain standards and review modules to include current global trends across the board (for all the modules) using OER authentic materials peer reviewed by experts. ZOU has to ensure that it contract writers with genuine qualifications and experience of preparing ODL materials using OER for the benefit of the user. There is also need to provide support, including training, to faculty members interested in producing OER online. ZOU should also encourage student involvement in the creation, maintenance, and upgrading of OER through academic credit where appropriate. Lastly ZOU should utilise its website fully by posting OER materials that are accessed freely and source for funding for OER educational resource initiative. The university must allow open educational materials to be accredited for use in college and university curricula and ensure that institutional accreditation activities do not unreasonably discriminate against the use of OER and should encourage all institutes of higher learning to adopt new policies, curricular, teacher education and student assessment methods like OER so as to cope with the needs of the society

Conclusion

It is true that there have been changes in higher education that have come about because of the availability of the Internet and the development of ICT in Zimbabwe. These changes, particularly regarding the teaching and learning mission, are pervasive than in conventional universities. This paper has examined the importance of harnessing OER in teacher education by the Zimbabwe Open University. The paper managed to bring to light the benefits of using OER in countries like Zimbabwe with severe economic hardships. The paper argued that, today is the time that Africa should start using OER facilities in all her academic institutes so as to lessen the burden of learner and involve them in cost effective educational systems that will see them managing to pursue their academic dreams while working. The paper has also found that greater openness fosters quicker and broader innovation, primarily because of the potential for many more people to contribute, as opposed to having to rely on the work of a lone "genius" or the capabilities of a very small group. Individual creators certainly play an important role in teacher education. The work has also established that openness taps the potential of a much larger number of potential creators, who might see the problem in a deferent way or be aware of alternative solutions and who are able to contribute drawing upon their own experience and expertise. The paper has also revealed that with the zeal to navigate the turbulent waters of today's dynamic and unpredictable economies formal education, training and learning providers are facing an increasing demand to find new ways to equip teachers, students and workers with the competencies and skills they need in a society at crossroads.

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