OER Readiness in Africa

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by Pauline Ngimwa, PhD Student, Open University, UK
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Page 22  By Pauline Ngimwa – Open Access Publicity
# Contents

1. Executive Summary ............................................. 1
2. Introduction ..................................................... 8
3. Methodology .................................................... 9
4. Findings .......................................................... 10
5. Conclusion ...................................................... 41
6. OLnet ............................................................ 45
7. TESSA ............................................................ 48
8. CREET ............................................................. 51
9. How this publication was produced ...................... 53
10. Useful OER links ............................................... 56
1 Executive summary

Introduction

The aim of this small scale project was to assess Africa’s readiness to adopt OER\(^1\). This involved an assessment of the technical and human related factors. By technical factors the study was to look at the status of existing technological infrastructure, establish the extent it supports creation, access and use/re-use of OER, and identify existing gaps or limitations. The human factors consisted of elements such as skills levels, perceptions and attitudes.

\(^1\) Open Educational Resources
OER Readiness in Africa

**Methodology**

The study was carried out as part of an ongoing PhD project. A qualitative research approach was adopted with in-depth semi-structured interviews. Ten participants were interviewed across higher education institutions in Kenya, Uganda and South Africa where TESSA² project is present.

**Key findings**

The study revealed that there is a positive perception of OER among people who are already using them. They acknowledge them as quality, relevant and current resources; a cheaper alternative to the high cost of educational materials which some of these institutions cannot afford; and a means of expanding equitable access to education. Examples of how these resources are being used include the adaptation of the TESSA materials in teaching practice and development of activities round TESSA materials in primary schools, i.e. a school weather station.

> “it is too costly buying textbooks all the time and paying subscription fees for journals and some of this material is available for free”

² Teacher Education in Sub-Saharan Africa (http://www.tessafrica.net/)
In relation to readiness to adopt OER, the study established that levels of and factors affecting the adoption vary across different regions. For example, the situation in Uganda and Kenya tend to be similar and quite different from that in South Africa. In terms of technological challenges, both Kenya and Uganda suffer from inadequate networked computers and poor internet connectivity, although there is optimism that the situation may improve with the arrival of the fibre optic cable on the eastern coast of Africa. Users outside the universities face challenges of limited computer access, poor internet connectivity and in some cases lack of electricity. However, access to the level of technology development in South Africa is quite different. Universities are well resourced and some of the schools including the rural ones have access to basic computer facilities.

The study established that technology is not really an impediment towards OER adoption because there are alternative approaches, some of which are working well. These include prints, CDs and cached downloads. One institution is applying “Vygotsky’s zone of proximal development” theory to help users overcome their ignorance around ICT application.

The study however established that the fundamental impediment affecting adoption of OER is human related factors. These include attitudes towards the open content which in turn affect people’s capacity
to use, re-use and share these resources. There are issues around misconception of what OER are; the concept of ownership and sharing; and limiting capacity to use OER. Examples of misconception of OER included OER being perceived as time wasting or extra work, and people not realizing that they are engaging with OER i.e. a medical academic who is developing open digital images of tropical diseases; a music digitization project for the public; librarians engaging in campaigns towards an open access movement; as well as some of the users of the TESSA materials.

People’s attitudes affected the concept of ownership and sharing. This included issues such as a “not invented here syndrome” where academics were resistant to take up materials they have not developed as they felt this eroded their academic pride; the perception that these resources are from the West and thus reducing African academics to consumers and not partners; a culturally oral society and hence not used to sharing digitally; fear of public scrutiny of and lack of confidence in ones work and unawareness that users can share back what they have recreated. Technological challenges also affected sharing because people are not always in a digital mindset.

Human capacity to adopt OER was found to be limiting particularly among the older academics most of who have computer phobia and tend to

“They would not want it to be known that they cannot use the computer so they keep off.”
keep off the technology. The younger generation is at ease with the technology and more likely to accept these resources.

IPR\(^3\) of institutional and academic output was highlighted as an important issue that is affecting the adoption of OER in Africa. This included complex processes in clearing licences while converting already existing content into OER; resistance to go open because of the economic benefits attached to copyrighted materials and national and institutional policies that tend to favour copyrighted resources because academics and institutions are funded or promoted on the basis of the amount of publications they have in accredited journals.

Effects of policies also impacted on academics’ readiness to share and collaborate with others such as librarians in a digital environment. Where institutions had clear policies on how digital content should be handled, this resulted to academics and librarians working together as opposed to where such policies were non existent.

Finally, the study identified certain suggestions to mitigate the identified challenges affecting OER adoption. These included sensitization campaigns across all levels including policy makers; versioning for the

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3 Intellectual Property Rights
African context in terms of content and technology adopted, using the approach taken by the TESSA project as an example.

Mobile technology which is so widespread in Africa is an option that can be explored as a platform for OER delivery. Understanding users’ technological profiles was highlighted as an important starting point in the contextualisation process. Other suggestions included advocacy work around open access publishing and encouraging people to have a paradigm shift so as to embrace the possibilities of a technically enabled environment.

The study concludes that Africa has pockets of readiness going by the conventional understanding of OER readiness. However, human related factors remain the fundamental impediment towards readiness for OER in this region.
2 Introduction

The aim of this small scale project was to assess Africa’s readiness to adopt OER. This involved an assessment of the technical and human related factors. By technical factors the study was to look at the status of existing technological infrastructure, establish the extent it supports creation, access and use/re-use of OER and identify existing gaps or limitations. The human factors consisted of elements such as skill levels, perceptions and attitudes.

This report summarises the findings of the project and the conclusions drawn from these findings. A brief statement of the methodology that was adopted is first provided.
3 Methodology

This study was carried out within a larger research that is part of an ongoing PhD project whose aim is to design a process model for supporting the development of a collaborative educational digital library for African higher education. A qualitative research approach was adopted. Three African countries were visited and in-depth semi-structured interviews conducted in institutions of higher learning where OER are being used. Data was analyzed thematically. The TESSA project was used as an example of OER adoption. So the study targeted people who are already involved in the TESSA project. Specifically, interviews were conducted with three participants at Egerton University in Kenya; two participants at Makerere University in Uganda; three participants at the University of Pretoria in South Africa, one academic at the University of South Africa (UNISA) and an education specialist at the South African Institute for Distance Education (SAIDE). In total ten participants were interviewed. The study took place between September and October of 2009.
Broadly speaking, the study established that levels of and factors affecting OER adoption vary across the different regions and countries visited. For example the situation in Uganda and Kenya tend to be similar and quite different from that in South Africa. Another key finding was that levels of awareness largely affected adoption of OER and how they are being used. Although technological impediments exist, human related factors such as attitudes towards open content and capacity to deal with it were cited as a fundamental factor affecting adoption. National and institutional policies too have had their impact on the adoption.

This section presents these findings with supporting excerpts from individual interviews. It starts by providing an overview of the various perceptions of OER among people who are already using them and examples of how they are being used. It then presents issues related to technology and human factors. This is followed by issues around Intellectual Property Rights (IPR) and how they affect adoption, and
then how national and institutional policies contribute to IPR challenges. The section ends with participants’ suggestions on how the challenges impeding on the adoption of these resources can be mitigated.

**General perception and usage of OER**

Interviews were mainly conducted among people who have already been converted to the OER movement. So they are already positive about OER and most often take up the role of advocacy. They are also using them in their teaching practices as well as in creating similar resources. It
can therefore be understood why most of their views concerning OER were positive. For example they viewed these resources as quality, relevant and current. They are a cheaper alternative that has come to fill a gap created by the high cost of educational materials which some of these institutions cannot afford:

“… I would say that digital materials you are looking for current materials, quality materials, relevant material but you are also looking at issues of cheaper access, like I have said, it is too costly buying textbooks all the time and paying subscription fees for journals and some of this material is available for free, free in the sense that you are not paying for the material although you are paying for the internet, and maybe if you are going to print you will pay for printing, but that is relatively cheaper than the actual resource.” Makerere University 2

They also saw them as a means of expanding equitable access to education.

“…when we think access and the core mission of our organization is to increase equitable access to education, when we think access in a digital environment, access will have to have a digital component.” SAIDE

Examples were provided of how some academics are using these resources innovatively with or without the technology. This included certain academics who have made TESSA materials a major resource in teaching methodologies. One institution has actually enforced the adaptation of these resources during teaching practice and made it part of their assessment.
Another example where TESSA materials have been used innovatively to create a positive impact in teaching is where a primary school teacher in Kenya used the materials with his pupils to create a weather station from scrap materials (see illustration below). This teacher has no access to the technology and used the TESSA materials as print. The quotation below describes his motivation to create the weather station from the TESSA materials, how he went about it and the impact this has had in his teaching:

“… I realised that the topic weather that is in our Kenyan curriculum is taught across all the classes and in all subjects. So I decided to carry out this
activity of the weather station, to even make easy my teaching and make learning more interesting. I went through TESSA materials and saw how I could make these instruments. I then used my learners to collect some of the materials that are locally available ... We set up the station and it became very interesting. I can see some change because right from class one, they go to the station to learn with their teachers. If they are teaching about wind, they can see a compass; they can see a wind vane, where the wind is coming from, where it is going, how it is measured. Also in advanced classes they are now able to read thermometers and interpret, we have also been measuring the amount of the rainfall. Because we are approaching towards the end of the year, I can see that it is of great success because right now from class 1-8, we were trying subject panels analysis we were seeing that the topic weather is no longer a problem with our students, even the small learners they have understood it, they have improved. Because we can analyse our examination questions, and we look if they have improved and we can see that in almost all the children are not having any problem with questions dealing with weather, they are getting almost everything. Egerton University 1
Technological factors

Status of technology

Technological related limitations in terms of infrastructure and human capacity are a major factor affecting the OER adoption in the countries visited. However, the situation in South Africa is more improved than that in Kenya and Uganda. In both Kenya and Uganda, access to networked computers is limited to the universities and in most cases internet connectivity is poor. Nevertheless, there is optimism among users that the situation will improve with the arrival of the broadband through the fibre optic cable on the eastern coast of Africa.

“But we get encouraged by the fact that we are having things here called fibre optic. It is being networked across the country and of course if the access costs can come down…” Egerton University

Users outside the universities have to grapple with not just poor internet connectivity but the actual access to the computers. In some rural schools, power is also a challenge as they tend to be outside the electricity grid.
“...the bulk of the teachers we work with come from schools that do not necessarily have sufficient machines for people to work with...” Makerere University 2

However, it was noted that access to the technology in South Africa is different. Universities are well resourced and some of the schools even those in the rural areas at least have access to basic computer facilities:

“Every academic is entitled to either a laptop or a desktop... The heads of departments have access to 3G cards so they can put a 3G card in their laptops or if they want they can use their 3G phones, most people have got smart phones, they have got blackberries, the Nokia communicators.” UNISA

Different views towards technology challenges

Some participants particularly from South Africa expressed the fact that technology and associated costs are really not the issue against OER adoption. According to them, the real issues are the licensing and the government policies towards the cost of bandwidth:

“I mean the concept has been sort of given in to because of the digital age and because it does actually help with storage and adaptation and all those kinds of things, the issue really about OER is the licensing issue, that’s the bottom line. So for example there was a wonderful address given ... in a conference where ... Leicester University’s OER being used by students in Malawi ... to conduct science experiment, with no technology at all, no computers anywhere, just paper, with a lesson and a set of resources like a banana, a
table and whatever else there happened to be…so OER and technology don’t necessary go together…It’s not a logical necessity.” SAIDE

“…the factor of cost has nothing to do with the technological capacity; cost is to do with how deals are made about bringing in internet facilities in this country. Cost is to do with the licensing that a government charges for a service provider that wants to bring internet, if they increase the charges the internet provider passes on the cost to the consumer…Costs are a political decision not a technical issue.” UNISA

Alternative approaches and innovations towards technology
As a way to counteract the technological challenges, it was established that alternative and innovative approaches have been adopted around usage and access of OER. For example most of the places faced with the technological challenges use the OER in print format. In Uganda and Kenya, TESSA materials are printed and distributed to the users at school level.

“We may not be able to access some of these resources because the areas where we are coming from there is no power, so what we can only access is the materials that have been downloaded and printed through the assistance of the university” Egerton University 2

Where teachers can access the technology even if in the cybercafés, CDs are used as well:

“…we are introducing the CDs; last time they were here we gave them CDs…but now with a CD they have to look for a computer. That is where the problem is because the schools out there do not have computers. But the teachers can be able to use cyber cafés around to see if they can access some of these materials.” Egerton University 1
Another example where alternative approaches have been adopted is with the use of cached versions of digital resources in cases where there is low bandwidth. Downloads are done at night and cached versions simultaneously created. These can later be used without necessarily being connected.

“So what we are wanting to do is to say lets look at unique affordances of each of those ways of distributing and making materials and let them speak to each other and be used judiciously but have in mind that we want to make more affordable resources available to people…affordable access to digital publications,… as people download e-books, a cached version of that book is simultaneously created so that people don't have to be online when they read that book… that's a big issue for Africa… for example we have been working in Malawi on this e-book project, they have such problems with bandwidth and slowness that they actually leave the thing downloading when they go home in the evening and then its there in the morning, but they can't do it in the day because it is impossible.” SAIDE

One institution has adopted the “Vygotsky’s zone of proximal development” approach in its attempts to change people’s thinking towards technology usage. While the end users are provided with the print versions because they do not have access to the technology, they also use tutors to support these end users. These tutors are well equipped with the technology which they are expected to use to support the end users. As they use these technologies, it is hoped that the users will learn from them and start using the technologies as well.
“...in a project that we have got... all the people that are engaged in this course are not connected to any internet, do not know anything about the computer, there is no possibility of any form of e-learning for the learners, so don’t go there, give paper-based resources, pen and paper assignments... however in order to provide support for these learners, we have to employ a lot of tutors ... And it’s the tutors that we are now training and equipping with laptops and all those tools... But you see what is happening there, we are not saying, oh well, everything must be paper-based, what we are saying is lets introduce and push people a little bit, and then those people begin to understand and explore that environment. That influences the way they relate with the people they are tutoring ... their learners understand that the world also consists of all of these kinds of technologies and a section of them will begin to explore those themselves. So that’s the notion. You have to push people, a little bit, a little bit, Vygotsy’s zone of proximal development...that applies to the technology”. SAIDE

The study found out that since the perfect OER model was developed for environments that are well developed digitally, it is difficult for such a model to work perfectly in environments that have not fully developed digitally. Therefore, they have to be customized to fit into the local contexts.

“...look at what is really happening on the ground, stop thinking like the first world ... we will grow much faster if we really understand our context and see what is appropriate and acknowledge the limitations and tell the Canadians and the Americans coming into Africa with great minds and great technologies and all their money...we know you have got a fantastic stuff there, its not going to work here, this is the context, and we think we need this and this and the other”. University of Pretoria 1
There was a strong view that since Africa is very well connected through mobile technology, OER should be customized to operate within mobile technology platforms.

"Do we have any OER site in the world that specifically makes provision for the small screen of the mobile phone? Not any I know…they develop a site so that they make access and navigation in site so much easier because it has links to an instrument of delivery or access to that OER site. So I think that’s something that I would think might be a very important development that we can try as Africans." University of Pretoria

**Human factors**

The study established that human factors affect OER adoption in a number of ways. These include attitude related issues which in turn affect people’s capacity to use, re-use and share the resources. Mostly these issues are interrelated and it is difficult to present them as individual items. This section thus attempts to bring them out according to key themes that emerged out of this interrelationship. These include misconception of OER; concept of ownership and sharing and limiting capacity to use OER.

**Misconception of OER**

Although the study mainly targeted people who already have an understanding of the OER notion, it established that the concept of OER is not very well understood outside this group of people. It
emerged that most academics are already using or creating OER in one way or another without realizing that what they are engaging with are actually OER. For example a number of people using the TESSA materials had not heard of the word OER before despite using them.

“…there are people using the internet, often they bump into some of them, they use them, they go and the word OER is news.” Egerton University 3

Other examples included an academic/pathologist in a medical school in Uganda who is creating digital images of tropical diseases with annotations and making them openly available, and a music department that is digitizing music files to make them available not only to the students but the public. Both cases do not realize that they are dealing with OER. Interviews with some librarians revealed some good practices such as exhibitions and open days (see illustration overleaf) aimed at encouraging academics to open up their research output, yet they had not heard of the word OER.
Another factor that emerged was the perception that OER lead to extra work and people are not willing to take on this additional work or do not think they have the time for it. So there are people who are simply not interested in adopting these resources. Others will adopt them but not create time for sharing back.

“…because people see OER as an addition, and its adding work and its rather an interrupter of my work not a supporter of my work, that sort of a thing…” University of Pretoria 1

“But they are not that welcoming because they do not want to be much involved because by the end of the day they want to cover what the syllabus expects of them. They do not want to sacrifice more time and energy.” Egerton University 2
Ownership and Sharing

The study also established that there are fundamental factors affecting ownership and sharing of these resources. Some of these are people’s notion of ownership and sharing and others are linked to technological challenges:

a) A “not invented here syndrome” factor

This came about particularly among some academics who felt that their colleagues have difficulties accepting materials that have been developed elsewhere.

“… I suppose really the attitude issue is more like certainly in South Africa the resistance to materials developed by other people, even by people within the country, and we have hit that, for example there was a suggestion that they use the OER that were made available and people said no, we don’t believe in doing that, we must make our own resources…. ours must be better, you know, it hasn’t been invented here … We actually got a phrase for it which is called “a not invented here syndrome” SAIDE.

b) Academic pride

Related to the above issue is the academic pride which affects their readiness to use and share resources they have developed:

“…pride of the academicians where they think to acknowledge that actually this is not my work that it so and so who developed it initially and I modified it, it seems to erode their pride, so one would rather quietly sneak in and pick pieces from elsewhere and say this is all mine than acknowledge that this is a
c) **Negative perception that OER is from the West**
The fact that the OER concept came from the West has been received with mixed feelings across different participants. This affects ownership of these resources. For example some participants felt strongly that they have been turned into consumers rather than partners of products developed outside. One participant commented that the reason for this is because international OER funding is skewed towards western institutions who in turn give these resources freely to developing countries as a way of appeasing their conscience.

“Our real problem is that most of the OER kind of initiatives, if you look at the proportion of funding that goes into OER in the developed world and the developing world is completely skewed, so vast majority of OER Hewlett Foundations are actually developed world projects and then they appease their consciences by saying we will give them to you. I mean what is the point of that?” SAIDE
Another factor affecting sharing of the resources is associated with the culture of the people. Africa is largely an oral society where people are
more at ease with sharing orally than with writing. Thus, sharing digitally is alien to most people. Examples were given of instances where users share excellent experiences with TESSA materials during a conference and are encouraged to share them in the TESSA portal. Unfortunately they end up not sharing.

“… I think we still have to do a lot of sensitization for people to stop sharing orally but begin to use the internet to share… I don’t know if it is a cultural thing, I don’t know what it is. But we have to encourage people to be as willing to share on the internet as much as they are willing to talk.”
Makerere University 1

e) Fear and lack of confidence
One other factor affecting people’s readiness to share is fear of exposing their work for public scrutiny mainly because they lack confidence that their work is good quality.

“If I came to you and said what do you think about this material? We will probably talk for about 30mins about it, but if I say, can you put down your thoughts, you would think twice about it, we still have hung ups, because if you share about OER, you become vulnerable, your thoughts are in the open, open to criticism, and you fear that criticism.” Makerere University 1

“I think the basic point that people say ostensibly is that this is my material, I have copyright for this material, I don’t want to share the material because it is my own work, that’s their argument but I think implicit in that argument are people who do not want to expose themselves to international critique of what they produce, they are not confident enough that their work can stand both national and international critique and in our case regional and continental critique.” UNISA
f) **Technological limitations**

Good internet connectivity is necessary for online sharing of resources particularly when these resources are PDFs or images which tend to consume a lot of bandwidth. However, most of the participants are in environments that have very poor connectivity and expressed this as one of the reasons why sharing is limited:

“…so I want to make them relevant by contextualizing them or versioning. Once I have done that, do I feedback what I have done, the answer in many case is no... Maybe you know we are in the third world, at times connectivity is poor, you take too long to download, so uploading itself can be a problem, then there is the cost, I hope with the coming of the fibre optic, maybe things will be more manageable.” Egerton University 3

Secondly, because limiting technological infrastructure has resulted in people using print versions of OER, it is difficult for them to share back because they are not in a digital mindset.

“Our biggest challenge is still that even when you do that, print is still dominant, so while most of the OER will require that you put back your revisions so that others can share in it, if what you are doing is for an audience that was going to read hard copy, the tendency not to put back because you are not developing for online usage is very strong, you are tempted to just work offline and make this and so you cannot contribute to the pool and that breaks the loop that would help give you the opportunity to also make a contribution and see how your contribution will be received.” Makerere University 2
g) Lack of awareness

It was also noted that even among those who have come to accept OER and are using them, there are some who do not know that they can share back what they have used and contextualized. This is related to a point noted earlier about the misconception of OER.

“…most people have not really understood what OER are and therefore they need sensitization. Also they need to understand that we can also create to share with other people.” Egerton University 3

Level of ICT skills

It was noted that potential users of OER have issues to do with limited ICT skills which hinder effective utilization of OER. This is mainly among school teachers.

“…as a developing country it is the biggest problem, they are not able to use the digitized materials as such because of not only the cost involved or the availability of the internet, but also because of the computer literacy skills.” Egerton University 3

However, at the university level, there are some old academics who are not comfortable with the technology and would not want to expose their lack of skills.

“a number of them still do not have the skills. You see in this department, almost everyone is getting to fifty they are all those guys with computer phobia, only a few make use of it as much. They would not want to be known that they cannot use the computer so they keep off.” Egerton University 3
These older academics are used to the traditional way of accessing and using educational resources, they are not ready to adopt new methodologies that take advantage of the technology. So they are reluctant to use OER. This contradicts the younger generation which is at ease with the technology because they have grown up with it and are thus ready to adopt new methods that rely on the technology. These ones are more likely to accept OER.

“…some people will not do anything, they are not really interested in that, they are typical, classical academics who want to be with books around them, give this information to the students and so I mean on the other hand there are academics who are more younger, its got also a generation thing, younger people who grew up with the technology and feel much more at ease, understand it much better might say this is a great tool to make my work less not more…” Makerere University 2

**IPR related factors**

IPR of institutional and academic output was highlighted as a fundamental issue that is affecting the adoption of OER in Africa. This ranges from complexities involved in trying to adapt already existing resources because of complicated license clearance to national and institutional policies that tend to favour copyrighted resources. The section that follows presents the various ways this has affected OER adoption.
Complexities involved in adapting existing resources

Examples were given of difficulties involved in trying to adapt already existing content into OER. This was mainly among institutions that are already a step ahead in creating OER. This included complex negotiations and processes in dealing with 3rd party materials.

“The negotiations are difficult…in terms of the contract, because we have signed the contract…how or what are we allowed to take? The fact is that the Oxford University have cleared them out of print, so there are various clauses in the contract that state that when something is out of print, the original authors can have them back, but there is a distinction at the moment between database and content rights and our contract specifies content rights rather than database rights. So in what format will Oxford University Press give those materials back to us, we are arguing that we would like to be able to make PDFs which can go through an OCR process, we would like to do that ourselves, they are obliged through the contract to give us the film but the film does not help us that much because it really is only suitable for paper printing, and PDFs are also not that helpful to us because the whole point about the OER is that they should be able to be adapted, or if they are PDFs they are locked, you wont be able to adapt. …it’s quite a complex process…” SAIDE

Resistance to open up content

This is largely an economic issue. For a long time academics the world over have earned an income from the royalties of the materials they publish. Among the participants interviewed, there was a strong view that the majority of the academics would not want to make their output
Findings

open because they make a lot of money, more so because these academics are not always properly remunerated by their institutions.

“But the academics who produce these courses, and programs and degrees and diplomas and certificates make a lot of money out of that, so they will not want to let it go….In UNISA right now they do not want to go the route of OER, because academics make a lot of money out of the copyright materials. They want IPR to their work.” UNISA

“I have a feeling that there is still a mind lock in the area of copyright, the idea that I can work hard and put my thoughts down and just make them available for others to use without a financial benefit to me, getting from what others have developed I mean that is not so repugnant but when you imagine that you are going to add in yours and also put it there, that is why I am seeing many people hesitating.” Makerere University 2

A different but related issue is what can be summed up as national pride which was pointed out during an interview with a participant in South Africa. Although this may not necessarily be the case in all countries, it was noted that South Africa considers herself as a leader in the region in terms of knowledge production and going the route of OER has the potential to weaken this preeminent position:

“The other factor is that South Africa is a major player in the region in terms of knowledge production, so if they go the route of OER, I think some people feel, I think wrongly, that that preeminent position that they have on the African continent will be diluted but I believe that if the whole country goes in a OER direction, I think the preeminent position in South Africa as a knowledge producer will actually be enhanced. Remember the top university
In Africa is the University of Cape Town. It rates about 255 globally. UNISA is the largest university in Africa. UNISA

Institutional and national policies

Traditionally academics have been promoted on the basis of their academic output, usually in the form of the amount of publications produced in accredited publications. There is still vagueness around how this can be achieved if the output is in the form of OER.

“...the debate about OER adoption, about publication, about the quality, how do we begin to assess, if something appears as OER will it be considered as a publication or not if not peer reviewed, and so because of that in terms of the requirement for progression, for promotion, that is as far as publications is concerned, that is if anyone want to contribute to that. That is some issue that will have to be clarified.” University of Pretoria 2

An even more complicated issue was identified in South Africa where universities are funded on the basis of the number of publications they produce in accredited journals. This in turn affects the way these universities reward their individual academics in terms of promotions and funding for their projects and conference attendance.

“...the other problem we have in this country is that academics are promoted on the basis of what they write number one, number two is that the universities get money on articles that academics publish in what we call accredited journals...the Department of Education partly funds universities on the basis of the articles that are produced... So the universities that have got people that publish more, meaning that people who have copyright of their materials, those universities get more money. So the moment you begin to say
that there is no more IPR on an article, I do not know what is going to happen, I think it is going to throw the whole thing into disarray. People will have to rethink how to fund academics, and how to encourage academics and how to promote them…” UNISA

Policies and their impact on academics’ readiness to open up, share content and work collaboratively with others was noted during interviews with librarians. In one institution, there is a clear policy on how to handle digital content i.e. uploading academic and research output onto an institutional repository uploading educational digital resources (i.e. courseware and library digital resources) onto their learning management system. In another institution, there were no such policies. It was observed that there was more readiness to share in a digital environment and work collaboratively where policies existed than in the institution that did not have these policies.
Participants’ suggestions for solutions round the challenges that are impeding on the adoption of these resources

This section covers suggestions that came out of the interviews for solutions of some of the challenges presented above.

Sensitization

Most of the participants interviewed felt that there is a need to sensitize people on what OER are and their value in teaching and learning. This kind of awareness creation should include giving people more information on the whole concept of OER in order to change their ways of thinking. It should include educating them on the importance of not just being users but also the whole notion of sharing back what they have built on. This may change the perceptions of those academics who think that what they have not authored is not authoritative enough and hence be willing to use and build on what others have developed.

“…sensitization so that people would know really what OER means. You know most people have not really understood what OER are and therefore they need sensitization. Also they need to understand that we can also create to share with other people. Awareness is lacking. At times even when people use them it is accidental” Egerton University 3

Such sensitization should be at all levels, i.e. at the national policy making bodies down to the institutional policy makers and the actual
end users who include university academics and teachers at the school level. School visits to encourage teachers, conferences and workshops for decision makers, head teachers and other players, i.e. national curriculum developers should be used as ways of creating awareness.

“We must also look at the Ministry of Education, what do they think about it? I am not sure they have been sensitized seriously about it, and then the actual set up of the university. You must touch those buttons first, if you want to adopt it. Otherwise, me as a willing person I would think about it in my teaching because I think it is a good idea, what about people who decide at the policy level? Those could be an impediment.” Egerton University 1

**Versioning for African context**

Participants expressed the view that for the OER adoption in Africa to be effective, there is need to consider the local context and operate within the provisions of this context. One area that was noted is the nature of the content. There were views that the content should be versioned for the African context. The example of TESSA was cited as a positive approach where the content has been developed by Africans for their contexts:
“So the issue is not with who posted that, it’s the content, whether it has been developed by the first world context or by Africans for Africans. And this is where the TESSA project comes in; they versioned it, they contextualised it for each country, that is I think very, very helpful in my view.” University of Pretoria 1

“…so what we are saying is that an idea can be conceived, it does not matter where, whether in Africa or UK or America, but when you want to use it in your own set up we want to contextualise it so that it fits our setup. Not to adopt it wholly the way it is, so like the TESSA booklet if we have to adopt it in this country, we have to do a lot of modifications to suit our context.” Egerton University 1

Another area that was cited is with the application of technology. There was the view that people need to evaluate the context in view of the
limitations of technologies and contextualize the application of the OER within what the technology permits.

“… we will grow much faster if we really understand our context and see what is appropriate and acknowledge the limitations and tell the Canadians and the Americans coming into Africa with great minds and great technologies and all their money … we as Africans must sit down and say, listen, wait, we know you have got fantastic stuff there, it’s not going to work here, this is the context, and we think we need this and this and the other.”

University of Pretoria 1

The study established that understanding the technology profiles of the users was the starting point.

**Advocacy**

The study also established the importance of advocacy especially around the need to make content open access:

“I think it can only be enhanced by encouraging institutions to go the route of OER, they already know but I think what they need is just more convincing that this is the best way to go, that IPR is a thing of the past, just like what happened with the Encyclopedia Britannica. Because students both undergraduates and postgraduates levels the only way they can get resources in countries which cannot afford libraries or textbooks its digital resources that are OER. And students can just go and download them.” UNISA

Indeed there are already some who are talking about alternative licensing regimes such as creative commons and encouraging their
institutions to go that way. This is in addition to campaigns such as the Open Access days which promote open access publishing and encourage academics to open up their content.

“So we are quite passionate about trying to promote the notion of OER as creative common resources without the unnecessary...permissions and copyright clearing and all that sort of things... After that we say to people that write, if you are worried about certain aspects, then you can make restrictions, but you start open and then justify your restriction rather than starting closed and then arguing for certain liberties to be allowed, so it's a different starting point, which I think it is a lot more helpful” SAIDE

A paradigm shift in how OER are perceived
The study revealed that there is a need to encourage people to change their ways of thinking towards digital resources generally. Most people on the African continent are grappling with the challenges presented by the technology as already noted above. As a result, people’s mindset is still in the traditional non digital context. Participants of this study suggested that this should change and people need to undergo a kind of
paradigm shift so as to embrace the possibilities of a technically enabled environment.

“...you have to be convinced that they work, you have to make that paradigm shift that knowledge does not come from stacks of books in the library, that you can sit on a little box, laptops and get materials. ... Because most of us are not used to sitting down in front of a computer and read digital resources, most of us prefer to borrow books and read from the library. ... a paradigm shift at the personal level, at the institutional policy maker level, and at the national level, those people who make decisions that affect education and training in whatever sector, whether it is mining, or health or transport, or fisheries, or science, whatever” UNISA

Participants also felt that this change of the mindset should apply to the whole notion of what OER are so that people understand that it is possible to use the resources, adapt them and then share them.

“...you need the openness of mind, the attitude that it is possible to get materials and it is possible to change it and it is possible for me to share it...a mindset that ...I can take this article and I can analyze it and make changes to it and share it back.” University of Makerere 1
5 Conclusion

The purpose of this study was to assess the readiness to adopt OER in Africa. From the findings presented above, it is difficult to conclude whether Africa is ready or not for adoption of these resources. Going by the conventional understanding of OER readiness in which technology is the major benchmark, one can conclude that there are pockets of readiness. This is mainly in South Africa where the technology is enabling. Institutions here are well equipped with technology and the internet penetration is high. There are also institutions such as SAIDE\(^4\) which have incorporated OER in their policies and have projects that are related to creation and usage of OER not only in South Africa but also in different parts of Africa through OER Africa initiatives. However, the question of human factors affecting this adoption still remains a big issue.

\(^4\) SAIDE stands for South Africa Institute for Distance Education. Their mission and policy can be found in their website [http://www.saide.org.za](http://www.saide.org.za)
This study exposed a number of factors that need to be borne in mind when discussing the subject of readiness for OER adoption particularly in this context. These factors are discussed below:

The first thing perhaps one should consider is the definition of the term readiness and what it encompasses. If it is technology, what are the benchmarks for determining technological readiness? If readiness is defined in terms of the actual application of OER, what constitutes this application? Is it application in a digital environment or can other non-digital practices qualify for OER application?

Looking at the issue of the technology, the study revealed that there is a certain kind of technology that is thriving in Africa. Mobile technology is being used across all social sectors including education. This technology connects people across different social levels and classes, so Africa is indeed well connected. This study therefore concludes that there is a need to look into how mobile technology can be used as the technology of choice to present and exploit the possibilities of OER in this part of the world.

In relation to the application of OER, the study established that Africa is already using OER but in a different perspective from what is
conventional. While the whole idea of OER was conceived to operate within a digital environment, practices in Africa seem to suggest that OER are resources in any format and the digital aspect is just one platform for presenting them. Consequently, OER are being used and reused in non digital formats because the digital environment is not fully developed. It may be necessary to do some studies around this area in order to establish how this can be optimised. For example, since the study established that one limitation of this practice is the inability to share because people are in a non digital mindset, how can sharing be encouraged and what innovative forms of sharing can be developed?

The above two points reinforce the importance of contextualisation not only of the content but also of the way OER are developed and applied and the choice of the technology used. As pointed out by one participant, TESSA’s approach appears to be a success in the sense that it has used Africans to create African content that fits into their different contexts and has tried to operate within the provisions of the available technology. For example, their portal is constructed with the bandwidth challenges in mind, and the materials are produced in a blended mode. This is one area that more research needs to be conducted to evaluate the impact of this approach and how it can be enhanced to suit other similar projects. Already other Open University projects have adopted the approach taken by TESSA. Research in this area would therefore benefit such projects that are coming up and be used to inform other
similar projects being carried out in other parts on Africa. In addition, such good practices should be published in African Fora in order to encourage dialogue across people who are interested in OER adoption in Africa.

The study established that an impediment to the adoption of OER is largely to do with people’s levels of awareness as well as their attitudes. Already there are places where there are efforts to create awareness. Awareness creation needs to be strengthened by developing clear strategies that should be adopted at all levels starting from the policy makers down to the users. Related to the awareness creation is the fact that people need to be sensitized to change their ways of thinking, i.e., their mindset in relation to the adoption of OER. They need to be sensitised to the benefits of opening up content and willingness to share it. For this to be successful, research around effective strategies should be carried out. This is because a lot of these issues are attitudinal and cultural and hence unique to this context. Such research would reveal what forms awareness strategies can work in this context.

Lastly, the challenges around IPR can be overcome through campaigns such as the Open Access movement which encourage open access publishing and create awareness of alternative rights protection regimes like the Creative Commons.
The aim of the Open Learning Network (OLnet) is to gather evidence and methods about how we can research and understand ways to learn in a more open world, particularly linked to Open Educational Resources (OER) but also looking at other influences. We want to gather evidence together but also spot the ideas that people see emerging from the opportunities.

The William and Flora Hewlett Foundation is supporting The Open University to work with Carnegie Mellon University to develop OLnet over 3 years to the end of February 2012. The project aims to bring researchers and educators together in an intelligent social network to share knowledge on the development of OER.

The Open University, UK and Carnegie Mellon University in the States are two major advocates of equalising access to higher education. OLnet is using collective intelligence to identify the big questions. Going beyond the universally available technologies for mass collaboration such as wikis, forums
and blogs, the network is analysing community contributions to gain insights from debate and moving idea generation towards innovative practice. Research is being focussed on the most urgent educational needs across the globe – from how OER are most effectively used in developing countries to working out how anyone can gain qualifications from free access to university course content online.

Since 2000, the William and Flora Hewlett Foundation have spent around $80 million on kick-starting the OER movement, encouraging some major players like Massachusetts Institute of Technology (MIT) and The Open University to provide proof of concept projects like OpenCourseWare (MIT) and OpenLearn (OU). Globally, over 150 universities are already engaged in the OER movement. The next step is to encourage more Higher Education institutions to exploit the knowledge gained in this ’start-up’ phase, making free access to HE resources universally available. The challenge will also be to stress-test current knowledge, using emerging technologies to improve on community generated ideas.

With the growing rise in access to the internet and government’s beginning to sponsor OER, the time is right for growth. Establishing an evidence base and
research framework for the emerging field is essential. The key challenge for OLnet will be in making sure the lessons learnt are taken forward into OER projects as the movement grows, and the production of OER remains leading edge whilst becoming commonplace.
7 TESSA

TESSA (Teacher Education in Sub-Saharan Africa) brings together teachers and teacher educators from across Africa. It offers a range of materials (Open Educational Resources) in four languages to support school based teacher education and training.

"perhaps the most successful of all the OER projects we have heard about"

Sir John Daniel, President and Chief Executive Officer, Commonwealth of Learning

TESSA is a research and development initiative creating open educational resources and course design guidance for teachers and teacher educators working in Sub-Saharan African countries.

TESSA has produced a large bank of materials directly aimed at enhancing and improving access to, and the quality of, local school based education and training for teachers. These materials (including audio and other media) are modular in format. They focus on classroom practice in

"The TESSA website …one of Africa’s most extensive multilingual websites for open education resources"

Professor Jophus Anamuah-Mensah, Executive Chair, TESSA and former Vice Chancellor, University of Education, Winneba, Ghana
the key areas of literacy, numeracy, science, social studies and the arts and life skills. All the materials are available through this website in a variety of different formats and languages.
TESSA is a consortium of 18 national and international organisations including 13 institutions in Sub-Saharan Africa who are using the TESSA materials in a variety of teacher education programmes.

The major funding for TESSA (2005 – 2010) has come from the Allan and Nesta Ferguson Charitable Trust and the William and Flora Hewlett Foundation.

The British Council has provided funding to develop and evaluate distance teacher education programmes at mass scale in Nigeria and Sudan and the OU alumni have contributed towards study visits and research scholarships.
CREET (Centre for Research in Education and Educational Technology), a research unit of The Open University, is one of the leading education research units in the UK. It is an internationally respected centre of excellence, pursuing innovative and rigorous research that influences policy and practice. CREET research is multidisciplinary and is united by:

- a focus on learning through diverse media in a wide range of social, cultural and disciplinary settings;
- a radical, challenging approach to established orthodoxies in policy, pedagogy, theory and research methods;
- a major thread of socio-cultural theorising with researchers working across the four broad themes.

The research themes that are being investigated are:

- Childhood and Youth Studies
- Education Studies
- Language and Literacies
- Technology Enhanced Learning
In line with the Economic and Social Research Council's most recent policy, CREET provides three years funding for full-time PhD students. Most students spend a year completing the MRes first, which provides a solid foundation in research methods, allowing the student to gain experience of independent research and to develop those skills needed to organise a large amount of material and information, an ideal base from which to continue their doctoral studies for a further three funded years.

More information about CREET can be found at http://creet.open.ac.uk.
9 How this publication was produced

The production of this publication was a project in itself. We wanted to publish this report in a format that could be both distributed electronically and in print form that was attractive and therefore enticing to pick up.

We opted for blurb (http://www.blurb.com/) as a method of printing on demand, since this also provides a distribution mechanism (albeit limited to USA, UK and France at the moment). The standard portrait size book in blurb is 20 x 25 cm, which is slightly smaller than A4 and letter (the two more common page settings). The page layout was all completed in Microsoft Word and the Custom page setting was used.

As well as checking with the author for her own photos, and our colleagues at the Open University for relevant images, we searched for images on Flickr by using http://compfight.com/, switching the creative commons option to 'only' in the top bar, to only get images that are available to use under this licence.
For anyone unsure about the different category of Creative Commons Licences and what they stand for, there is a good summary on Flickr: http://www.flickr.com/creativecommons.

The cover was created after the word document was complete (and therefore the number of pages established). The required dimensions for the number of pages were calculated using the tool on the Blurb website and then the cover design was produced in Microsoft Publisher.

Both the pages and cover files were then converted to PDFs using Adobe Acrobat 8 Pro adding in two Custom page sizes matching the files. The PDFs were then imported to Blurb for the printed book.

For the electronic distribution we looked at various websites for advice about ebook formats. It turns out there are lots. If you want to find out more, these websites seemed to give a good overview:

- “Comparison of e-book formats”
- “How can I create ePub files from my books?”
  http://www.lexcycle.com/faq/how_to_create_epub
Not wishing to make life difficult (and after some experimentation converting PDFs to ePub files using Calibre) we decided to stick to just distributing the PDF file of the pages with a different cover and using other electronic distribution services. We may revisit this choice when we see that happens with the PDF.

Karen Cropper (Project and Liaison Manager)
Janet Dyson (Project Co-ordinator).
August 2010
10 Useful OER Links

Creative Commons:
- Ghana: http://creativecommons.org/tag/ghana
- South Africa: http://za.creativecommons.org/
- Nigeria: http://creativecommons.org/international/ng/

“Look no Further for OER Search Engines”:
http://blog.curriki.org/2010/07/02/look-no-further-for-oer-search-engines/
Searching for Open Educational Resources, but not sure where to start looking? This blog post lists OER search engines to find educational content in any field.

Managing Heritage:
http://www.open.ac.uk/Arts/ferguson-centre/memorialisation/index.html
Research on contemporary heritage developments in Kenya, with some comparative reference to South Africa

Mobile Learning for Development:
http://www.ml4d.org/
New technologies offer endless opportunities for empowering individuals and communities through access to knowledge, means of expression, and coordinated action. Mobile and social technologies are penetrating every aspect of our life; personal, social and professional. Every day we witness new initiatives to leverage the potential of such technologies in education, government and civic society. Yet many of these initiatives fail, and those which succeed are often hard to replicate.
The ML4D initiative aims to engender a design-level discussion among practitioners in the field, in order to inform them of the challenges and potential solutions, and to facilitate rapid spread of critical design knowledge.

**OER Africa:**
OER Africa provides access to all the information needed to learn about and benefit from Open Educational Resources.

**OLnet:**
http://olnet.org/
Project which supported this report and aims to search out the evidence for use and reuse of Open Educational Resources

**SAIDE:**
http://www.saide.org.za
Increasing Equitable and Meaningful Access to knowledge, skills and learning through the adoption of open learning principles and distance education methods

**TESSA:**
http://www.tessafrica.net/
TESSA brings together teachers and teacher educators from across Africa. It offers a range of materials (Open Educational Resources) in four languages to support school based teacher education and training.
OER Readiness in Africa