

OER Africa

OER in teacher education: reflections from the OER Africa teacher education network

ATEN
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Introduction

This position paper is the product of an iterative reflection process undertaken by the teacher education network within the *OER Africa* initiative. The paper explores the current status of OER integration in teacher development from multiple country perspectives within this particular community of practice. The paper begins by providing some background and context for the discussion, then explores current practice and finally begins to identify some key lessons of experience to guide future integration of OER.

OER Africa's Approach

To facilitate broad take-up and use of the concept of OER in higher education systems across Africa, *OER Africa*, wherever possible, has sought to build relationships with existing networks of educational organizations and/or individuals and provide support of different kinds both to the networks and to individual organizations participating in them. This support has occurred in three forms, each designed to assist and reinforce the other activities. These are: institutional policy engagement; development/adaptation of OER for education programmes and courses; and support to collaborative networks, of which the African Teacher Education OER Network (ATEN) is one.

African Teacher Education OER Network (ATEN)

Many countries in sub-Saharan Africa make use of distance education and/or school-based learning approaches for both the initial and continuing education of teachers while in service. This means that many institutions offering teacher development have already made a move towards resource-based forms of provision and logically should have a natural inclination to engage with OER as providing a way to strengthen curriculum offerings and, in particular, to be able to adapt existing content for a better fit with different contexts. *OER Africa* has accordingly established the African Teacher Education OER Network (ATEN) as a way of promoting OER, facilitating dialogue and sharing existing teacher education content as OER.

To help sustain interest and engagement, over the past few years the *OER Africa* ATEN has offered a pre-conference workshop linked to a regional conference – most recently the DETA 2013 conference hosted at the University of Nairobi. Traditionally, ATEN has co-hosted the workshop with TESSA in order to create a dialogue between the respective members or partners of each and is exploring ways in which they might work more closely together – such as a shared discussion forum. [TESSA is an international research and development initiative which brings together teachers and teacher educators from across sub-Saharan Africa. It offers a range of materials (as OER) in four languages to support school based teacher education and training.]

While ATEN has been successful in promoting the publication as OER of teacher education resources by institutions with which *OER Africa* works directly or with which *Saide* has a historical relationship, this has required the direct intervention of *OER Africa*. The same has not tended to happen spontaneously with, for example, institutions more loosely connected to the network. Nevertheless, these institutions do share resources between themselves where they have an existing relationship, although what is shared and how it is shared is not more generally known.

Rolfe (2012) provides some possible insight into this suggesting that the major constraint in the creation of OER is the lack of time and lack of incentives for authors while also arguing that the major advantage of OER is the ability to access the best quality material from “top” institutions. The author conducted a research study at a Korean higher education institution, about knowledge sharing. The research results indicated that three quarters of staff shared and borrowed materials among colleagues. The internet was the favoured place where the majority of staff obtained their information, but *very few of them shared their own material in that space*. Rolfe (2012:9) also found that while both male and female staff shared and borrowed information, more females shared and borrowed learning material. However both male and female staff had positive attitudes about sharing and borrowing material. They believed in open education and that sharing work as OER enhanced their reputations. Economic reasons were also cited as a reason for borrowing. There was an insignificant difference between new and old staff, and within various age groups, concerning their attitude to borrowing material. However, there was a strong view concerning the need for security, ICT support and copyright clarity on their resources. The report concluded that institutional support structures are critical in the sustainability of OER integration into teaching and learning resources, and their use and re-use.

Nikoi and Armellini (2012) speculate that such institutional engagement will likely be driven by two main factors: the possibility of building the institution’s profile by sharing high quality products (a marketing and public relations agenda) and a desire to improve the quality of teaching and learning (which may have several motivations). They identify key enabling factors as being a more open agenda at a strategic and policy level; improved ICT infrastructure to improve access; quality standards and processes for OER production; and appropriate recognition and rewards for staff for the development of quality teaching and learning resources.

Teaching and learning resources

Teaching and learning resources include a wide range of possible forms and media. Professional communities of practice, our own experience and the prior knowledge and experience of our learners are all potential resources to support teaching and learning. We can also draw upon a wide range of ready-made printed, audio, video, multi-media and ICT-integrated resources ranging from formal textbooks that have been through an exhaustive peer review process to the reflective blog posts of someone whose individual ideas we find inspiring. Access to the internet opens access to an abundance of possibilities. However, in identifying appropriate resources to support learning and teaching in active and meaningful ways, we are always presented with one of the following three choices: adopt, adapt or create.

Adopting, for example a textbook, has the advantage that we immediately have access to a wealth of, hopefully credible, systematically organised information. But it has the disadvantage that the authors probably did not have our particular learners in mind when they were writing so examples,

language level and activities may not work that well for our particular learners. The diverse contexts of teaching and learning mean that teachers always need to mediate the planned curriculum by providing additional language support or different examples or by constructing different kinds of activities.

In contrast, creating allows us to select and present content that speaks to the interests, experiences and needs of our particular learners, but many of us lack both the time and the skills to do a really good job.

Adapting existing resources offers a middle ground; but often we are constrained by copyright restrictions. Many teachers do not realise that the default legal position on resources found on the internet, unless they explicitly state otherwise, is full rights reserved copyright. That means we cannot legally duplicate, share or change them without first getting written permission to do so (and probably paying a royalty fee).

Open Educational Resources (OER) can make a contribution to this process by increasing both access and quality in an affordable way.

The concept of Open Educational Resources (OER) was originally coined during a Unesco Forum on Open Courseware for Higher Education in Developing Countries held in 2002. During a follow-up online discussion, also hosted by Unesco, the initial concept was further developed as follows:

Open Educational Resources are defined as ‘technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes.’ They are typically made freely available over the Web or the Internet. Their principle use is by teachers and educational institutions to support course development, but they can also be used directly by students. Open Educational Resources include learning objects such as lecture material, references and readings, simulations, experiments and demonstrations, as well as syllabuses, curricula, and teachers’ guides. (Wiley 2006)

Since that time, the term has gained significant currency and become the subject of heightened interest in both national policy-making as well as in institutional circles, as many people and institutions explore the concept and its potential to contribute to improved provision of education around the world (Butcher 2011: 23). Indeed, the recent Paris Declaration (Unesco 2012) urges governments not only to promote the notion of OER but to encourage the open licensing of all educational materials produced wholly or partly with public funds. It is notable that policy requirements to this effect already exist in several countries including the United States, Austria and New Zealand for example (OER Africa 2012).

But what are OER and why should we engage with them in teacher education?

How are OER different from other resources?

It is important to note that resources released as OER remain the intellectual property of their developers and are still subject to copyright. The key difference is that in addition to asserting the right to be recognised as the originator of the work that has been shared, the author/owner adds licensing information that lets others know how and under what conditions they might use the resource, including whether or not it can be adapted or remixed. Several open licensing frameworks are available but among the most robust and widely used in the education sector are the Creative

Commons (www.creativecommons.org). This framework provides for licensing of resources across a spectrum of more or less restrictive conditions. Importantly for education, a CC BY licence, for example, allows a teacher to remix resources from several sources and adapt them, for example by including more contextually relevant scenarios or activities and/or translating the content into another language, to suit the particular needs of particular groups of learners. The only requirement is that the teacher acknowledges his/her sources. This possibility begins to address a second question.

Why engage with OER?

Butcher (2011: 5) argues that OER has emerged as a concept with great potential to support educational transformation. While its educational value lies in the idea of using *resources* as an integral method of communication of curriculum in educational courses (i.e. resource-based learning), its transformative power lies in the ease with which such resources, when digitized, can be shared via the Internet.

... the transformative educational potential of OER revolves around three linked possibilities:

1. *Increased availability of high quality, relevant learning materials can contribute to more productive students and educators.* Because OER removes restrictions around copying resources, it can reduce the cost of accessing educational materials. In many systems, royalty payments for text books and other educational materials constitute a significant proportion of the overall cost, while processes of procuring permission to use copyrighted material can also be very time-consuming and expensive.

2. *The principle of allowing adaptation of materials provides one mechanism amongst many for constructing roles for students as active participants in educational processes, who learn best by doing and creating, not by passively reading and absorbing.* Content licences that encourage activity and creation by students through re-use and adaptation of that content can make a significant contribution to creating more effective learning environments.

3. *OER has potential to build capacity by providing institutions and educators access, at low or no cost, to the means of production to develop their competence in producing educational materials and carrying out the necessary instructional design to integrate such materials into high quality programmes of learning.* (Butcher 2011: 13 – emphases as in original.)

In initial engagements with academics one often encounters scepticism about making educational resources freely available instead of exploiting them commercially; but it quickly becomes apparent that there are large numbers of educational resources that are **not** generating such additional income and could be usefully used more widely without detriment to anybody. In a digital age good material would probably already have been copied and shared informally anyway and once digitised, the costs of sharing more widely are comparatively negligible. More interesting discussions arise when working with teachers to improve the quality and depth of learning, for larger numbers of students with better retention and throughput, by adapting or developing existing resources so that they move beyond simply providing information towards developing activities that call for active individual and social engagement and the building of communities of learning and practice that access, interrogate, remix what exists and then share back refined or new understandings (Brown

and Adler 2008; Caswell, Henson, Jensen and Wiley 2008; CHE 2007; Gunawardena et al 2006; Strydom and Mentz 2010).

Good practice in the development of resources for use in open and distance learning has always recommended a similar departure point to that of research, namely first to survey what already exists. In the case of learning resources, it is then possible to decide what could be adopted, what could be adapted and finally what needs to be created to meet curriculum needs (COL 2005, Randell 2006). Glennie, Harley and Butcher (2012: 287) observe that many practitioners are engaging with OER as though they represented a completely new way of mediating curriculum when in fact there exists a rich literature on resource-based learning which can be drawn upon.

OER and teacher education

Thakrar, Zinn and Wolfenden (2009) observe that many of the developing economies of Africa are struggling to meet the need for more and better teachers to address the demands of increased access and success in the schooling system. They observe that contexts are different and varied and that if OER are to make a contribution they need to be designed to allow for flexible usage. They identify the following emerging critical success factors for successful OER integration:

- Access to appropriate ICT and the skills to use it
- Time to find and adapt resources developed elsewhere for local use
- Support for teachers in the integration of OER into distance education teacher development
- Cultural practices and the autonomy of staff in determining curriculum content
- Sustainability of ongoing resource development at both institutional and consortium levels.

There is a strong correlation between teacher education and distance education and between distance education and OER: increasingly we need to develop teachers' competences while already in-service and distance provision requires that we make learning resources available to support learning remotely. Of course, OER could be used simply to maintain the status quo – replicating at a distance traditional models and approaches for teacher development. However, the judicious selection of the teacher education resources we share as OER and the support, guidelines and examples we offer for their integration into teacher development curricula mean that we also have an opportunity, through modeling a resource- and activity-based form of learning, to shape more constructivist and collaborative forms of teaching practice.

However, Harley (2013) building on the work of Bernstein and others, and in light of several evaluations carried out with regard to OER integration in the fields of Health, Agriculture and Teacher Education, suggests that take up and re-use of OER might be easier in the disciplines that have hard disciplinary boundaries like Physics, where there is greater agreement about what constitutes the field and the hierarchy of its core underpinning concepts, than it is in a field like Teacher Education where the disciplinary boundaries are by their very nature softer and the conceptual development less hierarchical. This implies in the latter case that more effort and time is required to adapt resources developed elsewhere for a better fit for a different context. He suggests further that in relation to the other OER Africa focus areas, Teacher Education is “trickier” to work with than Agriculture and Health - even though all three are 'applied fields'. This is because the contextual adaptations required for Teacher Education are greater than for the other two.

Harley observes:

The widespread orthodoxy that has pervaded most teaching and learning situations is that 'learner-centredness' and interactive teaching is an unproblematically good thing across all teaching situations. While it might be in some, OER development would best be served by focusing on 'Pedagogic Content Knowledge' (PCK). Unlike general pedagogy, PCK refers to the manner in which the unique subject matter of a particular discipline or region is recontextualised for teaching purposes. This occurs when the teacher interprets the content of a specific discipline, finding different ways to represent its key concepts so as to make it accessible to learners. For academics, PCK opens new opportunities for research focused not just on the discipline, but the *teaching* of the discipline. (ibid.)

Harley's concern about the need to be more critical about what we are doing in teacher education is echoed in a recent report on the status of Mathematics teaching, which observes:

It has also become increasingly clear that effectively responding to demands for teacher preparation reform will remain difficult while there is lack of consensus on what such reform should encompass and while the range of alternatives continues to be poorly understood let alone based on evidence of what works. In the absence of empirical data, efforts to reform and improve educational provision in this highly contested arena continue to be undermined by tradition and implicit assumptions. (IEA 2012: 17)

What then is happening with regard to the use of OER in teacher education? And is the integration of OER provoking discussion about different ways of teaching? Through both an ongoing online discussion and a hard copy survey instrument circulated during the Distance Education and Teacher Education in Africa (DETA) July/August 2013 pre-conference workshop, ATEN has begun exploring the following questions in relation to the integration of OER into teacher development programmes:

- How are you currently integrating OER into your teacher education activities? What is working? What are the challenges (and how can we overcome them)?
- How do you think you might integrate OER into your teacher education activities in future? What kinds of resources are you looking for? What existing/planned resources are you willing to share?
- How should/can we organise the interest groups to make them more effective at meeting your needs?

This is the fourth and final version of a status position paper that has emerged from an iterative process of online ATEN community engagement. The next section includes responses from a number of organisations and institutions in response to the key questions outlined above.

Responses from ATEN forum members

Africa Nazarene University

Following an OER orientation workshop facilitated by OER Africa in August 2013, several faculties at the Africa Nazarene University have begun to integrate OER into their curriculum resources, but particularly so in the field of teacher education, as explained below.

We continue to encourage our students to use the OERs in conducting Research and completing general class assignments. This has prompted us to organize regular information Literacy training for both Students and Lecturers to enable them to effectively make use of the available OERs.

Some of our Lecturers in teacher education continue to adapt and use in their classrooms and online the teaching styles available from the MIT Website, therefore, enriching their classroom Teaching and Learning experiences.

Mathematics education for Teachers at our University has benefited the most from the use of a number of software applications that they have downloaded freely for use in the training of Teachers. The Student Teachers have found these resources helpful in writing Mathematics documents, learning basic mathematics and calculus. These resources include LaTeX which is a document preparation system and document markup language. The Teachers have found LaTeX appropriate for professional writing of mathematics papers, books, articles etc. Also in use is "Microsoft Mathematics" which provides a graphic calculator that plots in 2D and 3D, and supports step by step equation solving. "Graph" which is an Open Source application used to draw mathematical graphs in a coordinated system has also been used by our Lecturers and education students. "Maxima" a system for the manipulation of symbolic and numerical expressions has been put to use by our lecturers and students to plot functions and data in two and three dimensions.

Our Lecturers producing Teaching modules for Distance Learning Education students continue to use OER in addition to the available e books and e journals in our Library Databases.

Generally, our students and Lecturers through OER have made use of various online sites where they have been able to make use of e books, journals and videos.

British Council, South Africa

We make free resources (online) available to teachers, primary learners, teens and adults for English language learning and teaching via www.britishcouncil.org/learnenglish Users find the materials relevant and of high quality.

Challenges include:

- Lack of awareness of online resources
- Low computer literacy
- Poor connectivity for poor people (i.e. 80% of South Africa).

Some possibilities include:

- Awareness raising
- Making materials available on cheap mobile phones
- A lobby to government to provide cheap, fast broadband for educators and learners
- Including a session on use of British Council [and other] online resources in all training courses with teachers (all the above can be shared).
- More directed sessions on previously identified good quality OER. For example, the African Storybook Project was excellent but more time should have been allocated to explore it and how potential partners could collaborate.

- Ensure that that the pre-conference workshop and ATEN interest groups add value (show what high quality resources are available and how to access them).

Chalimbana University: Zambia

At Chalimbana University, we are using the NISTCOL Numeracy Module [available on the ATEN site] which is an OER as a teaching and learning resource in the Primary Teachers' Diploma by Distance Learning (PTDDL) course. As we only have four contact sessions in twenty six weeks in this module (of about 6 hours each), we have observed that the learner - tutor interaction is limited especially for the students who have serious challenges in Mathematics. As a way to increase learner - tutor interaction, we are planning a migration of the numeracy module from print to digital using Moodle. We have a stable Moodle site and some basics in Moodle but lack the expertise to package it effectively. The total number of PTDDL students is 4500, but we thought for a start, we could only pilot with about 200 students with Moodle. It is intended that the Moodle version of the module should also be shared more widely as an OER.

By incorporating other OER, such as ACE Maths and using the hybrid mode of online delivery using Moodle and face-to-face instruction during contact sessions. Existing material we are willing to share in the PTDDL Numeracy module [included on the ATEN site as well as on the preconference workshop CD].

We should consider also:

- Increasing networking among interest group members by exchanging information on best practices.
- Establishing a research agenda within the TESSA and OER themes for further collaboration.
- Sharing of TESSA and OER in Mathematics content and pedagogy.

Egerton University, Kenya

For teacher educators, we include OER in the methods courses micro teaching and teaching practice (mostly TESSA OER).

Some practising teachers are also using TESSA OER.

We plan to induct **all** teacher educators to use of OER before micro-teaching and teaching of method courses.

We need resources on how to teach effectively for life.

We need to maintain personal contact, continue to share ideas and to have a link person in every institution involved in the interest groups.

A key challenge is limited knowledge of ICT and a focus on content by teachers against pedagogy for passing exams.

Kyambogo University, Uganda

Pedagogy from TESSA is integrated in our programme run for teacher education for the award of Certificate, Diploma (in-service), BEd (in-service) and BE/Ed. In the last two, the TESSA methodology is promoted by a few “missionaries/converts” to TESSA OER.

It suggested that as a community we need to:

- Identify sources that can be adapted e.g. TESSA, Saide.
- Create our own and share them.
- Keep in contact with group members.
- Share experiences and developments.
- Encourage one another to develop the materials for OER.

Makerere University, Uganda

Lecturers of the B.Ed programmes of Makerere University adopt some of the TESSA OER materials' activities, as coursework for their BEd students., and they try them out as they teach in the schools where they are employed. Lecturers have also followed them up in the schools to witness how the TESSA materials and TESSA methodology of child-centred approach and activity-based teaching are incorporated in the day to day teaching of pupils especially in the primary Schools. The TESSA OER are also used in the training of distance learning course writers who are encouraged to follow the activity based methodology as they develop modules.

Availability of the OER is a problem since they are web-based and schools lack internet facilities, and where they have, it is not consistent. It would therefore be necessary to print the materials, which is expensive. Otherwise all schools in the country should adopt to improve on quality of teaching/learning.

One way of overcoming the accessibility problem is to involve the Government of Uganda, particularly the Ministry of Education and Sports and donors to assist in improving internet accessibility and production of physical copies of the OER materials.

We shall continue to use TESSA OER and AVU OER in the writing workshops of distance learning modules. Dissemination of use of TESSA materials could also be of help, and a TESSA club where students and lecturers can share experiences, preferably on a regional basis so that a smaller group interacts and shares the use and challenges of use of TESSA OER materials. Then we can pass the invitation to any other person who is interested and all this information can be fed on to other interest groups by a technical person.

Mauritius Institute of Education, Mauritius

The "Creative Pedagogy Project" is included as a module in the Teacher's Diploma Primary Programme. The project focuses on the pedagogy and practice using TESSA OER – stories project, kites and MDG Project. These are used in a non-linear and loosely structured approach and consider both the local environment of the school as well as innovative pedagogical practice as core components. This works very well and already several versions of the projects have been implemented both in Mauritius and Rodrigues.

OER is heavily based on the principle of sharing and apart from its cost, quality and licensing agenda to democratise education and the way we look at it, there are other concerns:

- OERs and improving teacher education practices which then heavily focus on OE practices. In our case OERs, mainly those of TESSA, have been used in a totally non-linear, project based

approach. This is totally different from most current uses where the agenda is to use and develop curriculum materials in line with the country's agenda.

- Based on the sharing principles, trainee teachers have been engaged in choice, innovation and creativity and currently new chapters of OERs begin to emerge out of native projects. However this happens on a voluntary basis where teachers are encouraged to see the worth of it before engaging in the process. In Mauritius and Rodrigues, projects such as Creative teachers, Millennium Development Goals with Creative teachers in Mauritius and Rodrigues, and more recently "Racont zistwar letan lontan" (Or folk tales from Mauritius) has worked wonderfully well. The impact is not only on OERs or its off-shooting practices, but mainly and primarily on the quality of teacher intervention and schools.
- This leads us to a key understanding: The case of non-consortia members like Mauritius and how volunteering and a project-based approach could be additionally supported to further knowledge and understanding about OERs and OEPs.
- Concerns about packaging the resources: this is where the problem lies with non-consortia members and is a current challenge, for the current understanding is a linear approach, therefore not-aligned yet with the non-linear exemplars that could be of use to many users.
- Technical, time and institutional policy constraints.

Some possibilities include:

- Moving from OER to Open education (OE) practices that focus on pedagogy, and home school community approaches.
- Resources based on excerpts and stories
- Technical expertise for licensing, structural organisation to support use
- Development of a network on the TESSA platform that incorporates non-linear and loosely structured use of TESSA OERs.

To encourage greater engagement we need to:

- Increase recognition for teachers and teacher education
- Share good practices, articles, essays, powerpoints etc.
- Organise virtual skype sharing and collect memoirs and anecdotes and feedback.
- Allow for the emergence of flexible rather than a rigid approach to teacher generated resources.

Mkwawa University College of Education (MUCE), Tanzania

We are using TESSA Secondary Science materials and other resources from MIT to develop our own materials for teaching undergraduate students in education, mathematics, science, social science and English language. Early adopters are enthusiastic and have prepared some materials.

The College will continue to support staff who are willing to develop their course materials. Once the materials are moderated for quality, they will be uploaded onto the Moodle learning management system so that student teachers can access them. Already three modules have been shared with Saide [included on the pre-conference workshop CD and will be uploaded to the new OER Africa ATEN site once it is stable].

We have been able to form a Social Science interest group with four members as the nucleus representing UDSM, Moi, Obajeni Awolowo and Kyambogo Universities. The members have pledged to keep in close touch and share experiences through email and other forums.

OER Africa, ATEN

We are constantly looking for existing resources of high quality that might be shared under an open licence and facilitating the process of publishing these on the *OER Africa* ATEN website. We also work directly with institutions such as Chalimbana, MUCE and Unisa to encourage the integration of OER into current materials and learning resource development and the sharing of the outputs under an open licence for others to use and adapt.

The process of locating existing resources and sharing them as OER is ongoing.

We also seek to encourage the development of collaborations and sharing that can be sustained without necessarily requiring the direct support of *OER Africa*. The formation of the interest groups is a step in this direction.

Some exciting projects that are, however, in process with direct input from Saide/ *OER Africa* include:

- A collaboration between the University of Cambridge and Unisa on the development of resources to support new continuing professional development qualifications in Mathematics Education, Science Education, Technology Integration and Inclusive Education.
- The African Storybook Project which seeks to create a platform for the development, publication and adaptation of stories to promote literacy skills in indigenous languages as well as English.
- An updated version of a programme for the training of school principles. The original South African Advanced Certificate in Education for School Management and Leadership was published in its entirety as an OER and all or parts have been used in a number of other projects and in other parts of the world (including the Pacific islands). Over the next few months, the Department of Basic Education in South Africa, Saide, a wide range of other stakeholders, and with support from the Zenex Foundation, hope to develop an updated programme and resources which again will integrate OER and be shared back as OER.

OER4Schools

This Centre for Commonwealth Education funded project started in August 2009 and ran through three phases of engagement into 2014. It has culminated in a professional learning resource for teachers and student teachers, focussing on interactive teaching and learning in science and mathematics - with and without ICT. A key element of this resource is the use of unique video clips illustrating interactive practice (produced in Zambian and South African primary classroom contexts) as a stimulus for discussion.

The resource is freely available for re-use under a Creative Commons license. It supports different modes of learning, including collaborative and individual use, as well as blended learning as part of a course. It is available in a number of formats, appropriate to the varied African environments in which teachers find themselves. It is being embedded in various teacher education and professional development courses administered by teacher colleges and universities in Zambia and elsewhere in

sub-Saharan Africa; and "taster workshops" have been run successfully with lecturers and students in three higher education settings. The resource can be accessed at: <http://oer.educ.cam.ac.uk/wiki/OER4Schools>.

Open University of Tanzania

The Open University of Tanzania (OUT) is a dynamic Open and Distance Learning (ODL) institution. It is in the forefront in OER initiatives in Tanzania. The institution has collaborated with Anglophone, Francophone and Lusophone African Universities to develop the African Virtual University (AVU) OER comprising university level Science, Mathematics, ICT and Education courses. AVU OER are accessible through AVU and OUT websites. Another OER initiative at OUT is the involvement of the university in housing MIT OER and using the resources to educate OUT staff and students. These open resources are also accessible to other interested people who visit the OUT website.

The Open University of Tanzania (OUT) started serious efforts to train its staff members to prepare study materials in line with the institutional e - learning platform (OUTLeMIS) around the year 2008 following approval of the revised publications policy and procedures that explicitly recognized the conversion of study materials that were prepared under the creative commons license by OUT academics or staff from other universities who were willing to author or co-author materials under such a license that also allows them to use the materials for teaching in their own institutions. The recognition had to be assessed by a panel of experts and such materials enabled staff members to get credits in their promotion beyond those given for merely writing study materials that in both cases involve payment of token monetary incentives. This has enabled OUT to put on the OUT official Learning Management System about 160 courses by 2012/13 out of the over 500 courses on offer. Faculties and individual staff members are given annual targets of numbers of courses to convert per year within their OPRAS targets. In 2010, OUT had to mainstream the benefits within the university staff review policy and procedures in order to encourage more staff to prepare OER in line with the official OUT LMS.

The university has adopted and adapted various OER into the study materials that are developed as part of the process of curricula review following an awareness campaign on the need to respect intellectual property ownership of other authors. Programmes that have adopted fully or with some minor modification OER from TESSA or the AVU coordinated OER include the Diploma in Primary Teacher Education, B.Ed, BA.Ed, BSc.Ed programmes. OUT has also adopted some study materials from NOUN and ZOU in selected programmes while it also has provided the two institutions some selected materials for adoption as long as they acknowledge originality under the creative commons license.

OUT also constitutes one of the founding members of the TESSA consortium that developed OER to support school based teacher education. TESSA materials are currently used at OUT to train diploma level primary school teachers who are of great assistance in improving teacher capacity and the quality of primary school teaching in the country. The OUT institutional repository is another OER initiative through which digitized services are offered to members of the community for effective management and dissemination of research reports donated or developed by institutional members. Currently, the institutional repository at OUT houses conference papers, University Journals (HURIA, JIPE, and Law Journal), student theses and dissertations.

To ensure usability of OER programmes/projects OUT has developed capacity-building and awareness workshop series with the support of the Commonwealth of Learning (COL). The institution is further developing 21st century OER courses to be offered to its staff and students. When completed, the OER under this programme will be housed on the ACDE website to open up the courses to wider access. To guard OER initiatives and sustainability at the institution SAIDE, OER Africa and OUT are collaborating in a process leading to development of an OUT OER policy.

University of Education Winneba, Ghana

I have focused on language development activities and the concentration is on an Integrated Approach to Story-telling. Two schools have been roped into the project and they seem to be progressing. [There is an obvious possible partnership here between this project and the African Storybook project.]

I want to include Foundation School teachers and Grades 1 to 3 teachers in the project. Another aspect I am looking into is using phonic methods of teaching letters of the alphabet for English language.

We need to explore contributions from the various interest groups on what works for them in what conditions and what the challenges are. What could be done to eliminate the challenges and the way forward.

Advocacy remains a key challenge – academia is sometimes quite conservative and there is often concern that materials may be published as OER that have not been subjected to a sufficiently rigorous quality and peer review process. It is important that academics understand that the selection and use of OER needs to be subject to the same quality assurance process as publication and use by more traditional means.

Most academics in higher education institutions have been appointed in the basis of their disciplinary qualifications and research-based outputs rather than their ability to teach or to develop learning resources. Many staff need support in the process of a migration to resource-based forms of teaching and only really begin to engage meaningfully with the potential of OER in relation to other pressures such as an institutional strategic move towards online or distance provision.

Existing policy can help or hinder the integration of OER. Key policy issues that need attention include but are not limited to:

- Clarification of intellectual property rights;
- Human resource management and in particular the extent to which investment in improving the quality of teaching is both recognised and rewarded;
- Ensuring a supportive ICT infrastructure and resources; and
- Effective quality assurance processes.

Ongoing advocacy remains important and particularly the sharing of examples of success.

As indicated, linking engagement with OER to existing strategic and curriculum initiatives can provide useful momentum but sometimes the OER orientation and support process itself can trigger such discussions.

University of the Witwatersrand (Wits): South Africa

From my side, at Wits University in South Africa, I can report that we have people using some the maths OER which are on the OER Africa site but all in print copy, not on a Moodle platform. All are on-site courses (B.Ed. mostly some although units have been used in honours and masters presentation lectures as well) and they are using the ACE Maths, Maths for Primary School Teachers and DIPIP Assessment for Learning material. Some use the full set of materials, others use selected units, or even parts of units. I don't have a full breakdown of who is using what as it is an on-going job to track this properly.

I am also aware of at least one NGO user of the Assessment for Learning material who located the OER through the Saide newsletter.

One of the units of Assessment for Learning material (Unit 1) has been versioned into French and is being used by Ricardo in Togo.

I think that the main challenge inhibiting use of OER remains the promotion of the OER – placement on the website does not necessarily guarantee take-up. Personal promotion (speaking to colleagues about available OER) still seems to be strongest of all and unfortunately this is costly and not always possible. I still use every opportunity to promote OER and particularly those which I know about and this does lead to additional users of the material very often.

There is still some uncertainty on the part of some people about what an OER is – how to interpret the licensing conditions and make good use of the available material, though I have seen an improvement in the general know-how of the public over the years (since 2006 when I first become involved in developing and promoting OER). The number of people who know about OER has increased, those who do know something still need the basic introduction and explanation before they realise the potential.

My work is still more on the development (and promotion side, wanting what we develop to “get out there”) since I am not in an active teaching position at the university at the moment – my position is purely research focused. But my colleagues all around me are in the business of teaching and I engage with many on a regular basis about OER – use and production. I still encounter resistance when I try to promote sharing – I think at the root of this is personal fear that one's material may not be “useful” to others and institutional “am I allowed to do this?”, or “what would the implications of sharing be?”. The initial reaction to “you can use this it will cost you nothing” is often “is it of a good enough standard?” but once people have engaged with actual material and they realise it is good enough for them they are usually extremely pleased that I told them about it.

Wits remains an on-site institution but I am still interested in promoting distance education and OER which could be used in either on-site or distance applications since this makes them most useful across all sites and seems sensible.

University of Lome, Togo

Currently, the use of OER in Togo is in its beginning; apart from AUF in the campus, which deals with ODL. OERs are largely unknown. However in 2006 Togo has been in touch with TESSA. After many analyses, TESSA is going to become a primary support tool.

Recently, I adapted the *Unit 1: Using learners' test data for professional development* [from the Wits DIPIP project on the ATEN site]. This module will help student teachers to improve their way to deal with students' errors. On the way, I worked a lot with Ingrid. Actually, I'm working with colleagues here in Togo to improve OER materials in mathematics.

TESSA

In addition to the references already made above, the following recent developments in the use of TESSA resources are worthy of note:

- In Nigeria, the National Council for Colleges of Education (NCCE) have printed 20,000 copies of the TESSA Teaching Practice Supervisor Toolkit (an OER) and distributed to all the Teachers' Colleges in Nigeria. The toolkit (developed last year by the OU/ NTI/ NCCE with Hewlett funding) offers advice and ideas to encourage Teaching Practice Supervisors to use TESSA OER in their work with trainee teachers on the NCE programme.
- In addition this month NTI and the OU have begun a pilot project with 30 Teaching Practice Supervisors in three states using the Toolkit and all the TESSA OER on a tablet computer. The idea is that this will help the Teaching Practice Supervisors to become familiar with the TESSA OER and draw on the OER in their school visits and seminars with student teachers, using an app 'Evernote' to record this process and share with others in the project. All very early days but we hope this will give us some insights into how OER can become embedded in the work of this group of teacher educators.
- In Ghana OLA College is using TESSA OER in several modules with student teachers on the B Ed programme and we have evidence on the use of TESSA by these students and impacts on their practice. OLA are now working with three further colleges in a peer-supported process to extend the use of TESSA OER to students in these three colleges - again early days but initial workshops and plans have been successful.

Concluding remarks and recommendations

Atkins, Brown and Hammond (2007) in their status report to the Hewlett Foundation identify the following as key "enablers" of OER integration:

- A commitment to open policy and content
- Systems architecture that promotes and supports participation and collaboration
- Improvement in performance of and access to appropriate ICT
- Increasing demand for and availability of rich media, virtual learning environments and gamification
- Emerging deeper understandings of human learning.

In its *2014 Horizons* report on trends in Higher Education more generally, the New media Consortium identifies the following short, medium and long-term trends affecting technology adoption in higher education and hence impacting on what we need to teach our teachers, how we need to teach them and the roles that OER might play in this process:

- Growing ubiquity of social media
- Integration of online, hybrid and collaborative learning

- Rise of data-driven learning and assessment
- Shift from students as consumers to students as creators
- Agile approaches to change
- Evolution of online learning;

and they then explore the following challenges which range from solvable to “wicked”:

- Low digital fluency of faculty
- Relative lack of rewards for teaching
- Competition from new models of education
- Scaling teaching innovations
- Expanding access
- Keeping education relevant. (Johnson, Adams Becker, Estrada, Freeman, 2014)

It is suggested that in order to maintain and even enhance the momentum of OER integration into improved teacher development, as a community of practice we need to:

- Support OER practices and pedagogy that really make impacts in classrooms and on learning experiences by sharing and recognising positive innovations
- Use technology as tools for learning rather than as dissociated affordances that are not integrated into changed classroom pedagogy
- Support non-linear approaches and adapted versions generated by teachers to encourage more users
- Create a platform and forum for non-linear use and project-based stories about OER from different quarters
- Conduct reflexive research into changing teaching practices and the roles that OER can play; publish and debate lessons in open public fora; and feed back positively into improved practices.

About OER Africa

OER Africa (www.oerafrica.org) is an innovative initiative established by the South African Institute for Distance Education (www.saide.org) to play a leading role in driving the development and use of Open Educational Resources (OER) across all education sectors on the African continent. Established in 1992, Saide’s mission is to increase equitable and meaningful access to knowledge, skills and learning across the African continent, through the adoption of open learning principles and distance education strategies. Saide’s *OER Africa* initiative brings together all of its OER-related activities under a common conceptual framework. This provides a unique opportunity to deploy African expertise to harness the concept of OER to the benefit of education systems on the continent and around the world. The core work of *OER Africa* is made possible by the support of the William and Flora Hewlett Foundation.

About The William and Flora Hewlett Foundation

The William and Flora Hewlett Foundation has been making grants since 1967 to solve social and environmental problems at home and around the world. The Foundation’s programmes have

ambitious goals that include helping to reduce global poverty, limiting the risks of climate change, improving education for students in California and elsewhere, improving reproductive health and rights worldwide, supporting vibrant performing arts in its community and supporting disadvantaged communities. The Foundation is the primary supporter of the work of *OER Africa* generally and of its teacher education work in particular.

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References

Atkins, D. E., Brown, J. S., & Hammond, A. L. 2007. A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and new Opportunities. Report to the William and Flora Hewlett Foundation. Accessed at <http://www.hewlett.org/uploads/files/ReviewoftheOERMovement.pdf> on 04/11/13.

- Brown, J. S. & Adler, R. P. 2008. Minds on Fire: Open Education, the Long tail, and Learning 2.0. *EDUCAUSE review*, January/February 2008. Accessed at <http://open.umich.edu/oertoolkit/references/mindsonfire.pdf> on 20/10/12.
- Butcher, N. 2011. *A Basic Guide to Open Educational Resources (OER)*. Vancouver: Commonwealth of Learning.
- Caswell, T., Henson, S., Jensen, M & Wiley, D. 2008. Open Content and Open educational resources: Enabling universal education. *IRRODL*, Vol 9, No. 1, 2008. <http://www.irrodl.org/index.php/irrodl/article/view/469/1009>. Accessed 20/10/12.
- Commonwealth of Learning (COL). 2005. *Creating learning materials for open and distance learning: a handbook for authors and instructional designers*. Vancouver:COL downloaded from www.col.org 22/04/08.
- Council on Higher Education (CHE). 2007. *Higher Education Monitor No. 6, A Case for Improving Teaching and Learning in South African Higher Education, October 2007*. Pretoria: CHE.
- Glennie, J., Harley, K. & Butcher, N. 2012. Conclusion: Reflections on Practice in: Glennie, J., Harley, K., Butcher, N. & van Wyk, T. Eds. *Open Educational Resources and Change in Higher Education: Reflections from Practice*. Vancouver: Commonwealth of Learning.
- Gunawardena, C. N., Oretgano-Layne, L., Carabajal, K., Frechette, C., Lindemann, K & Jennings, B. (2006, August). New model, new strategies: Instructional design for building online wisdom communities. *Distance Education*, 27(2), 217-232.
- Harley, K. 2013. *Some issues that have been generated from OER reviews and evaluations*. Narrative version of a presentation made at the OER Africa Advisory Meeting, Nairobi, 19 November, 2013.
- Haßler, B., S. Hennessy and A. Cross, with E. Chileshe and B. Machiko (2014, submitted to PDIE, in review). *School-based professional development in a developing context: Lessons learnt from a case study in Zambia*.
- International Association for the Evaluation of Educational Achievement (IEA). 2012. *Policy, practice and Readiness to Teach Primary and Secondary Mathematics in 17 Countries. Findings from the IEA Teacher education and Development Study in Mathematics (TEDS-M)*. [Multiple Contributors.] Amsterdam: IEA.
- Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. 2014. *NMC Horizon Report: 2014 Higher Education Edition*. Austin, Texas: The New Media Consortium.
- New media Consortium (NMC). 2014. NMC Horizon Report 2014 Higher Education Edition. Accessed at <http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf> on 04 February 2014.
- Nikoi, S. & Armellini, A. 2012. The OER mix in higher education: purpose, process, product, and policy, *Distance Education*, 33 (2), 165–184, DOI: 10.1080/01587919.2012.697439
- OER Africa. 2012. *Policy Development and Review Toolkit*. <http://www.oerafrica.org/policy/PolicyReviewandDevelopmentHome/tabid/914/Default.aspx> Accessed 20/10/12.
- Randell. C. 2006. *Resources for new ways of learning: a manual for developers of learning resources*. Pretoria:Saide. Downloaded from www.saide.org.za, 06/07/2006.

- Rolfe, V. 2012. Open educational resources: staff attitudes and awareness. *Research in Learning Technology*, 20.
- Strydom, J. F. & Mentz, M. 2010. *South African Survey of student Engagement – Focusing the Student Experience on Success through Student Engagement*. Pretoria: CHE.
- Thakrar, J., Zinn, D. & Wolfenden, F. 2009. Harnessing Open Educational Resources to the Challenges of Teacher Education in Sub-Saharan Africa in *International Review of Research in Open and Distance Learning, IRRODL*, 10 (4), September 2009.
- UNESCO. 2012. 2012 World Open Educational Resources (OER) Congress, 2012 Paris OER Declaration. http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration_01.pdf. Accessed 18/10/12.
- Wiley, D, 2006. The current state of open educational resources. Blog. *Iterating toward openness*. Accessed January 2011, <http://opencontent.org/blog/archives/247>.
- Wiley, D. 2008. http://www.wikieducator.org/OER_Handbook/educator/OER_Lifecycle