Promoting Open and Distance Learning: A Focus on Open Educational Resources

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Sub-theme:

Promoting Open and Distance Learning (a focus on Open Educational Resources)

# Background: The Context for Open educational Resources (OER) in Africa

Open Educational Resources (OER) have been defined in many ways, but one widely accepted definition is that of “materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research." Within the context of higher education in Africa, the logic behind the creation and use of teaching and learning materials that can be easily shared and adapted is self-evident. Higher education in Africa has undergone considerable change: the university, once a stratifying force between the African intelligentsia and the rest of the African people in the colonial period, came to be regarded in Africa’s post-independence era as a driver of development. As such, universities attracted significant investment, both locally and from international sources. Over time, however, both the euphoria that accompanied the independence project and the generous funding it generated have progressively waned. This reduction in funding for higher education has resulted in a dearth of quality, up-to-date teaching and learning materials, and the recycling of outdated resources is now all too often the norm.

One result of these changes has been the promotion of quality Open and Distance Learning (ODL) as a solution to the ever-growing demand for higher education on the continent, the notion that ODL might serve as a key agent in the massification of higher education. In industrialised countries, “massification is defined in terms of the gross higher education enrolment ratio of a country, a ratio approaching 50% being considered as ‘mass’ enrolment.”[[1]](#footnote-1) In much of Africa, student enrolment has tended to match population growth whereby “… the average annual increase in student enrolment from 1999 to 2005 was in the range of 12% to 60%, yet the gross enrolment ratio rarely exceeded 5%.” [[2]](#footnote-2) In many cases, however, even this relatively modest growth in student intake has not been matched by concomitant investment.

Higher education institutions on the continent frequently struggle to balance over-stretched faculty, under-resourced facilities, and the ever-present pressure on universities, to remain true to their institutional mandates of providing an affordable quality education. While improvements in technology have enabled the development of new forms of pedagogy, print-based Distance Education coupled with good tutorial and assessment feedback systems remains critical in Africa as in any developing region of the world faced with the need to educate a greater cadre of professionals, mid-level managers, teachers, doctors, nurses, technicians and so forth. Despite its many successes, some educators and potential students alike, maintain mixed feelings about the quality of education possible at a distance in instances where insufficient time and resources are made available for appropriate curriculum design, materials development and student support. The concept, however and indeed the demand for access to life-long learning are now widely accepted. Indeed, the advent of the Internet has spurred not only the growth of open and distance education institutions across the globe but also, that of “movements” – (for lack of an alternative term) – such as the open courseware and open educational resources movements, which proponents argue can serve to strengthen higher education – in Africa – and elsewhere.

In order to meet the costs of higher education for both school-leavers and those in search of continuous education and life-long learning, many HEIs on the continent have ventured into income-generating areas. Here, activities range from the leasing of university land to commercial developers, to the running of self-funded or parallel student programs, which target those with the resources to pay for them. The results have been mixed – and often contentious. The rationale behind such endeavours is, however, clear – governments can no longer meet the full costs of higher education – even within state-funded national universities. Within this context of contested scarce resources, the time needed for regular and systematic curriculum review and development, may be sacrificed in favour of activities that more readily demonstrate the potential to generate income: research, consultancies and other outreach programs, which also fall under a university’s core mandate. That good teaching and good learning – a third aspect of this mandate – will continue to occur often appears to be taken for granted. Yet good teaching and learning require equally good scholarly resources-in an environment where the cost of contemporary, copyrighted texts is prohibitive and university library stacks are often filled with outdated texts. New publications produced by the universities (via journals, books, or digital formats), are an infrequent occurrence, partly because of lack of finances – and partly because research grants are few and fiercely competitive. As a result, syllabi may frequently reference outdated texts and articles that are readily available – rather than the most current literature. Both a dearth of technology and outdated and/or poorly maintained technology too often present an obstacle to progress. Moreover, faculty are not necessarily well-supported in using what technology does exist and the fear that students, who increasingly have access to the internet and/ or to personal lap-tops, may indulge in educational practices that might lack intellectual or moral rigour, remain challenges to educational transformation – or an excuse for mediocrity.

At its most basic level, quality (of education) may be defined as “fit for purpose”. The purpose of higher education, it has been argued, has entered muddy waters. A former Secretary General of this august body, Prof. Akilagpa Sawyerr posits the following:

“It is instructive that in the current drive to reform Africa’s universities, the focus has tended to be less on the substance and core of the university enterprise, namely, curriculum, pedagogy and research, and more on funding, governance, management, access, equity, etc. While it would be naïve to ignore latter [sic] these matters… it is nevertheless suicidal and utterly subversive of the university enterprise to make a wholesale concession to these general pressures, to the extent that many on the university campuses are not even conscious any more of the notion of the university as a place for reflection and the generation of contending visions and ideas.” [[3]](#footnote-3)

The argument is clear: a quality education must promote reflection and occur within environments that stimulate the generation of contending visions and ideas.

It is within this context that proponents argue that OER have the potential to revive higher education standards, make curricula once more current and contextually relevant and to foster collaboration and knowledge sharing between institutions, all of which will in turn benefit the students.

## Some definitions:

OER have been defined as educational resources that are freely available for use, without an accompanying need to pay royalty fees. Such resources may include learning objects such as lecture material, references and readings, simulations, experiments and demonstrations, as well as syllabi, curricula and teachers' guides.[[4]](#footnote-4)

Most of us are familiar with copyright licenses, which prohibit adaptation or use of a resource without payment of royalties to a publisher. New licensing frameworks have now emerged to govern how educational resources might be used by others. The creative Commons Licensing framework which owes much to the work of Professor Larry Lessig of Harvard Law School, allows authors to stipulate the conditions under which another may use their work – ranging from simple accreditation of the author, to more complex conditionalities – such as disallowing commercial use. It is worth remembering that whether a license is open or proprietary, as is the case with a copyright license, human nature is such that compliance, whatever the form of license, is not necessarily guaranteed.

Finally, OER has often been conflated with electronic learning and with ODL. The core of OER is *how* a resource is licensed for use, rather than the format of the resource itself. With regard to format, OER created in Africa, whilst shareable in a digital format (both online and via offline formats such as CD-ROM) is primarily expected to be produced in a printable format. This is chiefly in response to the high costs and insufficient supply of bandwidth – a situation that is improving all the time.

# The Process of OER Production and Use in African Institutions of Higher Education

*OER Africa* is an initiative of *Saide* (South African Institute for Distance Education). Since 2008, *OER Africa* has been working with African institutions of higher education which have identified a particular need within their curriculum, which they feel can be met by OER, in the creation and use of quality OER. In this section, we shall discuss some practical examples of OER creation and use within the areas of Health Education and Agriculture Education in African universities.

The *Health OER* pilot, an initiative developed by *OER Africa* and the University of Michigan (U-M) in 2009, brought together four African universities: the Kwame Nkrumah University of Science and Technology (KNUST), the University of Cape Town (UCT), the University of Ghana (UG) and the University of the Western Cape (UWC). Each of these universities developed a “wish-list” of educational resources that they would hope to develop or to share, in order to meet stipulated curriculum gaps within their institutions or those of partner institutions. It should be noted that here as in other *OER Africa* partnerships, OER were to be used/developed not as ends in themselves but rather in order to address existing curriculum needs. Key steps taken to arrive at OER development are described below.

## Institutional Policy Engagement

As a first step, successful and sustainable use of OER must be predicated upon meaningful integration into institutional or systemic processes. For OER to be a useful and sustainable means of improving the educational offering, it must be firmly embedded within an institution’s policy framework. As noted earlier, institutional policy, whether implicitly or overtly, often foregrounds research and outreach above teaching and learning. Reviewing institutional policies often serves to highlight the ways in which existing policy might be amended to support, for example, dedicated time being regularly set aside for curriculum review and improvement in a systematic manner. Policy reviews have also served as an impetus for universities to codify their intellectual property and, in so doing, ascertain where gaps may exist or where available resources have become outdated.

In this instance, all four African universities supplied copies of their institutional policy documentation relevant to OER production. These ranged from Foundation Documents such as Trust Deeds (where applicable), Charters, Statutes and Strategic Plans to Mission and Vision Statements, Organisational Descriptions, Human Resources Policy Manuals and Academic Handbooks. All were reviewed for possible gaps regarding OER implementation. Both KNUST and UG were coincidentally undergoing institutional policy reviews in 2009 and, as a result, were able to work towards the development of new policies that directly supported OER development and use. These new institutional OER policies provide faculty and staff with concrete guidelines around key areas like materials development and IT support. Now efforts spent on developing teaching and learning materials at these universities are equivalent to research in tenure and promotion considerations. In the past, this was not the case. At UWC and UCT, which already had enabling policies in place, focus was directed to raising internal awareness among the faculty of those policies and undertaking analyses to recommend improvements to those policies.

## Building Institutional Capacity in OER

Sensitization workshops that addressed faculty support and recognition, localization of content, intellectual property issues, technology infrastructure, content standards and quality assurance, financial support and sustainability, and cultural acceptance of learner-centred approaches to health education were held at each of the institutions. In response to the prioritized list of potential materials to publish or acquire, based on an audit of currently available materials and a needs assessment provided by each university, faculty development workshops that covered OER fundamentals were developed and run. Areas covered ranged from intellectual property regimes to materials development, including curriculum design and learner support and assessment. Given that subject matter experts are not necessarily trained as teachers, these workshops were an invaluable means of engaging faculty in pedagogy and the possibilities of improving the methodology and relevance of the curriculum they sought to deliver. Subsequently, faculty from the University of Ghana, for example, ran follow-on workshops without *OER Africa* and U-M engagement, demonstrating the development of leadership capacity in this area that will serve to support the now growing African Health OER Network.

In terms of materials production, patient cases were developed using a template that facilitated content development and deployment via the web, flash drives, and DVDs. The template used included learning objectives, text and video learning resources, and formative quizzes. Materials produced ranged from Consulting room scenarios for paediatrics to a Comprehensive interactive learning Programme on Mycobacterium Ulcerans Infection (Buruli Ulcer Disease). At KNUST the Faculty of Fine Arts became responsible for design, so that the lecturers had only to focus on content.

What was the impact of all of this on faculty and on students? Faculty reported that as a result of having digitised their lectures, they freed up time that they could now use for their own reflection and for more meaningful engagement with their students. Having been tied to delivering the same lecture to each new cohort of students, year after year and in some cases semester after semester, had stifled creativity. Yet the alternative would have been to prescribe texts that they knew were beyond the reach of their students. Now they were able to re-examine the ways in which they taught and to rethink the ways in which their students learned.

In order to test the impact of the newly available resources on student learning, some faculty tried to run comparative exercises in which some groups of students would receive the OER produced and other groups would not. These exercises were mainly futile as students were so excited to receive the materials that they shared them with their peers before a test case could even commence! That said faculty were clear that those students who received these resources were able to engage in class, at a far higher level than had been the case with similar cohorts at the same level.

The students themselves reported excitement to being able to study on their own or in groups, using resources that had been tailor made for them by their own faculty. They felt empowered to study on their own and felt more confident when they embarked on ward rounds. These are concepts that are at the heart of student-centred learning practised by all good providers of ODL and described by Rogers[[5]](#footnote-5) as “…the shift in power from the expert teacher to the student learner, driven by a need for a change in the traditional environment where in this ‘so-called educational atmosphere, students become passive, apathetic and bored’”. In this instance, OER had provided the means of sharing this pedagogical good practice within traditional face-to-face institutions.

And what of the open license used in distributing these materials? In preparing their materials, faculty engaged with their peers, with interns, with students and with faculty in areas as far removed from medicine as Fine Arts. It was this collaboration that helped to ensure that any restricted copyrighted information (drawings, data, etc.) were stripped from the resources and replaced with high quality graphics and comparable sources of data which were already available as OER or created by Faculty as OER. The mentoring afforded to younger faculty members and to interns and students as a result of this process, cannot be underestimated. Once complete, resources were uploaded on institutional websites and on the websites of U-M and *OER Africa* to provide the broadest possible access. Each resource was allocated key words designed to improve its visibility on the internet and more specifically, within the dedicated global repositories in which health professionals would seek to find such resources. The application of open licenses liberated faculty to openly share their resources in the knowledge that the wider world with whom they were sharing would always be clear about the origin of those works – and any attempts to plagiarise a work that is openly available to and known to others – would not be a worthwhile endeavour.

More importantly for some faculty, were the possibilities afforded by an open license for sharing their work with others who would in turn share their own resources with them. A case in point is the Buruli Ulcer Disease resource created at KNUST by a leading specialist in this condition. This resource is now being used to teach medical students at the University of Michigan by a U-M faculty member who spent a sabbatical in Ghana, working with faculty to create and share OER. This is a demonstration of the sorts of collaboration that have been and can be spurred by OER, collaborations, both internal and external, that lead to a far richer educational product, than any one individual may have developed on their own. It is also important to note that this initiative resulted in a **two-way** exchange of resources between a developing and a developing context and not a one-way transfer of information from a developed to a developing context. *OER Africa* is keen to facilitate this kind of arrangement in which higher education institutions in Africa are also **producers** of knowledge that can usefully be shared by and with the rest of the world.

Clearly, any meaningful participation in the OER movement demands of educators, as of students, rigorous standards of discernment – the same rigorous standards that faculty have been expected to employ when selecting copyrighted print-based materials for teaching and learning and indeed subject to the same kinds of critical peer review processes associated with the publication of research. Accordingly, *OER Africa* has collaborated with the Kamuzu College of Nursing (KCN) in Malawi, training its staff to source, evaluate, and adapt OER for an e-learning Certificate in Midwifery[[6]](#footnote-6). Workshops facilitated by *OER Africa* at KCN, served to demystify the concept of OER and to train participants in how to source quality resources. Because access to the Internet and technology infrastructure is such a challenge in this setting, each student receives the training materials on CD-ROM. KCN is now interested in expanding this midwifery course to incorporate Malawian case studies and scenarios, including clinical skills for midwives. The College plans to produce a DVD including both video and audio lecture material on common competencies and procedures so that students can learn without having to attend lectures, and then have meetings with the lecturer for clarification and discussion.

## Some Conclusions: Harnessing the Potential of OER in Africa’s HEIs

*OER Africa* which was established in 2009 to play a leading role in driving the development and use of OER in Africa, notes in its Value Proposition, the following:

* Many higher education programmes on the continent have inadequate funds to run programmes and meet the educational needs of enrolled students *as well as* cover the costs of faculty time required both to design and run quality learning experiences.
* There are too few learning resources for learners and lecturers in African universities, and many of those available are too expensive to be purchased by universities or students.
* Much existing content available to and within African universities is based on weak and largely outmoded educational design principles.

Spurred on by these challenges and in addition to the OER health initiative described above, umbrella organizations such as the Regional Universities Forum for Agriculture, (RUFORUM) a consortium of 25 African universities; and the Collaborative Masters of Science in Agricultural and Applied Economics, (CMAAE), a partnership of 16 African universities, have collaborated with *OER Africa* and Michigan State University to develop the *AgShare* Initiative. The goal is to help these organizations to create, publish, share, and localize teaching and learning materials to fill critical resource gaps in African MSc agricultural curricula. For this to work, these efforts must be scalable and sustainable within the two consortia and elsewhere. Whilst the long-term vision of the *AgShare* planning and pilot project is to create a strong foundation for growth and expansion by providing evidence of key metrics, the rationale is underpinned by the notion that the application of OER concepts and practices in the more than 40 agricultural faculties that comprise the project will, hopefully, contribute towards reformation in agricultural education.

The International Council for Open and Distance Education (ICDE) has noted that “...access to knowledge and learning is a universal right, one of the key rights of the global community... increasingly regarded as the solution to individual and collective social and economic problems: it has become a new global religion...” [[7]](#footnote-7) In the same report, the ICDE warns that “...this new solution may soon be embroiled in the inevitable discussions of the new knowledge imperialism and the new marginalizations.” Open and Distance Education coupled with judicious use of relevant OER can help to alleviate some of the challenges of access, quality and cost, faced by African institutions of higher education. In many cases, adapting existing resources from elsewhere may be a far more cost-effective option than developing new resources. That said we should heed the warning made by Massachusetts Institute of Technology Linguistics Professor, Shigeru Miyagawa, to guard against knowledge imperialism and the marginalisation of Africa’s intellectual property. Miyagawa cautions that failure to actively embrace the new knowledge economies may result in a global information society that resembles “a map of the world in the 16th century composed of those that colonise and those that are colonized.”[[8]](#footnote-8) Africa must be a part of this global knowledge economy. Precisely because OER may be more easily **adapted for context**, they represent not only a cost-saving benefit but also a curriculum-pedagogic benefit over the need to prescribe uncritically textbooks developed by better-resourced institutions in the developed world. Our ability to produce and use open educational resources could make the difference between bridging and amplifying the chasm between those who benefit from this new knowledge economy and those whose educational fate may have been signified by its arrival. Whilst the work of *OER Africa* has demonstrated how OER can positively support the development and capacity of higher education systems and institutions in Africa, this work is also fuelled by a concern that, if the concept and practice of OER evolves predominantly outside Africa, institutions and faculty in Africa will never fully realize the potential of open educational resources. This is a concern that must be shared by members of the AAU, a forum established to facilitate “consultation, exchange of information and co-operation among institutions of higher education in Africa.”[[9]](#footnote-9) This forum will be keenly aware of the need for Africa’s HEIs to be generators of new knowledge and the means of sharing that knowledge: it would be naïve to assume that all OER created in the North is equally relevant in Africa.

In this paper, we have sought to provide some evidence that

* OER have the potential to access affordable, high quality resources and adapt them to specific needs and specific contexts.
* As educators share their resources, they open the door of opportunity for others to help develop knowledge and skills needed in Africa, thus creating a multiplier effect.
* The collaborative development of courses and materials frequently results in far richer products and processes than any individual or institution might have created on their own.

Clearly OER can provide a mechanism to improve and enrich the landscape of higher education worldwide, but the collaborative energy underpinning this endeavour needs to be firmly grounded. Higher education institutions on the continent wishing to embrace OER as a possible means of educational transformation will need to be clear about the need to build partnerships that enhance institutional capacity design, develop, and deliver quality higher education programmes and materials. Such partnerships must be rooted in a shared understanding that the end objective is to create and share intellectual capital as a means of improving quality and achieving long-term cost-effectiveness in higher educational practice. Indeed, business models based on this premise should be explored in tandem with the development of policy frameworks that support openness in the development, adaptation, and use of educational resources. In discussing educational reform on the continent, Prof. Tade Aina noted that “projects of transformation challenge assumptions, values and power relations and they offer alternative visions and situations.” [[10]](#footnote-10) This is an apt aphorism for the role of OER in higher education – not a panacea, but one incremental step to bridge the yawning gap in access, equity and quality that prevails in much of African education.

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