The Use of Open Education Resources at the University of Malawi (UNIMA)

Background &Context

The idea that Malawi should have a University was first conceived after the country obtained its independence in 1964. The result was the founding of the University of Malawi (UNIMA) only a few months after independence, although teaching did not start for another year. Today, UNIMA is the nation's principal state university, comprising four colleges and a polytechnic, with campuses located around the country.

- Chancellor College, the largest of its constituent colleges, is located in the small town of Zomba in the southern region of Malawi. The college houses five faculties: Faculty of Humanities, Faculty of Science, Faculty of Law, Faculty of Social Science, and Faculty of Education. The Rectorate's central office is also in Zomba.
- The College of Medicine has modern facilities, and is located in Blantyre, the country's largest city, a few kilometres away from Queen Elizabeth Central Hospital, which is the main teaching hospital.
- Kamuzu College of Nursing has two campuses. The Blantyre campus is located in the city of Blantyre, within the premises of Queen Elizabeth Central Hospital, while the Lilongwe campus, situated in the capital of Lilongwe, overlooks Lilongwe Central Hospital.
- Bunda College of Agriculture is located 35 km from Lilongwe, in the central region of the country.
- The Polytechnic, situated in the heart of Blantyre, comprises the Faculties of Applied Sciences, Commerce, Engineering, Education and Media Studies, and the Built Environment.

Challenge of Resources

Like most African tertiary institutions, the University of Malawi faces ongoing challenges as demands for tertiary education continue to grow but access to both physical and human resources remains fixed.

In 2009, a total of 5,600 Malawians sat the entrance examination to compete for a mere 1,152 UNIMA places.

Besides basing selection on merit, a geographical quota system that attempts to enforce spatial equity shapes student selection to the university. The legality of this quota system is being fought in the country's law courts, and the government is under constant pressure to allow more places.

In 2007, UNIMA had a total of 6,257 students enrolled in various under- and post graduate courses, and employed an academic staff contingent of 676.

Meanwhile, teaching staff face the daily challenge of providing quality education to those students fortunate enough to be enrolled. Prescribing the relevant textbooks, for example, is often considered a basic strategy when designing an academic course in developed countries. In many parts of Africa, however, copyrighted textbooks are difficult to acquire, and students and their families consider them to be too expensive.

UNIMA finds itself in a situation where very few students have access to the approved textbooks and readings, nullifying the prescribed book lists. Resources in the reserve section of the college libraries are in great demand, and popular books undergo rebinding many times in their life cycle.

It is against this background that UNIMA embarked on a strategy to exploit Open Education Resources (OER).

OER are teaching, learning, and research resources that reside in the public domain or released under a copyright licence that permits their use and or re-purposing by others. Open Education Resources include full courses, course readings, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials or techniques used to support access to knowledge.

Dr Emmanuel Fabiano

- *Dr Emmanuel Fabiano, the eighth Vice-Chancellor of UNIMA, was appointed in February 2010.*
- *Dr Fabiano is not new to the University of Malawi. He first joined UNIMA in 1977 as*

ICT Policy

The newly appointed Vice-Chancellor, Dr Emmanuel Fabiano, has a passion for Information and Communication Technologies (ICT). Dr Fabiano believes that, if deployed with insight, ICT can assist the university to overcome a number of institutional challenges. To this end, senior management formulated a draft ICT policy, which is currently being refined. The aim is to establish an infrastructure that will ensure the centralization of all aspects of administration at the various colleges and the Polytechnic. The Rectorate also wants to train staff so they can exploit e-learning strategies to assist in overcoming problems related to large class sizes, as well as providing students access to affordable, quality learning resources.

UNIMA OER 'Proof-of-Concept' Projects

Considering the challenge of providing quality, cost-effective learning resources, it made sense that UNIMA should experiment with using OER.

Through grants from the Open Society Initiative for Southern Africa and the William and Flora Hewlett Foundation, the International Association for Digital Publications and OER Africa, an initiative of the South African Institute for Distance Education, were able to facilitate these projects.

- The first project, conducted at Kamuzu College of Nursing (KCN), aimed at training staff to source, evaluate, and adapt OER for an e-learning University Certificate Midwifery Course.
- The second OER project, conducted at Bunda College of Agriculture (BCA), called for the use of OER to compile a first-year communication skills textbook.
- A third project, also running from Bunda, was designed to provide Post Graduate students with access to copyrighted e-books, a component of IADP's Affordable Access programme.

a teaching assistant and over the years has climbed the ranks to his current role as Vice-Chancellor.

- *Dr Fabiano has a B. Ed obtained in 1977 from the University of Malawi; an MSc (1980) from the University of Warwick and a PhD (1986) from the University of Newcastle Upon Tyne.*

Kamuzu College of Nursing's OER Project

Midwifery students in the pilot, show off their course materials CD-ROM.

Perceived Needs and Project Design

The Kamuzu College of Nursing (KCN) identified a series of needs, which shaped this project. Through this project, KCN sought to:

- Develop a course that would move students away from having a purely theoretical knowledge to being able to apply their skills and knowledge clinically. At most, any support material developed needed to be one third theory and two thirds practical skills.
- Introduce fifth year student midwives to electronic media, where colour photos and contextually relevant video clips could be integrated with text resources.
- Achieve all of this in a cost-effective way by adapting materials released as OER, rather than developing materials from scratch. Support came primarily from Michigan State University, which helped to identify relevant OER for the project.

As lecturers lacked the expertise to design materials incorporating a Problem-Based Learning (PBL) approach, they also needed support to teach in a different way. The project therefore sought to build capacity among the KCN staff to develop a set of materials to support both students and staff in the use of PBL using OER.

In an attempt to minimize any dependency on connectivity, a CD-ROM with this collection of digital support materials was distributed. The course was arranged according to a 'problem-solving' approach to nursing education, in which the focus of the content was on antenatal, labour and delivery, and postpartum care.

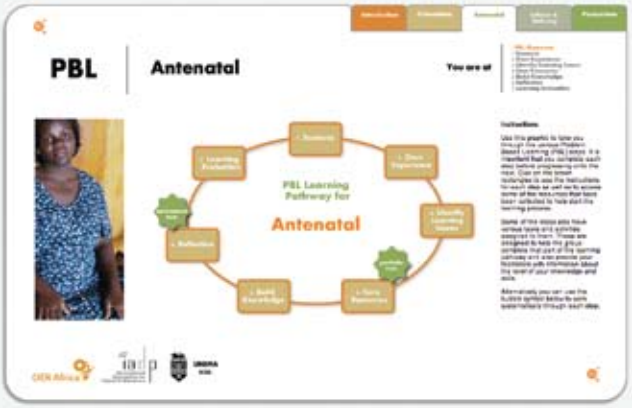
Project Implementation and Processes

Prior to the training and support of staff, it was necessary to find quality OER. This project's need for specialized materials relating to birth, delivery, and post-natal mother care benefitted from the sourcing of OER directly from institutions rather than from more generalized, openly available, online OER repositories. Michigan State University (MSU) was one of the universities contacted by IADP/OER Africa, and it generously provided a set of useful materials with which to start the adaptation process. These materials formed the core of a series of OER workshops held for a selection of nurses, midwives, and course designers.

During the first workshop, participants were introduced to the concepts of OER and PBL, and they began the process of adaptation of the materials to make them better fit the PBL approach and the Malawian context. Between the first and second workshops, the academics focused on reworking the materials. During the second workshop, the concept of packaging the materials integrated as a PBL pathway on a CD-ROM was refined, and the structure of the course and its various components were clearly identified and mapped.

After the second workshop, the work of the KCN team continued with support from the IADP. The IADP team developed the HTML interface for the CD-ROM and collated the draft materials submitted by the Midwifery team. To finalize the course and complete the creation and adaptation of the resources, a further meeting was scheduled.

Sisters! *A baby held by her older sister at Chatinkha Maternity Wing at Queen Elizabeth Central Hospital, one of the clinical sites for KCN.*



Opening screen for postpartum materials, clearly outlining the seven learning steps required in Problem-Based Learning.

Products and Outcomes

This OER project included training KCN faculty members to source, analyse, and adapt OER and, with the support of OER Africa/IADP, to devise an interface to hold the digital resources together in a manner that promoted the use of PBL. The materials integrated contextually relevant photographs and video clips. The final product included an orientation section, which introduced the PBL methodology and spelled out how student involvement was different from traditional learning methods.

The courseware has been offered back to the OER community via the OER Africa platform[1] and has a Creative Commons, Attribution, Non-Commercial, Share Alike licence (CC: BY-NC-SA).

Each step in the learning pathway is hyperlinked directly to a set of activities. For example, step four, entitled Core Resources, requires students to review a set of OER in order to acquire in-depth knowledge that would help them to solve a particular midwifery problem. The KCN faculty also devised portfolio and assessment activities to complement the use of OER.

Piloted in February 2010, the midwifery learning environment generated a high level of interest among students. Uptake in using the materials was slow, however, because both the staff and students had to adapt to a different methodology of teaching and learning. Consequently, a second piloting of the course occurred between June and August 2010 with a group of midwifery diploma students. Integrating the PBL methodology might take some time, but there is growing consensus at KCN that using OER is a cost-effective way of creating high quality teaching and learning materials.

Evaluation Findings and Lesson Learned

The KCN team provided monitoring and evaluation input on two occasions. During the first workshop, the team members completed a baseline study that gauged the extent of their use of computers and also their awareness of OER. The KCN team also completed a follow-up questionnaire that monitored changes in behaviour and perceptions during the third meeting.

The KCN team was unanimous in its support for the use of OER in tertiary education. Of particular interest was a comment made by one respondent, who said:

> *"While OER has a considerable role to play, there is a need to sensitize students and management to its significance. What we have done is not fully appreciated and the benefits too are currently not recognized."*
>
> ***KCN team member, response to questionnaire***

"... Because the materials are already there you don't need to re-invent the wheel and they shorten the time needed to prepare new teaching materials. With OER, it is easy to adapt them to your needs. Re-using quality OER also helps staff to grow in confidence in teaching the content of the materials."

Rebecca Ngalande, Lecturer and Coordinator of the KCN OER project.

[1] *See http://www.oerafrica.org/malawi/IADPSADCDigitalResourcesHome/Pilot2OERMidwifery/tabid/1350/Default.aspx*

The KCN team has affirmed the quality of the resources it adapted and believes the materials were cost effective as they are available free of charge. However, problems with Internet connectivity often made access difficult. When asked, "Do you believe technology and e-learning in particular can play a role in enhancing the courses you design for the students in the future?", the KCN team responded:

> *"Yes, because of the demand for and [increased] use of technology [by students] and also because we are faced with bigger groups with fewer resources."*
>
> *"Yes, as they can be used as learning materials which enhance the learning of the students even after they graduate. The resource will act as an important reference tool. "*
>
> ***KCN team member, response to questionnaire***

When asked to identify future challenges in acquiring and adapting OER, the KCN team identified the following issues:

- The staff workload needs to include time to source and adapt materials;
- There is a need to train and capacitate additional staff to source and adapt OER;
- Faculty and staff need to undergo a general sensitization programme outlining the benefits of this model; and
- A robust and fast connection to the Internet is required.

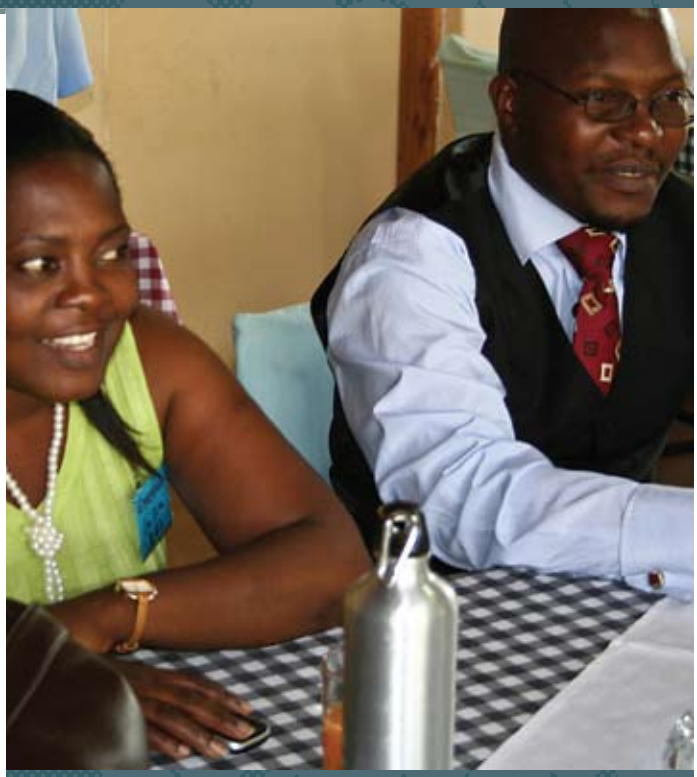
KCN staff during the second workshop, Blantyre.

Feedback

The project has generated much interest among other University of Malawi faculty members, some of whom have suggested using this model as a basis for other e-learning programmes. Some departments within the College have asked for similar CD-ROM-based materials for their courses. As a consequence of this type of feedback, the UNIMA project coordinator has asked OSISA/IADP/OER Africa to consider new OER projects that include:

- An expansion of the existing Midwifery course so that it incorporates genuine Malawian case studies and scenarios, including clinical skills for midwives, i.e. complicated antenatal, labour and delivery, and postnatal care (which was not included in the OER pilot course).
- The production of a DVD on common competencies and procedures, which would include both video and audio lecture material, so that students can learn without having to attend lectures. Students would supplement these materials with a shorter audience with the lecturer at a set time for clarification and discussion. Included would be additional materials that would show common competencies and procedures, and how these are used in both ideal situations and in areas where resources are not adequate, but without compromising quality.

Bunda College of Agriculture's OER Project



BCA staff at the first OER workshop.

Perceived Needs and Project Design

In this project, the staff of Bunda College of Agriculture's (BCA) Language and Communication for Development Department intended to use OER to address specific problems:

- While the Communication Skills course was a core one for all first year students, they did not have access to all of the textbooks used by the staff. This was due to there being no set textbook for the course syllabus. In addition, lecturers tended to use more than one text to teach the syllabus, and students generally did not have access to all of these titles.
- Students could not always access the 'recommended reading' textbooks that accompany the syllabus outline, as the library did not have, or had an insufficient number of, these texts.

BCA staff therefore decided to create a paper textbook from freely available OER that would cover at least 75% of the first semester course content and would be easily replicable for up to 200 students and staff per annum.

A series of writing workshops facilitated by OER Africa/IADP assisted BCA staff to source, analyse, and adapt a variety of existing OER to help craft the textbook. The workshops also intended to act as a model for expansion into other departments in the college facing similar needs.

The process involved would also help the initial group develop a second textbook at a later date for the second semester Communication Skills course.

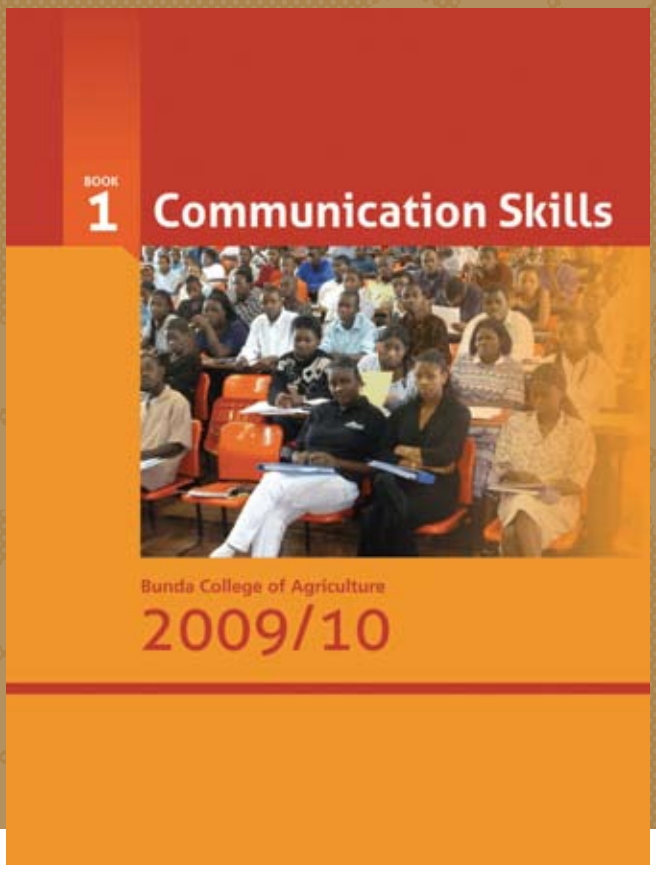
Project Implementation and Processes

Prior to the first workshop during February and March 2009, IADP/OER Africa conducted a search for OER associated with language teaching, resulting in a CD compilation of samples and associated web addresses that linked to these language resources. This resource list/sampler was part of the materials that formed the basis of the first OER workshop. The workshop included a theoretical component that introduced the OER concept and a 'hands-on' approach to searching digital repositories and adapting the materials.

Between the first and second workshops, the BCA team reworked the sourced OER and adapted them to suit the Bunda context. The focus of the second workshop was on the writing process and identification of any gaps that existed. The third workshop focused on quality control, providing an opportunity for further writing and also identifying omissions in the text and set remedial activities.

Products and Outcomes

While it initially proved difficult to wean the writing team off their familiar copyrighted texts, the BCA team felt afterwards that there is a role for OER in the production of university texts.



Cover of the completed OER textbook on Communication Skills.

BCA OER Materials Development Team
1st Workshop April 2009

Staff were encouraged to enhance the materials by adapting them so that they contained contextually relevant examples, included enrichment activities and assignments, and in some instances rephrasing them, so as to make them more familiar to local first year students.

These adaptations and improvements were possible only because the original OER licensing conditions allowed derivative works.

Bunda College released the 102-page Communication Skills textbook, created exclusively from OER, in early 2010. It is freely available from both the Bunda College web site[2] and the OER Africa web site[3]. The main text and the individual chapters have been licensed with a Creative Commons, Attribution, Non-commercial, Share Alike licence (CC: BY-NC-SA).

Evaluation Findings and Lesson Learned

The BCA team provided monitoring and evaluation input on two occasions. During the first workshop, team members completed a baseline study that gauged the extent of their use of computers for their work and also their awareness of OER. The BCA team also completed a follow-up questionnaire that monitored changes in behaviour and perceptions during the third meeting.

Not surprisingly, awareness of OER in the group improved. All were in favour of using OER in the future. One respondent claimed they were 'fantastic' and 'helpful in coming up with customized teaching material'.

A more cautious attitude prevailed on the issues of suitability, cost, and availability of OER. On the issue of suitability, one respondent said that it 'depended on the subject matter'. On the issue of cost, another team member stated that, while OER is free, there are hidden costs, such as the time taken to search for appropriate OER as well as the time needed to do the adaptations. There are also production costs. Comments on availability focused on issues of technology. Bunda College has an inadequate bandwidth allocation for its needs, and the two workshops on campus revealed a slow connection rate. Consequently, searching for resources was a protracted affair.

In terms of using OER in future, respondents identified the following potential pitfalls:

- Potential lack of interest among stakeholders (senior management);
- Lack of infrastructure and connectivity;
- Lack of adequate resources for the courses held at Bunda College of Agriculture; and
- Lack of funding to cover the time required to do the searching and adaptations.

[2] *See http://www.bunda.unima.mw/*
[3] *See http://www.oerafrica.org/malawi/IADPSADCDigitalResourcesHome/Pilot1CommunicationSkills/tabid/888/Default.aspx*

Perceived Benefits of using OER

In the wake of these two successful OER projects, other UNIMA staff members have expressed interest in OER projects for the other colleges. This interest is due in part to the praises sung by the recipients of the first round of OER training. Rebecca Ngalande, coordinator of the KCN project, comments as follows:

> *...the first project was an eye-opener and we had a number of issues we had to deal with. However, we have seen how the adapted materials were received by the students and are aware of the processes we should follow now. Adaptation in the future will be even easier.*

The Vice-Chancellor, who envisages ICT playing a greater role in supporting the teaching and learning processes in the future, believes exposure to and use of OER by his staff is an important component in their growth towards developing more sophisticated e-learning platforms. He endorses their use and appreciates their contribution.

Project Funders

OSISA
Open Society Initiative for Southern Africa

The Open Society Initiative for Southern Africa (OSISA) is a leading Johannesburg-based foundation, established in 1997 and operating in the following ten Southern African countries: Angola, Botswana, the DRC, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Zambia and Zimbabwe. OSISA is part of a network of autonomous foundations established by George Soros and located in Eastern and Central Europe, the former Soviet Union, Africa, Latin America, the Caribbean, the Middle East, Southeast Asia and the US.

OSISA's vision is to promote and sustain the ideals, values, institutions, and practice of open society, with the aim of establishing a vibrant Southern African society in which people free of material and other deprivations understand their rights and responsibilities and participate democratically in all spheres of life. OSISA supports advocacy work by its partners in the respective countries, or joins partners in advocacy on shared objectives and goals. In other situations, OSISA directly initiates and leads in advocacy interventions along the key thematic programmes that guide its work. OSISA also intervenes through the facilitation of new and innovative initiatives and partnerships, through capacity-building initiatives as well as through grant making.

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, advancing the field of philanthropy, and supporting disadvantaged communities.

Ford Foundation

Ford Foundation provides broad support for the IADP's Affordable Access Program, and supplementary funds were allocated to the e-book component of the UNIMA project.

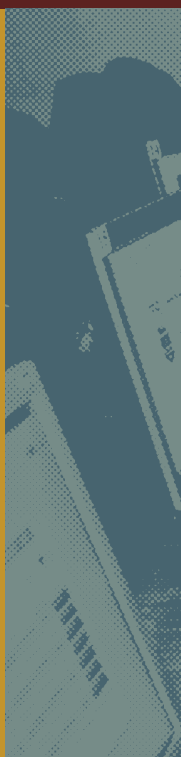
Project Facilitators

iadp International Association for Digital Publications

The IADP provides university students and academic staff in developing countries with affordable access to e-books and support for the identification, development, and effective use of open access e-learning resources. The IADP commenced operations in March 2006 with a pilot programme that provided e-books to small groups of students at four South African universities. This programme made e-books available offline as well as online on a pro bono basis by a growing number of publishers. The IADP also developed an open access platform, which it has started to populate with relevant e-learning resources. Following a positive external evaluation by the British Council in March 2008, the IADP is now preparing to add scale in South Africa and to extend the programmes into other countries. In order to implement the programmes, the IADP has added to its staff by in-sourcing specialist consultants on a time and expenses basis from the South African Institute of Distance Education (SAIDE) and Neil Butcher & Associates.

OER Africa

OER Africa is an innovative initiative established by the South African Institute for Distance Education (SAIDE) 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 recently launched OER Africa initiative brings together all of its OER-related activities under a common conceptual framework. SAIDE is – through its OER Africa initiative – providing 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.



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