Harnessing OER Practices to Drive Pedagogical Improvement: The Role of Continuing Professional Development

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Published by: OER Africa

   19 Ameshoff Street

   Johannesburg, 2001

Website: https://www.oerafrica.org

Introduction

Setting the scene

Universities face ever greater challenges in producing competent graduates; and the development needs of African countries have become more pressing. These twin thrusts have heightened the potential benefits of mainstreaming OER practices.[1]

In our efforts to support African universities to understand and harness the concept of open educational resources (OER), *OER Africa* has identified several practical constraints to achieving the widely anticipated potential for OER to contribute to achieving higher degrees of equity across higher education in Africa. Effective harnessing of OER practices (rather than propagation of OER to replicate rote learning and top-down content transmission) depends heavily on the educational skills of participating academics. Our work has suggested to us, anecdotally at least, that generally these skills are at much lower levels than we had assumed, regardless of the subject matter expertise of academics.

Consequently, in mid-2017, *OER Africa* commenced a series of interrelated research activities to explore in more detail the relationship between educationally effective use of OER and continuous professional development (CPD) of African academics, which are brought together in this summary report. First, working in partnership with the UNESCO Institute for Information Technologies in Education (IITE), we have undertaken new research to explore in more depth what the impact of OER has been around the world by completing case studies of different aspects of OER practices in 15 countries around the world,[2] a process which has also been supplemented by additional desktop research (methodology presented below).[3] The purpose of this work has been to get beyond the rhetoric of the OER community to determine what effect the OER movement has had in educational systems and how sustainable this has been.

In parallel with this reflection on the state of OER practices, we also sought to understand better what the literature has to say about CPD needs and practices in African academia, with a focus on developing competence in teaching and learning. This background research, focused on Anglophone Africa, was essential to help us to determine whether there might indeed be cause for concern, both regarding levels of competence amongst African academics in these areas and whether this was an area that is receiving systematic research attention.

These two lines of enquiry provided a platform for practical work with universities, which had two focuses. First, drawing from the above research, we have sought to learn more about academic CPD needs, predominantly by collaborating with our university partners (see below) to conduct surveys amongst academics about these needs and collating the results. Second, we began a series of engagements with universities to develop and test a range of professional development activities and approaches that might respond to these needs. The results of these processes are presented in the report below.

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[1] Harley, K. (2016). Institutionalization of OER Practices Project Mid-term Evaluation Report, July 2016. OER Africa. p1

[2] Australia, Brazil, Canada, Chile, China, Germany, Mexico, Mongolia, New Zealand, Nigeria, Slovenia, South Africa, Tanzania, Tunisia, and United Kingdom (UK).

[3] Hoosen, S., and Butcher, N. (2019). Understanding the Impact of OER: Achievements and Challenges. UNESCO Institute for Information Technologies in Education and OER Africa. Retrieved from https://iite.unesco.org/wp-content/uploads/2019/04/Understanding_the_impact_of_OER_2019_final.pdf

Flowing from these research activities, we have identified emerging issues that are presented in this report with a concluding set of recommendations. Before presenting this research, though, we begin by providing a brief overview of key concepts and a short background to the OER Movement globally to establish a common framework for the subsequent analysis. This is essential as there is a growing trend in many definitions to assume that a suitable proxy for 'open learning' is use of OER in educational environments, without sustained consideration of the underlying pedagogical practices on which that use is based.

Multiple meanings of openness

Several ideas and structures have formed the building blocks of OER today. The concept of open learning has been used in educational circles, and particularly in distance education settings, for many years, thus pre-dating most other concepts of openness in education. Open learning is a long-established approach to education that seeks to remove barriers to learning, while aiming to provide students with a reasonable chance of success in an education and training system centred on their needs.[4]

Saide defines open learning as:
> *An approach to all education that enables as many people as possible to take advantage of affordable and meaningful educational opportunities throughout their lives through:*
> - *sharing expertise, knowledge, and resources*
> - *reducing barriers and increasing access*
> - *acknowledging diversity of context*
>
> *Key open learning principles include:*
> - *Learners are provided with opportunities and capacity for lifelong learning*
> - *Learning processes centre on the learners and the contexts of learning, build on their experience and encourage active engagement leading to independent and critical thinking*
> - *Learning provision is flexible, allowing learners to increasingly determine where, when, what and how they learn, as well as the pace at which they will learn*
> - *Prior learning and experience is recognised wherever possible; arrangements for credit transfer and articulation between qualifications facilitate further learning*
> - *Providers create the conditions for a fair chance of learner success through learner support, contextually appropriate resources and sound pedagogical practices.* [5]

We believe that these principles can be applied to all education, regardless of the 'mode of delivery' used. This approach to learning gives students flexibility and choice over what, when, where, at what pace, and how they learn.[6]

This conception of openness in education is very different from, and significantly broader than, some more recent definitions of Open Educational Practices (OEP), many of which make OER central to the definition itself. For example, the University of Tasmania provides the following definition:
> *[OEP] are defined as practices which support the production, use and reuse of high quality open educational resources (OER) through institutional policies, which promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community: policy makers, managers and administrators of organizations, educational professionals and learners.*[7]

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[4] Butcher, N. (2011). A Basic Guide to Open Educational Resources (OER). The Commonwealth of Learning.

[5] Saide. (no date). Open Learning - A brief introduction to open learning principles. Retrieved from https://www.saide.org.za/article.php?id=5

[6] University of South Africa. (2008). Open Distance Learning Policy. Retrieved from https://www.unisa.ac.za/static/corporate_web/Content/Colleges/CGS/schools,%20institutes%20&%20research%20chairs/institutes/documents/odl-policy_version5_16Sept08.pdf

[7] University of Tasmania. (no date). Teaching & Learning - Open Educational Practices. Retrieved from http://www.teaching-learning.utas.edu.au/content-and-resources/open-educational-resources/open-educational-practices

There is a twofold risk in this type of definition of OEP (and several similar definitions can be found online). First, by making OER itself a central aspect of OEP it excludes many other educational practices that may not harness OER but could integrate several other important principles of open learning in ways that make the resulting educational experience significantly more open than many educational practices that do harness OER. Second, by conflating use of OER with open learning, such definitions create the risk that decision-makers judge education practices by proxy, that is they assume that use of OER provides evidence of open educational practices and quality pedagogy, despite abundant evidence that many educational practices that would conform to the above definition reflect poor underlying pedagogical practices. For these reasons, OER Africa believes it is important to separate open learning and OER as concepts and to engage in the more thoughtful process of (a) defining clearly what pedagogical practices and approaches support open learning most effectively, and then (b) defining how OER can further improve those pedagogical practices if they are harnessed thoughtfully. In this paper, we refer to those latter users of OER as 'OER practices', that is uses of OER that support effective teaching and learning.

The notion of open learning has exploded into a rainbow of 'open' concepts, all of which challenge traditional ideas of campus centrality, ownership, restricted access, academic privilege, and educational hierarchy.[8] However, the word is often applied loosely. Now that it has currency many different sectors are appropriating it in such expressions as open architecture, open society, open access to research data and open source software.[9,10]

In 1994, the term 'learning object' was introduced by Wayne Hodgins to describe any packaged digital resource that had defined educational aims and could be shared. This notion of shared learning resources brought about attempts to define standards for cataloguing and searching for teaching materials online. A further development grew from David Wiley who promoted the idea of 'open content' (analogous to open source software) and licensing, which in turn led to the foundation of the Creative Commons in 2001. Out of all these developments, came the OER movement, which is creating:

> *An understanding of the nature of the teaching resources and their use and repurposing, mechanisms for accurately and consistently describing them in larger collections, and frameworks for dealing with issues around intellectual property rights. Combined with a growing body of pedagogy that draws out the underpinning notions of knowledge, learning and the educational context where resources are always appropriately developed sets the scene for OER.[11]*

OER are educational resources that are offered freely, are openly available to anyone, and, under some licences, allow others to reuse, adapt, and redistribute the resources with few or no restrictions. The best known of these are the Creative Commons (CC) licences,[12] which provide legal mechanisms to ensure that people retain acknowledgement for their work while allowing it to be shared and which enable copyright holders, if they so wish, to restrict commercial activity or prevent people from adapting the work.

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[8] Conrad, D. (2013). Assessment challenges in open learning: Way-finding, fork in the road, or end of the line? Open Praxis, vol. 5 issue 1, January–March 2013, pp. 41–47. International Council for Open and Distance Education. Retrieved from http://www.openpraxis.org/~openprax/ojs-2.3.7/files/journals/1/articles/17/public/17-141-3-PB.pdf

[9] Open ICT for Development. (2008). Determinants of Openness. Retrieved from http://openict4d.wikidot.com/determinants-of-openness

[10] Weller, M. (no date). The Digital Scholar: How Technology Is Transforming Scholarly Practice. Bloomsbury Academic. Retrieved from http://www.bloomsburyacademic.com/view/DigitalScholar_9781849666275/chapter-ba-9781849666275-chapter-009.xml

[11] Mossley, D. (2013). Open Educational Resources and Open Education. The Higher Education Academy. Retrieved from https://www.heacademy.ac.uk/system/files/resources/oer_toolkit_0.pdf

[12] See Creative Commons. (no date). About the Licenses. Retrieved from https://creativecommons.org/licenses/

In 2012, the World OER Congress, which was attended by governments and educational and OER experts, emphasized using OER as a means of providing equal access to knowledge. The Congress led to the adoption of the Paris OER Declaration, which calls on governments worldwide to license publicly funded educational materials openly for public use.[13] With adoption of the Ljubljana OER Action Plan at the Second World OER Congress in 2017 and subsequent drafting of an OER Recommendation for possible approval at the 2019 UNESCO General Conference, the concept of OER has achieved global recognition and, at least in principle, mainstream acceptance.

As OER is growing, other significant open movements are also developing, possibly the most relevant to higher education is the concept of Open Access (OA). OA typically refers to research outputs distributed online, which are free of cost and may be licensed with a Creative Commons licence to promote reuse. They thus refer to scholarly publications and includes open access journals, books, case studies, conference papers theses, and book chapters.[14] OA can be used as OER if the open content is used in a teaching/learning context.

Whilst all these developments are promising, it is important to recognize that designing and implementing effective educational environments is critically important to good education and encompasses many more dimensions than simply opening access to educational materials using open licensing. Thus, OER should not be regarded as a panacea to challenges facing education systems but are nevertheless a potentially important contributor to bridging gaps in access and equity in education. As pressure mounts on education systems due to rising costs and changing skill demands in the global economy, it becomes important for all higher education stakeholders to enter the next phase of critical engagement with the growth and potential of OER.

Understanding the Impact of OER

As a first step in assessing what kinds of CPD are necessary to support effective OER practices, it is worth reflecting on the current state of these practices. The UNESCO Institute for Information Technology in Education (IITE) and *OER Africa* partnered to prepare a publication that critically reviews the growth of OER, its achievements and challenges, and its potential impact on education systems around the world. This research focused on the following key questions:

1) Are growing policy commitments to OER accompanied by financial commitments to invest in content creation or is open licensing driving down the perceived economic value of investing in creating high-quality educational content? And are these investments consistent between the developed and the developing world?
2) Is the emergence of OER fostering diversity and inclusion across and within countries or is it facilitating new forms of cultural imperialism? And what role is the OER movement playing in supporting (or impeding) the emergence of educational materials in different languages (and especially in languages that are underrepresented online)?

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[13] UNESCO Communication and Information. (no date). Open Educational Resources Congress passes historic declaration. Retrieved from http://www.unesco.org/new/en/communication-and-information/resources/news-and-in-focus-articles/in-focus-articles/2012/open-educational-resources-congress-passes-historic-declaration/
UNESCO Communication and Information. (no date). UNESCO World OER Congress releases 2012 Paris OER Declaration. 26 June 2012. Retrieved from http://www.unesco.org/new/en/communication-and-information/resources/news-and-in-focus-articles/all-news/news/unesco_world_oer_congress_releases_2012_paris_oer_declaration/#.V6R86TgkpMs
[14] Levey, L. (2019). Open Knowledge Primer for African Universities. Retrieved from https://www.oerafrica.org/system/files/12591/oa-publishing-african-universities06052019.pdf?file=1&type=node&id=12591.

3) How strong is the connection in policies supportive of OER to clearly defined pedagogical improvements? And is the emergence of OER driving educational innovation or simply entrenching traditional educational practices?
4) What research is being undertaken alongside OER policy implementation to measure the real educational impact and cost-effectiveness of openly licensing educational materials? And where impact and cost-effectiveness gains have been identified, are these consistent across countries or is open licensing contributing to a greater digital divide?

In gathering data, a two-pronged approach was adopted: completion of a brief desktop research exercise and development of a series of country case studies prepared with input from OER experts from 15 countries in five UNESCO regions. Case studies included input on OER in the higher education sector, with some including a focus on basic education (six respondents), secondary education (four respondents), and informal/lifelong learning (three respondents).

The case studies revealed that several efforts have been made to promote OER and its use, with funding and support by donors and intergovernmental organizations, governments, and educational institutions. This has resulted in significant growth and remarkable achievements in countries like Brazil, Canada, and New Zealand.

The research also found that some respondents conflate OER with other open initiatives. Most commonly, OA and OER are often used interchangeably. There were also examples where the concept of OER was conflated with 'free' initiatives. Several other studies also point to a lack of awareness of OER,[15] [16] [17] and this, together with findings from our research, highlight some confusion around understandings of OER. Lack of knowledge about OER and copyright plays a major role in limiting OER growth, suggesting a need for more and better dissemination of knowledge about OER.

In terms of OER adoption and its impact, the data provided little evidence of wide acceptance of OER within surveyed countries. In many instances, OER initiatives feature largely as 'projects', without systematic integration. OER approaches or initiatives still appear to be an 'add on' in education systems rather than being part of a mainstream approach to creating and adopting openly licensed materials. Data gathered in this research suggest that the extent to which respondents report a balance between OER reuse and creating new materials tends to depend on levels of OER activity in the country, with three countries reported a balance between OER reuse and creating new OER. In other countries, the focus is more on creating new OER. The findings from this research indicate that an assessment of whether OER practices are achieving a balance between creating new materials and adapting/reusing OER may be too simplistic, as this depends on the context and level of OER activity within a country. However, the findings do point to a lack of awareness around reuse, highlighting the need for more efforts to focus on how to reuse OER effectively.

The presence of country policies supportive of OER can be used as a gauge to determine levels of commitment to OER and potential wide-reaching impact. Several countries have developed national OER policies and the effects of these have differed from one context to another. Brazil, for example, has made great advances in the past decade in establishing laws and ordinances, as well as recently launching a platform with clear policies on copyright and reuse of resources. Release of materials produced with public funds is a requirement for public higher education and basic education

[15] de Oliveira Neto, J. D., Pete, J., Daryono & Cartmill, T. (2017). OER use in the Global South: A baseline survey of higher education instructors. In C. Hodgkinson-Williams & P. B. Arinto (Eds.), Adoption and impact of OER in the Global South (pp. 69–118). Retrieved from https://doi.org/10.5281/zenodo.599535
[16] Beaven, T. (2018). 'Dark reuse': an empirical study of teachers' OER engagement. Open Praxis, vol. 10 issue 4, October–December 2018, pp. 377–391. Retrieved from https://openpraxis.org/index.php/OpenPraxis/article/view/889/502
[17] COL (2017). Open Educational Resources: Global Report 2017. Burnaby: COL. Retrieved from http://oasis.col.org/bitstream/handle/11599/2788/2017_COL_OER-Global-Report.pdf

institutions. From the three African countries (Nigeria, South Africa, and Tanzania) represented in the study, Nigeria has recently adopted a national level OER Policy. The policy encourages higher education institutions with public-funded materials to openly license them and release them as OER. As this is a new policy, the country still needs to prepare implementation plans and strategies to encourage adoption and implementation. However, policy is not a priority for all countries as some countries including South Africa and Tanzania have no national OER policies. In South Africa and Tanzania, there is no national or institutional policy that mandates that educational materials produced with public funds be openly licensed. However, Section 12 of the South African Copyright Act allows reproduction of copyrightable materials for educational purposes (and thus academics, already able to reuse materials for teaching purposes, are not really required to engage with OER). If a proposed Amendment Bill is approved, this will mandate the open sharing of publicly funded research. Other countries focus more on other open concepts rather than OER specifically.

The UNESCO IITE- OER Africa study found that, in regions with extensive OER activity, a national policy is often not necessarily driving efforts, suggesting effectiveness of bottom-up initiatives in promoting OER. In practice, it appears that larger investments in OER are from more developed countries and these typically are accompanied by less policy emphasis. National government policies around OER may not always be a priority. Furthermore, some countries may have supportive local government guidelines, policies, and requisite funding. If contexts allow for free use of material for educational purposes, it is possible that this decreases the requirement for national OER policies.

A context supportive of OER (for example, through funding, creating collaborations, and developing competence amongst educators in effective OER practices) thus appears to yield more significant benefits and improved sustainability than the presence of policies. In other instances (for example, Tanzania and Tunisia), the lack of supportive policy is seen as an impediment to OER adoption, particularly as no funding is then allocated to OER development and use. However, there is limited evidence that OER policies are driving pedagogical innovation, and commercial interests and lack of awareness may limit the development and implementation of supportive OER policies. Again, this makes a strong case for interventions to support pedagogical innovation, including effective CPD of educators.

Promisingly, the research indicates that, while some OER efforts are financed through donor funding governments are increasingly funding OER initiatives, via grant funding or via institutions' operational budgets. There are also some regional efforts to fund OER initiatives. Institutions are either developing their own, internal budgets to accommodate OER, or attracting funding from donors – particularly in contexts where there might not be direct national policies or government funding for OER (for example, in the UK and New Zealand). However, in instances where one-off funding or funding for specific initiatives is provided, there might not always be enough funding or strategies to ensure these initiatives' ongoing sustainability. When considering policies, strategies, and guidelines, it is frequently unclear how much funding is allocated nor are there defined funding mechanisms to ensure sustainability. In contexts where there is no clearly allocated funding, OER initiatives are not likely to be sustainable. This highlights that the longer-term viability and stability of OER initiatives is uncertain unless provision to sustain them is built into the ongoing operational budgets of Ministries and institutions. Likewise, sustainability in government-funded OER initiatives may be affected by changes in government, which suggests a need for viable business models built around open licensing to ensure sustainability.

With regards to diversity and inclusivity, in most countries, OER are reportedly produced in the dominant language of that country, while only in a few instances are OER produced in indigenous languages. For example, in Australia, Charles Darwin University hosts the Living Archive of Aboriginal Languages, a digital repository of endangered literature in Australian indigenous languages from

around the Northern Territory, which is made available under a CC licence.[18] Nodes,[19] PreVET,[20] and Fliplets[21] are contextualized, multimodal learning resources tailored for remote indigenous students and made available under a CC licence. A significant issue still impacting on the inclusivity of OER is the issue of the digital divide, although there is some evidence of OER allowing for greater inclusion within countries with good Internet access. The Canadian respondent highlighted challenges of inclusion, particularly regarding the publishing industry, and use of commercial applications and Digital Rights Management (DRM), which restrict the ways users can copy and reuse content. Issues of diversity currently appear to be a marginal consideration in most countries. Significantly, no respondent included any substantive discussion of disability. Other issues related to diversity and inclusion – such as customizing content to local contexts and needs – were less frequently mentioned. Issues of language translation seem to be the main priority in terms of increasing access to educational materials.

In contexts where there is considerable OER activity, there concomitantly appears to be more rigorous OER research activity. Given that the OER movement is still in its infancy in some countries, it is not surprising that research on OER use and impact is limited. In other contexts, there may be some OER activity but not much research. In other countries, the focus may be less on research at a national level than on international issues, as is the case in Germany, where research reportedly tends to focus on international issues and the European Horizon 2020 projects.

Respondents in the IITE Study suggested several research issues that are worth exploring. The range of research issues that require further attention points to the need for significant work in almost all areas of OER, ranging from OER use and raising awareness to business models, marketing, credentialing, funding, and sustainability. The findings from this research thus provide few examples of research focusing on the educational effectiveness of OER. There appears to be little focus on research around the cost-effectiveness of openly licensed materials, and there is no strong evidence that research is systematically undertaken alongside OER policy implementation.

These findings have important implications for CPD efforts. OER and, more importantly, effective OER practices remain on the margins in many education systems, while governments engaging with OER tend to be more interested in forcing their limited definition of openness into existing education systems rather than understanding how it can transform those systems for the better. Moreover, a supportive context appears to yield more significant benefits than just the presence of policies. Thus, grassroots-level engagements (which would include CPD activities) are as important as policy-level engagements in advancing effective OER practices, if not more so. Further, given the lack of mainstream acceptance of the educational effectiveness of OER, it is likely worth further exploring ways in which OER can be used in CPD efforts to model effective OER practices for emulation by educators.

Mapping the Role of OER in Effective Pedagogy

As can be seen from the above analysis, despite the relatively long history of the OER movement, it seems that OER practices are having a relatively muted effect on education systems and pedagogical practices, both globally and within Africa. Thus, if we want to ensure that application of the concept of OER plays a meaningful role in improving teaching and learning for students, it is necessary to define

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[18] Charles Darwin University. (no date). Living Archive of Aboriginal Languages. Retrieved from https://livingarchive.cdu.edu.au/
[19] Nodes. (no date). Home Page. Retrieved from http://nodes.net.au/
[20] PreVET. (no date). Home page. Retrieved from http://prevet.net.au/
[21] Fliplets. (no date). Home Page. Retrieved from http://www.fliplets.net.au/

how exactly it can do this. To support this, OER Africa developed a Pedagogical Improvement Framework to define various ways in which effective OER practices can be harnessed to improve teaching and learning at universities. This framework, which has been derived from several years of practical engagement between OER Africa and African universities, as well as Saide's wider focus on educational quality, is presented below:

Table 1   *OER Africa Pedagogical Improvement Framework*

Improvement Area	Explanation	Roles for OER in Supporting Improvement
1) Effective learning design for programmes/courses.	• Clear and transparent learning design. • Flexibility, receptiveness, and openness in programme/course design. • Curriculum developers need exposure to a range of different learning approaches. • Meaningful and appropriate exposure to and integration of technology as part of teaching and learning design.	• Sharing course designs under open licences may encourage curriculum designers to invest more heavily in design phase, given potential for increased peer scrutiny. • Existing, high quality programme/course designs can be shared under open licences to serve as exemplars for other designers, both within and across disciplines. • OER can be used to build professional development courses cost effectively for curriculum developers. • Existing professional development course materials can be shared under open licences.
2) Learning from well-designed educational resources.	• Learners need access to high quality learning resources • Use of learning resources and activities that are appropriate, varied, and contextually relevant • Use of learning resources and activities that draw on student experiences • Learning environment that takes account of the individual and collective contexts of learners • Authentic subject matter expertise reflected in materials, providing students with a thorough grounding • Diverse learners often require diverse resources/explanations within courses • Educators and students often want to use resources in their own language and/or that are culturally relevant.	• OERs can be copied and shared more cheaply than proprietary content. • Educational resources shared under open licences can serve as exemplars for materials developers and can be integrated into other courses without paying licence fees. • Costs of expert design of content can be amortized over more students if it is shared under open licences. • Institutions with limited subject matter experts can harness OER to supplement local content. • Diverse explanations of key concepts can be incorporated cost-effectively into learning materials by harnessing OERs. • Sharing of educational materials under open licences enables cost-effective contextualization, adaptation, and translation of existing resources. • Where translation of OER can be done by students themselves, it might serve a valuable educational purpose. • Contextualizing of learning resources can occur through sustained engagement within courses, and this is enabled with more access to openly licensed resources.

Improvement Area	Explanation	Roles for OER in Supporting Improvement
3) Inclusion of multiple voices/perspectives demonstrating the contested nature of knowledge.	• Students and educators need to be exposed to multiple 'voices' and different/diverse perspectives and viewpoints to develop critical evaluation skills. • Students and faculty can be encouraged to question knowledge and develop critical thinking skills. • Access to different sources can enable different ways of conceptualizing knowledge and mediating content, building deeper understanding. • Create a sense of belonging.	• Educators and students can contribute to knowledge creation by focusing on creating materials of a local nature, rather than replicating content that already exists, and then sharing resources under open licences. • Harnessing OER can enable cost-effective integration of multiple voices/perspectives. • Access to OERs can create a sense of belonging where sources of content can be found that reflect students' own experiences; educators/students can contribute to this by sharing their resources under open licences. • Where there is Internet access, students can play an active role in sourcing and evaluating different OERs and sharing them with peers as part of learning activities.
4) Knowledge construction.	• Students constructing their own knowledge (supported as appropriate by educators). • Non-authoritarian facilitation. • Creating space for the student voice. • Harnessing social learning theory to enable learning from sharing and collaboration. • Collaborative selection of content and knowledge building. • Student responsibility for and management of their own learning and time.	• Openly licensed content enables collaborative selection of content and knowledge building and facilitates students constructing their own knowledge (noting ongoing need to provide education about plagiarism). • Online sharing of student-produced content under open licences can create additional spaces for the student voice, which can extend beyond the course environment. • Student sharing of content developed collaboratively under open licences can contribute to further learning within the course and enable connections with learners from outside the course. • Resource-based learning can create greater student responsibility for time and learning management, and OERs can be harnessed to make this richer and more cost-effective. • Supplementary learning materials and self-study courses can be made available under open licences for students to learn more about time management, self-discipline, and other critical learning skills. The more these resources are shared, the more cost-effective they can become.

	Improvement Area	Explanation	Roles for OER in Supporting Improvement
5)	Regular, specific, and constructive feedback from educators and peers.	• Assessment strategies that capture real learning. • Facilitation by educators of student collaboration and communication. • Sharing by students of what was learned and reflection on their learning. • Feedback on and reflection by academics on their practices.	• Existing assessment activities can be shared under open licences to serve as exemplars and to generate ideas for other educators, both within and across disciplines. • Online student sharing of assessment tasks under open licences might open additional feedback channels. • Sharing of course materials under open licences on public platforms can provide opportunities for critical reflection on educators' own practices.
6)	Application of knowledge and work-integrated learning (WIL).	• Resource-based learning can enable blended learning designs that allow students to spend more time in workplace and doing practical activities as part of their formal educational experience.	• OERs can be harnessed to make resource-based learning richer and more cost-effective. • Documented WIL practices can be shared under open licences to serve as exemplars for other educators.

The above Framework provides a helpful point of departure in defining what skills and competences academics will need to make educationally effective use of OER. Importantly, it maps various uses of OER directly to good teaching and learning practices, which provides a helpful guide to determining what foundational pedagogical skills academics will require to harness OER effectively. With this Framework in place, it is worth exploring what the literature has to say about the state of the field in African academia regarding ongoing development of skills and competences, both to build generic pedagogical skills and effective OER practices that can contribute to improved teaching and learning. The analysis below focuses on CPD related to teaching and learning.

What Do we Know About CPD Needs in African Higher Education?

Academics

It has been argued that the shortage of qualified faculty members is the greatest challenge facing African universities today. Linked to this, several studies also point to the need to prioritize CPD of academics.[22],[23],[24],[25] Various factors contribute to the inadequacy of qualified academic staff, including the limited number of individuals pursuing postgraduate degrees due to low or insufficient salaries, which limits the pipeline of young academics entering employment in the higher education sector.[26] Human resources and staff competence in universities are central to the quality of higher education. A competent and well-motivated staff, along with a supportive professional culture, are essential in building excellence in higher education.[27] While the quality of academic staff is key to a university's quality, the issue of academics' professional development appears not to have been accorded commensurate attention to date.[28]

Despite acknowledgement of the need to develop academics in African universities, there are few policies or papers documenting these needs in African universities. In 2013, the International Consortium on Education Development (ICED) surveyed member networks to identify current policies and practices related to preparation of teachers in higher education internationally. It found that there is little systematic gathering of national data on the preparation of university teachers. Some countries and regions have developed, or are developing and implementing, policies to improve standards of teaching in higher education principally, but not exclusively, requiring newly appointed staff to undergo training. In other cases, national or regional policies are not legally mandated. Further, some

[22] Bosan. P. (no date). Professional Development of Mathematics Educators for Open and Distance Learning Through Effective Collaboration. *International Journal of Educational Policy Research and Review*, 3(*8*), pp. 138-144. Retrieved from https://journalissues.org/wp-content/uploads/2016/10/Bosan.pdf

[23] Ekpiken, W. (2015). Capacity building strategies for teachers and sustainable development in universities in Cross River State of Nigeria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 6(7), 286 -292. Retrieved from http://jeteraps.scholarlinkresearch.com/articles/Capacity%20Building%20Strategies.pdf

[24] Jacob, W.J., Xiong, W., and Ye, H. (2015). Professional development programmes at world-class universities. Retrieved from https://www.nature.com/articles/palcomms20152

[25] NaliakaMukhale, P., and Hong, Z. (2017). Towards Improvement of Student Learning Outcomes: An Assessment of the Professional Development Needs of Lecturers at Kenyan Universities. Journal of Education and Practice, Vol.8, No.12, 2017. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/36578/37810

[26] Jacob, W.J., Xiong, W., and Ye, H. (2015). Professional development programmes at world-class universities. Retrieved from https://www.nature.com/articles/palcomms20152

[27] Education Strategy Centre. (2015). Ethiopia: Staff Development Strategy in Higher Education Policy Brief 8

[28] NaliakaMukhale, P., and Hong, Z. (2017). Towards Improvement of Student Learning Outcomes: An Assessment of the Professional Development Needs of Lecturers at Kenyan Universities. Journal of Education and Practice, Vol.8, No.12, 2017. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/36578/37810

responses to the ICED survey indicated that national or regional policies, regardless of whether they were legally mandated, were not necessarily being implemented.[29]

Nevertheless, there are some examples of country policies and strategies covering CPD issues, three of which are described below—Ethiopia, South Africa, and Kenya. It should be noted, however, that when searching for information on CPD needs and CPD initiatives, much of the work on CPD in Africa appears to be centred around teacher development and not academics. Further, many studies focus on challenges that have arisen because of reduced state funding to universities, liberalization, massification, and marketization of higher education. Whilst these issues are well articulated in institutional policies, academics' learning to teach has been disregarded in national policies and in the planning of most institutions, as it is assumed that academic qualifications are sufficient. Because so little attention has been paid to CPD at the university level, we also provide information on CPD for teacher training, where relevant.

Ethiopia

Ethiopia's third Education Sector Development Programme (ESDP III) gives priority to CPD, assuming that it is a right of teachers at all education levels, and a great value for national development.[30] Additionally, the Education Strategy Centre in Ethiopia published a staff development strategy policy brief in 2015. This strategy provides a vision and strategic direction that will help to create a system, structure, and processes to transform the supply, development, and retention of staff in higher education. The strategy draws lessons from good practices from across the world through a comparative analysis of local and international experiences.[31] There has also been recognition of the significance of CPD in other documents. For example, in 2007, the Ministry produced 'A Blue Print for Ethiopian Teachers Development Programme', the purpose of which was to emphasize the indispensability of CPD at all levels of education. Further, in 2009, a Framework for CPD of Teachers, School Leaders and Educators in Ethiopia was developed, which includes CPD at the higher education level. However, it was criticized for proposing a top-down approach that ignored the interests of faculty members and institutions to share their views and critical concerns.[32]

The Ethiopian government has also set targets in its Growth and Transformation Plans and taken actions to improve teacher competence and qualifications in higher education.[33] Further, the Ministry of Education has integrated academic and CPD programmes in Ethiopian higher education reform. CPD is a compulsory requirement for all those who teach in educational institutions. Moreover, all institutions are required to produce a CPD plan that outlines CPD priorities for the year.[34] In relation to the improvement of institutions and teachers' professional competencies, the Ministry of Education in collaboration with donors has been conducting several programmes, such as The Higher Diploma Programme (HDP), The English Language Improvement Program (ELIP), and the Academic Development and Resource Centre (ADRC). All these programmes are geared towards increasing the professional competencies of university teachers with the aim of enhancing students learning. Furthermore, projects such as the General Education Quality Improvement Programme (GEQUIP) have been striving to reform and strengthen professional development programmes both at the ministry

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[29] International Consortium for Educational Development. (2014). The Preparation of University Teachers Internationally - Draft for consideration, Council 2014

[30] Seyoum, Y. (2016). Analysis of Faculty Members Attitude towards Academic Development Endeavors in Some Selected Ethiopian Universities. *International Journal of Instruction* January 2016, Vol.9, No.1

[31] Education Strategy Centre. (2015). Ethiopia: Staff Development Strategy in Higher Education Policy Brief 8

[32] Seyoum, Y. (2016). Analysis of Faculty Members Attitude towards Academic Development Endeavors in Some Selected Ethiopian Universities. *International Journal of Instruction* January 2016, Vol.9, No.1

[33] Education Strategy Centre. (2015). Ethiopia: Staff Development Strategy in Higher Education Policy Brief 8

[34] Chalchisa, D. (no date). Continuous Teacher Professional Development: The Ethiopian context

and institutional levels. The GEQUIP is implemented at three levels of government; Federal, Regional, and Woreda (District) levels.[35]

In Ethiopian higher education, pedagogical training has not been a prerequisite for teaching in the past. One study by Abyot (2001) found that professors at universities in Ethiopia did not have instructional skills training and attempts to improve instructors' professional competencies were not always encouraging.[36] Another study found that participants (who were higher diploma programme candidates) did not attach much value to the level of organizational support and implementation of professional training and implementation at Addis Ababa university. Specifically, they were dissatisfied at the absence of follow-up of implementation, lack of reward for the training, scarcity of resources, and the layout of classrooms.[37]

University teachers do have access to a specialized teaching diploma. The Higher Diploma Programme (HDP) is a one-year on-the-job training of teacher educators, mainly on themes such as active learning, reflective practice, continuous assessment, and action research. Similarly, Ethiopia's Higher Education Proclamation requires universities to put in place a staff development programme as one means of assuring quality. It states that the teaching and learning process in any institution shall be, whatever the methods of delivery employed, interactively student centred and promote active learning.[38]

The MoE highlights several components of good teaching that are expected to be developed through CPD (at all levels of education):
• Professional knowledge and understanding (up-to-date subject matter and curriculum knowledge, good understanding of classroom pedagogy, etc.).
• Teaching skills (learning plans for students' involvement, use of active learning methods, reflect on classroom practices, etc.).
• Values and attitudes (love of profession, form excellent relationship with colleagues, strive for learning and self-improvement, high expectations for students, etc.).
• Learning environment (maintaining an attractive and supportive learning environment, creating a safe and orderly environment, use of appropriate teaching aids).[39]

As our PI Framework in table one above illustrates, there are various ways in which effective OER practices can support these aspects of good teaching.

A study by Jimma and Tarekegn (2016) found that major factors contributing to challenges in curriculum change include: lack of necessary instructional resources for the proper use of curricular reform initiatives; teachers' lack of expertise with proposed curriculum reform; inappropriate curricular materials for student-centred pedagogy; and students' lack of prior experience in using student-centred pedagogy. Further, at many universities, the academic culture did not prioritize and foster meaningful learning. Universities did very little in combating against these challenges, for example:

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[35] Seyoum, Y. (2012). Staff Development as an Imperative Avenue in Ensuring Quality: The Experience of Adama University. Education Research International Volume 2012, Article ID 624241, 17 pages http://dx.doi.org/10.1155/2012/624241
[36] Cited in Seyoum, Y. (2011). Invigorating Quality through Professional Development Programs in Ethiopian Higher Education Institutions: Implications for Curriculum Enactment at Haramaya University. International Journal of Social Sciences and Education. Issue 4. Retrieved from
https://pdfs.semanticscholar.org/f7a7/c845f04e25f26b833f201058b125d4efa9c6.pdf
[37] Seyoum, Y. (2012). Staff Development as an Imperative Avenue in Ensuring Quality: The Experience of Adama University. Education Research International Volume 2012, Article ID 624241, 17 pages http://dx.doi.org/10.1155/2012/624241
[38] International Consortium for Educational Development. (2014). The Preparation of University Teachers Internationally - Draft for consideration, Council 2014
[39] Chalchisa, D. (no date). Continuous Teacher Professional Development: The Ethiopian context. Retrieved from
http://www.aadcice.hiroshima-u.ac.jp/j/publications/sosho4_2-02.pdf

> *Often, however, in Ethiopian HEIs [Higher Education Institutions], training workshops take place at one time and in one location are apparent without follow-up, and without helping teachers build the range of skills and capacities needed to use the proposed reform in their actual classrooms.[40]*

The study found that, notwithstanding the reform intention, 'the academic culture has favoured a superficial change in the structure and contents of teaching with little or minimal effects to change in the beliefs and pedagogic practices of teachers. In part, this is exacerbated by a belief in the teacher-centred approach and the inadequacy of current CPD models. Most teachers are not familiar with educational principles as they were not trained in teaching and thus report tensions between curriculum reform policies mandating change and actual teaching and assessment practices. Some teachers do not have the required knowledge and skills to implement the curriculum reform. This has been attributed to HE teachers not having formal teacher education, and some of them are with lower educational qualification expected for the level.[41]

South Africa

In another example, the Council on Higher Education (CHE) in South Africa reports that various CPD initiatives are presently taking place at institutions, which encourage or support the engagement of academics in teaching and learning. These are aimed at enhancing academics as teachers and include induction programmes, seminars and workshops, and training of various kinds, including formal qualifications and short courses, peer learning, mentoring, and conferences.[42] The government also supports CPD efforts through grants. From 2008, the Department of Higher Education and Training (DHET) began to provide Teaching Development Grants (TDGs) to universities to implement teaching and learning development activities. A set of policy guidelines governs the use of these grants; each university submits a Teaching Development Plan to DHET. Funds are then transferred to the university based on an approved TDG plan. From 2017/18, a single earmarked grant, the University Capacity Development Grant (UCDG) replaced the previous Teaching Development and Research Development Grants; it currently funds implementation of the University Capacity Development Programme.[43]

In South Africa, many universities offer, or are in the process of developing, Post-Graduate Diplomas (PGDips) and Degrees in Higher Education aimed at their own staff or staff at other institutions that do not offer similar qualifications. Some universities require/encourage their academic staff to take a few specified modules of the PGDip, or to complete modules gradually until they have completed the entire qualification.[44] Additionally, South African institutions undergo quality assurance audits by the CHE, as part of which they have to provide evidence of staff development policies and strategies that promote the professional competence of academic staff and pay particular attention to the development needs of new personnel.

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[40] Jimma, T.T., and Tarekegn, W.M. (2016). The Prevailing Practices and Challenges of Curriculum Reform in Ethiopian Higher Education: Views and Responses from Within. Australian Journal of Teacher Education, 41(10). http://dx.doi.org/10.14221/ajte.2016v41n10.6

[41] Jimma, T.T., and Tarekegn, W.M. (2016). The Prevailing Practices and Challenges of Curriculum Reform in Ethiopian Higher Education: Views and Responses from Within. Australian Journal of Teacher Education, 41(10). http://dx.doi.org/10.14221/ajte.2016v41n10.6

[42] Cameron, A., and Woods, C. (2016). A Proposed 'Ladder of Learning' for Academics' Professional Development in Teaching. *South African Journal of Higher Education.* Vol, 30. No. 6.pp. 176–190

[43] du Pré, R., and Baumann, B. (2017). Improving the effectiveness of university teaching through assessment and accreditation of academics as teachers. Funded by the European Union.

[44] Woods, C., and Baumann, B. (2017). Improving the effectiveness of university teaching through assessment and accreditation of academics as teachers. Funded by the European Union. Retrieved from https://www.che.ac.za/sites/default/files/events/REPORT%20CHE-DHET%20Teaching%20effectiveness%20workshop.pdf

Kenya

In a bid to improve the quality of academics, the Commission for University Education (CUE) in Kenya directed all public universities to ensure that all academics have doctoral degrees by November 2018 (though it is not clear whether this goal has been achieved). The Commission also plans to phase out part-time teaching. However, the role of CPD in improving the quality of academics has not been emphasized relative to the doctoral degree.[45]

A study by NaliakaMukhale and Hong (2017) aimed to explore the professional development needs of academics at Kenyan universities. It investigated challenges that academics and their learners face while in class. It also explored academics' CPD needs, preferred modes of delivery of the CPD programmes, and changes that academics need to effect in their practice of teaching to improve student learning outcomes. The study found that:
• Most academics had attended CPD programmes in the recent past;
• Learners faced challenges such as lack of adequate instructional facilities, poor note-taking skills, congestion in classrooms, over-reliance on teachers' notes, difficulties in accessing learning materials, and lack of individualized attention due to the large class size; and
• Academics faced challenges of large class sizes, students who are not committed/motivated to learn, heavy workload, inadequate instructional materials, student indiscipline, class management, inadequate technical staff in laboratories, vandalized power accessories, evaluation of students, poorly ventilated lecture halls, and difficulties in teaching due to limited knowledge of the subject matter and teaching methods appropriate for university students.

These are common problems across many African universities, so CPD to develop effective OER practices should respond to such challenges and help academics to find sustainable solutions.

The study identified four categories of CPD needs:
• Teaching methods/pedagogy: this included the desire to learn how to teach effectively for long hours, cover the syllabus in time, use online teaching/e-learning, prepare e-learning material, adopt teaching methods appropriate for university students, motivate students to learn, construct tests, and develop teaching and management skills suitable for large classes.
• Subject matter: these needs related to the specific subjects and areas of responsibility.
• ICT: these needs are for training on how to incorporate ICT in teaching, and basic training on using technology in lecture halls.
• Research: this included proposal development, data analysis, academic writing, how to secure research grants and how to effectively and efficiently manage research grants.

These CPD needs can be linked to the following elements of the PI framework from table 1.

Table 2   *Mapping CPD needs in Kenya to the PI Framework*

Effective learning design for programmes/courses	• Clear and transparent learning design • Flexibility, receptiveness, and openness in programme/course design • Curriculum developers need exposure to a range of different learning approaches • Meaningful and appropriate exposure to and integration of technology as part of teaching and learning design
Learning from well-designed educational resources	• Learners need access to high quality learning resources • Use of learning resources and activities that are appropriate, varied, and contextually relevant

[45] NaliakaMukhale, P., and Hong, Z. (2017). Towards Improvement of Student Learning Outcomes: An Assessment of the Professional Development Needs of Lecturers at Kenyan Universities. Journal of Education and Practice, Vol.8, No.12, 2017. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/36578/37810

	• Use of learning resources and activities that draw on student experiences • Learning environment that takes account of the individual and collective contexts of learners • Authentic subject matter expertise reflected in materials, providing students with a thorough grounding • Diverse learners often require diverse resources/explanations within courses • Educators and students often want to use resources in their own language and resources that are culturally relevant

The study further found that, to enhance student learning outcomes, academics need to adopt a more student-centred approach, embrace seminar way of teaching, use practical approaches, be ICT compliant and create and teach courses that offer learners significant learning experiences. Further, academics prefer both face-to-face and online as modes of delivery for CPD programmes.[46] Whilst CPD programmes had been implemented in the past, the authors note two obstacles. First, academics were not involved in choosing and designing programmes, which increases the likelihood that what they were offered is not actually what they needed. Second, there was limited time for practice and thus academics could not apply fully the skills they learnt. If the participants could not fully apply what they learnt in their daily practice, then previous CPD programmes did not attain the desired impact.[47]

Libraries

Libraries are another key area where CPD needs are relevant to effective OER practices. For example, Tesema and Bekele (2017) highlight that a key issue hindering the development of library and information centres in Ethiopia is lack of staff training and shortage of necessary facilities, including a lack of digital resources.[48] Another contributory factor is the high turnover and low retention of staff in academic libraries of public and private universities in Ethiopia, and one of the reported factors contributing to staff turnover is the lack of staff training or continuing professional education for librarians.[49]

University library staff often have varying qualifications. Nwanko et al (2107) note that in Nigeria, university librarians have different qualifications, ranging from PhD and Master of Library and Information Science (MLIS), to Bachelor's degree in Library and Information Science (BLIS), Higher National Diploma, Ordinary National Diploma or National Certificate in Education in librarianship. Only those with PhD and MLIS in librarianship are regarded as academic librarians. Thus, young librarians may enter the profession as novices in the areas of scholarly publishing and research. While some quickly adjust and adopt the mastery skills of scholarly publishing, most have trouble coping, and mentoring has been identified as a possible way to help young librarians develop the depth of

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[46] NaliakaMukhale, P., and Hong, Z. (2017). Towards Improvement of Student Learning Outcomes: An Assessment of the Professional Development Needs of Lecturers at Kenyan Universities. Journal of Education and Practice, Vol.8, No.12, 2017. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/36578/37810

[47] NaliakaMukhale, P., and Hong, Z. (2017). Towards Improvement of Student Learning Outcomes: An Assessment of the Professional Development Needs of Lecturers at Kenyan Universities. Journal of Education and Practice, Vol.8, No.12, 2017. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/36578/37810

[48] Tesema, W., and Bekele, Y. (2017). Factors Hindering Development of Library and Information Services in Ethiopian Universities. American Research Journal of Computer Science and Information Technology (ARJCSIT), Volume 2, 2017, 7 pages

[49] Ergado, A.A., and Gojeh, L.A. (2015). Contributory Factors to Library Staff Turnover Pattern and Retention in Academic Libraries of Public and Private Universities in Ethiopia

knowledge required and refine the necessary skills to be successful in research.[50],[51] A study by Ukachi and Onuoha looked at CPD efforts that Nigerian academic librarians have participated in over a five year period to determine ways in which skills acquired from such programmes had enabled innovative and creative information service delivery. They found that librarians participated in very few forms of CPD programmes and the little skills acquired are rarely used in providing creative and innovative services in the library. Reasons for these are poor Internet access due to low bandwidth, lack of computing facilities in libraries, irregular power supply and, not working in the section where the skill could be used.[52]

In Ethiopia, most of the staff within Mekelle University Libraries do not have a higher degree of education. Out of 96 staff members, three have a Bachelor of science and four have a diploma. Most of the staff at the library have no library science training.[53] While staff development and training policies exist in the academic libraries in Ethiopian universities, a study by Gojeh et al (2015) notes that lack of career staff development and lack of staff training for library staff respectively could influence the turnover pattern and retention of academic staff. Further, while the staff development and training policy for library staff exists in most Ethiopian public and private universities, these documents are rarely explored by most policy makers and library staff. In addition, they are sometimes not updated or revised to meet the administrative challenges and changes of academic libraries and those of the institutions.[54]

A paper by Shepherd (2010) highlighted the need for CPD for librarians in academic libraries in general and at Rhodes University Library, South Africa, in particular. The paper describes the planning, design, implementation, and evaluation of a staff development and training pilot programme for professional librarians at Rhodes Library. The programme covered basic information-finding skills, using a variety of research databases and offered an introduction to concepts in twenty-first century academic librarianship. The programme was presented using course management software in a face-to-face environment and required homework exercises and the completion of a two-hour final test. The results of the project demonstrated the urgent need for such development programmes for professional library staff. Of the participants, 80 per cent completed the course. The final test results indicated below average database search skills, an inability to think laterally, and a lack of ICT competencies.[55] It is unclear what occurred after the pilot project and none of the author's subsequent publications provides any follow up of this initiative.

A study by Cobblah and van der Walt (2016) in Ghana established that there is a positive relationship between staff training and development and work performance of library staff in the selected university libraries in Ghana. The results also revealed that even though staff development contributes

[50] Nwankwo, T.V. Ike, C.P., Anozie, C.O. (2017) Mentoring of young librarians in South East Nigeria for improved research and scholarly publications. Library Management, Vol. 38 Issue: 8/9, pp.455-476. Retrieved from https://doi.org/10.1108/LM-11-2016-0083

[51] Nwabueze, A.U. and Anike, N.A. (2016), Mentoring strategies in use for professional development of librarians in South-East federal university libraries. *Journal of Applied Information Science and Technology*, 9 (*1*). Retrieved from www.jaistonline.org/vol9_no1_Nwabueze_Anike.pdf

[52] Ukachi, N., and Onuoha, U.D. (2013). Continuing Professional Development and Innovative Service Delivery in Nigerian Librarians: inhibitors and the way out. *Annals of Library and Information studies*. 60. 269-274. Retrieved from https://www.researchgate.net/publication/274717859_Continuing_Professional_Development_and_Innovative_Service_Delivery_in_Nigerian_Librarians_inhibitors_and_the_way_out

[53] Lindgren, S. (2007). A Case Study of the University Library in Mekelle, Ethiopia. Retrieved from http://www.diva-portal.org/smash/get/diva2:213484/FULLTEXT01.pdf

[54] Gojeh, L.A., Ayde, A., and Fantahun, A. (2015). Staff Development and Training on Turnover Pattern and Retention in Academic Libraries of Ethiopian Universities. Journal of Library and Information Sciences, June 2015, Vol. 3, No. 1, pp. 1-32

[55] Shepherd, E. (2010). In-service training for academic librarians: a pilot programme for staff. *The Electronic Library*, *28* (4), pp.507-524, https://doi.org/10.1108/02640471011065346

greatly to effective provision of library and information services, staff training alone did not contribute to staff effectiveness. The study found that staff development must be complemented with other human resource management strategies such as reward, promotion, and retooling.[56] Another study by Adanu (2007) in Ghana found that the library environment in the state-owned universities was generally supportive of CPD efforts. The study noted that CPD was a shared responsibility of the library and the individual, and that some benefits derived from CPD by the professional librarians were job advancement and 'updated skills leading to competence'.[57]

The African Library and Information Association and Institution (AfLIA) is keenly aware that African university librarians require additional training in several areas, among them open data, OER, and open access. It presented an open data webinar in November 2018.[58] In April-May 2019, in collaboration with OER Africa, AfLIA presented three webinars on OER and Open access.[59] Over 125 academic librarians participated in each webinar. AfLIA believes that training academic librarians in OER is 'necessary for quality university education, distance learning and lifelong learners in Africa'. The webinars aimed to 'assist academic librarians to develop an understanding of OER, Open Access, and Open licensing, and how openly licensed resources can be used in higher education institutions and their libraries'.[60]

CPD Initiatives

Professionals need different kinds of development during their careers. As highlighted above, it appears that few academics in African countries for which there is available research receive training focused on teaching prior to their appointment. In response to this, some universities in South Africa have introduced CPD initiatives to close this gap. Some institutions in South Africa offer induction courses for new academic staff whilst others conduct CPD courses on a regular basis for new and existing academic staff.[61] The ability of some induction programmes (once-off or of short duration), to fulfil this initial training function is limited. Other efforts have focused on providing workshops, seminars, symposia and conferences. These activities may be once-off, part of a series or recurrent. Some universities arrange / facilitate workshops and various programmes throughout the year to support CPD of staff, but there is little data on specific initiatives adopted.

Regardless of the nature of the support, it appears that most institutions in South Africa have begun to encourage/assist/compel/reward the improvement of teaching and the professional development of academics as teachers. These developments also serve to contribute to the bigger aims of increasing access to higher education; improving university education to lower the drop-out rate, reducing the failure rate, increasing graduation rates and shortening the time students take to complete a degree. In South Africa, a few universities are collaborating on a regional basis or based on proximity to each

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[56] Cobblah, M., and van der Walt, T.B. (2016). Staff training and development programmes and work performance in the university libraries in Ghana. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/0266666916665234

[57] Adanu, T. (2007). Continuing professional development (CPD) in state-owned university libraries in Ghana. Library Management. 28. 292-305. Retrieved from https://www.researchgate.net/publication/235307278_Continuing_professional_development_CPD_in_state-owned_university_libraries_in_Ghana

[58] African Library and Information Associations and Institutions. (no date). Webinar on open Data. Retrieved from http://web.aflia.net/webinar-on-open-data/

[59] The OER Africa webinar presentations can be found at https://www.oerafrica.org/content/oer-africa-aflia-webinars-series-librarians

[60] See African Library and Information Association and Institution. (no date). Open Educational Resources (OER) Webinar Series for African Librarians. Retrieved from http://web.aflia.net/open-educational-resources-oer-webinar-series-for-african-librarians/

other or availability of courses whereas some institutions are constrained by resources (funding, staff, mentors, time, attitudes) and location.[62]

There are few CPD providers in the higher education sector focusing on various aspects of professional development. The Association of African Universities (AAU)[63] has provided (and continues to provide) capacity building workshops for university leadership and academics. These include:
- Senior University Management (SUMA) Workshops targeting Presidents/Rectors / Vice-Chancellors / Principals, Deputies, Deans, Directors and HODs, Registrars and Bursars;
- Quality Assurance (QA) workshops;
- Monitoring, Evaluation and Learning Workshops;
- Faculty Development Workshops;
- Workshops on Research Leadership, Communication, Partnerships and Collaboration;
- Project Planning and Proposal Development Workshops;
- Scientific Writing Workshops;
- Strengthening Scientific Writing Skills for Publishing Research Outputs in Peer-Reviewed Journals;
- Financial Management Workshops;
- Data Ethics and Skills for Reproduction of Research Findings Using Stata Workshop;
- Strengthening the delivery of post-graduate Education in African Universities;
- Good Assessment Practices in Higher Education: Improving Teaching and Learning;
- Executive Seminar on Legal Issues, Procurement and Contract Management in Universities;
- Workshops on Best Practices in Management of Development Agencies' Supported Programmes for Institutional Growth;
- Data Ethics and Skills for Reproduction of Research Findings Using Stata;
- Workshops on Legal Issues in Higher Education Institutions in Africa.[64]

Other organizations like the Commonwealth of Learning (COL) also provides CPD programmes in African universities, usually around different aspects of Open and Distance Learning (ODL), including the training of trainers in curriculum and instructional design in tertiary institutions.[65] The Association for the Development of Education in Africa (ADEA) Working Group on Higher Education (WGHE) funds small-scale pilot initiatives and networking with pan-African institutions to engage in advocacy and support institutional capacity building.[66]

Direct government support also plays a significant role in CPD. For example, the South African Department of Higher Education and Training (DHET) has created 125 new, permanent lectureships for mainly black 'potential academics' through its New Generation of Academics Programme. These scholars will be able to study for their masters or doctoral degrees while being fully paid and will be paired with mentors.[67] As described above, Ethiopia's various strategies and frameworks for CPD also illustrate direct government support for CPD.

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[62] Woods, C., and Baumann, B. (2017). Improving the effectiveness of university teaching through assessment and accreditation of academics as teachers. Funded by the European Union. Retrieved from https://www.che.ac.za/sites/default/files/events/REPORT%20CHE-DHET%20Teaching%20effectiveness%20workshop.pdf
[63] Association of Africa Universities. (no date). Home Page. Retrieved from https://www.aau.org/
[64] See Association of African Universities. (no date). AAU Workshops. Retrieved from https://blog.aau.org/category/aau-workshops/
[65] Commonwealth Education Online. (no date). Commonwealth of Learning. Retrieved from http://www.cedol.org/organisations/commonwealth-of-learning/
[66] Association for the Development of Education in Africa. (no date). Working group on Higher Education. Retrieved from http://www.adeanet.org/en/working-groups/higher-education
[67] Breier, M. (2015). How Africa is tackling 'next generation' fears in academia. *The Conversation.* Retrieved from https://theconversation.com/how-africa-is-tackling-next-generation-fears-in-academia-49057

In addition, some universities themselves, specifically within South Africa, provide CPD. For example, some have academic development practitioners whose work is to professionally develop academic staff in the area of teaching. Their ideas and practice stem from the context of their work and life experience, and their knowledge grows with experience on the job. As a result, there is a great variety of knowledge and expertise that shapes CPD activities in universities. Programmes and activities geared towards academics' CPD of teaching are grounded in local needs and contexts, although there is recognition at a broader level of common purposes and common challenges.[68]

Further, some African universities have centres that provide capacity building and CPD for staff. For example, the University of Namibia has a division for Teaching and Learning Improvement which facilitates CPD related to effective teaching. It offers a range of short courses in the areas of effective teaching and learning, assessment, mentoring and induction of new staff members. It also runs a university-wide student-academic evaluation system, and feedback gathered is used to inform CPD efforts. In collaboration with the Faculty of Education, the Division also coordinates the implementation of the Postgraduate Diploma in Higher Education which intends to equip university educators with the relevant concepts and skills of teaching in higher education contexts.[69] At the North West University in South Africa, the Centre for Teaching and Learning (CTL) unit aims to inspire academic staff to enhance their skills in terms of both teaching and learning.[70] The Human Resources Department at the University of Botswana has a Staff Training and Development Section which is responsible for planning, coordinating, organizing and evaluating staff training and development programmes.[71] Similarly, the University of Jos in Nigeria has a Staff Training and Development Division focussing on skill upgrading and capacity building through academic training, conferences, seminars, and workshops.[72] At UCT, several units provide CPD support – for example, the Centre for Innovation in Learning and Teaching (CILT) conducts various staff development activities ranging from formal, accredited qualifications to informal learning. This centre is also involved in the Research on Open Educational Resources for Development (ROER4D) project which aims to provide evidence-based research on OER from several countries in South America, Sub-Saharan Africa and South / South East Asia. The primary objective of the programme is to improve educational policy, practice, and research in developing countries by better understanding the use and impact of OER.[73] Additionally, through the work of the Transformation Office, new staff are equipped with strategies to strengthen their intercultural competence in an ever-changing and diverse higher education environment whilst developing expertise to be researchers and teachers; the Research Office provides support by discussing strategies for planning and managing research tasks effectively.[74]

In Ethiopia, many universities have an Academic Development and Resource Centre (ADRC), but the extent of their effectiveness differs across universities. For example, at Adama University the university did not appear to have a comprehensive target approach to staff development. The ADRC lacks visibility and power, and staff reportedly have little support from the university management

[68] Cameron, A., and Woods, C. (2016). A Proposed 'Ladder of Learning' for Academics' Professional Development in Teaching. *South African Journal of Higher Education.* Vol, 30. No. 6.pp. 176–190
[69] University of Namibia. (no date). Teaching and Learning Improvement. Retrieved from http://www.unam.edu.na/cpdtli/tli
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who has not responded to their action plans nor supplied resources to properly establish the centre. However, at Hawassa University the ADRC was found to be an important unit for staff development, arising from quality enhancement initiative.[75]

Seyoum (2012) examined Higher Education Relevance and Quality Agency (HERQA) institutional audit reports at some Ethiopian universities. He found that whilst HE CPD programmes have been institutionalized, there is a lack of clearly defined policies and of resources, so the outcome of CPD practices was not up to the expected level. Nevertheless, the present system of CPD seems to suffer from lack of well-defined policies, resources, recognition, and attention on the part of the management bodies.[76]

In summary, it seems clear from desktop research that relatively limited attention is being given, either at policy level or within institutions, to the CPD needs of African academics with respect to teaching and learning. Where research has been done, it indicates that these needs are extensive and often still at quite basic levels, given assumptions made about academics' educational knowledge and the history of teacher-centred practices at many universities. Some universities, in acknowledging these needs, have established dedicated units to focus on academic CPD, with positive outcomes, but there are relatively few of these across the continent. Further, it appears that most CPD comprises either formal programmes, orientation activities for new academic staff, and face-to-face workshops. In the form of delivery, there is very little evidence of pedagogical innovation or harnessing of effective OER practices in the delivery of CPD itself, which seems a major omission given the opportunity to model good teaching and learning not only in the content of CPD activities but also in the way in which it is delivered.

Given the relative paucity of available data on CPD needs at universities in literature, *OER Africa* worked with some of its partners to conduct additional surveys to understand CPD needs at universities. The next section presents preliminary results from this work.

Surveys to understand CPD needs

OER Africa asserts, in its PI Framework, that effective harnessing of OER practices (rather than propagation of OER to replicate rote learning and top-down content transmission) depends heavily on the educational skills of participating academics. Its work suggests that, generally, these skills are at much lower levels than initially assumed, regardless of subject matter expertise. However, to understand this better, three surveys were used to understand CPD needs related to OER.

- CPD Survey at a Vaal University of Technology (VUT) in South Africa (124 responses)[77];
- OER Africa Survey on CPD (142 responses from five African universities: Open University of Tanzania, University of Namibia, Dar es Salaam University College of Education, Vaal University of Technology, and University of Dar es Salaam);[78] and
- AAU Survey on CPD needs (81 responses from 31 institutions in 17 African countries: Algeria, Benin, Botswana, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Nigeria, Senegal, South Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe).[79]

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[75] Seyoum, Y. (2012). Staff Development as an Imperative Avenue in Ensuring Quality: The Experience of Adama University. Education Research International Volume 2012, Article ID 624241, 17 pages http://dx.doi.org/10.1155/2012/624241

[76] Seyoum, Y. (2012). Staff Development as an Imperative Avenue in Ensuring Quality: The Experience of Adama University. Education Research International Volume 2012, Article ID 624241, 17 pages http://dx.doi.org/10.1155/2012/624241

[77] This survey was conducted by the authors of this paper as part of a separate project.

[78] OER Africa. (2018). Professional Development Needs of Staff in African Universities: Data Emerging from Questionnaires. Unpublished paper

[79] Raw data received via email correspondence with Dlamini, N. (AAU), February 13, 2019.

Each of the surveys was different (and thus did not ask the same questions), but nevertheless, high-level findings from these surveys are useful in gaining insight into CPD needs.

1) Teaching and Learning Needs.
   a) Course Design (the various processes a course developer might undertake in putting a course together):
      i) Planning curricula and courses;
      ii) Developing learning objectives/outcomes;
      iii) Conducting needs assessment;
      iv) Structuring a course;
      v) Developing content;
      vi) Updating and changing content.
   b) Teaching, Planning, and Development:
      i) Developing workplace integrated activities;
      ii) Training in technical skills and how to teach technical content;
      iii) Integrating practical skills with theory.
   c) Interacting with learners:
      i) Conducting/managing practical sessions and demonstrations;
      ii) Conducting lecturer evaluations;
      iii) Supporting students;
      iv) Managing and teaching large classes;
      v) Organizing classrooms.
   d) Pedagogy:
      i) Pedagogical skills for lecturers who do not have a teaching experience;
      ii) Modern techniques and methodologies in specific subject matter;
      iii) E-learning and pedagogies for distance learning.

2) ICT needs.
   a) Information literacy (skills required to locate, understand, apply and analyse information):
      i) Analysing and using information;
      ii) ICT related skills/learning management system (LMS)/software;
      iii) Finding relevant information.
   b) Multimedia Content Authoring:
      i) Video recording/editing;
      ii) Screen capture;
      iii) Audio recording/editing;
      iv) Image editing;
      v) Integrated/interactive multimedia;
      vi) Advanced Microsoft and interactive PowerPoint.
   c) Assessment and survey tools:
      i) Using classroom interactive tools;
      ii) Using Turnitin;[80]
      iii) Assessment tools.
   d) OER:
      i) Adoption, adaptation, and use of OER in teaching and learning;
      ii) Understanding copyright;
      iii) Understanding open licensing.

Respondents to the OER Africa survey highlighted the need for greater skills in teaching methodology and ICT skills related to online learning:

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[80] Turnitin is an Internet-based plagiarism detection service. It also provides instructors with the tools to engage students in the writing process, provide personalized feedback, and assess student progress.

Having been involved in online teaching, I feel that I do not have the required skills to make teaching online interactive and enjoyable. I would therefore wish to learn how to prepare materials for online teaching.

Not all academicians of the higher learning institutions are equipped enough with teaching methodology apart from those belonging to the faculty of education, therefore it is so necessary to conduct a teaching methodology course/training to all academicians of the Open University of Tanzania that will encompass among other things, course designing skills, course development, assessment and evaluation.

The results from all the surveys also indicate the need for improved university facilities and resources to support teaching and learning efforts. This includes ICT facilities, science and agriculture laboratories, books, and equipment.

The AAU survey, which required respondents to choose areas of CPD they would like to receive training on based on a predefined list, revealed that research needs are the most frequently mentioned area requiring CPD training. This highlights the extent to which, across the system as a whole, research tends to take precedence over teaching and learning as a priority amongst academics, which is unsurprising given the relative importance accorded to research activities compared to educational activities within higher education.

The results across the surveys clearly indicate that CPD is still much needed at universities, with participants highlighting the need for CPD to be compulsory and free. For example:
> *Since many of the academic professional are of the old cadre they should be encouraged or put into compulsory change.[81]*

> *Professional development at institutional level should be regular and free (no cost for the academic).[82]*

The surveys also reinforce the value of a comprehensive orientation programme for both permanent and short-term staff at the start of working at universities. This could be the same training or could be catered to the length or type of employment, for example, an abridged orientation training for short-term staff with the option of extending the training should the short-term staff member become a permanent staff member. In some cases, discipline-specific training might be required. Another suggestion was to provide easy access to all university policies and include engagement on its implications and applications in CPD programmes.

The specific need for CPD to improve the quality of teaching and learning in the face of growing student numbers was also noted:
> *As the number of students in universities are growing, I wish to see a professional development that can help instructors to handle the matter without affecting the quality of graduates and education at large. More skill on how to design and share online resources are inevitable.*

Piloting New Approaches to CPD

The desktop research and surveys reveal that few institutional and national policies articulate specific CPD needs in higher education. The desktop research also highlights that, whilst there may be policy in place to support CPD, there is sometimes a lack of effective implementation of the policies. The lack of easily accessible data on CPD needs in Africa indicates that CPD needs do not appear to be widely

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[81] OER Africa survey
[82] OER Africa survey

researched. So, despite the strong evidence for the general need to for CPD in higher education - to support effective teaching and learning and to support research – and whilst universities may be involved in such efforts, there is limited information available as to what the key specific CPD needs are, let alone the CPD needs around supporting effective OER practices. Available data also suggests that CPD efforts are at very basic levels, focusing on pedagogy, subject-specific matter knowledge, and ICT. This suggests that investment is required to develop and sustain CPD efforts.

The findings also indicate that there is a cause for concern around competence in course development, pedagogical skills, ICT skills, open licensing and copyright, and that these are not receiving systematic attention. Given the scale of the higher education system and the number of academics employed at African universities, resource constraints in most institutions, and the extent of these needs, it seems clear that massive, cost-effective solutions are required to meet CPD needs in African universities. While formal programmes and face-to-face workshops are clearly part of the solution, reliance on these modes of delivery alone is unlikely to deliver solutions on the scale and speed at which they are required.

In response to the above challenges, *OER Africa* has engaged in several preliminary efforts to pilot CPD efforts at African universities. The details of these activities are provided in Appendix One. Thus far, these have ranged from CPD focusing on research, knowledge management, and using Moodle to designing learning activities and finding open content. The CPD products developed through these activities are as follows:
1) 'Design an Activity or Assessment for provision in your Online or Blended course' and associated demonstration video of this learning object.
2) 'Moodle Basics Tutorial', an online course.
3) 'Working with OER', an online course.
4) 'Facilitating Online Learning' online course.
5) 'Finding Open Content', a series of online tutorials constituting an online learning pathway if completed in sequence.
6) 'Sharing research products' workshop using an institutional knowledge management system, now being redeveloped as a standalone online learning pathway.
7) 'Communicating Research' workshop, now being redeveloped as a standalone learning pathway.

In producing the above products, we engaged several institutions around their professional development needs and initiated CPD pilots at seven institutions based on their stated needs (namely, Open University of Tanzania, National Open University of Nigeria, Haramaya University, Mekelle University, Dire Dawa University, University of the Free State, University of Pretoria, and Vaal University of Technology):
• A signed a Memorandum of Agreement with Mekelle University facilitated their work selecting, quality-assuring and uploading research reports on to the Mekelle AgShare website,[83] with planned subsequent dissemination of the research as OER.
• At Haramaya and Dire Dawa Universities, we held workshops on Communicating Research Outputs and are likely to enroll academic staff and postgraduate students on to a short CPD learning pathway covering research communication to non-specialists, once it is developed.
• At Vaal University of Technology (VUT), we took a previously-developed openly licensed online course called Facilitating Online Learning and redeveloped it for the purposes of VUT as a 4-week train-the-trainer course.
• At the National Open University of Nigeria (NOUN), we ran an intervention on course design and development incorporating OER.

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[83] http://www.mit.edu.et/agshare/

- At the Open University of Tanzania, we ran a 'Facilitating Online learning' course[84] and developed and piloted a multimedia CPD activity on the topic 'Design an Activity or Assignment for provision in your Online or Blended course'.[85]
- At the University of the Free State, we facilitated training of staff from the University Library to support the population and maintenance of their Open UFS resource repository, which has subsequently been launched.[86] In addition, we supported the university's Centre for Teaching and Learning (CTL), facilitating a workshop on a professional development roadmap for faculty.

A final unanticipated activity was engagement with lecturers from all of South Africa's Technical and Vocational Education and Training (TVET) Colleges in a series of capacity-building workshops on open learning. The engagement provided a rich additional space for engagement on CPD strategies related to OER.

Emerging Lessons

Our desktop research, survey work, and pilot activities have yielded several important lessons. The continuous requirement to revise curricula and develop new academic programmes relevant to the needs of the 21st century, requires a system to train and retrain academics on a continuous basis. Despite CPD being regarded as important in HE, there is a paucity of research on it in Africa. The issue of CPD of academics in Africa has not been accorded enough attention, yet it influences the quality of higher education programmes offered. The findings from the desktop research and the surveys indicate that much work is required around CPD, especially as related to change and/or transforming educational spaces (for example, the role of technology in teaching and learning, changing student cohorts, and outdated skillsets). However, some tensions associated with CPD emerged from the surveys, including time issues, as academic staff are required to engage in formal studies prioritizing formal qualifications over other forms of CPD), and differences in how they see teaching and learning (different methodologies, ways of structuring learning, and so on). Responses also suggest a need to consider how CPD can/should best be offered.

The data from the desktop research indicate that once-off sessions can help introduce and build awareness on, for example, student-centred pedagogy. However, training programmes that are conducted without support rarely result in the adoption of student-centred pedagogy at the classroom level. To be effective and successful, PD efforts need to allow teachers to experience the types of instruction that they are supposed to use in their actual classes.[87] The desktop research further revealed that training participants should be afforded an opportunity to practice the skills that they have learnt. This will afford HE staff the opportunity to fully apply the skills they learn to achieve the desired impact.

Focus on improving awareness of OER, open licensing and copyright

The *OER Africa*-UNESCO IITE study found some confusion around understandings of OER. The lack of knowledge about OER and copyright plays a major role in limiting OER growth and calls for more dissemination of knowledge about OER. Further, findings from the CPD surveys also point to the need to improve understandings of these issues in course development.

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[84] https://elms.out.ac.tz/course/view.php?id=3016

[85] https://elms.out.ac.tz/course/view.php?id=3563

[86] http://oer.ufs.ac.za/

[87] Jimma, T.T., and Tarekegn, W.M. (2016). The Prevailing Practices and Challenges of Curriculum Reform in Ethiopian Higher Education: Views and Responses from Within. Australian Journal of Teacher Education, 41(10). http://dx.doi.org/10.14221/ajte.2016v41n10.6

The survey results regarding the copyright status of resources indicate that there is a need for CPD to focus on issues of licensing, such as copyright and open licensing. Data from the surveys provide some indications of the kinds of CPD required to harness OER practices in support of pedagogical improvement and corroborates the initial hypothesis that the levels at which this PD is needed are much more basic than initially assumed

Importance of understanding context

The desktop research highlighted that CPD efforts need to be considered within the context in which the universities operate. For example, a study by Akpan and Etor (2012) in Nigeria investigated the challenges of human capacity development in universities and possible strategies for improvement. The study noted that whilst academic programmes could be well structured, the delivery method might be poor due to inadequate or lack of essential instructional facilities for effective teaching and learning.[88] Respondents to the three surveys described above also noted infrastructure challenges as significant in supporting effective use of technology at universities. Indeed, in implementing CPD workshops and courses at a South African university, the facilitators faced technical issues that impacted negatively on participant engagement. These included email client problems, multiple login credentials, which resulted in some participants logging in with incorrect login details, and migration between LMSs. Participant involvement in the course was also heavily constrained by poor timing issues, compulsory participation by management, status of participants as independent contractors with related appointment issues, and workload. At a Tanzanian university, there were challenges with regards to English-language fluency, resulting in a major disconnect in understanding in what was required in developing modules.

A lesson that emerged from one pilot study was that deep understanding of the institutional context and culture could result in intentional and informed customization of courses. Another lesson was that some staff who experienced technical challenges were less engaged in focusing on learning because of their need to learn how to navigate the system and use the tools. These findings suggest a need to understand contexts and skills levels prior to implementation.

Operational Challenges

Related to the above, some challenges faced in implementing these OER CPD efforts relate to operational issues. For example, at two universities whilst the initial response to the collaboration was welcomed, communication following initial meetings declined. This led to a slower pace in implementation at one university due to political unrest affecting Internet service, and the need to locate a more committed person at the second university to move the pilot forward. At a third university, it was noted that a larger budget was expected. In addition, at all universities, progress tended to be very slow in the absence of visits by *OER Africa* support staff, raising questions about the full extent of institutional commitment to the CPD activities. A further challenge is staff relocations. In one instance key staff who were trained left and new staff members were inexperienced, resulting in some difficulty implementing project activities. Further, university staff have competing priorities; attending OER CPD initiatives is not necessarily regarded as urgent. Whilst these are operational issues, such experiences do highlight some challenges faced in rolling out CPD efforts.

Policies

The desktop search highlighted that there are few policies related to CPD of HE staff in African countries. Even where there are such policies, the findings suggest that more focus needs to be on implementing policies, including awareness of relevant university policies. Where there are policy/governmental requirements, there are many challenges that still exist with regards to

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[88] Akpan, C.P., and Etor, C.R. (2012). Challenges of Human Capacity Development in Federal Universities in Akwa Ibom and Cross River States, Nigeria. *Journal of Education and Practice. 3* (9).

implementation. Few, if any, university teachers receive training in university teaching prior to being appointed as a lecturer. Post-graduate students are usually not expected to undertake pedagogical training, although, in many cases, they are involved in some form of teaching or tutoring. Thus, the need for CPD training is clear. While there are some initiatives to address this need, the corresponding efforts may not be prioritised in a context where there are many competing needs.

Greater focus on content compared to pedagogy

In a context where many academics are not specifically trained to teach, the *OER Africa* survey indicated that there is a greater focus on content; pedagogy is regarded as a separate, additional component, often not core to the teaching and learning process. Quality assurance and evaluation are seen as a separate category, with no mention of academic staff becoming reflective practitioners who continuously evaluate what they teach (content) and how they teach (methodology). No mention was made of the practical component of courses (active work-based learning or field work). There does seem to be recognition of the importance of activity-based design (suggested by recognition of the need to include activities and assignments). However, inclusion of activities does not necessarily translate into authentic activity. Thus, it might refer only to tests and assignments concentrating on recall and measuring foundational competencies.

Recognition of course/learning design as open and ongoing

Survey respondents differed on what aspects of their courses needed to change but almost all recognised the need to make changes. In some instances, updating and/or changing content were identified with a view to making a course more contextually relevant. Given this, the issue of contextual relevance could provide a way to approach and encourage use and adaptation of OER. In some instances, completely changing activities and assignments was deemed to be important, which indicates some academics' willingness to redesign and iterate. Encouraging in this regard was an openness to working collaboratively. Some tensions were identified though, especially relating to varying pedagogical orientations and skills hampering collaboration. Thus, this might an area that should be incorporated into PD offerings, especially regarding in terms of what the use/reuse of OER and/or open pedagogies might mean for learning design.

Lessons from the Pilot Activities

Several lessons have been gleaned from these pilot activities, which are summarized below.

Unsurprisingly, academics tend to value research over teaching. It may therefore be worthwhile for *OER Africa* CPD efforts to focus on developing research capacities as a preliminary move when engaging with universities as a precursor to CPD in teaching and learning. Capacity needs identified relate to 'packaging' and disseminating research outputs for different audiences (and not just via journals/academic publishers). Our work also identified a need to develop capacity around managing and archiving research products on institutional websites and repositories, including considerations around formats and licensing of research outputs.

A significant lesson learned is that contextual relevance (fitness for purpose) is key if OER are to have any benefit as a CPD tool. For example, in one of our pilots we found that contract lecturers did not know whether their contracts would be renewed and were therefore not prepared to invest much time in OER/content creation. Also, it is necessary to understand where participants are located (if in disparate places) as, in one instance, staff were in different locations across the country and it was expensive to bring them together for face-to-face interventions.

Related to the importance of understanding contexts is the need to understand participants' existing knowledge and skills. We found that participants who struggle with using technology are unable to

focus on the subject matter and purpose of the course. So, for example, in the 'Working with OER' online course, we found that participants were not sufficiently conversant with online learning. Thus, some prior knowledge of online learning should be a requirement for that programme. Such expectations should be clearly communicated and managed prior to the CPD training. *OER Africa* has also identified several options to address this, for example, working on shorter introductory modules independently prior to CPD workshops to ensure that all participants are ready to proceed at the same pace during training.

In planning CPD activities, it is also important to understand whether participation in CPD activities is compulsory or optional. We found that requiring staff to participate is not ideal. Rather, finding ways to make participants take ownership of their own CPD should be explored. Further, we found that committed leadership is vital to encourage faculty to engage in CPD activities and to use OER.

With regards to content, our work indicates that investing in carefully selected in-depth activities might be better than a wide breadth of topic areas. We found that when there are too many activities, investment in CPD becomes too time-intensive and participants may disengage/drop out.

Regarding facilitation of CPD workshops, we found that open approaches and flexible facilitation are just as important as careful planning/quality checks. Further, follow up activities and support is required after CPD efforts to engage with new principles to implement what they have learnt.

The results of the various CPD activities show potential to be more widely shared. For example, at OUT, the collated Moodle help files can be promoted internally within the university and the collection can be shared with other *OER Africa* partner institutions who use Moodle.

Through the workshop engagement and subsequent development of online learning pathways we undertook with TVET College lecturers, we learned critical lessons that also respond to some of the issues encountered through our other pilot activities:
- Workshops can provide a useful forum to pilot CPD approaches that can then be codified into online tutorials afterwards. This is important because much of the CPD work we have done in other pilots will be difficult to replicate or scale without significant expenditure, which is beyond the reach of most African universities.
- If CPD approaches that have proven successful in workshop or course delivery can be converted into standalone, online activities of relatively short duration, there is significant potential for them to be accessed and used on a very large scale at very low cost. Already, resources developed with TVET College lecturers have been shared to all AAU and AfLIA members, as well as across the entire TVET College sector in South Africa.
- Design of granular CPD activities, in which each has a clearly defined purpose and provides immediate benefit to those who complete, offers potential for more immediate take-up and implementation of skills than very long CPD activities.

An Emerging CPD Framework for Effective OER Practices

Drawing from the above research and our Pedagogical Improvement framework, OER Africa has identified a series of CPD learning pathways that – taken together – provide the beginnings of a CPD Framework for effective OER practices. The Framework is made up of six learning pathways on educational issues, two focused on research that seek to connect research with teaching and learning, and one on knowledge management. They are as follows:
1) Implementing open learning;
2) Open content and learning design;

3) Finding open content;
4) Adapting open content;
5) Blended learning and open content;
6) Online facilitation;
7) Releasing research as OER;
8) Publishing using Open Access;
9) Creating an institutional knowledge management system.

Taken together, these learning pathways are intended to develop effective OER practices. The guiding principle in designing them was that they need to include short, sharp, focused tutorials or interventions designed to appeal to people who do not have lots of time but do require the practical skills associated with each tutorial. Both the learning pathways and short tutorials need to stand alone as there may be no possibility of facilitation. Consequently, the short tutorials should be as interactive as possible, light on text, use video, animations, and machine-generated feedback where possible.

Each learning pathway is unpacked into multiple tutorials below (to date, only the Learning Pathway on 'Finding Open Content' has been developed):

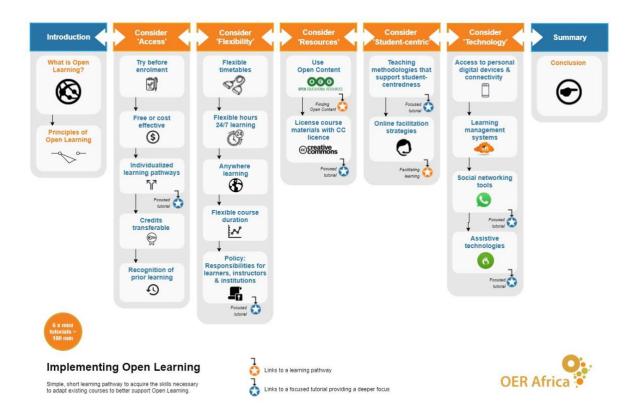*Figure 1   Learning Pathway on 'Implementing Open Learning'*

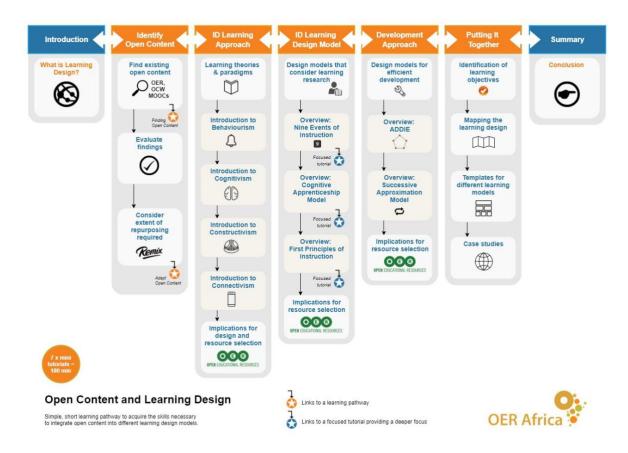*Figure 2   Learning Pathway on 'Open Content and Learning Design'*

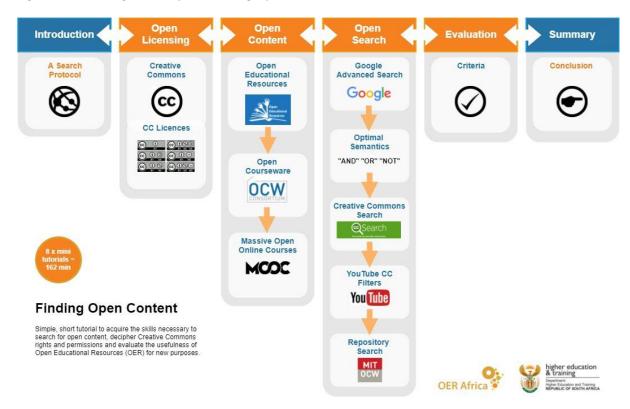*Figure 3   Learning Pathway on 'Finding Open Content'*

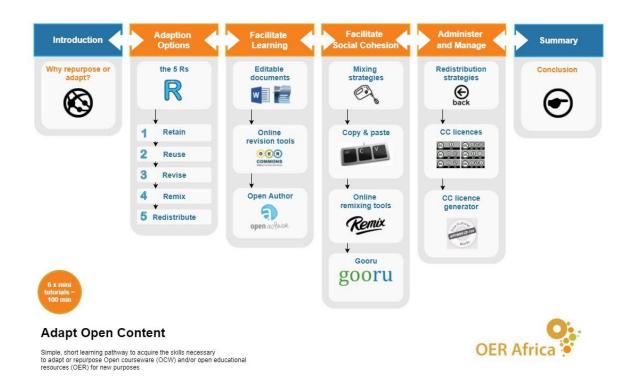*Figure 4   Learning Pathway on 'Adapting Open Content'*

Adapt Open Content

Simple, short learning pathway to acquire the skills necessary
to adapt or repurpose Open courseware (OCW) and/or open educational
resources (OER) for new purposes

Figure 5   Learning Pathway on 'Blended Learning and Open Content'

Blended Learning and Open Content

Simple, short learning pathway to acquire the skills necessary
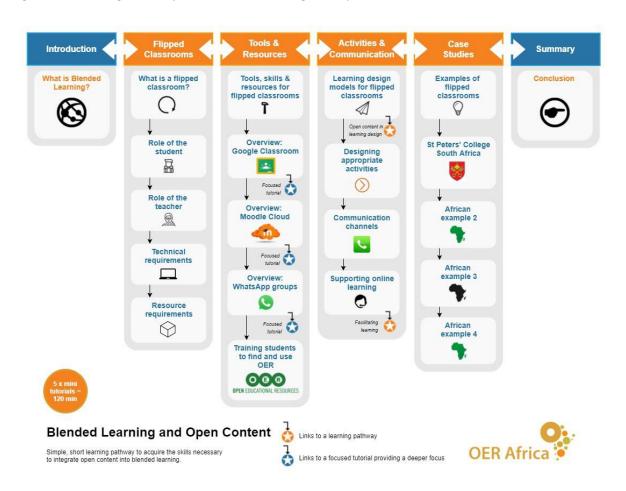to integrate open content into blended learning.

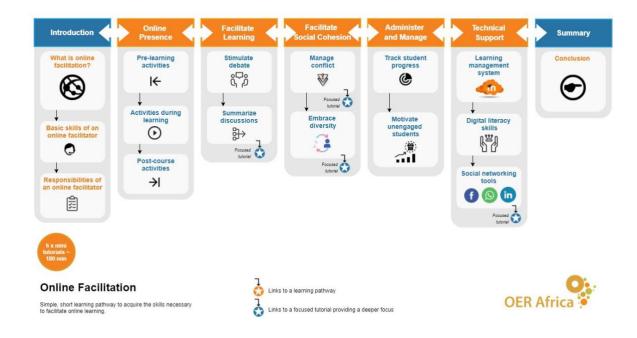*Figure 6   Learning Pathway on 'Online facilitation'*

Figure 7   Learning Pathway on 'Releasing research as OER'
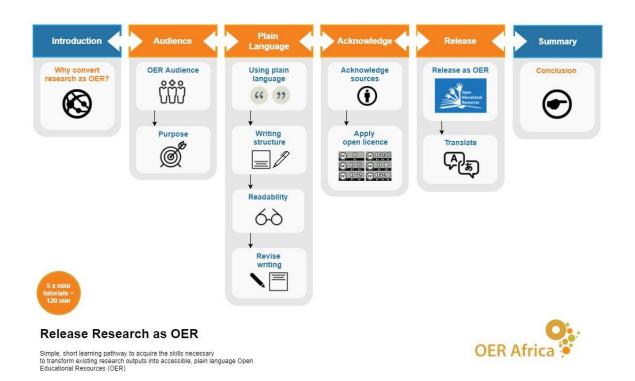
Figure 8   Learning Pathway on 'Publishing Using Open Access (OA)'
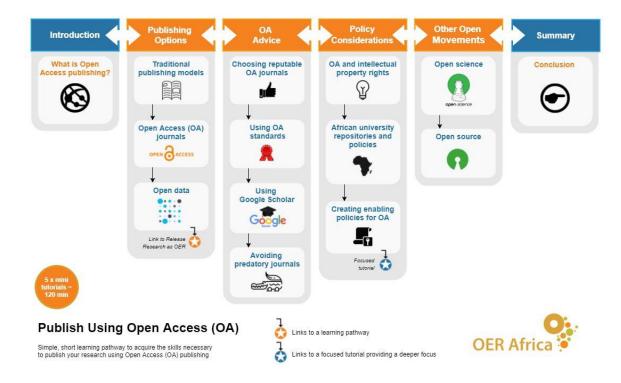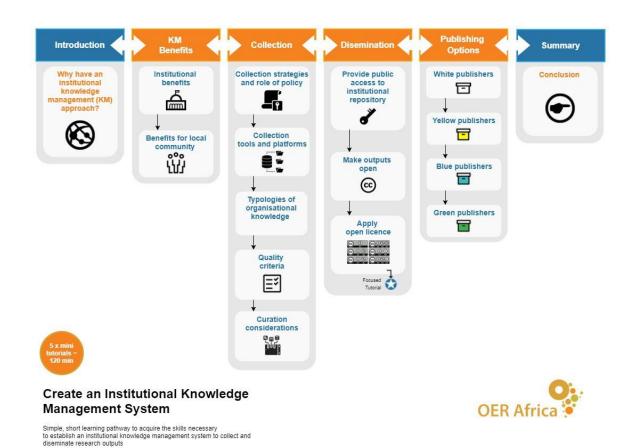

Figure 9   Learning Pathway on 'Creating an Institutional Knowledge Management System'

Conclusion

Our research has confirmed that there is an urgent need to focus on CPD for academics if one is interested in developing effective OER practices in African higher education. In summary, it has identified the following important issues that will guide our further work in *OER Africa*:

- Effective OER practices depend heavily on African academics having a strong prior grasp of good teaching and learning practices; our experience is that many lack this foundational knowledge.
- Very little research has been done on CPD needs amongst African academics, though the research that does exist indicates clearly that this foundational knowledge requires development.
- From research, it appears that greater emphasis in CPD is placed on research than on teaching and learning. Further, most CPD practices tend to take the form either of formal programmes or face-to-face workshops, which are often expensive to implement and difficult to scale cost effectively.
- From our pilot activities, it appears that there is a potentially significant role for other forms of CPD that can supplement these traditional, more expensive forms of CPD very cheaply.
- It is possible to identify a range of 'learning pathways' comprising sets of stand-alone activities or 'tutorial's that can form a CPD framework to develop effective OER practices, thereby contributing to resolving the problems identified above.

Given this, we believe that there is merit in investing in developing the above set of learning pathways to provide access to high-quality, tested, and scalable CPD 'tutorials' on effective OER practices. These could be of intrinsic interest to academics and their leadership because they: can be completed relatively quickly without incurring travel costs and without requiring time away from the classroom; each should deliver clear and practical benefits that can be immediately applied in ways that will improve the professional work of the participating academics and/or save them time; and can be combined in pathways that build towards deeper levels of knowledge.

However, sustained growth of effective OER practices in resource-scarce environments also requires institutional policies that provide academics time and incentives to invest in developing their pedagogical capacity, including underlying cognitive skills and competences, accompanied by strategies to elevate the importance of implementing these policies. For such policies to be effective, professional development cannot simply be treated as an individual responsibility; it requires dedicated institutional support capacity. To improve their educational practices, institutions need to provide some form of regular support from dedicated personnel and/or units whose role is to work alongside academics.

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Appendix One: OER Africa Pilot CPD Activities

Ethiopia: Professional development at Haramaya and Dire Dawa Universities

Overview/Scope

Funded by the Gates Foundation, the AgShare project started in 2010 in identified universities in Ethiopia and Uganda. The aim of the project was to embed an innovative agricultural education practice known as the AgShare method in these universities. The AgShare method aimed to improve agricultural production by integrating the outputs of postgraduate research on local agricultural practices into the curriculum and feed the research back to the farming communities and other members of the agricultural value chain. Thus, in addition to improving agricultural production by small-scale farmers, the method helped bridge the gap between theory and practice. Knowledge and resources generated through postgraduate research could also then be widely disseminated using open licensing for use by other agricultural faculties in East Africa. This project ran until 2015.

While some postgraduate students produced theses that were disseminated through conference presentations and published as journal articles, their research was not easily consumable by ordinary small-scale local farmers. One key component of AgShare was that the results of research should be fed back to farming communities in order to enhance agricultural productivity. The CPD intervention at Haramaya and Dire Dawa Universities used the AgShare Method to create a way for academic staff and graduate students to convert their research outputs into OER, which are accessible to non-specialists. This involves the following processes:
- Identifying the target audience and purpose;
- Writing in plain language that is readable;
- Translating into appropriate local languages
- Acknowledging sources and applying an open licence; and
- Releasing the resource as an OER in PDF or an appropriate similar format.

Implementation

The first contact session covered an introduction to the intervention with academic staff and postgraduate students, twelve at Haramaya and 20 at Dire Dawa. At Haramaya these stakeholders were based at the Faculty of Agriculture (given *Saide's* previous contact and engagement with the university), whilst, at Dire Dawa, a cross section of academics from various faculties participated in the intervention.

An *OER Africa* staff member travelled to Dire Dawa in February 2018 with the intention of conducting training. Unfortunately, this coincided with a four-day strike in the area and thus the staff member was unable to visit the university to conduct any workshops. The subsequent visit in August 2018 suffered from an Internet blackout due to unrest in a neighbouring province. Given the bandwidth difficulties experienced at the universities, *OER Africa* is investigating running the intervention in digital format, both online and offline. The intention is that the intervention can be presented as an online, standalone tutorial, which could be scaled up beyond the two universities to a much larger audience of researchers.

Given the bandwidth limitations as well as logistical and communication difficulties, the intervention was thus constrained to one contact session and would need to be further developed during 2019. The University President at Dire Dawa has twice enquired when further interaction with OER Africa can commence.

Lessons learned

Although the focus of the *OER Africa C*PD grant is professional development of academics for teaching and learning, our work indicates that many academics value research over teaching. The inclusion of research-related interventions within the OER Africa suite of CPD activities would seem to be a politic move when engaging with any of the universities that we propose to work with in the future. Haramaya University has used the concept of 'policy briefs' which emanate from their research. The university also appears open to the idea of further developing the research of their postgraduate students as OER for multiple audiences.

Ethiopia: Professional development at Mekelle University

Overview/Scope

The College of Dryland Agriculture and Natural Resources (CDANR) at Mekelle University generated several research outputs over 25 years of conducting action research involving local communities. Outputs of this research risk being lost as individuals keep these resources on computers in their departments and they are not easily accessible, particularly outside the relevant departments, let alone outside the university. The university also has no system of collecting research that is conducted by postgraduate students and staff. Students submit hard copies of their theses to their supervisors; these are usually not accessible by others aside from the supervisor and a few others in the same department. There is no requirement for students to submit electronic copies to the library, and thus knowledge generated through research usually sits with supervisors.

During *OER Africa's* several interactions with CDANR, including a two-day workshop in February 2018, the focus of the CPD activity was decided: The aim of the pilot was to facilitate effective sharing of research outputs as OER within the CDANR. It was envisaged that ultimately, this would end up as a university-wide initiative. The pilot involved the College of Agriculture collecting all past research reports that are sitting with supervisors and putting them on a common portal.

Implementation

The CPD pilot involved identifying and collecting research outputs from all departments and individuals in the College. *OER Africa* recommended that the College should consider outputs produced over the past two years, but the College ended up selecting research papers that were produced earlier than that because they considered them to be high-quality products. The Dean established a small committee to coordinate the process and used criteria that *OER Africa* developed to select outputs to upload to a portal developed specifically for this purpose.[89] By November 2018, the website contained research papers, technical reports, newsletters, theses, and posters. Specific skills that were promoted through this intervention were:
- Developing an appropriate website;
- Evaluating research outputs to select the most appropriate ones to share;
- Uploading the different types of outputs using the correct taxonomy;
- Managing the website as outputs are continually added; and
- Developing an understanding of the different types of Creative Commons licenses with a view to encourage the College to license the uploaded products appropriately.

Although the website currently holds agriculture research outputs only, the idea is to develop a culture where all research outputs in the university will be uploaded on the website. Thus, greater capacity and skills will need to be developed for selecting, uploading and managing the site.

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[89] See Mekelle University. (2018). AgShare Project. Available from http://www.mit.edu.et/agshare/.

At the November 2018 workshop attended by 14 academics from the CDANR (including the Dean), some academics reported that they had developed teaching and learning resources that they were keen to share as OER. Since the last workshop engagement with the College in November 2018, a taxonomy has since been developed and used to organize uploaded products, comprising primarily research documents. To date, no multi-media resources are uploaded on the site, although the College has videos and photographs from research by academics and postgraduate students which are also worth sharing on the website.

Lessons learned

As is the case in Haramaya and Dire Dawa, most academics appear to be preoccupied with research outputs that are disseminated only through conventional journals. In the process, they forget the benefits that research results have on local communities where that research is conducted. There is need to support academics on how research outputs should be packaged for different types of audience, including ordinary community farmers.

Not many academics at Mekelle University are aware of the different self-archiving rules different journals place on publications, and this knowledge is important for academics to know if they are to manage a system of archiving research products on an institutional website. Further, whilst groundwork has been laid for collating and sharing research results, these resources have not been licensed as planned at the beginning of the intervention. Additionally, whilst there is buy-in for releasing research outputs as OER at Mekelle University, no serious consideration is made of the formats in which the outputs are released and shared with other users.

Tanzania: Open University of Tanzania (OUT) – incorporating Dar es Salaam University College of Education (DUCE)

Overview/Scope

OER Africa, which has worked with OUT since 2009, liaises with the OUT OER Team and the OUT Ed Tech Unit of the Institute for Educational and Management Technologies (IEMT). During its 2014-17 Hewlett grant, *OER Africa* collaborated with OUT to develop a suite of courses on Digital Fluency-DF. The notion of 'fluency' (rather than literacy) promotes a state in which pedagogical purpose takes centre stage and digital online technologies are used as tools for educators. The five modules of the Digital Fluency course are:
- Digital Fundamentals;[90]
- Working with OER;
- Design and Development of Online Courses;
- Academic Integrity in a Digital Age; and
- Storage and Access of Digital Resources.

The *Saide* 'Facilitating Online Learning' online course was then run in late 2017 as a sixth module to complete the Digital Fluency suite.

The process of identifying CPD needs began in Oct 2017 when 79 Tanzanian university staff responded to the OER Africa online survey on Professional Development needs. This was followed by small focus group discussions in December 2017. The CPD needs were then prioritized in collaboration with the OUT OER Team & IEMT. Three CPD interventions were identified, to leverage off existing OER already produced by OUT:

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[90] See Open University of Tanzania (2016). Digital Fluency Course: Module 1 – Digital Fundamentals. Available from https://tinyurl.com/yxqcetxw

- Developing an Activity Design 'Sharable Content Object Reference Model' (SCORM) package (activity extracted from DF Module Three and developed by the Ed Tech interns supported by OUT and *OER Africa*)
- Further Dissemination of the 'Working with OER' DF Module Two online course (provided by OUT with Dar es Salaam University College of Education (DUCE) participants); and
- Collect and Collate Moodle help files at OUT (general online Moodle T&L support collated by OUT Ed Tech staff).

The 'Design an Activity or Assignment for provision in your Online or Blended course' SCORM package can be embedded in a Learning Management System (LMS) or run from a web site (both avoiding Mac incompatibility). It can also be downloaded (zipped) and run on a user's own Android or Windows device. The Activity Design process takes place in three Phases: Preparation, Activity, and Feedback. Each phase in the process provides a series of questions to which the users should respond, as well as links to relevant resources to aid the user in developing their responses. At the end of each phase, users can check and revise their responses. The takeaway for the user is an email containing their fully designed activity in digital form ready to be implemented in a course (on- or offline).

The 'Working with OER' online course run for DUCE participants was a revised instance of the DF Module Two developed by OUT during the previous grant period. Four topics were covered over four weeks: OER Concepts, Creative Commons Licencing, Mixing, Adapting & Reusing OER, OER Production. The module was provided online by OUT to +-30 DUCE academic staff, with 3 facilitators. Participants were expected to spend at least six hours per week engaging with the module, which was designed for independent study. Facilitators were deemed necessary for this instance, as DUCE staff (a contact institution) are not accustomed to online/distance learning.

The effort to collect and collate Moodle help files at OUT remains ongoing. Many videos and several guides are now available on the OUT eLMS. The instructor and student Moodle guides were developed internally at OUT and other external Moodle tutorial resources were also made easily available. These resources could potentially reach all Moodle users (staff and students) at OUT, as well as any other universities that use Moodle.

Implementation

The 'Design your Activity or Assignment' intervention is aimed at academic staff. A pilot was run at OUT in January 2019, with approximately 25 participants. An additional pilot was held at DUCE, the same month, with nine participants. This exercise was later run at the National Open University of Nigeria (NOUN) in February 2019, with around 55 participants. (See section below on NOUN CPD interventions).

The intervention was evaluated immediately after each cohort undertook the exercise. An online survey was conducted and completed by 25 Tanzanian respondents (OUT 21; DUCE 4). Key strengths were that the topic is highly relevant, the guidance was sufficient to undertake the exercise independently (without facilitation), the time allocated was sufficient (2-4 hrs), and there was positive feedback regarding possible sharing of participants own CPD activities as well as a good reception to the variety of CPD provision methods suggested. The package allowed data entered to be retained if the exercise was interrupted or cleared if the user wanted to start a new activity design.[91]

The 'Working with OER' online course was run in early 2018 for DUCE participants. Unfortunately, only four participants completed the course. Participants struggled with the fully online mode of provision

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[91] Note: OUT tested the intervention from within Moodle and DUCE users engaged as standalone from laptops.

and with competing priorities for their time. The course was rebooted with additional face-to-face support in the form of Learning Circles[92] because online participation was not satisfactory. Although initially greeted with enthusiasm, engagement was not sustained. Issues included poor internet connectivity, time pressures, commitment to the sustained four-week engagement, and poor motivation to complete the course.

The Moodle help files tutorials and videos are available to all academics and students at OUT from the home page of the OUT Moodle eLMS. (approximately 45,000 students). However, there are no statistics at this point on how often they are viewed and/or downloaded. The OUT in-house instructor and student guides were not provided in a format suitable for review by *OER Africa*.

The Digital Fluency Course has been submitted by OUT for consideration by the Commonwealth of Learning (COL) in their Excellence in Distance in Education Awards (EDEA)[93] to be announced at PCF9 in Edinburgh in September 2019.

Further dissemination of the Digital Fluency Course has taken place in the form of 2 pre-conference workshops during this grant period with all participating institutions invited to download, adapt, and make use of the CC BY modules:
- Mallinson, B.J. and Mbogela, S. (2018). "Exploring the Digital Fluency Course for Academic Staff Professional Development". Conference workshop at e/merge Africa online conference, July 2018, CILT (UCT), South Africa.
- Mallinson, B.J. (2018). "Professional Development in a Digital Age: Exploring Aspects of Digital Fluency for Blended Teaching and Learning". Invited Keynote pre-conference workshop at NWU Teaching and Learning Conference, May 2018, Potchefstroom, South Africa.

Lessons Learned

The collated Moodle help files should be promoted internally at OUT, and statistics kept re their use. The collection could also be shared with other *OER Africa* partner institutions who use Moodle.

In the 'Design an Activity or Assignment' intervention, comprehensive storyboarding was key to successful multimedia development. Users were able to engage with the exercise independently without facilitation, and time taken to complete the exercise was within the 2-3 hours range. Parts of this process could again be broken down into stand-alone CPD exercises to dive deeper into some aspects of activity design. The development process and format can be reused to produce other such short learning activities for CPD by the OUT team and other partners. Reach into other Tanzanian institutions has already been discussed with the Tanzania Research and Education Network (TERNET)[94] - a network of Tanzania higher education and research institutions aiming at providing network infrastructure and associated services for enabling sharing of education and research resources inside and outside the country - who could provide national reach, as well as regional reach via UbuntuNet [95]-the regional backbone network that interconnects National Research and Education Networks (NRENs) and connect them to other regional networks.

OER Africa has identified several options to address some of the challenges outlined above. For example, it could provide the DF Mod 2 Working with OER activities in smaller chunks, or it could provide all the Digital Fluency online courses as unfacilitated, independent learning courses, available without time restrictions. Facilitation is expensive, may restrict participation numbers, and requires

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[92] Learning circles is an interactive, participatory structure for organizing group work. The goal is to build, share, and express knowledge though a process of open dialogue and deep reflection around issues or problems with a focus on a shared outcome.

[93] www.col.org/edea

[94] https://www.ternet.or.tz/

[95] https://ubuntunet.net/

that all participants are ready to proceed together. DUCE expressed interest in starting an 'OER Club' and suggested the possibility of integrating OER into the teacher curriculum.

Nigeria: National Open University of Nigeria (NOUN)

Overview/Scope

OER Africa has had a working relationship with NOUN since 2010. The process of identifying CPD needs at NOUN began in July/August 2018 when 72 NOUN staff responded to the OER Africa online survey on CPD needs. Following this, in August 2018, focus group discussions were conducted, during which CPD needs were prioritised in collaboration with the Regional Training and Research Institute for Open and Distance Learning Team (RETRIDOL), NOUN's OER Unit, and Department: Learning Content Management Systems (DLCMS). Given that this engagement started late in the grant period, it was decided to leverage primarily from existing PD interventions, which addressed the identified CPD needs and to develop one new Moodle-orientated intervention. Thus, the CPD interventions identified for action in Feb 2019 during a three-day gathering included:

- Using Moodle: Theoretical & Practical exercises
- Learning Design: Design an Activity & Create your Storyboard (Extracted from OUT DF Mod 3); and
- Understanding OER & Finding Open Content.

Implementation

A three-day CPD intervention was conducted with approximately 55 NOUN academic staff, some of whom had travelled to Abuja from other campuses within Nigeria. Each day addressed a specific theme to provide some coherence to the overall intentions. Participants brought their own laptops to work on within the large council chamber; support was provided by RETRIDOL, DLCMS, OER UNIT, and IT. Special Wi-Fi was set up for use during the three days in order to facilitate better internet access and stability.

In total, 34 of the 55 NOUN participants, completed a pilot evaluation survey that covered all the CPD interventions. It was noted that the participants had very limited prior experience in using Moodle. Internet was slow and unstable, with much frustration being experienced by participants as they engaged with the exercises during the three days. Key strengths were that topics were highly relevant, the online guidance was 'mostly sufficient' to undertake independently (without facilitation), time allocated was 'mostly sufficient' (2-4 hrs), and positive feedback was recorded regarding sharing participants own CPD activities and the variety of CPD provision methods suggested. Thus far, the OUT DF modules have been uploaded on the NOUN Moodle site and made available for their professional development activities.

Lessons learned

With the eight NOUN faculties distributed over three Nigerian cities,[96] it is expensive to bring staff together for face-to-face interventions which has historically been the preferred mode of CPD. The *OER Africa* facilitator questioned this in a large group discussion in August 2018, pointing out that the lecturers expected their students to study at a distance, yet they preferred to engage with their CPD face-to-face. One concern at NOUN is the internal collaboration of CPD stakeholders who need to work together in the interests of a successful CPD programme for academic staff going forward. The OER Unit was moved from the Academic Planning directorate to the Library Directorate in February 2019, and there remains some internal discussion around alignment of the stakeholders.

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[96] The move of NOUN from Lagos to Abuja has been distributed over several years due to the associated costs.

NOUN has the potential to contribute CPD OER in the area of assessment. Certain staff expressed an interest in developing something similar to the OUT SCORM activity for CPD around assessment, which is an area of strength at the university - all of their formative assessments are conducted online using Moodle. The NOUN student assessments have been online in Moodle for years although they are only just starting the actual teaching on Moodle.

South Africa: Professional development at Vaal University of Technology - Facilitating Online Learning course (FOLC)

Overview/Scope

An initiative at the Vaal University of Technology (VUT) involved hosting workshops for blended learning and to facilitate an online learning facilitation course, the Facilitating Online Learning course (FOLC). This course was derived from two existing courses: *Saide's* 'Supporting Online Learners' course; and the Centre for Education Technology (CET) at the University of Cape Town (UCT) online course 'Facilitating Online'. In 2014 *Saide* worked on designing, developing and implementing a remixed OER course that would provide essential elements of each of the original resources and run online over three weeks. The aim was to achieve an appropriate balance of the elements and to shorten and tailor the remixed course without losing the intrinsic value of either original resource.

The first version of the *Saide* course was a three-week course, excluding 'start up' time (three days during week 0), a 'break week for those needing to catch up, and three days wrap-up at the end. In 2015 it was extended to a four-week course, with further revisions made to it in 2016, 2017, and again in 2018.

Implementation

For the VUT context, FOLC was conceptualized as a train-the-trainer course, which started in Dec 2017 and ended at the end of February, 2018. The purpose of the course was to initiate or extend staff members' online facilitation knowledge, skills, and responsiveness to online facilitation. The VUT Centre for Academic Development was responsible for inviting staff to participate, while *Saide* was responsible for facilitation and an *OER Africa* team member was appointed as a researcher. Surveys (a pre-course and a post-course survey) were administered and completed by participants. The survey data were supplemented with facilitator reflection notes. An external organization assisted *Saide* to migrate the course into Blackboard/VUTela; *Saide* then customized the course to meet VUT's needs. Eighteen students were given access to the course by VUTs system administrator. Twelve participants logged in initially and completed the first introductory activity, while only five remained active and completed the entire course. Those who completed it found some value in the course and there was evidence of an emerging community of practice.

In a course survey (13 responses), most participants cited time constraints, workload (or both) as reasons for drop-out. Only half of the participants had ever participated in an online course as a facilitator. The FOLC was conceptualized to assist with online facilitation. It was not meant for learning design and/or creating content, yet several of the participants had enrolled expecting to learn about course design. The activities that participants engaged in helped with course design but were not sufficiently in-depth (or intended) to fully develop these skills. Facilitator reflections focused on technical issues, design issues and constrained participant engagement. Some examples of technical issues include email client problems, multiple login credentials which resulted in some participants logging in with incorrect login details, and migration from Moodle to Blackboard. Design issues included layout and navigation problems, clunky design, text-heaviness, announcements page as entry point, too many weekly activities, and confusing instructions. Participant engagement in the course was heavily hampered by poor timing issues, enforced participation by management, their status as

independent contractors with related appointment issues, workload, and technical constraints. In retrospect, the facilitators should have reflected on the fact that participants didn't understand the purpose of the course for which they registered. Nevertheless, the five participants who completed the course, found the activities to stimulate much debate, reflection and new ways of thinking about online facilitation. Two quotes from participants are:

> *This course has opened my eyes to the endless ways I can improve my students VUTela experience. I am thankful for my own experience..."*

> *Participating in this online course was a total different way of 'attending' an [online] workshop. It however was a purposeful and good fit of participating as I experienced a hands-on way of learning and thinking differently about how learning take place in an online environment.*

Lessons learned

From the survey responses and facilitator reflections, the following lessons were learned:

- The design of the course was not fit enough for purpose. Such contextual relevance is key if OER are to have any benefit as a CPD tool. Contract lecturers do not always know if their contracts will be renewed and they are therefore not prepared to invest much time in OER/content creation.
- Obliging staff to participate is not ideal, and the invitations to staff were not sufficiently specific for staff to know what they were registering for. Rather, finding ways to make participants take ownership of their own CPD needs to be explored.
- With reference to the inclusion of activities, depth is more important than breadth. If there are too many activities, investment in CPD becomes too time-intensive and participants may disengage/drop out.
- Those who struggled with the technology are unable to focus on the subject matter and purpose of the course. A requirement should be that participants be familiar with the 'how to' of VUTela.
- Open approaches and flexible facilitation are just as important as careful planning/quality checks
- OER redesign/redevelopment is more cost effective than creating material/courses from scratch.
- It is important that participants have some experience of online teaching and learning and of using a learning management system prior to embarking on the course. This is crucial for a 'train the trainers' type course.

South Africa: TVET College System Open Learning Workshops

Implementation

As part of a separate contract with the European Union, Neil Butcher was engaged by the Department of Higher Education and Training (DHET) to deliver three workshops on open learning to Technical and Vocational Education and Training (TVET) College lecturers in each of South Africa's nine provinces. This extended engagement with over 250 lecturers across six days spread over the course of a year provided an excellent opportunity to learn more about TVET CPD needs and model new approaches to meeting those needs with very simple, granular CPD activities that respond to the immediate instructional challenges they face. In light of this, *OER Africa* provided additional support of three kinds to the workshop process:

1) It invested in development of online versions of some of the activities identified through evaluation forms as being of greatest relevance by the workshop participants;
2) It supported development of an institutional policy guide on open learning for TVET Colleges (see Appendix Two);
3) It is supporting an in-depth analysis of national policy constraints to open learning that will be delivered to DHET when it is concluded (expected by June, 2019).

When speaking to workshop participants, it was clear that most of them immediately grasped the great potential of OER and open content formats such as Open Courseware and Massive Open Online Courses. However, many indicated that searching for open content was just too time consuming or else they did not know how to go about constructing effective searches. One said that the amount of time it took to find OER was exorbitant and she could author her own materials in the same time. The facilitator of these workshops realized that an effective search strategy, or protocol, and a set of specific search skills were missing from nearly all educators' skill sets. The workshop experimented with different approaches to solving the problem. In so doing, the facilitator devised a simple strategy and identified a specific set of skills. Feedback on this activity, collected through workshop evaluation forms, was universally positive across the nine workshops in which the activities were run, with strong indications given that participants were already using the skills they had learned to implement searches of many different kinds.

Flowing from this iterative development process, the *Finding Open Content* tutorial was developed as a collaboration between DHET and OER Africa. It can be accessed directly at https://www.oerafrica.org/book/welcome There is no requirement to log in or register, simply click on the link. There are videos and interactive elements so an Internet connection is required. The tutorial is made up of 9 segments of about 10-12 minutes each and covers:
• A search strategy for open content
• What is Open Licensing?
• What is Open Content?
• How to search for open content using Google
• How to conduct more effective online searches
• How to search for open content using Creative Commons search
• How to search for open content in YouTube
• How to search for content in open repositories
• How to evaluate open content

It is hoped that the tutorial will provide skills to locate and evaluate the usefulness of open content quickly and efficiently. This will allow educators additional time to design and supporting learning. The resources have been widely shared and piloted at the Vaal University of Technology (See next activity).

Lessons Learned

Key lessons learnt from this experience were:
• Workshops can provide a useful forum to pilot CPD approaches that can then subsequently be codified into online tutorials.
• If CPD approaches that have proven successful in workshop delivery can be converted into standalone, online activities of relatively short duration, there is significant potential for them to be accessed and used on a very large scale at very low cost. Already, these resources have been shared to all AAU and AfLIA members, as well as across the entire TVET College sector in South Africa.
• Design of granular CPD activities, in which each has a clearly defined purpose and provides immediate benefit to those who complete, offers potential for more immediate take-up and implementation of skills than very long CPD activities (supported by piloting process outlined in the following activity).

South Africa: Professional Development at Vaal University of Technology - Finding Open Content

Implementation

OER Africa conducted a workshop with approximately 20 VUT staff using the Finding Open Content (FOC) Tutorial. Most participants were library staff, with additional participation from four academic staff from Health Sciences, Chemistry, Hospitality, and Mechanical Engineering. Throughout the day, the participants worked through the tutorial, with assistance from the facilitators.

Lessons learned

A survey was conducted at the end of the training, which was completed by eight participants. Generally, participants found all the sub-sections relevant for their purposes. Everyone reported that the section on *Open Content was* very pertinent, as was the section on *Open Licensing*. Most participants reported that all the sub-sections were either relevant or very relevant. Only one participant found the section on *How to Conduct More Effective Online Searches* not relevant. No respondent considered any of the tutorial sub-topics completely irrelevant. This shows that the resource was regarded as useful for the VUT participants.

In terms of the skills that were targeted by the different sub-sections, most participants indicated that they either already had the skill or knowledge that is imparted through the various sections or were partially skilled or knowledgeable in the same areas. This is not surprising especially, given that most participants were librarians; their motivation for participating was likely to add to their current knowledge. The overwhelming majority of participants felt that the time allocated for each of the sub-sections of the tutorial was just about right. Only one participant felt that time allocated for the *Open Content* section was insufficient; another felt the same about the sub-section on *Open Licensing*.

In terms of ease of use, six of the participants found the *Google Advanced Search* and two found the *Creative Commons Search* tools the easiest to use. None of the respondents indicated that the remaining three (You Tube, search in open repositories and online search) search tools were easy for them to use. These findings suggest that these aspects of the tutorial may need to be revised.

Respondents found two main sub-sections most useful/illuminating (as opposed to ease of use): *How to Search for Open Content using Google* and *How to Search for Open Content using Creative Commons*. Participants were also asked to indicate the frustrations they faced as they went through the tutorial. The following aspects were highlighted:
- Some OER repositories require registration for access.
- Headphones were not provided, so participants were unable to listen to the YouTube videos; and
- The internet connection was slow.

Finally, participants had an opportunity to suggest how the tutorial might be improved. The following suggestions were made:
- Add Google scholar searches.
- Provide links to research databases.

Other points noted by the facilitators were related to the content of the tutorials, ensuring that there is a clear introduction to the tutorial, explaining that it is self- study, providing clearer instructions and relevant contextual terminology, ensuring that spelling and grammar is correct, and providing better explanations of the CC license options.

South Africa: University of the Free State (UFS) -Supporting UFS Librarians maintain the Institutional Open Repository

Overview/Scope

The University of the Free State (UFS) has worked with *OER Africa* to mainstream open education initiatives. This includes developing a Learning Management System that offers free and open courses and developing an OER repository of teaching and learning materials.

Implementation

OER Africa facilitated a one-day training to capacitate 14 UFS Library personnel to search for and identify open resources; appreciate the parameters of Creative Commons Licenses and upload useful open resources, both internal and external to UFS, into the institutional open repository.

Lessons learned

The librarians were very appreciative of the training and were willing participants. They also immediately understood the value proposition of open content and how this aligned to their mandate as librarians. One concern expressed by library management, however, was the amount of extra work necessary to maintain an open repository.

South Africa: University of the Free State (UFS) -UFS Centre for Teaching and Learning (CTL) Professional Development Framework Workshop

Overview/Scope

The Vice-Chancellor at UFS tasked the Centre for Teaching and Learning (CTL) to upskill academics to begin to integrate elements of open learning and teaching into their courses. CTL was also required to encourage academics to embrace the use of technology in their course designs.

Implementation

OER Africa facilitated a one-day workshop with UFS CTL. The workshop was designed to elicit a framework for the development of a UFS academic CPD course aimed at providing skills and knowledge to revise academic courses to support a blended learning methodology. The workshop achieved the following:
- Defining the outcome of the UFS CTL CPD course being developed, viz: "Participants in the training are able to design, develop and deploy blended learning courses."
- Design principles were agreed upon:
  - The course should be **modular** in design. Course components should be designed to be re-used in different configurations. Adopting this approach will allow, in time, various learning pathways (study options) can be developed using the same materials.
  - Learning interventions need to be **short and concise**. To appeal to busy academics, the study interventions need to be easily 'digestible' and support 'just in time' learning. Theory should only be inserted if it directly supports the acquisition of a skill.
  - The course should not be too text dense and **media**, such as video, should be used to offer alternative ways to access information.
  - Where possible existing CTL materials should be enhanced and adapted to work within the new course. Also, Open Educational Resources should be used where the materials are appropriate.
  - The design of the materials and the course environment needs to be **attractive**. Course components should be professionally made to encourage user engagement.

- Course activities and the products of these activities should be linked to a participant's UFS **Teaching and Learning Portfolio** as evidence to support promotion prospects.
  - **Universal Design for Learning** principles should be implicit in the course's design and development.
- A detailed course structure was also negotiated with the CTL team using the ADDIE[97] instructional design model as an organizing framework. Unfortunately, though, this was never developed due to competing priorities within CTL.

Lessons Learned

The training was too focused on developing a CPD course. A course design was developed, but never implemented nor adopted. It appears in retrospect that the true intention of CTL management was to allow CTL staff an opportunity to engage with new principles that they themselves would need to champion in the development and deployment of UFS CPD courses and materials. Feedback from management after the training was that more time was needed to orientate their own staff to progressive principles before such a course could be set up.

South Africa: University of the Free State (UFS) -Law Faculty

OER Africa further conducted a workshop with the Law Faculty at UFS who wished to capacitate their staff to revise some of their courses to embrace a distance learning pedagogy and open content. OER Africa conducted a one and a half-day staff development workshop, where staff were trained to plan and adapt a course so that it can be distributed using the university's learning management system (LMS) and whose content is both supplemented with OER and licensed with a Creative Commons licence.

Lessons Learned

The primary lesson learned from this workshop is that leadership is vital to encourage faculty to use OER. The Dean of the Faculty had been sanctioned by senate to improve the quality of teaching in his faculty as the SA law society was threatening (or had) to withdraw their endorsement/ approval for the quality of the faculty. However, he felt that OER was not relevant to law and, at the end of the workshop, declared that because South African law was unique in the world, they had nothing to learn from the contributions of other law faculties elsewhere in the world. Thus, OER was not adopted in the Faculty.

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[97] ADDIE is an acronym for the five stages of a development process: Analysis, Design, Development, Implementation, and Evaluation.

Appendix Two: Open Learning Policy Development Guide

Introduction

The Department of Higher Education and Training (DHET) released a draft Open Learning Policy Framework for South African Post-School Education and Training (PSET) in March 2017 (the policy framework) This identified Open Learning (OL) as a key strategy to increase access to high quality and affordable education and training opportunities for all learners and to overcome the learning constraints experienced by learners imposed by:
1. Geographic isolation from campuses or learning centres within reasonable proximity;
2. Lack of reliable access to digital infrastructure, adequate bandwidth, the internet and ICT;
3. Inability to take time off from work or family obligations for structured learning;
4. Discrimination based on physical disability, gender, age, social class or race;
5. Lack of qualifications considered necessary as requirements for admission to particular programmes;
6. Financial constraints and an inability to meet the cost of studies; and
7. Past experience of content-based, transmission-type pedagogy and assessment that restrict accessibility, alienate the learner or contribute to a loss of confidence.[98]

The policy framework was developed and released to:
1. Provide a framework for building a shared, common Post School Education and Training (PSET) system, making extensive use of open learning approaches and distance education methodologies;
2. Set out guiding principles and specific objectives for the implementation of open learning in the PSET system that will guide the decision-making and activities of government, PSET institutions, the staff that work in them and the learners learning in the PSET system;
3. Provide a high-level strategy for implementing open learning approaches in the PSET system in a structured, integrated manner;
4. Identify instruments and mechanisms for steering the PSET system towards increasing access and quality through the incremental adoption of open learning approaches and through appropriate monitoring, evaluation and quality assurance; and
5. Provide a framework for cooperation and collaboration among the DHET, institutions and skills providers to implement open learning approaches in an organised and systematic way.

OL is also an important strategy to help tackle many of the current challenges faced by PSET institutions. These include competition, the rising costs of provision, increasing enrolment, and resource availability. OL provides viable and sustainable options for PSET institutions to meet the growing need for education and training by simultaneously increasing capacity, reducing costs while maintaining or even raising educational quality and rates of learner attainment.

This Open Learning Policy Development Guide (the policy guide) has been developed for Technical and Vocational Education and Training (TVET) colleges to help them:
1. Understand what OL is and how it can be implemented;

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[98] Open Learning Policy Framework for South African Post-School Education and Training. Department of Higher Education and Training (March 2017). Accessed 19 July 2018 from http://pmg-assets.s3-website-eu-west-1.amazonaws.com/170407openlearningframework-postschooleduc.pdf

2. Understand what institutional policies are necessary to guide and direct the successful and sustainable implementation of OL; and
3. Develop the necessary institutional policies.

What is Open Learning?

The policy framework is careful to explain that open learning is not synonymous with distance learning (although many people erroneously use the terms interchangeably). Instead, it defines OL in terms of the 1995 White Paper on Education and Training as

> *An approach which combines the principles of learner-centeredness, lifelong learning, flexibility of learning provision, the removal of barriers to access learning, the recognition for credit of prior learning experience, the provision of learner support, the construction of learning programmes in the expectation that learners can succeed, and the maintenance of rigorous quality assurance over the design of learning materials and support systems.[99]*

OL is a principle-based concept, not a rigid, formulaic, one-size-fits-all deployment of any defined set of practices, pedagogies, processes, procedures or policies. It is the careful and judicious selection and use of any methods that contribute to increasing access to educational opportunities by lowering or removing all unnecessary barriers to learning.

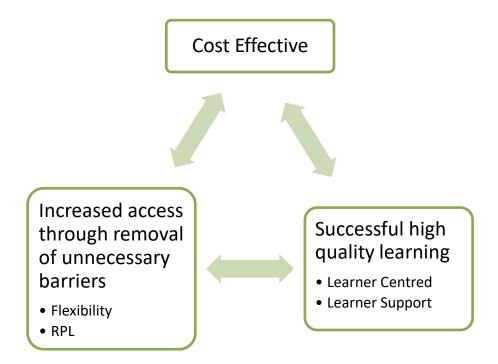The following key OL principles are outlined in the policy framework:
1. Learning processes focus on the learners and their contexts of learning, build on their experience, and encourage active engagement leading to independent and critical thinking – OL is **learner centred**;
2. Learning provision is **flexible**, allowing learners to increasingly determine where, when, what and how they learn, as well as the pace at which they will learn;
3. **Unnecessary barriers** to access and learning are removed;
4. **Prior learning** and experience is recognised wherever possible which may include credit transfer and articulation between qualifications to facilitate further learning;
5. Providers create the conditions for a **fair chance of learner success** through learner support, contextually appropriate resources and sound pedagogical practices; and
6. Learning is made **cost-effective**, striking a context specific optimal balance between cost, learner numbers, and educational quality.

OL is fundamentally about increasing access to *quality* educational opportunities by removing or lowering all *unnecessary* barriers. This statement holds the central tension present in OL – increasing access to learning for as many people as possible while still ensuring that the learning being accessed is of a high quality and that learners have a fair chance of success.

A further essential dimension is that the balance above is struck in a cost-effective manner.

The following model of OL is presented as a way of visualising these principles and the relationships and tensions between them to enable one to design policy that strikes the correct balance.

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[99] White Paper on Education and Training. Department of Education (1995). Access 19 July 2018 from https://www.education.gov.za/Portals/0/Documents/Legislation/White%20paper/White%20paper%20on%20Education%20and%20Training%201995.pdf

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Developing an Open Learning Policy

As a principle-based concept, OL is idealistic in nature, but also reflects a balance between a quest for greater 'openness' and a commitment to ensuring the success of learners, both within and after their studies. Developing an OL policy and implementing open learning is, therefore, a journey rather than a destination. Dynamic tensions exist between the different principles, and striking the optimal balance requires ongoing review and analysis.

As the goal is for increased 'openness', it is important to remember that any step (even a small one) in this direction is necessary, important and useful. One must not become overwhelmed attempting to take too many steps at once or taking steps that others have taken without carefully considering one's own institutional context and the context of one's learners.

Because OL is not a one-size-fits all approach, it is vital that, when considering policy initiatives, each institution evaluates where it is, what the needs of its learners are, and what resources and skills it has available. Multiple incremental successful steps towards OL are invariably better than trying to do too much at once.

This policy guide has been designed to assist TVET colleges in considering the various kinds of policies they can develop to make their institutions more open. The following six areas have been defined to assist in this policy formulation. What will become apparent is that these areas are all closely linked and influence one another to greater or lesser extents. Thus, policy formulation needs to take account of many of these areas simultaneously and consider the influences they have on each other.

Open Learning Policy Template

The following outlines a possible specific policy template that the institution can adopt and/or adapt for the purposes of developing their OL policy. The examples given are for illustrative purposes only and need not be adopted in part or in full.[100]

The policy document should contain the following sections:

1) **Preamble**: Describe the background context at a South African, PSET and institutional level. This helps to establish some of the problems or issues the policy is broadly designed to address.
2) **Purpose**: Describe the purpose of the OL policy and how it integrates with the institution's wider policy framework. Some examples of other policies may include general policies and procedures, teaching and learning policies, IPR policies, HR policies and ICT policies. This section can also include outlines of specific challenges the institution is facing and wishes to overcome. Examples of challenges include:
   a) Funding constraints
   b) Perceptions of quality
   c) Competition from other institutions (local, national and international)
   d) Lack of capacity
3) **Goals and Objectives**: Detail the specific strategic goals and objectives of the OL policy. These should be linked to any specific challenges outlined in the Purpose section. Some examples of OL policy aims and objectives may be to:
   a) Provide guidelines of the introduction of distance and blended learning programmes.
   b) Reduce the cost of education provision.
   c) Provide guidelines of the development and delivery of high quality learning programmes.
   d) Improve the quality and effectiveness of learner support services.
   e) Promote awareness of, commitment to and the use of ICT and multimedia to increase learner access to programmes.
4) **Definitions**: Provide definitions of key terms used in the OL policy. These may be widely accepted definitions of common terms or specific interpretations of concepts based on the institution's unique context. Some examples of defined terms include:
   a) *Blended learning* is the effective and efficient use of multiple teaching and learning strategies in combination with a range of technologies to accomplish specific learning goals;
   b) *Learning* is the active development and/or solidification of knowledge, skills, attitudes and values by learners.
   c) *Open learning* represents a principled approach to quality education provision that emphasises the importance of learner centeredness and success and the lowering of false barriers to learning through cost-effective means. It is not a specific educational approach or methodology but encompasses any approach useful in meeting its objectives including

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[100] This policy template is a composition of several sources but especially the following:
1) Institutional OER Policy Template, Commonwealth of Learning (2016). Accessed from http://oasis.col.org/handle/11599/2361
2) Open and Distance Learning (ODL) Policy for Busitema University (2016). Accessed from http://www.busitema.ac.ug/wp-content/plugins/download-attachments/includes/download.php?id=3269
3) Open and Distance Learning Policy Development, Commonwealth of Learning (2003). Accessed from http://oasis.col.org/bitstream/handle/11599/79/KS2003_policydev.pdf
4) Institutional Open Distance Learning Policy Template, Paula Marais, Technical University of Lisbon (2013). Accessed from https://www.researchgate.net/publication/285584938_Institutional_Open_Distance_Learning_Policy_Template
5) Open Distance Learning Policy, UNISA (2016). Accessed from https://www.unisa.ac.za/static/corporate_web/Content/Colleges/CGS/schools,%20institutes%20&%20research%20chairs/institutes/documents/odl-policy_version5_16Sept08.pdf

distance education, resource-based learning, correspondence learning, flexi-study and self-paced study.

d) *Learner centeredness* places learners and their learner at the heart of all educational and administrative processes by supporting them to take responsibility for and ownership of their learning.

e) *Learner support* encompasses all services offered by the institution to help meet learners' ultimately meet their learning objectives and be successful in their studies. As such, it includes various forms of tuition support, assessment feedback mechanisms, directed peer support, administrative support, and psycho-social support.

5) **Principles**: Define and describe the key principles that underpin the OL policy and the methods in which it will be implemented. Some examples of policy principles include:

a) General institutional principles like affordability, inclusivity, learner centeredness and quality;

b) Development of life-long and independent learners;

c) Relevance of programmes to the needs of industry and the real-world;

d) Alignment of programmes and programme delivery with learner demographic, geographic and socio-economic profiles;

e) Provision of clear exit level outcomes and teaching, learning and assessment strategies that support learner success;

f) Engagement of learners in active learning processes;

g) Provision of responsive and flexible delivery modes and learning pathways; and

h) Provision of inclusive and effective learner support.

6) **Key Policy Focus**[101]: Detail specific areas of focus that the institution will address through the OL policy. The following section, outlines five common OL policy focus areas. Each policy focus can usefully be constructed as follows:

a) **The Issue/Goal**[102]: A description of the specific issue being addressed or the specific goal to be achieved. What is the discrepancy between the current and desired situation?
E.g.: Lack of budget for OL development and implementation.

b) **Issue/Goal Justification**: A summary of why the issue/goal is considered important enough to be included in the OL policy.
E.g.: OL requires initial investment in programme development and staff capacity development to realise its promise. Therefore, a lack of budget inhibits this and undermines the ability of OL to contribute positively to the institution's strategic objectives.

c) **Policy Statement**: An explicit declaration and description of the overall action to be undertaken and the entity to be held accountable for the action being implemented.
E.g.: The institution will financially support the development and delivery of OL programmes and services.

d) **Specific Objectives**: Detailed and measurable activities to be undertaken to ensure the identified issue is fully addressed.
E.g.: The institution will create separate, ring-fenced budget lines for OL development and delivery; departments will be required to develop project and funding proposals for OL initiatives; and the institution will actively seek additional funding sources from the public and private sector to support the development and delivery of OL initiatives.

7) **Policy Implementation**: Highlight and detail the mechanisms by which the policy will be implemented. The following sub-sections can be included:

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[101] This outline is useful in helping institutions to articulate the full scope of a policy focus area. However, the OL policy document does not need to be structured in this way. Each policy focus area can be presented without this defined structure.

[102] Examples of policy focus areas include governance and management, staffing, training and professional development, curriculum and materials development, programme design and delivery, learner support, quality assurance and qualifications, and ICT and related infrastructure.
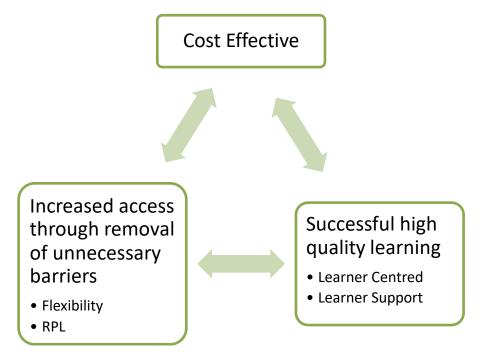
a) **Ownership of OL Programmes**: Which departments will be tasked with actively pursuing and developing OL initiatives?

b) **Administration**: What processes will be used to manage and administer OL programmes and initiatives?

c) **Collaboration**: What kinds of intra and inter-institutional collaboration will be encouraged, how will this be structured and how will it be funded?

d) **Programme Approval**: By what process(es) will new programmes or OL initiatives be approved and evaluated, by whom?

e) **Quality Assurance**: By what process(es) will the quality of programmes, OL initiatives, assessments, learner support services and programme approval and evaluation procedures be quality assured, by whom, and how will resultant learning be captured, documented, disseminated and integrated?

f) **Implementation structures**: Will specific (de)centralised structures be established to ensure the implementation of the policy (or parts thereof), what will be their scope/mandate, what will be their composition and to whom will they be accountable?

Open Learning Policy Development Guide

This policy development guide consists of five key policy focus areas, namely ICT Infrastructure, programme design, human resources, admissions and RPL, and intellectual property and copyrights. For each area, several questions have been listed with the purpose of guiding policy development that balances the OL principles.

In all cases, a balance must be struck between policies and actions that foster and encourage increased access through the removal of unnecessary barriers and policies that support successful high quality learning, all the while ensuring that whatever balance is struck is still cost effective.

The exact nature of these balances will differ from institution to institution and context to context and so, the questions are presented only as a guide to further discussion and deliberation.

ICT Infrastructure

ICT is an essential component for applying the principles of OL. The increased reach, capacity and capability of the Internet has fundamentally opened learning in significant ways, increasing access, lowering or eliminating previous barriers (including distance and time), and offering multiple and flexible modes of learning, while simultaneously greatly enhancing cost-effectiveness and the means of supporting learning.

Three important components of any ICT policy for OL needs to include access to the Internet, computing devices and platforms and technologies for the delivery of educational programmes.

IN designing an OL aligned ICT policy, one needs to find the correct balance between the principles of access and flexibility while also ensuring cost effectiveness and sustainability within the institution's existing financial and technical constraints.

The following policy issues should be considered.

1) Provision of high speed on-campus Internet to staff and learners for teaching and learning purposes.
   a) How will access to the Internet be made available to staff and learners (e.g. campus wide WIFI, discrete computer centres, classrooms and/or laboratories)?
   b) Under what conditions may staff and learners access the Internet?
   c) What restrictions apply will apply to this access in terms of location, content, time and speed?
   d) What Quality of Service will the institution guarantee?
   e) What kind and level of monitoring will be required, applicable and permissible?
   f) How and by whom will access be governed, controlled and monitored?
   g) What penalties will apply to instances of misuse and what open, fair and transparent disciplinary processes will be followed?
   h) How will increased and higher quality access to the Internet be made sustainably available to more staff and learners more of the time?
   i) What kind of technical and instructional support will be provided to staff and learners to enable them to access the Internet and make most productive educational use thereof?
2) Provision of high speed off-campus Internet for staff and learners for teaching and learning purposes.
   a) Through what means will it be supported?
   b) How will such access be governed, controlled and monitored?
   c) How and by whom will access be governed, controlled and monitored?
   d) What penalties will apply to instances of misuse and what open, fair and transparent disciplinary processes will be followed?
   e) How will increased and higher quality off-campus access to the Internet be made sustainably available to more staff and learners more of the time?
3) Access to and availability of appropriate computing devices and software to staff and learners for teaching and learning purposes.
   a) Will computing devices be provided to staff and learners or will a "Bring Your Own Device (BOYD)" policy be applied?
   b) If a BOYD policy is chosen, will staff and learners be financially supported in acquiring their own devices and how will this support be provided and under what conditions?
   c) What kind and level of usage monitoring will be required, applicable and permissible?
   d) What penalties will apply to instances of misuse and what open, fair and transparent disciplinary processes will be followed?
   e) What educational and productivity software will be required by staff and learners for teaching and learning purposes?
   f) How will this software be made available to staff and learners?
   g) How will this software be maintained, supported and updated?
   h) What kind of technical and instructional support will be provided to staff and learners to enable them to make most productive educational use of their devices?
   i) What additional device peripherals (e.g. projectors, printers, instruments) will staff and learners require, how will these be provided and under what conditions will they be provided?
4) Teaching and learning delivery platforms e.g. Learning Management Systems, learner administration systems and library systems.
   a) Will teaching and learning activities and resources be managed by and delivered through an LMS?
   b) If so, what specific functions will the LMS need to fulfil?
   c) Where will the LMS be hosted and who will maintain the technical server infrastructure?
   d) Who will be permitted to access and use the LMS and for what purposes?

e) What kinds of technical and instructional LMS support will be provided to staff and learners to enable them to make most productive educational use of the LMS?

f) What additional teaching and learning delivery platforms will staff, how will these platforms be maintained, supported and updated?

5) ICT infrastructure security (including physical and digital security e.g. virus scanning) and maintenance.

a) What ICT infrastructure security measures will be required and how will they be met (including financially)?

b) Who will be responsible for ensuring that the required security measures are in place, are fit-for-purpose and are appropriately managed and maintained?

c) Who will be responsible for ongoing maintenance of all aspects of the ICT infrastructure and how will this be financed?

Programme Design

While ICT can help to increase access to learning opportunities to more learners and more diverse learners, access on its own is not sufficient. The kind of learning that learners are given access to also needs to be fit-for-purpose and sensitive to the particular profile of learners. Programmes need to be designed in a way that increase the chances of learn success.

Programme design, in particular, requires a careful balancing of the OL principles. One needs to design programmes (and other learning opportunities) that are free from unnecessary barriers (e.g. too stringent entry requirements) and offer as much flexibility in provision as possible, allowing learners to study where they want, when they want and at the pace they want.

However, they also need to be of a sufficiently high quality, be learner-centred and offer the necessary learner supports to increase success.

As such, institutions need to rethink the modes of instruction and learning spaces that are used to deliver their educational offerings, in order to make these more accessible and flexible, including the deployment of blended learning methodologies.

The following policy issues should be considered.

1) Lowering and removing unnecessary barriers to access.
   a) What exiting administrative, educational and/or programmatic barriers prevent more learners and more diverse learners enrolling at the institution?
   b) How can these existing barriers be lowered or removed?
   c) What metrics will be used to track progress in increasing access, how will these metrics be recorded and measured and by whom?
   d) What processes will be put in place to ensure that the institution consistently reviews progress and makes the necessary adjustments to strategy, policy and operational plans and budgets?
2) Increasing access through the use of more flexible and blended teaching and learning methodologies.
   a) What kind(s) of teaching and learning methodologies currently predominate in the institution and what have been the drivers for these methodological choices?
   b) What steps will be taken to align existing programmes with the use of teaching and learning methodologies that improve access, what resources will this require and how will these resources be secured?

c) What teaching and learning methodologies will in future be prioritised and used to increase access to educational opportunities for all learners?
d) What teaching and learning methodologies will in future be prioritised and used to increase flexibility and learner choice?
e) How will use of these teaching and learning methodologies be incentivised and mainstreamed?
f) What specific barriers to the use of these teaching and learning methodologies currently exist and how will these be addressed?
g) What specific capacities (knowledge, skills and resources) will the institution work to develop to ensure the use of teaching and learning methodologies that increase access and how will these be developed and maintained?

3) Increasing learner success through the use of better and more targeted learner support systems and services.
a) What kind(s) of learner support processes and systems (institutional and programmatic) are currently offered by the institution and how effective are these in meeting the needs of learners and increasing the chances of learner success?
b) What steps will be taken to improve and/or augment current learner support processes and systems, what resources will this require and how will these resources be secured?
c) What additional types of learner support processes and systems will in future be prioritised and used to increase success for all learners?
d) What specific barriers to the use of these learner support systems and processes currently exist and how will these be addressed?
e) What specific capacities (knowledge, skills and resources) will the institution work to develop to ensure the effectiveness of these learner support systems and how will these be developed and maintained?
f) What metrics will be used to track progress in increasing learner success, how will these metrics be recorded and measured and by whom?
g) What processes will be put in place to ensure that the institution consistently reviews progress and makes the necessary adjustments to strategy, policy and operational plans and budgets?

4) Supporting learner access and success through better quality assessment practices.
a) What kind of summative assessment practices are currently used by the institution and how accurately do these measure learner progress and attainment?
b) Are there alternative summative policies and assessment practices (e.g. oral assessment) in place to cater for disabled learners or learners with specific learning difficulties or situational contingencies (e.g. family death, serious accident etc.)?
c) How is formative assessment used throughout the institution to monitor learner progress and adapt or modify teaching and learning design and delivery where necessary?

Human Resources

The ability of a learning institution to apply the principles of OL is fundamentally enabled or limited by the kind and capacity of its human resources.

Firstly, it is essential that academic staff, in particular, have the space, incentives and competency to design and implement programmes that embody OL principles, especially the principles of learner centeredness, flexibility and learner support. This includes curriculum design, the creation of effective and cost effective teaching and learning environments and the development of high quality teaching and learning materials.

The following policy issues should be considered.

1) Enabling institutional policies and structures.
   a) To what extent do existing policies and institutional structures enable, support and motivate staff to invest at least a portion of their time in programme and teaching and learning materials review and development to align new and existing programmes with OL goals and principles?
   b) How can existing policies be adapted to enable, support and incentivise the development and implementation of programmes and teaching and learning materials aligned with the goals and principles of OL?
   c) Are such activities and responsibilities formally included in job descriptions and reward and promotion policies?
   d) How will job descriptions and promotion policies be amended to create the necessary space, support and incentives for academic staff to invest in the review and development of OL aligned programmes and teaching and learning materials.
   e) What processes and policies are needed to guide these amendments to ensure fairness and transparency?
   f) Are there dedicated programme design and materials development units within the institution and how do these units interface with other academic departments?
   g) Will dedicated programme design and materials development units be required by the institution and, if so, how will these units be constituted, structured, managed and directed?
   h) How will these units interface with other academic departments?
2) Staff knowledge, skills and experience.
   a) What knowledge, skills and experience do staff currently have for the alignment of existing programmes to the goals and principles of OL?
   b) What knowledge, skills and experience do staff currently have for the development and implementation of new programmes aligned to the goals and principles of OL?
   c) To what extent do existing policies and institutional processes enable, support and motivate staff to invest a portion of their time in professional development and capacity building?
   d) How can existing policies be adapted to enable, support and incentivise the professional development and capacity building of staff for the design and implementation of programmes and teaching and learning materials aligned with the goals and principles of OL?
   e) Are such activities formally included in job descriptions and reward and promotion policies?
   f) How will job descriptions and promotion policies be amended to create the necessary time, space and motivations for academic staff to invest in professional development and capacity building?
   g) What processes and policies are needed to guide these amendments to ensure fairness and transparency?
   h) How will the institution identify and quantify the professional development and capacity building needs of staff and how will it identify and provide the necessary training and support.

Admissions and RPL

Often, one of the key ways of removing unnecessary barriers to access is to review and revise admissions and Recognition of Prior Learning (RPL) policies. This certainly does not imply the removal of all admissions barriers but it does require the institution to expend effort in identifying and quantifying what potential learners know and can do to enable access even without formal qualifications.

The following policy issues should be considered.

1) RPL policies and processes.
   a) To what extent do existing RPL policies and processes for the assessment and accreditation of prior learning align with the principles of the Council for Higher Education's RPL policy framework, namely:
      i) A focus on what has been learnt rather than where the learning took place;
      ii) A focus on human development and lifelong learning;
      iii) Credit for what has been learnt through experience and not experience alone;
      iv) Flexible, robust and fit-for-purpose assessment practices;
      v) A focus on candidate guidance and support in the preparation and presentation of evidence; and
      vi) A commitment, in practice, to integrity, transparency, fairness and quality?
   b) To what extent to existing RPL assessment processes adhere to the key principles of high quality assessment, namely:
      i) Validity;
      ii) Reliability;
      iii) Manageability;
      iv) Transparency;
      v) Authenticity?
   c) How can existing policies and processes be revised to enable increased access through the assessment and accreditation of prior learning?
   d) What steps will be taken to improve existing RPL practices, what resources will this require and how will these resources be secured?
   e) What additional types of RPL systems and processes will in future be used to increase access?
   f) What specific barriers to the use of these RPL systems and processes currently exist and how will these be addressed?
   g) What specific capacities (knowledge, skills and resources) will the institution work to develop to ensure the effectiveness of these RPL systems and how will these be developed and maintained?
   h) What metrics will be used to track progress in increasing learner access via RPL, how will these metrics be recorded and measured and by whom?
   i) What processes will be put in place to ensure that the institution consistently reviews progress and makes the necessary adjustments to RPL policy, processes and operational plans and budgets?
2) Admissions policies and procedures.
   a) To what extent do existing admissions policies and procedures increase access to as many learners and as many types of learners as possible?
   b) How can these policies and procedures be updated and/or streamlined to make it easier for more learners to gain access?
   c) What specific capacities (knowledge, skills and resources) will the institution work to develop to ensure simple and effective learner admissions?

Open Educational Resources (OERs), Intellectual Property Rights (IPR) and Copyright

Technology (and especially the Internet) has altered the value of teaching and learning resources. The plethora of freely available educational resources online has shifted the emphasis away from resources and onto the nature and quality of the instructional practices, assessment, learner support and accreditation services offered by institutions as key differentiating characteristics.

However OL, with its simultaneous focus on increased access, learner centeredness and cost effectiveness, requires ongoing investment in the development of teaching and learning resources. Using OERs can reduce both the duration and cost of these processes.

In addition, the sharing of these resources as OERs through the application of open licences further opens access to quality learning for all learners.

The following policy issues should be considered.

1) IPR and copyright policy
   a) To what extent do existing IPR and copyright policies clearly lay out the respective rights of the institution, its employees, sub-contractors and learners with regard to IPR and are all parties aware of their rights and responsibilities?
   b) Are these rights codified in the various contracts the institution enters into with other parties?
   c) How do these policies need to be revised and amended to make these rights clearer and more enforceable?
   d) To what extent is intentional use of OERs made in the design and delivery of educational programmes and the development of teaching and learning resources?
   e) Are teaching and learning materials automatically published under open licences except where compelling reasons to the contrary exist and, if so, what are these reasons and who adjudicates these decisions?
   f) If so, under what open licence does your institution release its learning materials? Can materials be released under more open (less restrictive) licence conditions.
   g) If not, what compelling reasons exist for not doing so or what specific barriers (institutional or otherwise) need to be overcome to make this possible?
   h) What specific barriers exist to the automatic institutional publication of materials as OERs?
   i) To what extent do existing policies encourage and incentivise the selection, use and adaptation of OERs rather than the creation of new materials and how can these policies to revised to encourage and incentivise this more?
   j) To what extent do existing policies encourage collaboration in the selection, use and adaptation of OERs rather than individual endeavour and how can these policies to revised to encourage and incentivise this more?
   k) What specific capacities (knowledge, skills and resources) will the institution work to develop to ensure that the collaborative selection, use, adaptation and creation of OERs is encouraged and incentivised?
   l) What metrics will be used to track progress in increasing the use of OERs?
   m) What processes will be put in place to ensure that the institution consistently reviews progress and makes the necessary adjustments to policy, processes and operational plans and budgets?
2) Human resources to support the use and development of OERs
   a) To what extent do staff (and especially academic staff) understand the IPR and copyright issues associated with the selection, use, adaptation, creation and publication of OERs?
   b) To what extent do staff (and especially academic staff) understand the educational and quality issues associated with the use of OERs?
   c) Is the creation of especially OER based teaching and learning resources specifically part of staff job descriptions and time allocations?
   d) What professional development and capacity building does the institution need to provide to support staff in the selection, use, adaptation, creation and publication of OERs and how will this support be delivered?

e) What additional skills and capacities are required for the selection, use, adaptation, creation and publication of OERs?
3) ICT infrastructure to support the use and development of OERs
    a) In what technical formats are teaching and learning resources currently published by the institution?
    b) What technical systems are currently used for the storage and management of teaching and learning materials and how fit-for-purpose are these?
    c) What additional technical formats will be made use of in the future?
    d) What are the ICT infrastructure implications of these new formats?
4) Cost-effective materials development processes based on OERs
    a) How are teaching and learning resources selected for development, developed and approved for use and subsequent publication as OERs?
    b) Where and how are draft and final versions of teaching and learning materials and their constituent elements stored, catalogued and managed?
    c) How is more cost-effective materials development through the use of OERs encouraged and incentivised?