

African Veterinary Information Portal

Case studies on African OER initiatives in higher education

## Introduction

The field of veterinary science in Africa has been characterised by under-resourced faculties and schools and a lower quality education in many contexts because of a lack of equipment and teaching resources. OER Africa began engaging with the University of Pretoria’s (UP’s) Faculty of Veterinary Science since 2008 to support the concept of open educational resources (OER). A formal partnership began in 2012 where the focus was to:

* conceive an educational model that embraced technology and ‘openness’,
* provide awareness of OER to staff within the wider faculty,
* construct AfriVIP, an online repository of quality veterinary teaching and learning resources, as an initial mechanism to achieve the vision of a blended open learning environment.

In February 2014, [AfriVIP](http://www.afrivip.org) was launched containing predominantly continuous professional development (CPD) resources. The portal was part of a broad vision to share intellectual property under an open licence. At inception, it was also seen as a test case to explore the potential for wider adoption of OER and open licences across the university and at veterinary faculties/schools in the Southern African Development Community (SADC) region.

OER Africa continued to support the veterinary faculty at UP from 2015 until 2017, where the focus was to:

* expand the AfriVIP repository and enhance the (CPD) experience, but also design ways to use the database for teaching both undergraduates and postgraduates,
* encourage faculty staff and students to adopt and contribute OER for the development of courses through advocacy and training,
* use AfriVIP to develop collaborative partnerships with other faculties of veterinary science particularly in the SADC region using the creation and sharing of OER,
* provide the vice-chancellor (VC) with a suggested revision of the institutional Intellectual Property (IP) policy.

Thus, the overarching aim of the project was to improve the quality of veterinary science education in Africa through collaboration in the development, sharing, and re-use of educational and research resources under open licences, to enrich both African and global veterinary science knowledge networks and educational programmes.

This report is based on desktop research, and interviews with the OER Africa project manager involved in AfriVIP at the time, the AfriVIP website developer, and two academic staff members (Profs Holm and Coetzer) from the Faculty of Veterinary Science at UP who were intimately involved in the project.

## Description of the initiative

### UP Faculty of Veterinary Science

OER Africa committed to support UP’s Faculty of Veterinary Sciences’ curriculum review processes, with a particular interest in investigating how OER were being used to enhance teaching and learning at the institution. At the start of the initiative, there was much support from the then deputy dean, Prof. Koos Coetzer , who initiated and championed AfriVIP. Under his leadership, and the subsequent dean’s (Prof. Darrell Abernethy) support and enthusiasm for OER, OER Africa ran capacity building workshops with a view to develop a ‘culture’ of OER within the faculty. These capacity building workshops explored what OER are, OER concepts, the benefits of OER, how to search for subject-specific OER, evaluation of OER, copyright and licensing, and discussions around appropriate use.

During this time, the faculty participated in UP’s initiative to adopt a hybrid teaching and learning approach. UP’s Department for Education Innovation trained staff members at the Faculty of Veterinary Science as part of their CPD responsibilities. This CPD course (called ‘The Mix Matters’) was run regularly, initially as a five-day programme and, after revisions, as a four-day programme that all new and existing staff were required to attend. The focus was on teaching and learning skills using a hybrid model for veterinary science lecturers. The Department for Education Innovation dedicated one day of their programme to issues related to OER, and an OER Africa member designed the programme for that day and ran those sessions. The programme covered: defining OER; finding existing OER applicable to veterinary science training; analysing the value of OER; determining the level of adaptation needed to make the resource appropriate for a veterinary course; an investigation into ‘use’, ‘re-Use’ and ‘remix’ strategies; and Creative Commons licensing and what each licence permits.[[1]](#footnote-1) The involvement of OER Africa meant that all staff who attended the CPD programme were introduced to the concept of openness, the AfriVIP portal and how to search for and use OER. Of particular value was the OER Africa knowledge and experience with Creative Commons licensing. Members of the Department for Education Innovation also worked individually with lecturers when they needed to prepare materials, championing OER and encouraging the use of OER within the faculty. One of the UP representatives interviewed, highlighted that staff found this course very valuable in assisting their teaching practices and some even attended it more than once.

Under the leadership of Director of Teaching and Learning, Prof. Linda van Ryneveld, the faculty set up a Veterinary Science OER Committee, which included representatives from each department in the faculty, the library, the Department for Education Innovation, OER Africa, and other interested parties in the faculty. The committee convened three to four times a year. It advocated for OER, raised awareness of OER within the faculty, and searched for resources and coordinated staff contribution to materials to add to AfriVIP and [UP Space](https://repository.up.ac.za/) (the university library system which houses open access material).

Later on, the UP’s IP policy was identified as preventing OER adoption in practice. A copyright expert at UP was engaged by Deputy Dean for Teaching and Learning, Prof. Dietmar Holm, and a process of revising the policy was initiated. A draft version was prepared and, at the time of writing in 2021, was in the process of receiving approval.

OER Africa developed and then refined the AfriVIP repository, which included maintenance tasks such as look and feel, installing security patches, refining the taxonomy, populating the database with new resources as they became available, and tagging (inserting metadata) resources. OER Africa also provided technical support in building and maintaining the AfriVIP resource collection. The website developer trained a UP staff member (Ms Linda Poggenpoel), who was appointed as an instructional designer, to build and maintain AfriVIP’s resource collection. She was involved in editing resources, designing templates, and placing resources within the templates and building html resources. She had the support of a working group of administrative staff, and there was thus a dedicated support team uploading and sharing resources. All the AfriVIP materials were openly licensed under Creative Commons licences. The initial years of AfriVIP involved much hard work in revising and shortening selected disease chapters from a book titled *Infectious Diseases of Livestock* that Prof. Coetzer edited. The objective was to draw together information and research and educational materials on uniquely African matters through a network of faculties of veterinary science and veterinary associations working in Africa and further afield.[[2]](#footnote-2)

AfriVIP also included a video repository, which is accessible via its [YouTube Channel](https://www.youtube.com/channel/UCd2x5btnx4QzGlFttjUR53A).

Figure 2 AfriVIP [YouTube channel](https://www.youtube.com/user/vethub)

Graphical user interface, website

Description automatically generated

In 2016, the chairperson of the International Veterinary Students Association (IVSA) was a UP student and became interested in AfriVIP. This led to a memorandum of understanding (MOU) between OER Africa and IVSA to allow a series of IVSA-produced videos to be released on AfriVIP under a Creative Commons Attribution-Non Commercial licence. OER Africa trained IVSA students at UP on how to create videos and use their phones to capture procedures in the field or the operating theatre. These resources are available on the [IVSA-AfriVIP webpage](https://afrivip.org/ivsa_subdomain/index). Between October 2019 and May 2020, the site had 426 users, and 733 page views. Most users were from China, followed by the United States, and South Africa.

#### African Deans Forum

In response to the dearth of regional veterinary resources and the need to contribute to the global knowledge network, African veterinary science faculties and schools voiced a desire to work collaboratively and to share resources. At that time, deans from SADC veterinary schools met annually at the Southern and East African Regional Deans’ Meeting under the auspices of the *Office International des Epizooties* (World Organization for Animal Health) (OIE). Here, they identified opportunities to collaborate to improve veterinary training on the continent. Thus, in 2016, the deans committed to harness OER and share veterinary science knowledge resources under open licences to facilitate their use and re-use across the region, working with UP and OER Africa to help achieve this.

In the second half of 2017, with funding and technical support from OER Africa, UP worked with other African veterinary education institutions to create a collaborative materials development working group (the Deans Forum). Institutions included:

* University of Namibia, School of Veterinary Medicine,
* University of Zimbabwe, Faculty of Veterinary Science,
* Sokoine University of Agriculture, Faculty of Veterinary Medicine,
* Makerere University, College of Veterinary Medicine, Animal Resources and Bio-Security,
* Kwame Nkrumah University of Science & Technology School of Veterinary Medicine.

All institutions showed interest and enthusiasm to work collaboratively. Staff members from either OER Africa or UP (or both) visited each of the institutions to identify areas where possible collaborative initiatives might take place. During institutional visits, discussions with the five veterinary deans identified a strong commitment to create and share teaching resources and conduct research collaboratively. During these visits, OER Africa conducted training workshops on how to develop OER, with the idea that all developed OER would be uploaded on AfriVIP. Further, each academic institution identified institutional OER champions and developed some proof-of-concept OER to be shared with the network. The intention was to use AfriVIP as a central repository for OER generated by different institutions and IVSA, each with its own user web interface but sharing the same backend resources. Institutions were to collaborate and support each other in creating this combined pool of resources.

OER Africa funded a three-day convening workshop with all member institutions. The OER champions met at UP to finalise their institutional contributions and upload them into a shared repository. During this visit, members from UP’s Department for Education Innovation trained the champions on how to create digital material. The materials were to be stored and distributed on AfriVIP, and there was much support and buy-in for AfriVIP. The OER Africa manager noted that the University of Namibia prepared an excellent video series. However, the quality of resources from other institutions still needed further work. Thus, whilst the aim was to leverage AfriVIP as a collaborative space rather than just a UP repository, most of the other institutions still required much support to create high quality materials. At that time (2017), and before improvements to materials could be made, the UP dean of veterinary science (Prof. Darrell Abernethy) left the university. This also coincided with OER Africa changing its focus from supporting and collaborating with institutions to evidence-based research on OER, and thus the initiative ended before the collaborative space was properly developed.

AfriVIP ran for approximately five years from 2014–2017, and the African Deans Forum was active for just over a year (2016–2017).

## Achievements

### AfriVIP portal and YouTube Channel

In 2014, the UP Faculty of Veterinary Science launched the first veterinary online information portal (AfriVIP) in Africa. The event was attended by over 100 invited guests, including twelve deans of faculties of veterinary medicine from East, Central and Southern Africa. AfriVIP was developed under an open licensing framework as an online portal of information, educational and research resources, and CPD opportunities for veterinary and para-veterinary professionals, and students.[[3]](#footnote-3) By 2019, AfriVIP had 561 resources including related assets uploaded, with a total of 44,431 resource downloads. Resources included documents, pdfs, videos, and slides. The UP library website created a link to AfriVIP to drive additional traffic to the site. Between September 2016 and August 2020, 22,236 people visited the AfriVIP website and on average each person spent 2min, 15sec per session/visit. The popularity of resources varied, with the most popular resource being downloaded 1,989 times. The AfriVIP YouTube channel has 148 videos, and over 3,800 subscribers. It also had a total of 1,307,416 views at the time of preparing this case study.

### Capacity building

The OER Africa project manager estimated that between 60–80 teaching staff were trained during the capacity building workshops run by OER Africa, and during the Mixed Matters CPD workshops. As a result, academic staff were encouraged to reflect on OER and teaching and learning methods; and were equipped with skills to find, adapt and license OER and develop new and useful courses and materials. Each department nominated an OER representative who reported to the university OER committee, where there was ongoing engagement on OER related issues and sourcing resources for AfriVIP. Several staff members were actively involved in the initiative and began releasing material as OER. The OER Africa project manager estimates that at least 25 staff members submitted OER to be uploaded to AfriVIP. The discussions of the OER committee also affected other departments beyond the veterinary sciences faculty – for example, the library department began exploring how to open up their resources. A research paper documenting some of the processes was also produced.[[4]](#footnote-4)

The OER Africa website developer also highlighted that the process of packaging material as OER was useful to some staff as they explored processes for clearing copyright, and sourcing resources to replace copyrighted material.

In addition, as part of the Deans Forum, at least one person per institution (five in total) received detailed training on how to find and use OER. General OER awareness training was provided to small groups of staff during the UP/OER Africa visits to the Deans Forum member institutions.

The initiative supported the development of a hybrid model (via the Mixed Matters CPD workshops), and another unintended positive spin-off was that this model laid the foundation for the faculty to respond quickly to teaching and learning in an online environment during the COVID-19 pandemic.

That was extremely valuable in 2020 when we had to suddenly move to completely online. We were so well prepared compared to other institutions. We were very successful in moving from our status quo to an online environment, and it had a very significant impact....all the courses we did in the years 2014–2018…we were so well prepared when 2020 arrived – with a lot of material prepared, and a lot of mindsets changed…people were not completely frightened of using pre-recorded video or making a short video with assessment – because we did it before.[[5]](#footnote-5)

As highlighted in a research paper on the Mixed Matters approach:

The knowledge gained about hybrid teaching and learning stood the faculty as a whole in good stead when the COVID-19 pandemic caused considerable disruption in the academic offering. The conclusion can therefore be drawn that the Mix Matters workshop was highly significant, because it successfully prepared the faculty’s teaching staff to better implement UP’s hybrid teaching and learning model. Furthermore, the workshop also prepared the staff to be able to withstand the influence and impact of a pandemic, even though such an event had not been envisaged at the time when the workshop was presented.[[6]](#footnote-6)

### UP IP Policy

Whilst the initial aim was to provide the VC with a suggested revision of the institutional IP policy, this process was slow. Nevertheless, a significant achievement was that some progress was made in revising the university IP policy. The representative from UP highlighted that, when he became involved in the initiative, the UP’s IP policy was in need of revision:

We realised that OER was against the IP policy at UP. It was a very conservative and outdated policy and not keeping with the times. The policy did not allow academics to contribute to OER. We then pushed from the faculty to have that policy reviewed… if UP wants to be [an] international player, we should contribute and be a leader in Africa – we are the only veterinary faculty in the country and top ranked in Africa… we have a responsibility to make a contribution. That process has been very slow… because it takes so long to go through a motion. It resulted in a revised policy… I think there is one more step that must be concluded [before the policy is passed].[[7]](#footnote-7)

The draft revised IP policy now makes provision for the development of OER by staff members, which was previously not allowed. It is not clear whether the policy provides for the use of open licences.

### Leadership support

At the start of the project, there was strong support for the initiative from the deans and deputy deans who encouraged staff members to participate. The OER African project manager pointed out that these leaders recognised the value and opportunity of participating in this initiative.

### Increased collaboration

Based on the primary engagement with UP, a simultaneous network with the other institutions was being built (the African Deans Forum). At the OER Convening at UP, partners began to submit resources, which signified the start of collaboration on developing and sharing resources. The UP representative highlighted that the process of interaction with other veterinary schools in the region (and other disciplines) was a wonderful experience for UP staff involved in the initiative. Whilst not a measurable benefit, he reported that it had a positive effect on networking and creating new and positive perceptions of working with external universities and partners. For example, the faculty developed a very good relationship with the University of Namibia which has a new veterinary school, and there is an active MOU in place for student exchanges in clinical training.

Despite the initiative ending, representatives from UP indicated that it was worthwhile participating in the initiative as it played an important role in the history of the faculty, the development of its staff, and in influencing the university IP policy.

## Challenges

OER Africa worked with two deputy deans and one director (Teaching and Learning) during this project: Koos Coetzer, Linda van Ryneveld and Dietmar Holm, and traction varied during their tenure. The first deputy dean with whom OER Africa engaged in 2012, Koos Coetzer, was very keen on OER. He was editing a three volume book called *Infectious Diseases of Livestock* and because no hard copies of the book were available he decided to release about 30 selected chapters on high impact transboundary diseases under an open licence, via AfriVIP. He was very particular about the quality of the material he was producing. The OER Africa project manager noted that when Linda van Ryneveld was in office, she motivated to appoint a dedicated OER Officer in the faculty, was able to get funding for the post, and appointed a candidate. However, the candidate found another position and, whilst the post was readvertised, no suitable candidate was found so the funds were directed elsewhere. There were also plans to motivate postgraduates to create courses, but these students showed little interest in creating courses so this strategy did not work. Dietmar Holm was able to make significant gains during his tenure, such as driving changes in the IP policy. From an OER Africa perspective, the change in leadership meant that there were some lags in implementation and ‘it was very difficult to coordinate because of different personalities and things kept changing’[[8]](#footnote-8). Thus, some momentum was lost during handovers. UP representatives also highlighted that, at times, there was a lag in the support from OER Africa, particularly with regard to technical support and this also resulted in a loss of momentum. Importantly, this suggests there was never strong internal ownership of the initiative.

Ultimately, the limited external funding coupled with the lack of interest and motivation, meant that there was no incentive for the initiative to continue. AfriVIP was hosted on an OER Africa server which UP continued to fund to keep the AfriVIP website live until 2020. The faculty initially decided to maintain the platform to assess how well it would be used and whether it was financially feasible to sustain. The faculty explored options such as commercialising some resources with an external partner to provide CPD points with the idea that the resources would be open, but attaining CPD points would be paid for. But this approach/business model did not require an OER platform so this idea was abandoned. The faculty also considered including advertisements on the site, but it was felt that there would not be much traffic to that site as the discipline is small. Thus, the faculty decided not to continue with the platform as there was no financial benefit. All the resources were transferred to UP and are being stored in a Google Drive folder. Following the closure of AfriVIP, Prof. Coetzer, who was editing the book on *Infectious Diseases of Livestock*, started to develop an online platform called [Anipedia](http://www.anipedia.org) to host and update the book on *Infectious Diseases of Livestock* and other resources including a textbook on veterinary helminthology and a book titled *Plant poisonings and Mycotoxicoses of Livestock*. The faculty is currently exploring integrating these and other resources into an online content platform for undergraduate teaching and learning in the Bachelor of Veterinary Science (BVSc) programme.

At the start of the initiative, Prof. Coetzer noted that much work was required to persuade faculty members to engage with OER as the concept was foreign to them. One of the challenges facing the OER Africa project manager when running capacity development workshops and promoting OER was that many found it difficult to realise the benefit of OER for them personally. This was because the faculty staff members were ‘at the top of their game’[[9]](#footnote-9) in terms of producing quality resources and available OER located during their searches were of an inferior quality to their existing resources. Thus, while some staff were happy to produce and share their own resources, recognising that their contributions would help improve their teaching materials, most saw no personal advantage from sourcing existing OER. Thus, their engagement with OER felt ‘one-sided’, as only contributing to and distributing resources that others could use, as opposed to incorporating use of existing OER. Further, the project manager reported a very conservative attitude among some staff. Much work was required to ‘win individuals over very slowly to change the conservative mindset’.[[10]](#footnote-10) The representative from UP echoed this, noting that the faculty is well-established with many resources already, whilst there are not many relevant OER available:

Our academics feel that the resources they develop in the departments are more valuable and relevant in our situation and context, and they don’t use OER a lot. They are willing to make a contribution more than they are willing to use it. This balance is not what one would ideally want to see… this became apparent [in the Deans Forum] where there was mostly expectation from other schools to use our resources… because we don’t have a good balance there, our staff members are not inspired or passionate about it.[[11]](#footnote-11)

A challenge regarding the Deans Forum was that there was no other champion institution aside from UP. The initial idea was for AfriVIP to have multiple front ends, so each partner, including IVSA, would have its own front end. For IVSA, the website was set up as a subdomain and the AfriVIP look-and-feel was adapted to incorporate the IVSA logo and branding. For other partners, this was not achieved as there was insufficient content from institutions aside from UP.

The website developer highlighted that use of the resources may have been hampered by the fact that AfriVIP was not integrated or linked to the UP website, which she felt impacted on the take-up and publicity of materials. She highlighted that advocacy around understanding the value proposition of OER takes much time and effort, and initiatives tend to underestimate the time and energy required for such advocacy.

In addition, the university representative noted that UP and OER Africa were successful in marketing the concept of OER and making people aware of OER. However, it was not successful in getting people to use OER:

With the course that we did, the marketing achieved the objective of making people aware of OER. But it was not successful in getting people to buy into OER. If you ask an academic here, they know what OER is, but they are not using [them] because they don’t see the benefit to themselves and their students. There are some exceptions. That is my perception.[[12]](#footnote-12)

University representatives highlighted that available OER in the field are context-specific, and much work is required to revise content to make it specific to the African context. The UP representative noted that he ran a project with his students, which required them to take an existing openly licensed slide and make it applicable to the South African context. Whilst the task was useful, it required too much effort:

I initiated a project with students. I gave the students in the Bovine Health and Production course a task to take an existing slide given to them and improve it using OER. It was a nice task but it was a massive effort, for the students and myself. It took a lot of energy. I am not completely convinced of the cost benefit considering the amount of time spent. I may have achieved [the] learning outcome with less time and effort without using OER. [[13]](#footnote-13)

He further highlighted that there are various other tools available, which are easy to use and impactful. He noted that, to contribute to the field of OER takes less effort than to ‘panel beat’ others’ resources.

The OER Africa project manager noted that dedicated time and continued effort was required to drive the initiative. He indicated that as meetings were spaced out, at times the same discussions needed to be repeated. He also expressed that he might have not been best suited for this project as the work required a person dedicated to the project, to continuously nurture, follow up, and push staff members to complete tasks. The OER Africa project manager felt that had the OER officer position been filled, such a person would have been able to drive processes at the university more effectively.

## Lessons learnt

With all the effort and hard work put into the initiative, the OER Africa project manager was disappointed that the initiative ended without being successfully integrated into faculty operations and that the good quality materials are not accessible as OER. For future initiatives that involve collating resources within a repository, it would be worth considering in the planning stages who would host the repository and what would happen when the initiative ends.

One of the main lessons from this initiative was that leadership support is required to gain buy-in and support. At the start of the initiative, in addition to the dean’s (Prof. Swan) support, the VC at UP at that time, Prof. Cheryl De la Rey, also supported the initiative. However, as leadership changed, there was a subsequent lack of ownership and leadership. The OER Africa project manager noted that, when the latest dean (Prof. Vinny Naidoo) was appointed, it would have been helpful if the outgoing dean (Prof. Abernethy) briefed him on OER and the initiative to ensure continuity. This may have piqued his interest or provided him an indication of where he could drive efforts.

Another lesson, from the university’s perspective, is the need to have a long-term secure relationship with a service provider to support the project. Due to the change in management and leadership over the years, the terms of the grant may not have been clearly communicated as leadership changed, and thus when the initiative ended it may have come as a surprise to some at UP. Whilst there was a long-term relationship with OER Africa between 2012 and 2020, another key lesson is that the initiative could not be sustained as it was never internalised as part of the faculty’s work. The UP representative highlighted that it is difficult to establish such initiatives without funding and support if there is no clear benefit to the faculty, as has been the case in the adoption of OER. He indicated that the faculty was dependent on the support provided and was therefore ultimately unable to sustain the initiative as it had not prepared for the withdrawal of support. The UP representative highlighted that he also benefitted by deepening his understanding of funding and how grants work and how to plan accordingly, particularly to ensure sustainability. He also learnt how to mobilise and motivate staff, as well as how to develop an awareness of other ways of teaching.

A further lesson from the university’s perspective is recognising that working with OER requires a mindset change to use others’ materials. One of the UP representatives highlighted that he is more likely to use a resource from someone he knows and interacts with, as he can trust the resource if he knows that person is an expert. He further highlighted the need to train staff and students in how to recognise good quality materials:

We teach our students – previously knowledge was power, now knowledge is everywhere – how to distinguish good and bad resources – incorrect and correct resources. Except for open journals, other OER are not good resources that are peer reviewed. Important skills would be for users to be able to distinguish quality and authenticity of resources. You can find a video or slide show on rabies. Whether what is said is the truth or not is difficult to investigate. To find easy ways to identify reliable resources is difficult.[[14]](#footnote-14)

Given the expertise of staff members and the work that they were doing compared to the other institutions, there was not much benefit for them:

The only benefit staff derived from OER was exposure for themselves… they were exclusively suppliers of OER rather than consumers of OER. There was no low hanging fruit for them to pick. It was all about giving, they never really got back. They couldn’t see the value for themselves.[[15]](#footnote-15)

It may thus be worth looking at what incentives would drive such staff to commit time and share their resources with others. The project manager touted greater exposure of their work and expertise, as well as consideration of the impact their resources would have on improving animal care, and this appeared to motivate staff to contribute resources.

Nevertheless, the initiative demonstrated that, once buy-in was gained, there was an interest and potential for sharing quality resources. The OER Africa project manager noted that he was starting to see a change in culture, with more staff embracing OER skills. However, such traction can only be sustained if there is dedicated funding and continued support from senior management. A representative from UP highlighted that for similar large initiatives to be successful, it requires patience, commitment and passion on the part of faculty members:

We can learn from AfriVIP. The faculty must take note that if they don’t take ownership, good things can die because of lack of ownership and passion... we need to have ownership, a good driver, a clear message… escalate it and grow that concept. [[16]](#footnote-16)

Thus, to summarise, the key implications from this case study on effective CPD are:

1. Faculty and university leadership and support are important in ensuring success of initiatives.
2. It is necessary to focus efforts on creating buy-in for CPD efforts at the start of initiatives, and when there are changes in leadership, to ensure continuity and sustainability.
3. It is important to integrate CPD activities into faculty operations as opposed to them being ‘add-on’ activities.
4. It may be necessary to consider incentives to motivate staff to participate in OER activities.
5. Whilst OER champions are useful in driving awareness of OER and creating momentum for initiatives, a heavy reliance on champions raises concerns for sustainability in the event that they leave the institution.

[A picture containing text, clipart

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#### [www.oerafrica.org](file:///C:/Users/monge/Neil%20Butcher%20%26%20Assoc%20Dropbox/Monge%20Tlaka/ndthenwhat%20and%20NBA/OER%20Africa/For%20sumbission/OER/www.oerafrica.org)

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