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## OERs in a Competency Based Environment: Fostering Access and Inclusion in Vanuatu

### *Introduction*

On the face of it Open Educational Resources (OERs) would seem a comfortable fit with competency based training (CBT). OERs and CBT are both about increasing access to vocational training and providing more flexible options for students. And it is the method of delivery – the methodology – that determines whether or not a course of instruction qualifies as CBT, not the materials that are used. It is unfortunately true though that in vocational and training systems where strict regulation is the rule, as is the case in Australia for example, there is something of an ideological gulf between those who promote OERs and those teachers and trainers who work within a tightly regulated vocational training framework. The closed inward looking mindset of the Australian training sector has had limited success in open content models based on Creative Commons and OERs. Couple this with shrinking budgets for education where everyone is expected to do more with less funds, and you get a situation where creators of content would rather try and sell their materials for profit than share them freely as OERs, or at least copyright them as some kind of shallow compensation for their effort. It is a sad fact that in the Australian system there are multiple copies of the same courses – all copyrighted – in circulation forcing everyone delivering that course to either buy someone else's materials or create yet another copy of an existing course. It is extremely wasteful and a poor reflection on a very closed system.

### *What is Openness exactly?*

In its simplest and most widely used context it means that there are educational materials available for anyone to use and adapt in any way they want, for free. The MOOC phenomenon has made excellent use of this principle in creating Massive Open Online Courses (MOOCs) that offer university courses for free. That is to say, the content is free. If you want a qualification at the end of a MOOC then you have to pay. But do you want specialised or personalised instruction from a tutor? Then you pay. MOOCs have utilised existing OERs, or created their own to enable thousands of people around the world get access to university *content* for free. This is the basic intention of openness – free content with no restrictions.

Other commentators though would argue that there are many other layers to openness. For some, to be truly open means conducting any class you teach or facilitate in full public view. In pre-Internet days this wasn't possible, but it certainly is now. There are some, and they are a few in the overall scheme of things, that offer entire courses in public view of anyone who cares to look. This is different from MOOCs where people are actually enrolled in a course. In the extreme model of total openness people can literally drop in on the online course as guests and observe what is going on.

In academia another area of controversy in relation to openness is the question of research and publishing. Academic journals are full of articles that can only be read if you are a subscriber to that journal. This has severely limited the number of potential readers, and stifled opportunities for collaboration and cross-fertilisation of ideas. In recent times some academics keen to push the boundaries of traditional publishing have published only in open journals, insisted on a creative commons license if their work is published in a pay-for-subscription model, or by-passed traditional channels entirely and published straight to the open web.

There are other levels of openness that can be practised both at the individual or institutional level, but the key point is that openness is an attitude; it's a frame of mind. Individuals or institutions that allow their materials to circulate as OERS have a mindset that is open; a mindset that would prefer to share rather than sell; would prefer to collaborate rather than work alone; would rather be open about individual and institutional practice rather than have everything behind closed doors.

### *What has this got to do with Vanuatu?*

The overarching framework that houses and governs approved content (Training Packages) in the Australian system is the Australian Qualifications Framework (AQF), and Vanuatu has recently imported a similar framework and rebadged it the Vanuatu Qualifications Framework (VQF). This has had some immediate unfortunate consequences. Prior to the introduction of the VQF vocational and skills training was occurring in Community Training Centres (CTCs). Almost overnight the introduction of the VQF meant that courses run in CTCs were deemed null and void because they didn't meet the standards of the new framework, and the skills trainers didn't have the required qualifications required by the VQF. As of 2015, just 5 of a possible 27 CTCs had been registered as legitimate providers of training under the new system, and many CTCs didn't have the funds or resources to reach the minimum standards. (*Activity Design Document (ADD) – Skills Development for Rural Communities, NZAid*)

So the problem is not so much that training bodies in Vanuatu cannot use OERs – they can – but there are currently insufficient numbers of CTCs and trainers who meet the quality standards of the new VQF.

In 2015 Sanma province on the island of Espiritu Santo ('Santo') applied COL for assistance in adapting existing COL OERs in Small Engine Maintenance for use in a CBT environment. They identified the skills taught in these materials – maintenance and repair of outboard motors, grass cutters, lawnmowers and small generators - as essential for the local community. The existing OERs in Small Engine Maintenance, while good enough for their original purpose, were not written with CBT in mind.

### *Adapting the Materials*

To take their rightful place in a CBT environment the materials needed to have objectives or learning outcomes inserted that were measurable and observable. This meant rewriting the existing objectives using active verbs like 'demonstrate', 'identify', 'measure'.

This is not an especially difficult task but it does require a shift of thinking to ensure that objectives are not generalised and vague. For example, '*will develop an understanding of how a carburettor works*' is not specific nor is it measurable or observable. In contrast, '*identify the steps involved in cleaning a spark plug*' is specific, measurable, and observable.

### *Breaking Down Tasks*

When I sit down at my desk to write this paper there are several assumed skills that allow me to do this. If this activity were part of a course of study I may, depending on the nature of the course, be assessed on my ability to write using a word processor. But there's no point trying to assess my competence in word processing if I don't know how to turn a computer on; or I have no knowledge of what word processing software is available. First a set of sub-skills need to be taught. Can I:

- turn on a computer
- load the appropriate software
- choose suitable fonts and formatting tools
- name, save and retrieve files?

Similarly, if I am to assess someone on their ability to create 2 stroke fuel mix I need to see that a student knows

- which ingredients to mix
- the relative quantities of the ingredients to mix
- to use only containers that have been cleaned, etc.

All of these steps need to be outlined in the instructions for this activity. You can't just tell a student to 'go ahead and make the 2 stroke fuel mix'. You should not assume that a student knows all the preliminary stages before they have demonstrated them. The stages of a task need to be explicit *and taught*.

It is difficult to be mindful of this level of detail when you are quite experienced at something you may have been doing for many years. We forget how many steps we have internalised as we become proficient at a task. It can sometimes help to have an outsider – someone who is not familiar with the domain - observe you performing a task and break down the stages of the task for you. They, strangely perhaps, might see the stages more clearly than you will.

In the existing OER materials for Small Engine Maintenance this breaking down of tasks was largely absent and needed to be included in the revised materials.

### **Assessment**

It is in the area of assessment that CBT presents the most significant differences compared to other types of vocational training.

#### *Informing the Learner*

At the heart of competency based assessment (CBA) is informing the student *how they will be assessed*. Methods of assessment might even be determined in dialogue with the student – especially in an adult learning environment. But in any event, the student is informed upfront, at the start of a course or training session about how they will be assessed. This includes showing them the course or session objectives, and making sure they understand them.

In Vanuatu, the aim is to have students assessed at the end of each unit and once rated competent they will be offered a certificate of attainment to show they successfully completed a course or unit, whether or not they complete the full qualification. This should protect against repetition of learning and duplication of learning costs.

#### *Method of Assessment*

Assessment might be via written exercises, oral discussion, observation, or practical demonstration. It can be individual, or part of a group. It can be a one-off exercise or something that is done several times over a specified period. Will any self or peer assessment be involved? There are many ways to conduct assessment but what is essential in a CBT environment is that the student knows how they will be assessed upfront. There are no surprises or springing sudden tests. It's not about catching people out or finding out what *they don't know*. It's about providing students with opportunity to show what *they do know*.

In terms of adapting the existing OERs in this case this simply meant adding information at the start of each unit about how students would be assessed. But this simple addition actually generated a lot of discussion within the project team as they had never been required to put in writing how they assess, and these discussions inevitably led to questioning the assessment methods they had previously used, and debates about how effective they were. In particular many trainers realised for the first time they had only ever assessed practical activities as a group. And in this scenario, if the group managed to

achieve the task then everyone in the group ‘passed.’ This is exactly what CBT tries to avoid. Working in groups is a valuable skill and may be assessed separately as part of another unit or framework, but when it comes to demonstrating a practical skill like how to change a spark plug in a lawnmower *everyone* needs to demonstrate competency in the task. Everyone needs to demonstrate not just that they know how to do it, but that they can actually, on their own, indeed *do it* - change a spark plug. And they should also be required to demonstrate competency on more than one occasion. (Three times seems to be the de facto number of times that students are required to demonstrate a task before being deemed competent, but it can vary.)

The competency standards currently being developed will include the methods of assessments trainers will use to assess each unit.

### *Competency is Not Time Dependent*

The very notion of competence is at the heart of CBT. CBT courses typically have just two grades – *Competent* and *Not Competent* (or NYC – Not Yet Competent.) And being competent is not dependent on whether you’ve completed a course of say, 20 hours. You may have achieved competence well before the nominal end of the course, or you may need to stay on for more training/practice beyond the nominal 20 hours before you can be deemed competent. Students in a CBT environment can all finish at different times. This creates problems for organisations who have traditionally trained groups of people at the same time, and who have no flexibility in their delivery for people to exit whenever they’re ready; whenever they’re competent. Work based training can be an asset in the CBT environment in this regard – employers can monitor a trainee’s progress, give them appropriate tasks and support to enable them to achieve competency without having to ‘go to school’ elsewhere. They ‘grow into competence’ as they work on the job.

### *Competency Standards*

In Vanuatu at present competency standards are being written for the units that will eventually become part of their TVET system. CBT training does not use grades (A, B, C; pass/fail; marks out of 100, etc). Competency is measured against a set of standards that are determined by practitioners in the relevant industry.

As these standards did not exist in Vanuatu when the existing OERs were written, they need to be inserted into the new materials and course activities aligned against them, and once completed will be part of the Vanuatu national training package – another quite challenging task.

### *Language Challenges*

When working in a second language tasks like writing course materials in line with agreed standards becomes much harder. The people charged with this task in this case were largely from a French speaking background, and the final materials needed to be in English. The linguistic make-up of Vanuatu is complex. The most widely used language is Bislama. Of those who speak French or English, approximately 60% speak English and 40 % French. There is a strong case therefore for the new competency standards and companion training materials to be also provided in French. This of course is a significant additional cost for the Ministry of Education but unless there are bilingual materials available the goal of access and inclusion to the new TVET system for all may be an illusion for ni-Vanuatu from Francophone backgrounds.

### *Video*

There is a solid body of evidence that confirms that courses of instruction that include multimedia (audio/video) increase rates of retention and student satisfaction. In many countries video has become almost a lingua franca among people under 30. It is their first port of call for discovering new

information (YouTube is their Google), and is an important means of communicating ideas and disseminating information to their peers.

In the current context the addition of media to the course content is a basic requirement. It is a technical/trades based course and as such is mostly concerned with learning skills that can be demonstrated and observed. Photos or drawings of engine parts for example are essential. A short video on how to dismantle a carburettor is infinitely more effective than a text description of the same process. However including video to supplement course materials brings several challenges.

- *File size:* video files can quickly become very large causing issues of storage and access. For people without Internet access, or with slow bandwidth, long or high definition (HD) video is an impractical option unless they have the video files on CD/DVD.
- *Who 'directs'?* Most people with basic digital cameras or simple modern mobile phones can take a reasonable photograph. It is not quite the same with video – angles, lighting, audio quality, close-ups, zooming and panning are all more complex skills that require practice.
- *Narration* – who narrates? Who writes the narration? Should it be scripted?
- *Ease of inclusion:* digital photographs can be integrated easily into print documents; video cannot be included in print documents.

Obviously the inclusion of supplementary video for any skills based or technical course is going to be a boon. Given that the target audience in the first instance (Vanuatu and the wider Pacific) are likely to have low literacy levels and/or a level of first language interference, video materials will be important to increase meaningful access to the finished materials, and encourage more flexible and inclusive delivery methodologies.

#### *Creative Commons Video*

YouTube is an astounding resource. If you search for something on YouTube it more than likely will provide you with multiple videos matching your query. And so it is when searching for video content on topics relating to Small Engine Maintenance. However, if you search for the same topics with YouTube's Creative Commons filter turned on it is a very different story. You get far fewer results and the quality drops away significantly. A search of other Creative Commons repositories also yielded little of value. This is a shame obviously because not only does it mean you have to create your own video content, but also because I suspect that a great many YouTube users would be very happy to make their content available as OERs but simply don't know about it. They make their videos and upload them and don't give a thought to copyright. And short of contacting the creator of every video you'd like to use and asking their permission, there's nothing you can do about it. Legally you are not allowed to use these 'no licence' videos. So you need to make your own.

#### *Making Own Video – Options*

The method that guarantees you the best quality is to use a film crew with expensive high tech equipment. This is also the most expensive and most time consuming. YouTube is full of quite reasonable quality videos created by users with little or no training. Users create video mostly using their phones, or with extremely portable (small) handycams. Point of View (POV) technology is also being used – especially for action footage. The POV approach has also been quite extensively used in some technical and trade training. The first person vantage point offers a unique and new perspective on a practical skill like removing a sparkplug.

User Generated Content (UGC) has been touted by some as important as it allows the user-creator to experience authoring content, and learn about how to distribute it via the Internet or mobile media. It gives the user an understanding and sense of ownership of the process. And as mentioned above, the

skills of creating and distributing video are very much a part of 21st century digital literacy. If students have the opportunity to create video for inclusion in the revised OER materials it gives them that sense of ownership, and simultaneously provides the necessary content: a win-win situation.

### *Current Status*

At the time of writing eleven of a total of seventeen units of the Small Engine Maintenance course have been revised and adapted to meet the requirements of Vanuatu's new TVET qualification framework. Revising the original OERS in Small Engine Maintenance has involved

- Adding information about how course participants would be assessed
- Stating course outcomes upfront in language that conveys the fact that outcomes are observable and measurable
- Relating these outcomes to criteria specified in the competency standards for each subject
- Revising instructional content so that it closely relates to the stated outcomes
- Devising activities that allow for assessment of individuals performing practical tasks
- Accreditation processes being finalised so providers can deliver the revised materials as an accredited offering
- Structuring the revised materials to include core and elective units to meet the requirements of the VQF

Happily, as the original OERs were quite sound in structure and content, much of the existing content could be retained.

### *Challenges of adapting existing training materials for a competency based environment*

Teachers and trainers, especially those with little or no formal training as educators, will likely follow the model of teaching they were exposed to as students. That is, they do to their students what was done to them when they went to school. And for most of us that was very much a teacher-centred model where everyone did the same thing at the same time – we all heard the same content at the same time; we were all given the same homework; we all sat tests at the same time and at the end of the course we were given a pass or fail grade and were moved on or, if we failed, were condemned to repeat the whole course again. It was a case of time served equalled a pass – even if it was a bare pass of 51%. At 49% you failed and had to repeat everything!

The most significant challenge for educators adapting materials for a CBT environment is grasping the significance of the student-centred approach where in theory there is no such thing as failure; where in theory students are given as much time as they need to achieve competence. Initially rewriting course objectives or outcomes using active verbs that are measurable can be challenging. Accepting that an outcome such as 'learn about two stroke engines' is vague – and if you have been using this kind of course goal/outcome for years it can be difficult to accept that it is not very useful – and not as effective as 'can identify the different parts of a two stroke engine'.

Getting trainers and teachers to understand and accept these kinds of changes about delivery methodology is the first step. This can involve asking them to outline the advantages of CBT. The group working on the Small Engine Maintenance course in Vanuatu suggested the following advantages:

- Easier to get jobs/qualifications

- Encourages learners
- Ensures quality product
- Increased student engagement
- Fosters growth of new life skills
- Provides training at all levels/ages
- Not time based
- No student fails
- Based on national standards
- Based on specific skills > good for communities
- Flexibility (anywhere, any place, any time)
- Step-by-step practical learning approach
- Learners will perform better in workplace
- Ensures training sessions are more oriented to practice rather than theory

Once people understand why a more flexible methodology better suits a CBT environment they are more easily able to fine tune materials and delivery strategies accordingly.

### *Conclusion*

Despite the challenges this task has presented we are confident that the resulting materials will be suitable for delivery in the new TVET training system in Vanuatu. We are hoping that they might also serve as a model for other vocational courses to copy.

While not yet complete, the whole exercise of adapting the Small Engine Maintenance materials has been a rewarding experience for the team involved. It has allowed educators to think more deeply about their teaching practice, recognise the value of the CBT approach, and appreciate that its flexibility promotes greater access for participation. The open-ended nature of CBT training – you exit when deemed competent – is also more inclusive. Those who need more time, support and practice to reach competence are given the opportunity to complete the training even if it takes a little longer.

While adapting the materials was initially slow going it became clear that the attendant analysis of how to best teach skills based subjects was an effective means of having people realise what CBT is in theory and practice.



## References

Peter Bright , Bill Lord , Helen Forbes , Florin Oprescu , Nigel Barr , Terri Downer , Nicole M Phillips , Lauren McTier , Vilma Simbag and Kristel Alla. Expert in My Pocket: Creating First Person POV Videos to Enhance Mobile Learning. Deakin University and University of the Sunshine Coast. <http://tinyurl.com/j3884kl> {Accessed 7 August, 2016}

Coghlan, M. (2009) POV Technology in Education. <http://www.slideshare.net/michaelc/pov-technology-in-education> {Accessed 7 August, 2016}

Cormier, D., & Siemens, G. (2010) Through the open door: Open courses as research, learning, and engagement. EDUCAUSE Review, 45. <http://net.educause.edu/ir/library/pdf/ERM1042.pdf> {Accessed 7 August 2016}

Coghlan, M. (2016) 21c learning: emerging trends in edtech. <http://www.slideshare.net/michaelc/21c-learning-and-emerging-edtech-trends> {Accessed 7 August 2016}

NZAid. (2015) Activity Design Document (ADD): Skills Development for Rural Communities

Sankey, Michael; Dawn Birch, Michael Gardiner (2010), Engaging students through multimodal learning environments: The journey continues. Proceedings ASCILITE 2010: 27th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Curriculum, Technology and Transformation for an Unknown Future

The State of Video in Education in 2016: A Kaltura Report (2016). <https://blog.kaltura.com/whats-state-video-education/> {Accessed 7 August 2016}

