

## **Open content for elearning: Cross-institutional collaboration for education and training in a digital environment**

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### **ABSTRACT**

The University of the West Indies Open Campus and Athabasca University conducted a pilot workshop to see if open educational resources (OER) could be used to construct curricula. UWIOC was interested in increasing distance education offerings and Athabasca University was interested in expanding programming to offer an online graduate program in Instructional Design. A workshop brought a team together to: come to a consensus on the format of module specifications, select appropriate resources, and to report on the feasibility of the approach. The team produced course outlines and specifications for modules using OER. The following were noted: Use of OER sped the aggregation of content; OER are not available for every topic; OER differ from the desired scope and academic level; they vary in media and content quality; and OER that lack clarity of authorship and copyright are difficult to include in courses.

**Keywords:** *Open Education Resources, Instructional Design, Digital Environments*

### **DIRECTIONS IN DISTANCE EDUCATION**

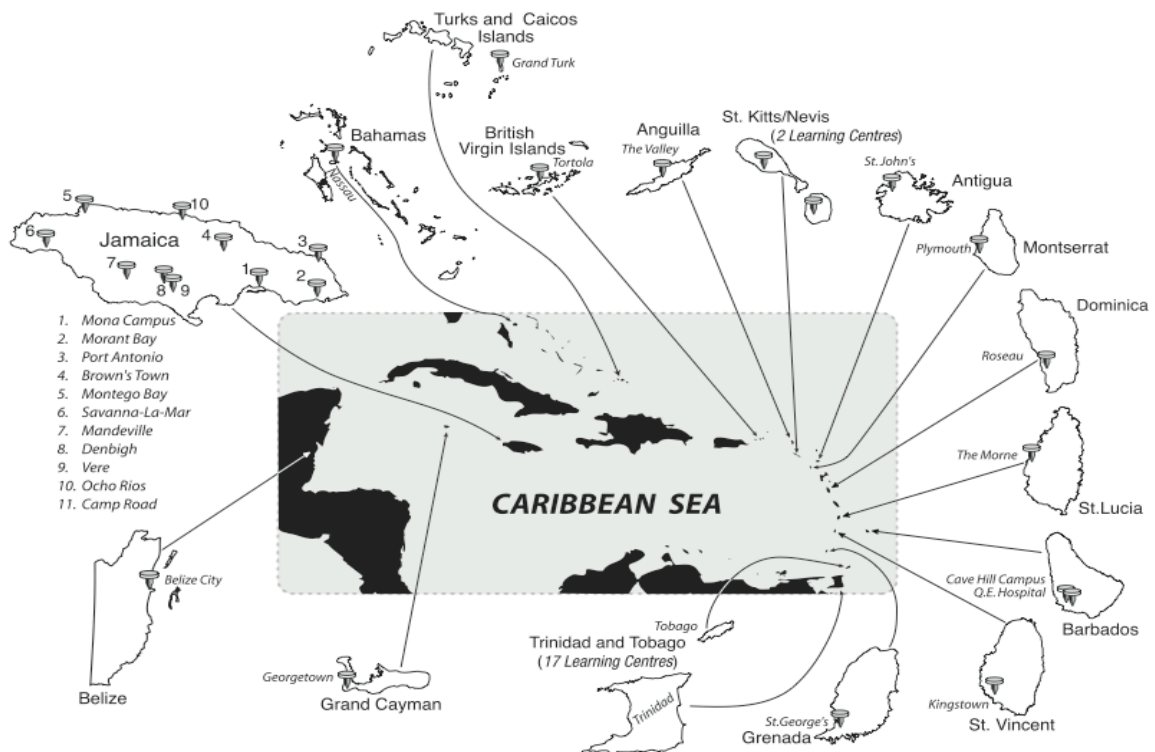
In the process of trying to achieve the Millennium Development Goals (MDGs), and more particularly in these recent difficult financial times, there has been a massive increase in interest in distance education in both developed and developing countries. Distance education is very attractive for governments wishing to achieve a rapid increase in trained professionals without the massive infrastructure costs associated with “bricks and mortar” institutions. Considerable progress has been made in some professions, but there is still a desperate need for more training in others. Distance education also has the potential to diminish the internal brain drain from the rural areas that often occurs when students are forced to move from their communities to an urban institution if they wish to study.

From the point of view of the learner, not only is distance education usually more affordable, it is also more convenient – allowing the learner to study where and when they wish. And it means that those in employment wishing to upgrade their education do not need to seek study leave or relinquish their positions. There are difficulties, of course, and these have been well researched and documented in many contexts over the years. These include: questions about the quality, providing adequate learner support, helping dependent learners, lowering the high attrition rate, and dealing with the lack of time and funding to create materials. But there is new hope for tackling these difficulties. This paper looks at an initiative taken in the Caribbean to tackle one of these difficulties, viz., the lack of time and funding to create materials.

## THE BIRTH OF AN “OPEN CAMPUS” IN THE CARIBBEAN

The Caribbean region comprises a number of islands and mainland countries which border on, the Caribbean Sea. Described as small, developing countries, they share a history of colonization by the English, French, Spanish and Dutch (some countries still remain colonies) resulting in varying language and culture groupings in the region today. Human resource development is a primary concern of governments in the Caribbean, with increased participation in post-secondary education viewed as an important aspect. Because of the relatively small population distributed across mainly small islands, distance education is seen as an important means of providing cost-effective access.

The University of the West Indies Open Campus was opened in 2008. It was created by combining and reconfiguring the existing outreach entities of the University, the largest being the Distance Education Centre and the School of Continuing Studies. One of the key strategic aims of the creation of an Open Campus was to enable The University of the West Indies to expand the scope, enhance the appeal and improve the efficiency of its service to the individuals, communities and countries which it serves.



**Figure 1:** Open Campus sites throughout the Caribbean

The Open Campus is simultaneously a virtual campus and a physical entity with 50 site locations in 16 countries in the English-speaking Caribbean (see Figure 1). It is currently developing and implementing a range of methodologies and formats for the delivery of Open Campus programs, including blended learning modalities (face-to-face, online, and distance) along with the

distribution of print and software materials. But like so many other higher and tertiary education institutions in developing countries, the University finds the time and cost of developing the required materials to be prohibitive.

## **ADDRESSING RESOURCE DEVELOPMENT ISSUES WITH OPEN EDUCATIONAL RESOURCES**

When you are teaching a large number of students, e.g., at the Open University UK or the Indira Gandhi Open University, then the cost of development becomes less significant because it can be shared across a large enrolment. But the small populations in Caribbean countries do not allow these economies of scale.

But consider: If I share my loaf of bread with my neighbor, then I'll have less bread for my family. However, if I share my knowledge with my neighbor, I still have the same amount left. So why do we treat knowledge as a commodity that must only be shared if others pay for it? Now apply this simple observation to course development. Individual institutions might not have the resources to develop a whole online program themselves, but might be able to contribute one online course to a "bank" of such courses to be shared by many institutions. Taking this approach further, there is no reason why such online courses cannot be made available to the world as "Open Educational Resources". Clearly, utilizing courses from such resource banks frees up time and diminishes the amount of funding required for individual institutions to develop and deliver programs to their students.

Open educational resources (OER) are web-based educational materials that have purposely been made freely available for the re-use by others. UNESCO (2002) noted the potential benefit of OER for expansion of education in the developing world. Over 200 educational organizations, including the UWI Open Campus, have signed the Cape Town Open Education Declaration (Open Society Institute, 2007) a manifesto to remove barriers to education through the sharing of OER. In principle, users of "open" educational resources are free to use, adopt, modify and re-publish the materials to suit their own purpose. Creators of materials may assign specific rights to the reuse of their OER and usually do so through a Creative Commons License (Lessig, 2010). The most common license provisions require acknowledgement of the source, but allow free non-commercial use. Several large institutions have made their distance education online courses available in this way, e.g., the Open University of the UK.

The OER approach is growing in academic journals. For example, Athabasca University Press publishes the *International Review of Research into Open and Distance Learning* as a free online electronic journal. An annual grant helps cover the editing costs, and Athabasca absorbs the overhead of the electronic infrastructure. Now in its tenth year, *IRRODL* has become one of the most widely read and cited journals in the field of Distance Education. Although the journal is distributed for free, it maintains a rigorous academic review standard using the Open Journal System – open source software that itself is free to use. The *International Journal of Education and Development Using ICT (IJEDICT)* – an online, open access journal edited by one of the authors of this paper and published by the UWI Open Campus – also uses the Open Journal System to manage the submission, reviewing, editing and publishing process. *IJEDICT*, now in its sixth year and with a readership of many thousand, carries peer-reviewed articles mainly by authors in developing countries.

AUPress has also produced a free series of academic books *Issues in Distance Learning* (Anderson, 2008) that have rapidly achieved high levels of readership. Free distribution makes academic content that has largely been produced through government research grants by

publicly funded academics available to a much larger audience than traditional distribution channels. Once again, the benefit of this openness is particularly felt in developing countries.

In a traditional publishing model, the market provides a financial incentive to produce and update quality texts, ancillary materials such as study guides, images and examination banks, and to invest in their marketing and distribution. These costs are passed along to the students and become a major part of the cost of education. Unfortunately few students in the developing world can afford commercial textbooks. Free materials provide an alternative, and the growing cost of texts has already inspired collaborations between Rice University's Connexions and the Community College Consortium for Open Educational Resources (CCCOER) to produce open textbooks (Baker, Thierstein, Fletcher, Kaur & Emmons, 2009). In addition to the economic incentives, open textbooks can be made available for digital distribution – thus they could be openly vetted and adapted by faculty to ensure accuracy of content and enable selection of material relevant and appropriate for the target audience. While the benefits seem obvious, many questions arise about the economic sustainability of the OER approach.

While a growing number of projects and consortia are forming to share educational media resources, e.g., the Commonwealth of Learning Virtual University of Small States of the Commonwealth (VUSSC), individuals are also contributing to the growing pool of open resources. Informal learning has been flooded by the thousands of ten-minute videos that have been posted on repository sites like Youtube.com. These “how-to” vignettes cover most every topic from piano jazz to calculus. Whatever the motivations of the producers, their continued growth whether measured in available videos or number of viewers is probably the strongest indicator that there is a sustainable market for open education and that schools, colleges and universities no longer have a monopoly on the distribution of knowledge.

### **THE UWI-AU PILOT WORKSHOP ON OER**

Despite their apparent popularity, a number of pragmatic issues such as availability, quality, format, and copyright surround the use of OER in academic settings. In 2010 the University of the West Indies Open Campus, and Athabasca University conducted a pilot workshop to see if Open Education Resources could actually be used to construct university level curricula. UWI was interested in increasing its distance education offerings throughout the sixteen Caribbean countries it supports and a masters program in Instructional Design could provide the skilled designers to produce the new courses. Coincidentally, Athabasca's Centre for Distance Education was also interested in expanding programming to offer an online graduate program in Instructional Design. A Cooperative venture using Open Education Resource would greatly advance the interests of both organizations and the use of OER had the potential to reduce costs of development.

#### **Workshop Preparation**

Draft outlines from each university's program proposals were compared to identify six common modules of interest. The next step was to have research assistants conduct an Internet search to identify available materials. Then, the workshop brought curriculum development leaders from each university together in Barbados for during the first week of May. Their goal was to come to a consensus on the format of the module specifications, to select appropriate resources, and to report on the feasibility of the approach.

The search for available resources was conducted prior to the workshop. Each module was assigned to a research assistant, and they were provided with the module topics and a list of known OER repositories. They were also allowed to search using Google. Both research

assistants had previous training on evaluation of on-line learning objects using the Learning Object Review Instrument (Nesbit, Belfer and Vargo, 2002). The LORI evaluation criteria were slightly modified to meet the needs of the project, and an on-line SurveyMonkey form was used as a quick database to enter relevant resources. Results and observations of the researchers were posted on the project wiki at <http://uwi-au.wikispaces.com/>.

The search results showed that finding relevant OERs was not an easy task. Many of the repositories turned out to be project sites that pointed to other repositories. Many of the repositories had poor meta-data or poor search mechanisms. Google search proved much more efficient in locating objects than approaching repositories directly or going through federation gateways such as GLOBE ([www.globe-info.org](http://www.globe-info.org)). As copyright ownership and usage permission were often unclear, particularly when a site obviously embedded content from a third party, the advanced search function on Google proved advantageous as it allowed filtering for materials that had a Creative Commons license. Objects that were found varied greatly in target audience, format, content quality, and size. Few met the SCORM concept of a learning object as a complete unit of instruction; most were text documents, web pages, images or videos. The OER world is very much “buyer beware”: you get what you pay for, but the price is patience. Eventually, eight to ten OER were recommended for each of the six target modules.

### **The workshop**

Curriculum specialists from AU attended the week-long workshop together with a group of instructional designers and media producers from UWI. The first task for Monday (day one) was to settle on a specification template that could be used for all modules. It was agreed that a template already used by UWI developers would be sufficient for the task. The research assistants called in by Skype and gave a one-hour summary of the work they had done, highlighting the reasons why the recommended resources had been selected.

The group was then divided into three teams of three or four people each, the project leads from both AU and UWI were also assigned to groups but ended up spending most of their time moving from group to group to advise on the process. Each team was assigned two of the modules and progress reports were made at the end of each day with a final review of the products and accomplishments on Friday morning (day 5).

Each team had five tasks: 1) Review the draft program proposal to specify learning outcomes for each module; 2) Provide a draft treatment for learning activities that might best produce the outcomes; 3) Review the recommended learning objects to decide if they were appropriate for the revised outcomes; 4) Identify new OER and supplementary (commercial or institutionally developed) resources that could be used in meeting the objectives; 5) Document the module specifications using the agreed upon template.

The team succeeded in producing six course outlines, and detailed specifications (i.e., drafts) for six modules (instructional units equivalent to one to two weeks of traditional face-to-face learning activity) using Open Education Resources. In many cases they were surprised that some OER had been made available by the same authors who had successful commercial resources.

The use of OERs immensely sped the aggregation of content. OER come in different sizes – from entire courses, to textbooks and journal articles, to short lessons and multimedia elements such as pictures or animations. The team noted that OERs are not always available for every topic, that OERs may differ from the desired scope and academic level, and that OERs can vary widely in media and content quality. OERs that lack clarity of authorship and copyright are difficult to include in course packages. Still, OERs are a growing body of reusable knowledge and offer tremendous potential to speed course development in emerging economies.

## DISCUSSION

OER in the area of Instructional Design do provide a feasible alternative to purchase of commercial materials or to the development of new curriculum resources. The range of available resources will probably vary with the content area. OER can be used directly, they can be re-purposed to meet local needs, or they can provide models for developing new resources more appropriate for the target audience.

Many resources offered as OER have unclear copyright information – this is particularly true of web sites and documents that borrow heavily from other web sites without documenting the copyrights associated with the embedded materials. OER with unclear copyright or licensing information were unusable by the workshop participants.

Despite the amount of effort that has poured into learning object repositories, Google seemed to be a more efficient search tool, particularly since the advanced feature allowed the user to specify materials with CC licensing.

Because OER originate in so many different contexts, they have no standard format, complexity or length. Although there are meta-data standards such as the IEEE, these standards are not well adhered to and meta-data is often missing or incomplete. OER originating in multi-party collaborations may fare better in this regard – projects like the Commonwealth of Learning's WikiEducator ([www.wikieducator.org](http://www.wikieducator.org)) or the CCOTP open textbook projects found they had to establish templates and guidelines early in the production process, so more uniformity of OER can be expected from these sources. Organizations anticipating large curriculum development projects might profit best from establishing collaboration guidelines early in the project to avoid results that can not be easily assembled into courses.

OER currently focus on content; little or no meta-data is available on the embedded learning activity or implicit learning strategy in the OER. More attention needs to be paid to approaches like Dalziel's (2003) Learning Activity Management System where the focus is on reuse of the pedagogic strategy rather than re-use of the embedded content.

While OER may be free, considerable effort may be required to find suitable material and edit them into a smooth learning package. Instead, OER users may find the integration resembles a circus ringmaster who provides context and cues the appropriate resources as required. The ringmaster will need to remind the learner on how to re-enter the main learning package after viewing the OER.

The OER may contain material that is not the most appropriate for achieving the learning objectives of the course in its unique context. Thus, there may well be a need for adaptation and localization of the material, e.g., replacing US or Canadian examples with Caribbean examples, the incorporation of new learning scenarios, changing language structures.

It may also be necessary to use supplementary resources. Note that it is possible that some of these supplementary resources could be commercial, but care must be taken how these are used so as not to affect the CC license of the course material and the possibility of it being added to the bank of OER. So the listing of a course textbook as recommended reading would be fair usage, but the incorporation of parts of the commercial textbook without copyright permission would not.

Most OER repositories do not collect user reports on the quality of the resources provided. Although Youtube.com does provide a five-star rating, the criteria for the rating are proprietary and influenced heavily by core users. Popularity does not always reflect quality or suitability for an intended audience. These decisions have to be made by the course designer as they review OER.

OER do little to address technical problems of use of web information. An organization that embeds third party resources into their lessons needs to have contingency plans against the sudden disappearance of selected resources. The best strategy is to cache the selected OER to an internal server, and advise the owner with a request for copyright permission to mirror the resource for a certain period of time. Organizations that are unable to cache the selected resource need to have a contingency plan involving alternate resources should the primary OER suddenly disappear or have its CC license revoked by the owner.

Copyright law and enforcement varies around the world. When in doubt institutions should exercise caution when embedding materials from web sites located in jurisdictions where copyright is unheeded because the original owner of the material may choose to have their copyright enforced in the institution's home country where the law is less forgiving.

## **CONCLUSION**

OER is about sharing. Institutions that embed OER material in the courseware have a moral obligation to share back derivative works. If an organization that embarks on an OER strategy cannot find suitable materials, they should create them and share them back to the community. OER is built on trust. To ensure a sustainable OER environment continues, institutions should encourage the widest possible distribution of their adaptations of OER and other educational resources they possess.

As much as academic freedom needs to prevail, adhering to some practical standards for the authoring of OER materials greatly enhances their potential re-use. *Connexions* and the Open Textbook Project provide good examples of how the creation of common resources eventually led them to reduce chaos by agreeing to standard software tools and templates for creating pages, conventions for naming elements and files, and standards for managing and reviewing workflow (Baker et al, 2009). *Connexions* provides a set of guidelines for would be authors at <http://cnx.org/help/authoring/authorguide>. Similarly, clear declarations of copyright and permissions need to be attached to the objects through Creative Commons Licensing. The final hurdle is better metadata including object descriptions so that OERs can be easily found by search engines. Such constraints are simply the beginning of making content shareable and it may be easier to set such standards in a small community of sharing colleges than to attempt to attain global agreement.

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