Research Brief

April 2012

Introduction

The OECD cites four key changes that have affected the higher education sector: globalization, demographic changes, changing governance and technology[i]. These changes present an opportunity to increase the quality, value and speed of education development and delivery, through open education resources (OER). OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge. For something to be labeled an OER, users must have both free (no-cost) access to the OER and legal permission to engage in the "4R" activities when using the OER, including:
○ *Revise*: adapt and improve the OER so it better meets your needs;
○ *Reuse*: use the original or your new version of the OER in a wide range of contexts;
○ *Remix*: combine or "mashup" the OER with other OER to produce new materials;
○ *Redistribute*: make copies and share the original OER or your new version with others.

All materials produced from the TAACCCT grant funding must be made available with CC BY licenses. That is, they will become OER. How can you transition your colleges to an OER environment? The Open Professionals Education Network (OPEN) team can help you and has experience in:
○ open licensing and metadata to contribute OER;
○ finding OER;
○ policy creation and transitioning to an OER environment;
○ supporting the creation and continuous improvement of high quality online courses and learning environments.

OPEN is funded by the Bill & Melinda Gates Foundation and has created free services aligned with the U.S. Department of Labor's grant requirements and designed to support your project. Our partners' long-standing experience in these noted services areas may help you achieve your project goals while minimizing your time and resources spent.

This OPEN research briefing paper describes analysis undertaken to April 2012 on the TAACCCT projects. It provides a status update for staff working on projects funded by DOL TAACCCT grants. Your reactions and feedback to this paper as experts in the field are important to us and we can tailor our research program accordingly. Please email your thoughts to anna@creativecommons.org who will act on your feedback as soon as possible.

Analysis

The OPEN Consortium has read the initial thirty-two grantee proposals (1000+ pages) through the lens of key criteria of interest to the OPEN Consortium. The aim of our analysis was twofold: to understand levels of awareness, abilities and goals regarding licensing and OER amongst project teams; and to identify potential projects that may partner with the OPEN Consortium to create innovative courses and learning environments. Several broad themes emerged across the proposals and were noted.

An exploratory approach was used and OPEN is interested in: new content creation; collaboration and openness; learning technology infrastructure; student retention; innovation; the target population; and courses in high growth industries. For example the following are of interest, although this is not an exclusive or exhaustive list:
○ projects that aim to create new content;
○ projects in high impact STEM industries;
○ consortia using evidence-based learning practices linked to retention;
○ willingness to work with the OPEN Consortium;
○ consortia using and creating open education resources;
○ degree of overlap with the courses of other projects;
○ projects targeting veterans; culturally, racially or ethnically distinct; high poverty; low skill; underemployed.

The OPEN Consortium acknowledges project leaders are managing large complex projects with multiple teams, many initiatives and different resources across states, systems and colleges. Because these projects are complex, there is no one solution to each issue that can be applied across all projects and each project has unique goals and challenges. Although we have analyzed each project in detail this summary provides a general overview only. Our indicative findings align with the grantee focus review by TAConnecT[ii]. Finally this review of proposals is incomplete because several proposals are not yet publicly available.

The Research provides a starting point for the project and has been used in different ways. Firstly projects were matched to members of the OPEN Consortium according to our criteria and expertise. An outreach plan was developed that aimed to: educate grantees about licensing; refine a list of projects or course sequences that may benefit from co-design; and advance towards deeper collaborations with projects. Secondly, key themes and commonalities emerged from the analysis that may suggest opportunities for 'high impact' education outcomes, and they are explored further in the OPEN Consortium survey that is currently underway.

This paper next describes initial findings including general themes that emerged and reflections upon those themes. Following that a description of initial findings from the OPEN survey are provided.

Initial Findings

All project consortia expressed the need to provide bridging programs (in literacy, maths and personal effectiveness skills). Each program requires contextualization, for example bridging programs for technology courses differ to those for nursing. Bridging programs aim to improve student resilience however strategies to be used differ widely. Embedded remediation, accelerated time to degree completion, contextualized developmental education, learning communities, career coaches, and early assessment were just some of the strategies mentioned.

Synergies in course content were noted, for example in: nursing (RN, PN, CNA), aged care, paramedics, solar installation and robotics. Eighteen out of thirty-two projects reviewed offer healthcare programs, roughly 121 healthcare courses. At most eight contain healthcare courses not offered by other consortia. In other sectors courses (for example in advanced manufacturing and robotics) are different but share common elements that could benefit from collaboration. The figure below illustrates how we identified course synergies, specific details to be provided at the OPEN conference and in final analysis.

Figure 1: Healthcare course synergies

Several projects aim to apply emerging innovative approaches (mechatronics, robotics, green energy and advanced manufacturing) to traditional industries, as tailored to the needs of major local employers. At least eleven (thirty-four per cent) of thirty-two projects include national goals and at least seven proposals mention working with the OPEN Consortium.

Common themes emerged from the proposals relating to: sharing content; using open content that is already available; accelerated learning; student retention strategies; and use of innovative learning technologies. A word map of keywords from the proposals is below and the larger fonts represent most frequently occurring phrases. This however is a snapshot and refined themes arose within context from reading the proposals. Of note 'Open Education Resources' was a keyword in only two proposals.

Figure 2: Pedagogical Keywords used in Proposals

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More detailed findings will be provided when this review is finalized. We have summarized key themes that are of interest to the OPEN Consortium and - while there is a high degree of variability amongst individual projects - it provides a touchstone for the start of this program. There were many examples, and samples taken directly from proposals highlights some themes.

Table 1: Project proposal excerpts that exemplify broad themes

Thinking Broadly
● Build nationally portable best-in-class courses, to galvanize a national movement including best practices;
● Systemic redesign of education delivery;
● Project products and tools will be disseminated nationally in years 2&3 of project via NTER, SEED or other open repositories;
● Create model courses and templates, best practices documentation;
● 3 principles: standardization, customization and regionalization;
● Expand individual courses across the consortium, and course changes will be integrated across colleges;
● Build a framework of methods that colleges can localize;
● Build a credentials system that ties with national systems;
● Integrate existing systems across colleges in the consortium, and students in other states may attend courses

Open Content
● Content will be designed as Reusable Learning Objects (RLOs) - modular curriculum format to be redeployed
● Use of OER will be prioritized so that online content will not be created where it already exists;
● Use an open source repository into which all colleges will submit content for standardization.

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Accelerated Learning
- Aim for students to complete a 2-year program in 1 year;
- Creating new developmental curriculum to reduce time to complete requirements and increase developmental

Student Support
- Create an online platform for students and coaches;
- Develop web enabled contextualized bridging courses;
- Create fully-accessible, open access online modules for developmental education;
- Automated Early Warning and intervention system (E-wise) and Intrusive advising;
- Multiple retention goals including use of cohort structure, embedded remediation and compressed time;
- Self paced e-learning modules, learning communities and e-portfolios to improve retention and achievement rates.

Learning and Instruction
- Develop online 'wrap around' services for workforce readiness;
- Personalized instruction and individualized competency based training;
- Building real-time online interactions;
- Use technology including blended, online, Virtual Career Network platform and others;
- Develop hands on simulation and visualization modules to mimic lab experiences;
- Virtual lab platform & curricula - aim for two hundred new open source labs for off site students;
- Goals for retraining teachers.

The samples typify general themes that emerged from thirty-two proposals and are of interest to the OPEN Consortium.

Reflections upon initial findings

One third of projects are thinking about the national applicability of new courses created with this grant. If you are not thinking nationally, would you now reconsider?

If you are preparing new courses in *emerging* industries, the pool of existing OER is small. The development challenge escalates if the industry is evolving rapidly. An open approach - sharing tools and resources with other educators in the same industry - presents an opportunity to enhance the speed, value and quality of education development and potentially decreases the groundwork required.

Secondly, if you are developing courses for a rapidly evolving industry, they require equally rapid iterative refinement. How quickly will you amend courses based upon student feedback?

If your course developers reuse resources from similar courses then more time may be spent on course improvements (for example, tailoring the course to local employer needs). This can then be shared with other educators who may do the same.

There is no 'one size fits all' solution, and equally important to content development is the interactions of students, educators and employers. Every course must be tailored.

All projects reviewed to date require bridging programs. Are bridging programs a core offering of your courses or a pre-requisite to them? Is creating bridging programs an optimal use of course developer time or is there a shareable open source solution that your course developer may reuse and tailor to local course needs? Is this already happening?

The learning strategies of bridging programs to support student retention may be implemented through a co-design and +platform process.

Given the constraints of community college environments and the proliferation of free or low cost tools, trying to deal with variability through a one size fits all approach to one component of learning, such as how information is represented, would be limited. Instead, open education resources must attend to how components interact. For example, we must consider how learners act on content by creating flexible approaches to achieving course goals and assessing success, and through the various ways learners and teachers engage with one another around course content. This requires an examination of how we manage variability in all aspects of curriculum – learning goals and objectives, teaching methods, materials and assessments.

The OPEN Consortium can show your project teams how to find, use and share Open Education Resources.

Initial indications from the OPEN survey (survey active as at April 18)

Projects are still organizing resources and the larger multi-state and system consortia may not yet be ready for collaboration

Grantees have indicated strongly that help is needed to:
- Openly license their materials with CC BY;
- Apply metadata to their materials; and
- Find quality OER for reuse in their courses.

To a lesser extent, three respondents require guidance on the use of their open licensed course materials together with materials from third party vendors.   These points will be addressed at the Open conference.

Next steps

Over the next quarter the OPEN research team aims to:
○ analyze remaining proposals when they become available;
○ finalize proposal review analysis;
○ analyze and report survey results (May);
○ meet representatives from grantees at the OPEN conference;
○ contribute to a project that identifies relevant OER for project industries;
○ use feedback to refine the research approach.

Your reactions and feedback to this paper as experts in the field are important to us and we can tailor our research program accordingly. Please email your thoughts to anna@creativecommons.org who will act on your feedback as soon as possible.

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[i] Centre for Educational Research and Innovation 2007, 'Giving Knowledge For Free', Paris, OECD, <http://www.oecd.org/dataoecd/35/7/38654317.pdf > (PDF,18-22).
[ii] TAConnecT 2011, 'Resources Illustrated. A Resource Guide for TAACCCT Applicants and Grantees' VisionLink, <www.taconnect.org/sites/taconnect.drupalgardens.com/files/Resources_Illustrated_v2_031512.pdf> (PDF, 73)