

Running head: UTILIZING OER FOR DEVELOPMENT

Utilizing Open Educational Resources for International Curriculum Development.

Peter Rawsthorne

Memorial University of Newfoundland

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Dr. Dennis Sharpe

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Abstract

With the growing adoption of technology in education combined with the increasing focus upon open educational resources (OER) it is becoming an essential skill for educators to know how to create, reuse and alter OER. A recent report from the OECD (2007) highlights how this growing need is being encouraged by globalization, increasing competitiveness among educational institutions and the support from funding organizations. All these factors are creating an environment where the success of OER is becoming an extraordinary trend (OECD, 2007). To meet this growing need the time has come for a learning program that focuses upon the creation, reuse and alteration of OER materials. This paper provides a proposal for such a learning program and addresses the many aspects of program development and its ongoing sustainability.

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Introduction

This program proposal has been developed to open discussion regarding the need for an Open Education Resources (OER) developer program and to get feedback to the programs structure, approach and outcomes in meeting the learning needs of an OER developer. The programs proposal follows a model developed by Churchill and Rawsthorne in 2007 to support their requirements for a course in a Masters of Education program. The proposal will be solicited to existing OER providers to gain their support and endorsement. The proposal has been developed with the belief that a program focused upon developing the skills and knowledge of educational resource developers has become increasingly required with the adoption of OER. It is believed that such a program would be well subscribed. The proposal identifies the attributes of the learner and discusses the programs formal needs assessment. It identifies how projects and programs operating within OER are having success from both a subscription and funding perspective. The proposal includes a plan that identifies performance indicators to encourage the programs success and ongoing sustainment. The proposal identifies and initial set of modules that introduce the learner to OER, the toolkits required for its development and a project where the learner adds to the OER commons. The proposal offers a strong implementation and evaluation plan that includes input from stakeholders, subject matter experts and learner contributors. The final evaluation phase of the proposal encourages ongoing program improvement that feeds back into the envisioning of the next iteration of the programs development. The proposal is also supported by documents provided in the Appendixes. These documents elaborate on the programs budget, schedule and technology adoption.

Envision

As defined by Churchill and Rawsthorne (2007) the envision phase will focus upon the identification of learners, the context and settings combined with a needs assessment to confirm and deepen the programs vision and an approach to program evaluation.

Learners

The learners will be degreed K12, college and university faculty wanting to develop and re-contextualize open educational resources (OER). As instructional developers they will have introductory skills and knowledge in using technology for developing instruction with a keen interest in deepening their multimedia technology skills for both high and low bandwidth environments. They must be strong communicators with a desire to seek out local knowledge and resources to ensure the OER are localized to encourage use, understanding and contextualized learning (Stacey, 2007; Wiley 2007). The learners will have the following salient characteristics;

1. **Post secondary education** – OER materials are focused upon K12 and post secondary. OER developers need to have at least post secondary education to engage in developing materials in these domains.
2. **Understanding of learning theories / epistemology / pedagogy** – A background in learning and knowledge building would assist in creating and altering OER learning materials.
3. **Context awareness** – the alterations of OER materials will often be due to context or targeted to a particular context. Context awareness is essential for altering OER.

4. **Self directed** – beginning and completing an OER project will require an amount of self direction.
5. **Proven ability to create learning materials** – learning materials need to be well thought through and acknowledge differing learning styles. Previous experience in this capacity will be required for success in creating and altering OER.
6. **Hard workers with understanding of and belief in continuous improvement** – OER material development is often poorly paid and requires a lot of work to create quality. The other side is that the materials will need to be changed and will be altered by other people. Staying abreast of these changes will require continuous focus and an eye for improving quality.
7. **Altruistic and more socialist in bent** – People will not develop OER for the money. It requires an altruistic world view where work is done for the commons (common good). People who do not fit this description may not have success in this program.
8. **Cultural and global issues / sensitivity aware** – OER will be targeted to many different people in many different locations from many different cultures. Developing OER to meet the needs of the many while identifying what would have to be altered for context is an important attribute for the OER developer.
9. **Localization awareness** – altering learning materials of a new context requires awareness and sensitivity to the local environment.
10. **Willingness to learn about copyright, intellectual property and licensing issues** – the legal issues within OER is growing yet becoming simpler as issues are

resolved. Knowing what existing materials can be used and how is important. A willingness to understand the matrix of issues within this domain is important.

11. **Technology savvy** – much of the design, production and delivery methods for OER are technology based. Being able to utilize technology will be essential in being successful with international OER efforts.

For simplicity and readability the term of ‘OER developer’ will be used for the remainder of this program proposal to describe the learner.

Context and Setting

The context for this program is within the existing international OER repositories and to provide additional educational resources to encourage OER developers to create, re-use and alter OER materials for new educational contexts. The OER developers will be working in a variety of different settings that will include, and are not limited to;

- Rural and contextually specific – learning materials are being built for a specific purpose in a specific localized region.
- National – learning materials are being built for a national curriculum.
- Domain specific – learning materials built for specific universal subject domain.

Needs Assessment

The focus of the needs assessment will be threefold; first, to identify the approaches used by existing OER developers who create and reuse OER materials and to determine their areas of challenge and where they see the need for learning materials in this capacity.

Second, identify the technology “toolkits” currently used in OER development and where the future seems to be directed. And third, get a ground level assessment of the level of

technology access in the developing countries where OER have been developed or utilized and gain insight into the impact of the level of access. The needs assessment will be targeted toward three of the four roles as defined by Ojo (2007); Government, Institution, Teacher and Learner. Our assessment will exclude Government as a role, as this program is more focused on the OER development.

Approach

Executing the needs assessment will be a challenging, and potentially expensive (Rothwell and Kazanas, 2004), stage in this programs development. It is believed the existing OER institutions will be interested in utilizing, and providing input, to this program and will therefore contribute to the requested assessment. In general the needs assessment will be an online survey with follow-up interviews where necessary. Some institutions, including MIT, have similar needs assessments already executed (Carson, 2007; Lane, 2007), and given the spirit of openness have provided their findings through conferences. It is expected that other institutions may provide assessment results to assist in this programs development. Either way the following OER providers will be contacted for participation in the needs assessment.

- Open University (UK) Open Content Initiative - <http://openlearn.open.ac.uk/>
- Rice Connexions - <http://cnx.org/>
- Carnegie Mellon Open Learning Initiative - <http://www.cmu.edu/oli/>
- Commonwealth of Learning - http://www.wikieducator.org/Main_Page
- UNESCO Open Training Platform - <http://opentraining.unesco-ci.org/cgi-bin/page.cgi?d=1>

- MIT OCW - <http://ocw.mit.edu/OcwWeb/web/home/home/index.htm>
- National Repository of Online Courses - <http://coursepository.org/index.html>

Themes

Each of the three focuses in the needs assessment will set out to answer particular questions. The answers to the posed questions may also require further assessment to confirm the findings; this follow-up is where interview may be used. The use of the interview will be determined after the first iteration of data gathering is complete. Each focus will have questions along the following themes;

Existing Approaches to OER

- Where do you find OER? Do you find yourself using one repository more than another?
- Do you use complete modules or individual parts of modules? Do the existing repositories ease the use of module components? Do you find licensing an inhibitor to using module components?
- How much do you use multi-media? What are the biggest restraints in using multimedia?
- What issues of localization do you find take the most effort?
- What do you find most challenging in relation to OER?

Development Toolkits

- What toolkits and / or methodologies do you currently use for developing OER?
Are these toolkits open source or vendor specific?

- How much is multimedia used in OER development? What do you consider multimedia?
- What do you consider the most important issues around using multimedia for OER?
- How is your OER material hosted? What costs are associated with hosting? And is the funding sustainable?
- What toolkits and approaches do you see using in the future? What barriers need to be removed for OER to be more successful in the future?

Access to Technology

- How much is bandwidth an issue when developing and deploying learning materials? If poor bandwidth is an issue please explain how and its impact.
- Do you have adequate technology (include video, audio, radio, multimedia, etc. as technologies) to develop learning materials?
- Do the students have adequate access to technology for developed learning materials? Please elaborate?
- How does your current level of technology access impact the learning for yourself as an instructional developer and for the students?
- What future initiatives within your school, district or region do you see having a positive impact upon access? What do you see required to improve access?

Program Evaluation Approach

The overall program success will be evaluated via the listed performance indicators.

Evaluation on these indicators will be gathered using a variety of methods and the first evaluation will occur before the program becomes available. This initial evaluation will

become the baseline to show improvement, all subsequent evaluations will be closely monitored and used to provide direction to program changes. The identification of these indicators comes from three primary sources and numerous secondary sources. The primary sources include; the guidance in identifying and writing performance measures found in Rothwell and Kazanas (2004), the evaluation framework utilized by MIT and presented by Carson (2007) and the Critical Success Factors (CSF) identified by Ojo (2007). Using these three primary sources provides; the balance of a strong (and proven) evaluation approach from Rothwell and Kazanas, performance indicators from a mature open resource from the MIT-OCW project and insight of the OER issues from the developing world through Ojo. The secondary sources come from the research in writing related papers on Community Knowledge Management for Development (2006) and Assessing the Quality of Open Educational Resource based Wikis (2007) by Rawsthorne. The indicators are as follows; it should be kept in mind that additions or changes to the identified indicators may occur after the needs assessment is complete.

1. Who is accessing the program (as identified by online profile role)?
2. What are the learners' disciplines and interests?
3. What is the learners' location?
4. How is the OER being used? Is learning design appropriate for use?
5. Are learners completing the program? Are they returning to the materials for later reference?
6. How are the materials being used or adapted?
7. Are changes occurring to both root and derived content?
8. What impacts are occurring via the use of OER?

9. Exit surveys from program participants

Planning

As defined by Churchill and Rawsthorne (2007) the planning phase will focus upon the publishing of the mission statement with the devised goals and objectives, define the programs strategy and identify the modules and overall curriculum.

Vision and Mission

This program is designed for K12, college and university faculty and staff who want to focus on developing Open Educational Resources (OER) in an international development context. With the growing adoption of technology in education combined with the increasing focus of using OER within international education it becomes an essential skill to know how to create, reuse and alter OER for the international context.

The mission of this program is to provide educators with a “toolkit” for OER development. The toolkit will aim to build knowledge of the issues surrounding OER and the skills to utilize the technologies being used to facilitate OERs creation, reuse and adoption.

Goals and Objectives

The goals of this program are;

1. To develop an understanding of Open Educational Resources as an ideology and a practice.
2. To introduce faculty and staff to the many sources of OER.
3. To investigate the licensing and intellectual property issues with OER.
4. To review the international guidelines related to the development of OERs.

5. To introduce faculty and staff to emerging technologies and technology trends supporting OER.
6. To provide hands-on experience using the technologies for the development and reuse of OERs.
7. To develop practices in identifying changes to existing OER for a different international context.
8. For each learner to alter an existing OER for a different international context.

Strategies

The programs strategy will have two focuses; the first focus is upon the overall program success (or alignment) with meeting the programs vision and mission. The second strategy is in the programs ability to address the identified characteristics of the effective OER developer.

Alignment

The following strategies will be followed to meet the vision elements of creating, reusing and altering OER for the international context.

- Continuous focus on building a toolkit that can be easily used within context
- Utilize existing and open learning materials wherever possible
- Recognize existing licensing approaches
- Customize materials, wherever possible, using local resources
- Build internal competencies to encourage ongoing sustainability
- Recognize international ICT competency curriculum, certification and diplomas
- Identify alternative sources of internal and external funding

- Utilize internet technologies to distribute learning with least amount of physical resources (i.e. Paper, textbooks, materials, etc.)
- Provide measures to prove program success

Addressing the Learners Characteristics

A number of objectives will be created to address the most important characteristics discussed in the previous envision section. The approach in identifying and specifying these objectives will follow the technique offered by Rothwell & Kanazas (2004, p 96);

<i>What learner characteristics...</i>	<i>What are the characteristics?</i>	<i>How should the characteristics be addressed (or considered) in the instruction you subsequently design?</i>
Are targeted directly at the area of need?	<ul style="list-style-type: none"> • Understanding of learning theories / epistemology / pedagogy; • Context awareness; • Proven ability to create learning materials; • Cultural and global issues / sensitivity aware; • Technology savvy 	<p>Cultural and context issues need to be addressed in relation to learning theories / epistemology / pedagogy. Transferring this cultural and context knowledge into learning materials require skills and knowledge to be built.</p> <p>Hands-on technology skills directly related to OER production is required.</p>
Pertain to organizational policies?	<ul style="list-style-type: none"> • Post secondary education; • Cultural and global issues / sensitivity aware; • Willingness to learn about copyright, intellectual property and licensing issues 	<p>Education level should be considered for prerequisite. Interview will be part of entrance requirements with consideration for cultural sensitivity of applicant. Global and cultural issues will become part of the curriculum. Copyright, IP and licensing will be part of curriculum.</p>
Pertain to learner / organizational needs?	<ul style="list-style-type: none"> • Context awareness; • Proven ability to create learning materials; • Altruistic and more socialist in bent; • Localization awareness; • Technology savvy 	<p>Context knowledge will be part of curriculum. Portfolio of learning materials created by applicant will be required. Entrance interview will include review of altruism (volunteerism, community work, etc.) and social awareness.</p>

		Ability to identify localization issues will become part of curriculum. Some technology skills will be required upon program entry, some will be developed.
Can be addressed with available resources?	<ul style="list-style-type: none"> • Understanding of learning theories / epistemology / pedagogy; • Hard workers with belief in continuous improvement; • Willingness to learn about copyright, intellectual property and licensing issues; • Technology savvy 	Learning resources are already available for learning theory, continuous improvement, copyright and technology. These will be utilized in the development of this program.
Pertain to existing constraints on the instructional design project?	<ul style="list-style-type: none"> • Post secondary education; • Context awareness; • Localization awareness; • Technology savvy; 	Many constraints exist within the targeted context for the OER editing. All these will be considered during program development and as part of the program itself. These constraints will include; regional politics, religion, etc; available resources of connectivity and technology, language issues, geography, transportation, etc.
Are feasible to collect data about in terms of resources and logistical limitations?	<ul style="list-style-type: none"> • Post secondary education; • Understanding of learning theories / epistemology / pedagogy; • Proven ability to create learning materials; • Willingness to learn about copyright, intellectual property and licensing issues; • Technology savvy; 	Many demographic attributes of the students can be collected and used upon entry to the program. Ongoing assessment and survey of students will gather further data of knowledge acquisition and program satisfaction / issues.
Are translatable into design specifications?	<ul style="list-style-type: none"> • Understanding of learning theories / epistemology / pedagogy; • Context awareness; • Understanding of and belief in continuous; • Cultural and global issues / sensitivity aware improvement; • Localization awareness; • Copyright, intellectual 	Curriculum designs and specifications can be transferred from all of these characteristics.

	property and licensing issues; • Technology savvy	
Are related to the performance problem that instruction is intended to solve?	<ul style="list-style-type: none"> • Context awareness; • Ability to create learning materials; Cultural and global issues / sensitivity aware; • Localization awareness; • Willingness to learn about copyright, intellectual property and licensing issues; • Technology savvy; 	Many of the learner characteristics will be “solved” upon completion of the program. Therefore, creating designers that can create and reuse OER for localized within context learning materials.

Modules / Curriculum

The modules and curriculum will be developed with a constructivist and functional contextualism approach. The constructivism will be through the encouragement of learners to contribute to the ongoing development of the program. The contribution aspect of a socio-constructivist approach is beyond the scope of this program proposal though Wiley’s (2005) comments regarding OER and contribution as an important curriculum design goal is important for the programs modules, development and continued success. The program will also follow the emerging instructional design approaches of Functional Contextualism being discussed by (Fox, 2005; Jonassen, 2006; Reigeluth & Yun-Jo, 2006) for this approach is particularly focused on contextualizing materials which is also important when utilizing OER within a new context. Again, a complete discussion of functional contextualism and its alignment with OER reuse is beyond the scope of this proposal though it should be recognized as a research outcome for the program.

Before the execution of the needs assessment the following three modules have been identified as program modules. The breadth and depth of these modules may change dependent upon findings from the needs assessment and the programs learner contributions. The three identified modules will have the following outcomes;

Module 1 - Introduction to OER	
Ideology	<ul style="list-style-type: none"> Learners will be able to discuss and organize the ideology and practices of OER to suit different educational contexts.
Licensing	<ul style="list-style-type: none"> Learners will be able to evaluate the impact of different licensing approaches given different local, regional, national and international contexts.
Sources	<ul style="list-style-type: none"> Learners will be able to select OER materials best suited for different targeted contexts.
Guidelines	<ul style="list-style-type: none"> Learners will be able to evaluate and choose the required regional, national and international OER guidelines for program success.
Module 2 - Technology Toolkit	
Technology & Trends	<ul style="list-style-type: none"> Learners will be able to assemble technology toolkits best suited for a given educational context. Learners will be able to synthesize technology trends for the best interests of a educational programs development with consideration for the programs context.
Use & Development	<ul style="list-style-type: none"> Learners will demonstrate competencies in using the comprehensive set of OER development tools and approaches. Learners will design and develop approaches to using technologies appropriate for a given context. Learners will alter existing OER materials using an appropriate toolkit while staying within the required licensing and applicable guidelines.
Module 3 – Implementation	
Project Charter	<ul style="list-style-type: none"> Learners will propose, estimate and plan an OER project that alters existing OER for a new context. Learners will identify and define metrics to assess learning and OER improvements as a result of their project alterations.
Evaluation	<ul style="list-style-type: none"> Learners will create and score rubrics to evaluate their OER project deliverables.

Budget, Schedule and Funding

Budgeting should be kept as tight as possible and where possible internal country resources should be utilized. As stated in Rothwell and Kazanas (2004, p. 325) the budget should be used to put plans into action. The budget should be associated with schedule so funding agencies build confidence in the project and are more willing to provide additional funding if necessary.

An iterative scheduling approach should be used to show frequent and continuous progress in meeting the program development goals. Free or philanthropically funded technology resources, such as site hosting, should be identified to control costs.

The budget and schedule will be split across the two stages of the projects lifecycle. A budget and schedule will be created for the development stage, which completes the development tasks and makes the program available. The second stage budget and schedule will address the ongoing “care and feeding” of the project until the program is no longer sustainable due to a drop in usage.

Budget

The budget is broken into two sections, one for the programs development effort and the other for the ongoing execution of the program. Provided in these two sections are the high level costs and their associated tasks. For greater detail of the budgets see the spreadsheets available in Appendix A.

Development

COSTS:	\$56,200.00
Envision	Execution of needs assessment, making adjustments to existing descriptions of learners, context & setting and evaluation approach.
Planning	Development of the program vision, mission, goals, objectives, and strategy. Identification of program modules and overall curriculum. Creation of development budget and schedule.
Develop Instruction	Further define both the modules and their associated assessment methods. This definition will include consideration of access issues and context sensitive multimedia approaches. Complete development of program modules including integration with assessment methods.
Implement	Execution of the program pilot accompanied by the online marketing, communication and advertising activities.
Evaluate	Focus on evaluating program based on indicators identified during envisioning and planning in preparation for program improvement.

Execution

COSTS:	\$17,920.00
Envision	Adjustments will be made to learner, context, setting and evaluation approach based on initial release evaluation.
Planning	Adjustments made to planning tasks based on evaluation and on changes for the program being in execution and not development.
Develop Instruction	Updates to program modules and assessment methods based upon evaluation and usage.
Implement	Program adjustments will increase after implementation accompanied by ongoing marketing, communication and advertising.
Evaluate	Evaluation will become an ongoing process and following the approach utilized during initial evaluation.

Schedule

Schedule is milestone and duration based. The overall length of time for the project to be implemented and evaluated is approximately one year. A Gantt chart showing the critical path elements of the project schedule can be found in Appendix B. The table below describes the projects milestones and brief descriptions of the tasks completed to meet the milestone.

Milestone Date	Completed Tasks
07 January 2008	Project kickoff
12 March 2008	Needs assessment report made available to stakeholders and Subject Matter Experts (SME) for review and feedback.
30 April 2008	Based on the needs assessment all project modules are defined.
6 May 2008	Based on the needs assessment the assessment approach is defined.
16 May 2008	Detailed planning report is completed and published to program website.
20 May 2008	Module 1 – Introduction to OER content is complete for review
30 May 2008	Module 1 assessment activities integrated
16 July 2008	Module 2 – Technology Toolkits content is complete for review
24 July 2008	Module 2 assessment activities integrated
14 August 2008	Module 3 – Implementation content is complete for review
22 August 2008	Module 3 assessment activities integrated
28 August 2008	Program pilot kicked-off
23 October 2008	Pilot complete
14 November 2008	Program implementation is complete, program goes live.
2 January 2009	Program evaluation report is published. Ongoing program adjustment, improvement and review activities begin.

Funding

Funding this OER program will be one of the projects major challenges. Funding will be based upon sustaining the program so as Wiley (2005) states, “it can have an ongoing ability to meet its goals”. Both Wiley (2005) and Downes (2006) describe the funding approaches to keeping OER sustainable from review of these writing it was decided that the funding model for this program will be threefold as it will seek membership, donation, and conversion funding. Membership based funding will be sought as it is believed the need for this program is held by many existing OER based organizations and each of them would be willing to pay membership to keep and OER development program sustainable. Donation based funding will also be sought as a number of philanthropic organizations exist that have existing activities in funding OER based initiatives. Conversion based funding will also be sought as it is believed this program will also need to be converted to support a number of different adaptations. Wiley (2005) describes four adaptations that could apply to this program, these include; technical, linguistic, cultural and pedagogical.

Develop Instruction

As defined by Churchill and Rawsthorne (2007) the develop instruction phase will focus upon the creation and evaluation of learning modules, the assessment approaches and the project and program time frames. Development of materials will be targeted for online delivery and will utilize the wiki as the primary method for materials delivery. The needs assessment will provide insight into the level of access for the community delivery of the learning content. As Rawsthorne (2006) explores in his paper on “Community Knowledge Management for Development” the wiki can provide a technology platform well suited for

learning content delivery regardless of the level of access. All OER re-contextualization should be developed with this level of access top of mind.

As previously mentioned the pedagogical foundation for this programs development will be based upon both constructivism and functional contextualism (Fox, 2005). These two pedagogical theories are well aligned with a contributor based approach that will require re-contextualization to meet different learner communities. As previously mentioned, the use, application and effectiveness of these pedagogical approaches will be primary research activities associated with the program.

The learner as contributor will be a theme throughout the design and development of this program. Needless to say it is worth considering how an OER based program focused on OER development approaches would be utilized as an OER itself. The learner as contributor approach is well documented by Wiley (2005) with references to “trib’ing” and “trib’ers”. “Trib” is short for contribute and any program that does not allow learner contribution is out-of-date and read-only materials are based on an authoritarian based approach that no longer applies. Given the learner community targeted for this program it is suggested that this “trib” design theme be a part of the programs overall design and development. Again, the learner as contributor aligns very well with a wiki based delivery model.

Modules

An important theme in developing modules for this program is the development be done by local resources to better localize the materials for the available technology, the language, the culture, the best suited pedagogical approaches and the context. It would be desirable to utilize Creative Commons (n.d.) licenses with a CC-BY or CC-BY-SA so the materials

could be altered without violating existing licensing schemes. The localization alterations to the materials should be published back to the public domain so others can make use of them and the process of public review and scrutiny will increase their quality (Rawsthorne, 2007). Depending on the available infrastructure and related costs it may be preferred to implement the program within a Learning Management System (LMS). Given the costs restraints it would also be recommended that an Open Source LMS like moodle (2007) be utilized.

Defined

Described in this documents previous Modules / Curriculum section there are three modules identified for this program. The first stage of development will be to define in detail the modules and have a stakeholder and SME review before the module content is committed to and developed. The detail module definitions will include;

- A module description including pedagogical approach
- Detailed descriptions of the learning outcomes
- Fully referenced content sources
- Module and sub-module learning activities
- Use of multi-media
- Identification of root and derived content

Developed

Once modules have been defined and these definitions have been published to the project wiki for stakeholder and SME review development will begin. As development progresses the content created should be identified as either root or derived content. The idea of root or

derived content separates the content that is considered static from that considered dynamic. The static content will not change given a change of context where the dynamic content will change given an OER context change. Language, culture, pedagogical approaches, multi-media are all aspects of the modules content that could require change and is therefore dynamic. All dynamic content should be derived from the root content and re-contextualized.

Assessment

Once modules have been developed and an initial review by stakeholders and SME's has been completed the approach to assessment should be defined. Unless otherwise defined by evaluation or re-contextualization the module assessments should be formative and summative in that each individual lesson should have "micro-assessment" events to confirm learning. Each module should also contain summative assessments for the overall module. These assessment tools should also be easily localized and aligned with the learning objectives defined during module definition.

Determine Program Time Frames

Frequent delivery of modules should allow for an early pilot of the completed modules. This early piloting will provide feedback to improve subsequent module development. The Introduction to OER module should be developed first, with the remaining modules developed shortly thereafter. As described in the planning section of this proposal the actual schedule for complete program delivery should be within a year to encourage program success and funding attractiveness. Considerable transparency to development progress should be encouraged and as modules come available they should be published to the

internet for review. Again this will show progress and build confidence and provide instructional designer status reporting without the formal (and costly) activity of writing a progress report.

Implementation

As defined by Churchill and Rawsthorne (2007) the implementation phase will focus upon an initial pilot of the new program and will give opportunity to reflect upon, evaluate and adjust the program to better meet learner needs. As implementation matures beyond the pilot the budgeting, administration, advertising, marketing and communication of the program should be initiated.

Pilot

The pilot phase will include execution of all the modules and should initiate the gathering of information for module improvement and the performance indicators to show the success of the program. Along with the exit surveys and web metrics the pilot stage results should provide the required feedback to identify strong and weak areas of the developed curriculum.

Adjust

Adjustments, where identified by the pilot, should be made to all aspects of the curriculum to improve the overall product and to ready the program materials to be released for public consumption and back into the OER commons for use and reuse by other OER developers.

Budget

Once the pilot has completed greater insight to the overall costs in sustaining the program should be available. These should be used as a budget for the programs ongoing improvement and operation and to provide detailed budgeting information for ongoing sustainment plans. The implementation phase will provide insight to strengthen to costing associated with the post-development budget as described in Appendix B.

Marketing and Communications

The marketing and communications for the program should be threefold. First, it should inform OER providers, teachers, students and OER developers of the program and solicit them as participants; second, it should also be used to identify subject matter experts (SMEs), stakeholders and potential curriculum developers and third it should be used as a method for informing funding agencies and attracting further funding.

Advertise

Advertising will be predominantly through the internet and via localized educational media associated with OER and learning materials development. The program should be associated with all OER provider sites and repositories. Cross linking with these sites should happen whenever possible as this will increase this sites ranking in search engines. Cross linking will also provide advertising exposure from sites often associated with OER. Having the advertising in local educational media will assist in increasing program exposure. What are the most used media should be included as an assessment question. As local newsletters or professional development publications may provide the best advertising approach.

Evaluation

As defined by Churchill and Rawsthorne (2007) the evaluation phase will focus upon the release of the program and an overall program evaluation to provide the opportunity to reconcile the program with the original plan. A review of the program against its vision and mission will allow for improvement as learner needs and environment change.

Program evaluation should align with the indicators identified in the Envisioning phase of the program. It should be kept in mind that data for many of the performance indicators will only come available once the program has been running for a few months. Given the online format and the exit surveys it should be possible to get evaluation data, though this data would be more qualitative than quantitative.

Evaluation Format

The evaluation format should be based upon a combination of the indicators identified during the envision phase, the results from professional evaluators and the experiences of other OER related programs and projects. It should be kept in mind that the professional evaluators, or cultural informants (Rothwell & Kazanas, 2004, p. 295), should be cross-culturally sensitive if they are not native to the country the material is being developed. The data for these indicators will come available at different times during the early stages of the programs release. For further insights into program evaluation the three focus approach used by MIT to evaluate their Open Course Ware (OCW) initiative was referenced. MIT found they focused their evaluation on Access, Use and Impact (Carson, 2007). These three focuses have influenced the evaluation approach for this OER programs evaluation. It is important to note that Carson (2007) stated that “Stories are better than numbers” when

evaluating OER. Therefore we do not hesitate to use freeform text fields for user feedback in the online surveys and during the interview process.

The identified evaluation items will have the following format and or approach;

Indicator	Format or Approach
1. Who is accessing the program? (as identified by online profile role) 2. What are the learners' disciplines and interests 3. What is the learners' location	The LMS, Wiki or web based delivery platform will require authentication where the user must login to add or alter materials. During the users set up profile data will be captured regarding the user, their discipline, interests and location.
4. How is the OER being used? Is learning design appropriate for use?	The web logs combined with survey and interview will be utilized the gather information regarding use and appropriateness.
5. Are learners completing the program? Are they returning to the materials for later reference?	The web logs and LMS history combined with profile data will be used the determine program completion and if learners are returning to site for later reference.
6. How are the materials being used or adapted?	Through materials licensing and attribution it will be possible to track how materials are being created, reused and adapted. This ability to back-track will enable to ability to evaluate how the materials are being adapted. It will be important to evaluate for technical, linguistic, cultural, pedagogical and contextual adaptations.
7. Are changes occurring to both root and derived content?	The ability to back-track changes and the features of version and change management available in wikis and LMS's will enable the identification of root and derived materials changes.
8. What impacts are occurring via the use of OER?	This will be the most qualitative of the evaluation metrics. It will be important to gather the stories through interviews and freeform text of how OER is having an impact.
9. Exit surveys from program participants	Exit surveys should be an ongoing aspect of the program. Changes should be made to the program as needed from surveys.
10. LMS or weblog metrics.	LMS's and all internet based content have log files based upon the traffic and utilization which occurs against the content. These data files should be utilized to gather usage data.

Evaluation reports should be available via online authenticated access where the data behind the reports is always up to date. Having this level of transparency to the actual

performance of the program will greatly assist further development and funding of the program.

Reconcile to Plan

Once the program has been established it should be evaluated for its alignment to the original plan and its goals, objectives and strategies. This “reconciliation” will be ongoing as it is a part of the learner contributor learning culture. The “reconciliation should also be executed by professional evaluators that bring pedagogical and context related insights not necessarily provided by the learner contributor. If changes (beyond the learner contributed changes) are required to the program “official” changes should be made to the plan and cascaded through the entire program and related documentation. It is important to save and publish the results of the evaluation and reconciliation for it shows how the program has executed on what it planned and provides a transparency that could attract additional funding sources.

Release and Review

Once the program has been released all evaluation artifacts should be reviewed by the steering committee and funding agencies. If any troubles occur with program delivery they should be recorded and reviewed for candidate adjustments to the program.

Conclusion

This document proposes a program designed to facilitate the learning of students, teachers and instructional designers to become OER developers. The programs foundation is in utilizing and re-contextualizing existing OER materials to increase the availability of educational materials in the developing world. Many OER successes have occurred since

the term OER was defined at a UNESCO conference in 2002. The understanding, acceptance and success of OER have increased with the adoption of openness toward learning materials occurring within many reputable education institutions. An increase of funding approaches to keep OER sustainable will require deeper accountability by the institutions that develop OER. Therefore, the time has come for an OER developer program to be available and offered online as an OER itself.

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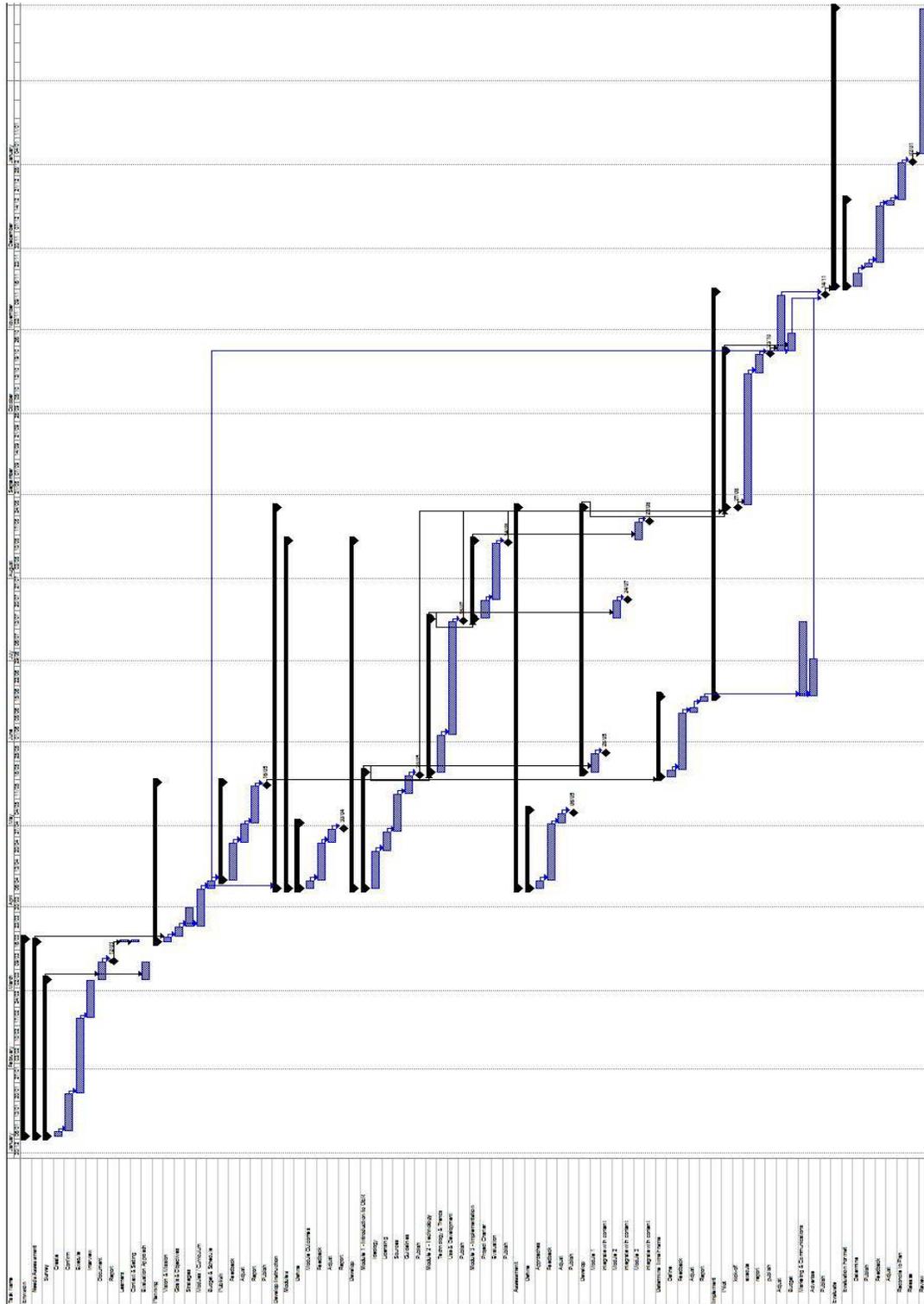
Appendix A – Budget(s)

Development

Contract OER Developer (per hr.) \$ 40.00

	Hrs.	Cost	Notes:
Envision			
Needs Assessment	80	\$ 3,200.00	
Learners	16	\$ 640.00	<i>Adjustments based on needs assessment</i>
Context & Setting	12	\$ 480.00	<i>Adjustments based on needs assessment</i>
Evaluation Approach	40	\$ 1,600.00	<i>Adjustments based on needs assessment</i>
Planning			
Vision & Mission	16	\$ 640.00	<i>Adjustments based on plan feedback</i>
Goals & Objectives	16	\$ 640.00	<i>Adjustments based on plan feedback</i>
Strategies	16	\$ 640.00	<i>Adjustments based on plan feedback</i>
Modules / Curriculum	32	\$ 1,280.00	<i>Adjustments based on plan feedback</i>
Budget & Schedule	8	\$ 320.00	<i>Adjustments based on plan feedback</i>
Publish	40	\$ 1,600.00	<i>Includes soliciting feedback</i>
Develop Instruction			
Modules			
Define	20	\$ 800.00	
Develop			
Module 1 - Introduction to OER	set rate	\$ 7,000.00	
Module 2 - Technology Toolkits	set rate	\$ 7,000.00	
Module 3 - Implementation	set rate	\$ 7,000.00	
Assessment			
Define	26	\$ 1,040.00	
Develop			
Module 1 - Introduction to OER	set rate	\$ 2,000.00	
Module 2 - Technology Toolkits	set rate	\$ 2,000.00	
Module 3 - Implementation	set rate	\$ 2,000.00	
Implement			
Pilot	96	\$ 3,840.00	<i>8 hrs per week over 12 weeks</i>
Adjust	6	\$ 240.00	<i>few adjustments during initial implementati</i>
Budget	40	\$ 1,600.00	
Marketing & Communications	100	\$ 4,000.00	
Advertise	60	\$ 2,400.00	
Evaluate			
Evaluation Format	60	\$ 2,400.00	
Reconcile to Plan	40	\$ 1,600.00	
Release	12	\$ 480.00	
TOTALS	736	\$ 56,440.00	

Appendix B – Project Schedule



This project plan can also be found at <http://www.rawsthorne.org/bit/medit/ed6823/OERDeveloperGantt.pdf>

Appendix C – Applied Technologies

For the “Utilizing OER for Development” program it is assumed all stakeholders, contractors, employees, etc. will be working at a distance. Therefore internet based technologies will be favored. In particular those tools that encourage collaboration and the open publishing of work so participants can easily and immediately provide feedback. Really Simple Syndications (RSS) is a very effective publication / notification service and should be used to notify all participants of project status. During the development of this program the use of an online project management tool like basecamp (<http://www.basecamp.com>) will be used to manage the critical path elements, to provide resources with notification of milestones and project timelines and to facilitate the online visualization of the project. A version or content management system should be utilized to manage all the artefacts that are created during program development. This will create a repository (with versioning) for ongoing reference to the project. Preference should also be given to OpenSource software as the ideological alignment between OER and OpenSource provides for a healthy partnership.

The use of these technologies is suggestive. What is used in practice should be mindful of the availability of these technologies; given the location, technology resources and access.

ENVISION	
Identify new ideas (projects, learners, contexts and settings).	<ol style="list-style-type: none"> 1. Idea management software should be utilized. This will allow scoring and stakeholder input to “narrow” the list of new ideas. This should be supported by a surveys database where the scoring of ideas can be reported upon. 2. Mind-mapping tools like Inspiration and CMapTools should be used to deepen the new ideas and to identify inter-relationships. 3. Blogging and Wiki based tools should also be utilized for brainstorming and discussion.
Needs assessment	<ol style="list-style-type: none"> 1. Utilize a variety of software tools and technologies to gather data and information regarding needs, these include; <ul style="list-style-type: none"> • Blogging and Wikis for individual and group collection • Word processors for written needs assessments • Online questionnaires for survey • Video and audio for interview data • Database and statistical software for analysis
Baseline evaluation	<ol style="list-style-type: none"> 1. Collaborative use of Blogs and Wikis for gathering / identifying Key Performance Indicators (KPI). 2. Use questionnaire, internet “exam” and survey with statistical analysis abilities to create program baseline and subsequent evaluations.
PLAN	
Create vision and mission statements	<ol style="list-style-type: none"> 1. Use a wiki as the repository with extensive use of voice over IP (VOIP / skype), video conferencing and online discussion / chat to collaboratively create and record the vision and mission statements.
Devise goals and objectives	<ol style="list-style-type: none"> 1. Initial collaboration should occur over wiki with use of chat

	<p>or VOIP for key educational stakeholders confirm and agree upon the goals and objectives.</p> <ol style="list-style-type: none"> 2. Word processor or Web (HTML) to publish goals and objectives.
Define strategies	<ol style="list-style-type: none"> 1. Use wiki to collaboratively define strategy. 2. Use word process, spreadsheets, etc. to publish strategy for stakeholder feedback. Ensure strategy is aligned with institutional strategies and instructional design approaches. 3. Use a program portfolio management tool to align and track program with departmental and institutional strategies.
Outline modules and curriculum	<ol style="list-style-type: none"> 1. Use combination of wiki, word processor, spreadsheet and database for module and curriculum description creation and storage. 2. Consider using learning management system (LMS) or learning object repository (LOR) for module creation and storage.
Budget and schedule	<ol style="list-style-type: none"> 1. Utilize planning or project management software for critical path, task management, estimating, costing and scheduling. 2. Use spreadsheets for advanced budgeting and costing activities. 3. If applicable use spreadsheets for return on investment (ROI) calculations
DEVELOP INSTRUCTION	
Create learning modules	<ol style="list-style-type: none"> 1. Utilize existing OER where applicable. 2. Use appropriate pedagogical approaches depending on culture and context. 3. Use local resources to build multimedia, video, audio, etc. materials. 4. Use a personal learning environment (PLE; like ELGG or LeMill) where people can create their own learning materials / modules with little instruction required.
Create assessment approaches	<ol style="list-style-type: none"> 1. Use a wiki history like approach for peer review on OER customizations. 2. Have student cohorts create and use rubrics to assess student created OER. Use blogs to provide feedback. 3. Consider also having current cohort evaluate previous cohorts material.
Timeframes	<ol style="list-style-type: none"> 1. Use RSS notification to keep developers on track with development.
Evaluate instruction	<ol style="list-style-type: none"> 1. Contact peer reviewer subject matter experts (SME) via email to use wiki and provide module-by-module review and evaluation. 2. Create rubrics to evaluate modules, use online scoring approach.
IMPLEMENTATION	
Pilot and reflect	<ol style="list-style-type: none"> 1. Use open (and low cost or free) implementation approach. Consider wiki with rich media features. 2. Keep history of module usage and allow for commenting during pilot. 3. Encourage reviewers to make changes. Be sure to have

	version management enabled.
Initiate – Evaluate – Adjust	1. Aspire for root content to be context neutral. Utilize content branching features of version management tools.
Create budget	1. Use spreadsheet software for budget creation. 2. Consider web based spreadsheet to allow collaboration from key stakeholders.
Marketing and communications	1. Affiliate with other OER sites (COL, OERCommons, CNX, WikiVersity, OpenCourseWare, Etc.) 2. Create cross-links to boost search engine placement 3. Join OER based discussion groups and engage members 4. Cross-link with other blogs and wikis.
Advertise	1. Cross-link to as many OER and development related sites as possible 2. Use search engine optimization techniques 3. Use online groups, use viral advertising techniques. 4. Podcast, YouTube, Etc.
EVALUATE	
Evaluation format	1. Use available metrics from hosting environment or LMS 2. Use trackback, linking and traffic reporting 3. Define quality for materials; then evaluate how well inherited content gets reused, its frequency, breadth, depth, etc. 4. Identify modules being reused; multimedia, graphics, assessment tools, etc. 5. Measure, measure, measure...
Reconcile to plan	1. Collect demographic information (particularly for international participants); use database technology 2. Use versioning software to gather metrics on module branching and editing. 3. Measure CC license adherence
Release and review	1. Create program portfolio management infrastructure to provide business intelligence type insight 2. Set up online infrastructure to allow stakeholder review and commenting.