SECTION 1: COVER SHEET FOR PROPOSALS TO THE OPEN EDUCATIONAL RESOURCES INITIATIVE

WikiEducator - General Operating Support proposal

Date submitted or revised	16 April 2009
Name of applicant organization	OER Foundation
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Amount Requested	$ 200,000 ; length of the project: 2 years

Organization's fiscal year end	Month:__December	Day:_31_____
PAYMENT OPTION:	Wire Transfer	
☐ WIRE TRANSFER	Complete, sign and return wire transfer form. (attached)	

Public description of your project

Please provide a brief statement that best describes your proposed work.
This description will appear on our website and in our annual report. It can be no longer than 15 words.

Improve OER reuse through content interoperability between projects while improving skills of educators to participate.

Proposal summary

Fostering the development of an open participatory learning infrastructure is a strategic priority for OER. This proposal will address two major challenges restricting growth, adoption and effectiveness of OER:

- The absence of content interoperability between OER projects thus limiting the potential for remixing of digital education resources for different learning settings across mainstream OER projects.
- A confined approach to thinking about economic sustainability of OER which, to date, has largely focused on the sustainability of individual projects at the potential expense of fostering sustainable ecosystems at the macro-level.

WikiEducator is an independent project operating under the auspices of the OER Foundation. The project has implemented a holistic strategy to OER *community* development utilising the principles of mass-collaboration to simultaneously develop *capacity* among educators to engage meaningfully in the initiative while developing OER *content* aided by smart *connections* in the incremental refinements of the enabling technologies used and strategic networks facilitated by the international reach of this project. Named the Best Educational wiki in 2007 by eLearning opinion leader, Stephen Downes, and inaugural recipient of the MERLOT Africa Network's award for exemplary OER practices in 2008, this holistic strategy founded on the principles of self-organisation and digital networking provides a solid foundation on which to improve mass-collaboration OER approaches in the formal education sector. This proposal will:

- Build OER content interoperability among Connexions, WikiEducator and the MediaWiki software platform used by Wikipedia (the largest repository of OER), with particular emphasis on improving the remix potential and pedagogical quality for different learning contexts.
- Continue WikiEducator's pioneering work under the Learning4Content training project, which oversees the world's largest wiki-skills development initiative in education. This proposal will support further training for a minimum of 1,150 teachers, lecturers and trainers around the world.
- Establish a national New Zealand OER collaboration in close consultation with the Ministry of Education for the school sector forming the basis for replicable models which could be used in other countries. This will include the development of 75 demonstrator OER lesson plans and digital resources mapped to the national curriculum by New Zealand teachers.
- Improve our metrics and knowledge of open peer-collaboration models by implementing a robust and comprehensive monitoring and evaluation plan for WikiEducator.

SECTION 2: PROPOSAL NARATIVE

A   Theory of Action

The theory of action for this proposal is informed by the corporate logic model and strategic plan of the OER Foundation and the WikiEducator project. This proposal identifies four major barriers impeding the realisation of the ultimate impacts of OER, namely to reduce cost, widen access and improve the quality of educational provision using free content and open networks. Three initiatives are proposed for funding support in response to addressing the identified barriers.

This section is structured as follows:

1. A summary of WikiEducator's strategic plan illustrating the corporate logic model and corresponding foundations underpinning the initiatives contained in this proposal.

2. A brief analysis of current OER barriers/problems and the corresponding interventions proposed showing how these initiatives will contribute to the attainment of the long-term impacts of the OER movement.

3. Justification of the alignment of the proposed initiatives of this proposal with the Hewlett's OER grant-making priorities for 2009 in accordance with the submission guidelines of the Foundation.

1. WikiEducator's strategic plan and the corporate logic model

The vision of the WikiEducator project is to turn the *digital divide* into *digital dividends* using OER and open collaboration networks. Our mission is to work collaboratively with the open content community to develop OER which are freely available for sharing, and remixing in support of all national curricula, for all levels (K12, post-secondary and higher education) and all educational sectors (formal, non-formal and informal).

WikiEducator's corporate-level logical framework
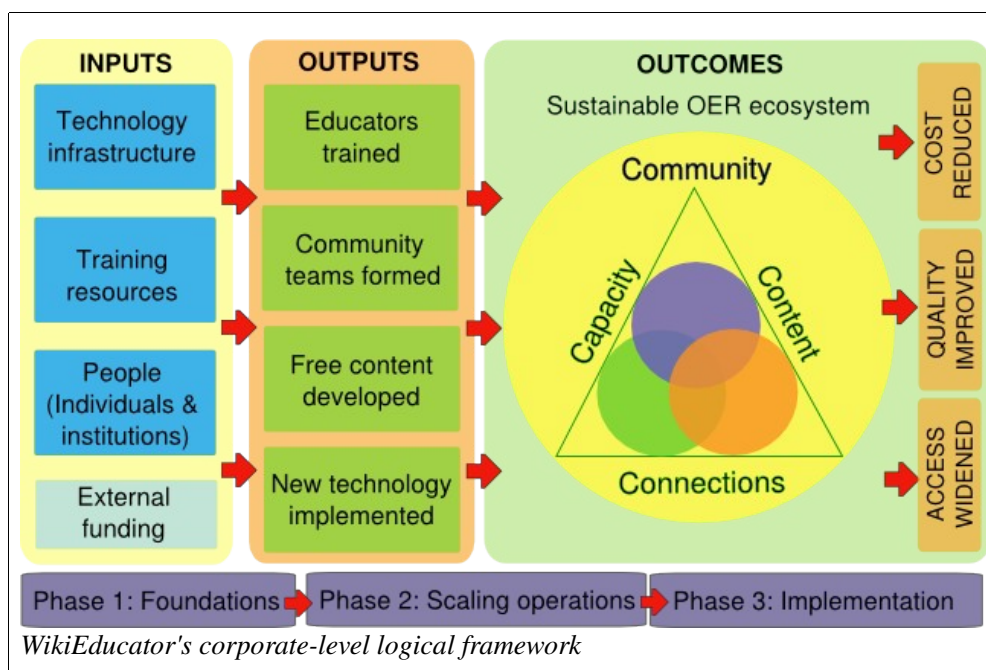
1.1 Long-term impacts

The long-term impacts provide the rationale of why we are engaged with OER as a solution to contemporary education challenges. OER shows considerable potential for *reducing the cost* of education for both institutions and learners alike with corresponding opportunities to *widen access* and *improve the quality* of education around the world.

1.2 Strategic outcomes

The strategic aim of the OER Foundation is to foster the development of a *sustainable OER ecosystem* dedicated to the design, development, sharing and re-purposing of open content resources. In achieving this outcome the strategy focuses on the four "C's":

- Fostering and enabling the growth of a thriving **community** of *individuals* (teachers, lecturers, trainers, policy makers, and other educational professionals) and *institutions* (schools, tertiary education providers, publishers, ministries of education, research institutes, and foundations) committed to the OER movement.

- Building the **capacity** and skills of the community to engage meaningfully in the mass-collaboration required for the design and development of high quality OER learning resources, for example through the Learning4Content training project.
- Developing free **content** to support the maturation of open communities in the development and use of OER in multiple educational contexts.
- Ensuring smart **connections** through appropriate *social networks* and *strategic partnerships*, including the development of relevant and appropriate open source software solutions as enablers for collaborative OER development. WikiEducator has a strong focus on the unique pedagogical requirements of asynchronous learning, and challenges associated with access and delivery of OER to learners in the developing world who may have restricted, unreliable or expensive access to the Internet.

1.3 The three phases of the strategic plan

Given the complexity and scale associated with building a global mass-collaboration and sustainable ecosystem for OER, WikiEducator has adopted a phased approach in realising the strategic plan. The primary focus of each phase and corresponding outcomes measured against the strategic plan are summarised below:

Phase 1 Establishing the foundations	June 2006 - Dec 2007	This phase focused on setting up the technologies, processes and content resources to facilitate community development and international collaboration on OER using wiki technology. During this phase the foundations for a community governance structure were established. **Cumulative outcomes (Dec 2007)** • *Community*: 2,165 WikiEducator users • *Capacity*: 320 Educators trained • *Content*: 24 OER book equivalents produced
Phase 2 Scaling up OER content development	January 2008 - December 2008	The prime purpose of Phase 2 was to scale up the rate of OER content development, building on the foundations established during Phase 1. Phase 2 focused primarily in building capacity among individual educators to participate in the project and instituting the first WikiEducator Community Council. **Cumulative outcomes (Dec 2008)** • *Community*: 7,048 WikiEducator users • *Capacity*: 2,051 Educators trained • *Content*: 54 OER book equivalents produced
Phase 3 Implementation and sustainable OER development	January 2009 - ongoing	The purpose of this phase is to prioritise activities which implement OERs into mainstream educational activities in achieving a sustainable OER ecosystem. This phase will focus on institutional-level membership and establishing creative partnerships with the education supply chain network, for instance: textbook publishers, ministries of education, international agencies, IT solutions providers, open source communities, research institutes, foundations etc.

		Cumulative outcomes (Mar 2009)
		• *Community*: 8,522 WikiEducator users • *Capacity*: 2,680 Educators trained • *Content*: 61 OER book equivalents produced

This proposal falls within the third phase of the strategic plan hence the prioritisation of initiatives which provide the building blocks for fostering the evolution of a sustainable OER ecosystem.

2. OER barriers, proposed initiatives addressing these challenges and interrelationships with the strategic plan

A review of the international open content landscape identifies four major barriers within the context of supply-driven collaborative models of OER development:

1. Lack of collaboration and seamless **content interoperability** among mainstream OER projects, potentially resulting in unnecessary duplication of content resources, fueling the growth of project silos and restricting the realisation of OER's most significant differentiator: the ability to remix and redistribute content from a variety of OER sources for different educational contexts.
2. Shortcomings in suitable technical solutions to address the **reusability paradox**, namely that the more educational context embedded in an OER resource will enhance its pedagogical effectiveness but paradoxically reduces the potential for reuse of the same OER in different learning settings[1].
3. Shortage of educators in the formal education sector with the **capacity and skills** to engage meaningfully in mass-collaboration approaches of OER development and reuse on an international scale.
4. The absence of a systemic OER participatory learning infrastructure which alludes to the requirement to foster the evolution of **sustainable OER ecosystems** comprising: public and corporate partnerships, ministries of education, national and international OER collaborations, education institutions, individual educators and appropriate and relevant technology enablers.

In response to these challenges this proposal will implement three initiatives:

1. *Developing an open source software extension for content interoperability between the Connexions and Mediawiki software platforms* incorporating enhanced pedagogical features to specify the *content* (what we teach) and *form* (how we teach) elements of OER content within these OER platforms. This initiative will improve reuse and remix alternatives by ensuring **content interoperability** among widely used OER platforms in addition to finding practical ways of reducing the technical and pedagogical barriers associated with the **reusability paradox**. This initiative will also widen alternatives for reusing digital OER for different delivery options, for example online versus print-based study guides and text books.

2. *Continue training activities based on the successful Learning4Content training model* thus building **capacity and skills** among educators around the world to participate more effectively in mass-collaboration projects dedicated to OER development.

3. *Launch a national OER collaboration for the New Zealand school sector seeding the development of OER demonstrator lessons and corresponding training support in collaboration with the New Zealand Ministry of Education.* This will establish a national community node thus contributing to the range of models for the international evolution of a **sustainable OER ecosystem.** The unique context of a small country with strong policy-level support may generate models and approaches for scaling OER at an international level. These models can be used as examples for assisting other countries in developing national OER strategies.

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1 D.Wiley. 2004. The reusability paradox. Online: http://cnx.org/content/m11898/latest

While the three proposed initiatives above have been designed as discrete activities in response to the identified barriers, they are integral and interrelated components of the theory of action aimed at contributing to the successful achievement of the impacts of OER in general and WikiEducator's strategic plan in particular. For example, the national OER collaboration for the New Zealand school sector will will require skills-development support for teachers under the international Learning4Content training initiative while simultaneously finding effective solutions for sourcing open content from Wikimedia Foundation projects and Connexions for remixing lessons. In addition, New Zealand teachers will require the ability to host static versions of their content outputs in content management systems like Connexions, hence demonstrating the requirement for OER content interoperability.

The proposal specifies three initiatives with distinct outputs so as to facilitate accurate reporting of the achievements against the proposed funding support. The three proposed initiatives are interrelated with the theory of action in the following ways:

Proposal Initiative	Relationship with WikiEducator strategic plan and logic model
Initiative 1 *Develop an open source software extension for OER content interoperability between the Connexions and Mediawiki software platforms*	This initiative relates to the overall strategic outcome of building smart technological **connections** as an enabler for establishing a sustainable OER ecosystem.
Initiative 2 *Continue training activities based on the Learning4Content training model*	This initiative relates to the overall strategic outcome of building **capacity** among educators to participate in mass-collaboration approaches of OER development.
Initiative 3 *Launch a national OER collaboration for the New Zealand school sector seeding the development of OER demonstrator lessons and corresponding training support in collaboration with the New Zealand Ministry of Education.*	This initiative incorporates the strategic outcomes of building **community**, developing **capacity** and OER **content** in support of a national curriculum.

Finally, from a risk management perspective, the three initiatives have been designed to avoid critical dependencies with regards to the attainment of other initiatives of the OER Foundation and the WikiEducator project. However, the success of the three initiatives will contribute to the overall international objectives of the OER movement.

The following subsections provide a brief analysis of the identified barriers and the proposed initiatives to address these challenges.

2.1   Lack of content interoperability between mainstream OER projects

Two broad OER development approaches are identified within the context of this proposal[2]:

- *Producer-consumer* models where an institution or consortium develops materials and releases courseware under an open license which can be reused by other providers, for example MIT's *OpenCourseWare*[3] or the British Open University's *OpenLearn*[4]. These approaches are derived from traditional academic publishing models utilising work flow methodologies and peer review processes.

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2   This proposal does not provide a comprehensive analysis of the full spectrum of OER development approaches and the discussion is restricted to supply-based collaboration models as they relate to Connexions, WikiEducator and Wikimedia Foundation projects.

3   http://ocw.mit.edu

4   http://openlearn.open.ac.uk/

- ***Commons-based peer-production*** models, a concept coined by Yochai Benkler[5], which encourage open and unrestricted participation by large numbers of educators utilising "powerful new models of production based on community, collaboration, and self-organization rather than on hierarchy and control" (Tapscott & Williams 2006)[6] for example WikiEducator, Wikipedia and GNU/Linux open source software operating system.

There are advantages and disadvantages to both approaches depending on the context and purpose of specific OER projects. Sadly, to date, there has not been much cross pollination between these approaches so as to capitalise on the "best of two worlds".

The lack of content interoperability between the Connexions and Mediawiki software platforms restricts educators from simultaneously realising the advantages of both authoring approaches. Currently, for instance, it is not possible for Connexions authors to open up their developments (or parts thereof) for open peer-collaboration, utilising the benefits of mass-collaboration approaches of the wiki model. Similarly, WikiEducator authors are not able to migrate collections of content into platforms which provide more traditional work flow features and administration of static instances of OER, utilising, the Connexions "lens" feature for managing peer review within selected groups or consortia.

A more consequential limitation impeding return on investment in open education relates to the reuse and remixing of content across mainstream OER projects. Atkins, Brown and Hammond (2007:25) warn against "success disaster" where, for instance, a teacher has access to hundreds of courses in elementary calculus. These researchers recommend that the OER movement should develop "incentives and mechanisms to promote creation and access to fewer instances of the same course but with more support material, more commentary, more examples, etc.[7]".

Clearly there is a need to provided seamless import/export functionality between the major OER projects in the formal education sector as a mechanism for scaling more effective OER production and reuse. For instance, it is not currently possible to import/export content between WikiEducator and Connexions. This is a major restriction in that two leading OER projects which subscribe to approved licenses under the free cultural works definition are not able to easily exchange and remix content between the two platforms. Moreover, these technical limitations exclude content remixing opportunities with the world's largest repository of free content, namely Wikipedia. WikiEducator and Wikipedia both use the MediaWiki open source software engine. The recent resolution by the Board of the Wikimedia Foundation to migrate from the GNU Free Documentation License to a Creative Commons Share-Alike license (CC-BY-SA)[8] has created OER remix opportunities for educational content previously not possible. There are also significant technological opportunities for Connexions, WikiEducator and the Wikimedia Foundation to facilitate access and interoperability with the Wikimedia Commons -- a database of more than 4.2 million images and media files licensed under OER compatible licenses[9].

2.1.1 Proposed solution

To develop an open source software extension for the Mediawiki software platform which will:

- Enable export of a Connexions module or collection of modules for export into WikiEducator or any MediaWiki installation for editing using the open peer-collaboration approaches associated with the wiki model;

- Enable export of a WikiEducator page or collection of pages (or any other Mediawiki installation using the

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5 http://en.wikipedia.org/wiki/Commons-based_peer_production

6 D. Tapscott & A. D. Williams (2006). Wikinomics: How Mass Collaboration Changes Everything. Online: http://www.wikinomics.com/book/

7 D.E. Atkins, J.S. Brown & A.L. Hammond. 2007. *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities*. Report to The William and Flora Hewlett Foundation. Online: http://www.hewlett.org/download?guid=745fe08c-54de-102c-ae2b-0002b3e9a4de

8 http://wikimediafoundation.org/wiki/Press_releases/Dual_license_vote_May_2009

9 http://commons.wikimedia.org/wiki/Main_Page

collections extension including Wikipedia and Wikibooks) for remixing and re-purposing of OER content in the Connexions platform to facilitate hosting of static versions of OER content and to utilise the content management capabilities associated with more traditional work flow features of the Connexions repository.

As an open source software development, these new features will be freely available for all OER projects in the world utilising the Mediawiki and/or Connexions software platforms and as such are not restricted to the WikiEducator project thus widening the global impact of this investment. The recent resolution of the Wikimedia foundation to migrate to a Creative Commons Share-Alike license will enable this project to incorporate remixing of Wikipedia content for OER lessons in the formal education sector.

The outcome of the community vote by the Wikimedia Foundation to enable their projects to migrate from the GNU Free Documentation License (GFDL) to an equivalent Creative Commons license is not a critical dependency of this proposal. It is technically feasible and possible for both WikiEducator and Connexions to install dedicated instances of these projects for remixing GFDL licensed content.

2.2. Shortcomings in appropriate technical solutions to address the OER reusability paradox

The quality of a teaching resource is, in part, determined by the pedagogical design elements and learning activities embedded in the OER that respond to the learner's educational context.

Educationally speaking, reuse means placing an OER into a different learning context from that for which it was originally designed and developed. Meaningful learning is closely related to the learner's context. For instance, an OER Physics lesson dealing with Newton's second law of motion based on an activity using the example of a London bus will have little meaning or context for learners in rural Uganda who have never seen a London bus. While this OER example may be pedagogically effective for children in the United Kingdom, it has significantly less reuse potential for children in Africa. Consequently, there is an inverse relationship between pedagogical effectiveness of OERs and their potential for reuse -- hence the reusability paradox (Wiley 2004: online)[10].

Effective OER reuse of necessity requires recontextualisation of the resource. The example of the Physics lesson above is used to illustrate that educational elements embedded within OER can restrict reuse, but this example is understandably an

The reusability paradox illustrating the inverse relationship between reusability and pedagogical effectiveness

oversimplification of the pedagogical challenges associated with remixing. It is therefore imperative that we empower educators as "intelligent agents" within self-organising systems to recontextualise OER by: 1) building capacity and skills to remix OER in conjunction with 2) the development of technologies which make it easier to do this.
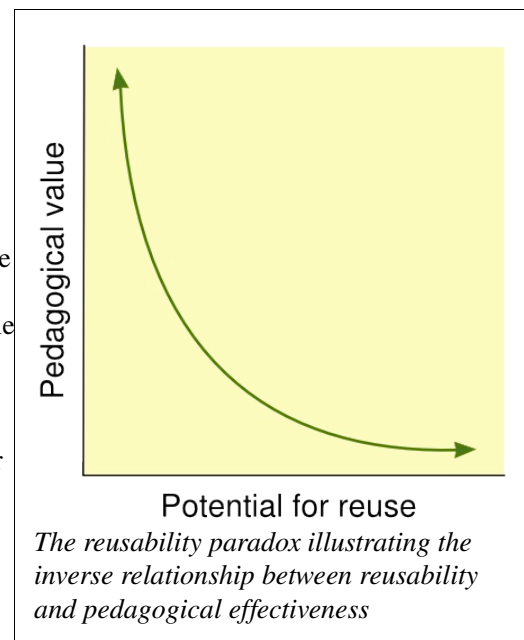
The value proposition for OER reuse is based on a cost-benefit decision by the educator:

Perceived cost of repurposing < Perceived benefits of developing a new OER

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10 D. Wiley. 2004. *The Reusability Paradox,* Online: Connexions, April 20, 2004, http://cnx.org/content/m11898/1.18/

The cost of recontextualisation, that is, the time required to re-purpose an OER for a different educational context, should conceptually be less than the perceived benefits of developing a new OER from scratch.

Improving reusability is simultaneously a technical and a pedagogical challenge:

- **Technically**: OER should ideally be developed and stored in editable formats using open standards and open file formats thus enabling educators to easily adapt and modify materials with the tools of their choice[11]. Both Connexions and WikiEducator develop and store OER in formats which are easily editable by users hence these respective platforms are ideally positioned to reduce the reusability paradox. Moreover, the Mediawiki software engine has an collection extension which enables users to produce customised pdf versions and the option to download these customisations in open document format[12] for off line editing.
- **Pedagogically**: The ability to identify the educational elements embedded in the content as discrete components within OER would increase the value proposition for reuse. This would enable educators to save time in recontextualising the pedagogy for different learning situations. For example, exporting the content of the OER Physics lesson on Newton's second law of motion (above) with the option of excluding context specific activities. This would contribute to the reducing the cost of recontextualisation in terms of the time required to re-purpose and OER.

With reference to the OER sustainability challenge, Atkins, Brown and Hammond (2007:25) recommend the adoption of "a voluntary (or mix of voluntary and paid) wiki-like model, in which OER is the object of micro-contributions from many[13]." Educational elements like: learning outcomes, pre-knowledge reflections, case studies, interactive questions with feedback, supporting resources and other learning activities constitute the micro-elements of OER learning materials. The learning design approach of breaking down educational materials into its constituent pedagogical elements is well researched within the distance education literature[14]. This approach is being used by a growing number of OER projects. Consider, for example: the design template used for authoring OER materials in the Teacher Education for Sub-Saharan Africa project[15]; the instructional design template[16] developed by the Commonwealth of Learning which incorporates distance education instructional design elements and techniques into the learning texts; the deployment of similar techniques called instructional devices (iDevices)[17] by the eLearning XHTML Editor (eXe)[18] – a popular open source software authoring tool designed for use by teachers; and WikiEducator's deployment of the equivalent approach in the wiki environment called pedagogical templates[19].

Without discounting the complexity associated with questions of pedagogical design, diverse cultural learning contexts, psychological "ownership" of externally generated teaching materials, personal teaching styles etc, it is a plausible contention that making it easier to edit and re-purpose sub-elements of OER learning materials with greater flexibility to manage and manipulate output formats will contribute to a reduction in the "transaction cost" associated with reconfiguring an OER resource for different contexts. The following use case illustrates salient features of an OER remix scenario.

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11 This does not preclude educators from using proprietary software tools but provides the development community with open access to the formats used in these OER projects to foster innovation in remixing alternatives. More importantly, the commitment to editable formats using open standards ensures that educators, who for whatever reason are unable to afford the costs of using legal copies of closed-source software, will not be restricted from participating in OER development and reuse.

12 Open Document Format is a free and open standard used as the file format for office productivity software, eg word processing, spreadsheets etc.

13 D.E. Atkins, J.S. Brown & A.L. Hammond. 2007. *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities*. Report to The William and Flora Hewlett Foundation. Online: http://www.hewlett.org/download?guid=745fe08c-54de-102c-ae2b-0002b3e9a4de

14 See for example, Preparing materials for open, distance and flexible learning by Derek Rowntree, 1994 or Activities in Self-Instructional Texts by Fred Lockwood, 1992.

15 http://www.tessafrica.net/images/stories/static_files/tessa_perfect_template_pan_africa_english.doc

16 http://www.col.org/resources/publications/trainingresources/Pages/handbooks.aspx

17 http://eduforge.org/wiki/wiki/exe/wiki?pagename=Describing%20an%20Idevice

18 http://exelearning.org/FrontPage

19 http://www.wikieducator.org/Wikieducator_tutorial/Pedagogical_Templates

Use case scenario

Wazobia creates and repurposes OER materials and activity assignment for his pupils in Nigeria

Wazobia, a teacher in a rural village in Nigeria is planning an assignment on waterborne diseases for his grade 10 class. The school has no textbooks, computer lab or connectivity.

Last Saturday when visiting the Internet café at the nearby town to check his gmail account for an expected email from his sister who is studying in South Africa, he searched Google and found three Wikipedia articles: Safe water (http://en.wikipedia.org/wiki/Safe_water); Drinking water (http://en.wikipedia.org/wiki/Drinking_water); and Water Pollution (http://en.wikipedia.org/wiki/Water_Pollution).

Wazobia also visited the WikiEducator web site and found a practical assignment and corresponding worksheet developed by a teacher in India to measure and monitor the levels of water pollution in a local river. He noted that the assignment was well designed with a number of clearly identified educational elements which WikiEducator called *iDevices* (instructional devices). The assignment on WikiEducator contained a clear statement of learning outcomes, a number of interactive multiple choice questions with feedback for correct and incorrect answers and a case study of the Musi River in Hyderabad which has now become a receptacle of domestic and industrial waste resulting in the water downstream of the city being highly polluted. Each educational element was clearly signalled in the materials using a representative graphic icon and distinctive layout separating the "teacher talk" from the learning content.

Unfortunately the case study example was not appropriate for his class and two of the stated learning outcomes were not aligned with the Nigerian curriculum. Wazabia clicked on the link labelled "create a print version" He was presented with a number of options: (1) Export full version (including text for the iDevices); (2) Export with place holders for iDevices (iDevice text removed) (3) Custom selection. Wazabia tried the 3rd option and chose to keep the multiple choice questions and selected the place holder options for the learning outcomes and the case study elements which required reconfiguration for the Nigerian context. He saved this as a personal collection in WikiEducator and was also given the option of saving an "ODT" file (Wazabia wasn't sure what this was for). Nonetheless, he saved the .pdf and .odt file onto his USB memory stick, which he used for saving copies of his email communications.

Clicking on the ODT file, Wazobia found out that he could open and edit the file using Open Office which was installed as the word processing software at the Internet café. This meant that Wazobia could edit the OER content he sourced on WikiEducator off line without the need to tackle the long walk to the cyber café. This was useful, because feedback from his pupils after completing the project would inevitably result in a number of refinements based on the experience of using the lesson in the field.

He noted that the ODT document he downloaded from Wikieducator had maintained the layout and presentation for the learning outcomes and case study, but the text was removed. He inserted new learning outcomes based on the relevant Nigerian outcome statements and authored a new case study using a local stream as the example. He made a mental note to loan his cousin's new mobile phone to take a photo of the local streams, and transfer this to a memory stick for uploading onto Wikieducator on his next visit to the cyber café. Wazobia was surprised to see that the online interactions and feedback for the multiple choice questions now appeared as an Appendix in the off line version of the OER resource with cross references to the relevant questions in the body of the text.

Wazobia saw that Wikipedia also had the option of downloading an ODT file, and he downloaded copies of the three Wikipedia articles. Working off line, he deleting the irrelevant sections of these Wikipedia articles for his

teaching purpose and combined the abridged encyclopaedia text with the customised activity assignment from WikiEducator. Selecting the File > Export option in Open Office, Wazobia uploaded a remixed version of his lesson.

Wazobia decided to create a customised workbook which contained his remixed version of the content from Wikipedia and the activity worksheet sourced from WikiEducator. He was able to customise this workbook by adding his own title and subtitle which he called: "Water pollution and Safe Drinking Water: A Group Assignment for Grade 10". He also added his name as the editor of this compilation and was rather pleased, because this was the first book he had edited. WikiEducator produced a pdf master file with a professional looking layout, which could be reproduced locally for his pupils. He also saved an ODT version of the file for editing later off line.

There are other alternatives for customisation and content manipulation which are made possible by identifying the content and form elements of an educational text at a technical level. These alternatives could also contribute to improving OER reuse in the future, for example:

- Educational institutions and/or commercial publishers could create their own customised set of graphic icons used with iDevices to promote consistency with their local brand identify;

- It would be possible to export WikiEducator OER collections as an IMS content package or content cartridge for importing into the institutional Learning Management System.

- Exporting collections as a standard open textbook (that is, without the educational elements) and exporting the educational activities for reuse in other online environments, eg blogs.

- Promoting teacher collaboration, community discussion and exchange of OER learning activities based on a common course content base.

The reusability hypothesis of this proposal suggests that the classification and identification of these educational elements as discrete objects within an OER resource combined with storing these resources in editable formats will make it easier for educators to repurpose OER for different contexts thus addressing the reusability paradox. This may provide the catalyst for "micro-contributions from many" in an open wiki environment as intimated by Atkins, Brown and Hammond (2007:25) as a strategy to promote long term scalability and sustainability of OER. This is an untested hypothesis but is certainly plausible reviewing the literature on the design of self-instructional texts in distance education combined with the popularity among teachers using the eXe authoring tool[20] which breaks down educational materials into identifiable elements (iDevices).

2.2.1 Proposed solution

Connexions uses an XML schema (a mark-up language which facilitates differentiation between content (*what we teach*) and form (*how we teach it*), and is ideally suited to structured authoring and identification of discrete educational elements like iDevices at a technical level. Similarly, WikiEducator uses a feature to embed pedagogical templates in the content which is the wiki equivalent of an iDevice .

The project proposes to incorporate the definitions of iDevices (educational elements) within the XML schema used by Connexions as a sub-project of the Mediawiki <==> Connexions interoperability initiative above. This would facilitate a one-to-one, import/export capability between iDevices in WikiEducator and the presentation and display of these educational elements within the Connexions platform. In this way the project will add value to the capability of Connexions for educators who choose to use these features. In addition, the pedagogical templates used in WikiEducator will assist in remixing Wikipedia content as OER lessons.

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20 eXe was rated Best in Show for "Content Authoring", and also one of the top 3 participant rated projects at the IMS Global Learning Impact Awards 2008.

This activity is a relatively low cost intervention because the developers can copy and reuse the iDevice definitions from eXe as an open source project. At the very least, this work will add value to the professional display and presentation of educational content in both the Mediawiki and Connexions platforms. However, at the same time this small investment will create opportunities for the OER community to test the hypothesis associated with reducing the constraints of the reusability parodox by enabling features for authoring micro-contributions from educators.

1.3 Shortage of educators in the formal education sector with the capacity and skills to engage meaningfully in mass-collaboration approaches of OER development and reuse on an international scale

Learning wiki skills is cited by new users of WikiEducator as the top reason for registering an account on the WikiEducator site (70% of respondents). This is closely followed by "researching innovative educational trends and ideas" (68% of respondents) and "developing free content materials" (66% of respondents) as the main reasons for joining the project[21].

This survey data emphasises the importance and need expressed by educators joining WikiEducator to learn how to develop OER using the collaborative wiki model, especially given that 72% of WikiEducator users are teachers, lecturers or trainers working in the formal education sector and that approximately half of our users are older than 45.

Why do you join WikiEducator?

to learn wiki skills	70
to explore new trends & ideas	68
to develop free content	66
to connect with WE community	56
to grow personally	50

WikiEducator has pioneered a low-cost training model using OER to teach wiki skills in a live wiki community. WikiEducator's Learning4Content training project has demonstrated its capacity to provide wiki training on a global scale. As a wiki project, the skills development of the Learning4Content project is focused on developing basic wiki editing skills in conjunction with an introduction to the concept of OER and free content licensing. A significant feature of the Learning4Content training program refers to the potential of skills transfer for other wiki projects, including Wikipedia, Wikibooks and Wikiverstity which use the same technology as WikEducator. We do not track data on the number of Learning4Content graduates who have subsequently made edits on Wikimedia Foundation projects but there have been posts on the WikiEducator community list and personal reflections and communications which provide examples of Learning4Content graduates who have subsequently ventured into editing on Wikimedia Foundation projects.

With the growing number of educators acquiring basic wiki skills through the Learning4Content training programme, the community has expressed the need for an intermediate level course to follow on from the basic wiki skills course. These requests are posted on the WikiEducator community discussion list and relevant planning pages for community requests on the WikiEducator web site. However, prior to the finalisation of the curriculum proposal for the development of tutorials for an advanced skills course, appropriate community consultations and analysis will be conducted to determine needs and priorities. In addition, we anticipate further uptake and investment by other institutions in widening skills development using the Learning4Content OER resources and supporting materials.

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21 This survey data is derived from an optional online survey. The survey link is sent to all new account registrations on the WikiEducator site. To date, the survey has been completed by 1011 educators. 52.2% of respondents indicated that they found out about the survey from the welcome email when registering an account compared with 15.8% indicating that they completed the survey from information provided at a meeting or conference. 20.7% have specified other sources (which could include mouth-to-mouth referrals and workshops.) Consequently the majority of respondents completing the survey have not participated in an Learning4Content workshop.

1.3.1 Proposed solution

Under this proposal, we will continue to offer free basic-level wiki training for educators around the world.

In addition to the basic-skills course we propose to develop further OER tutorials covering more advanced skills. This will enable the commencement of an intermediate-level workshop using the Learning4Content model for members of the WikiEducator community seeking to advance their skills in collaborative OER authoring, for example a tutorial on how to remix OER in support of the OER content interoperability initiative of this proposal. The needs analysis for determining the topics for the intermediate-level tutorials will be conducted in consultation with the WikiEducator community.

1.4 The absence of a systemic OER participatory learning infrastructure which alludes to the requirement to foster the evolution of sustainable OER ecosystems

An ecosystem requires that the elements of the system are continually engaged in a set of relationships with every other element constituting the environment in which they exist[22]. At the micro-level of the OER ecosystem, there are early signs suggesting the potential sustainability of individual OER projects, for instance, Monterey Institute for Technology and Education, which is nearing the operational breakeven threshold. However, there is still much work needed in fostering the development of a sustainable OER ecosystem at the macro-level. There is a growing body of knowledge beginning to reflect on the sustainability question, for example Downes' (2006) work articulating different models for sustainable OER[23] and Dholakia, King, and Baraniuk's (2006) reflections on sustainability in the case of Connexions[24]. A number of important principles are emerging from these reflections:

- **Learning infrastructure is fostered, not built**: Self-sustaining OER systems will only be achieved when social, organizational, and cultural issues are resolved in tandem (Atkins, Brown and Hammond 2007:56). Self-organisation works best when the global pattern emerges from the collective interactions of the sub-elements where the rules of interaction are determined at the local level. Open wiki models exemplify these processes of self-organisation where local projects and initiatives can determine their rules of interaction and engagement, while simultaneously fueling the emergence of sustainable OER ecosystems at the macro-level. The wiki model enables incremental growth combined with flexible adaptation as knowledge and experience of the system grows. Conceptually the proposed sustainability model advocated by the OER Foundation is based on collaboration rather than competition among individual OER initiatives. "Co-opetition" is well understood in the business world where corporations collaborate in order to compete better. Consider for example, the collaboration between Toyota and Peugeot Citroen who share design, component parts and a jointly owned manufacturing plant to produce competing vehicles[25]. Specifically, this proposal is designed to encourage and promote collaboration between Connections, WikiEducator and the Mediawiki projects as a mechanism to improve collective interactions between sub-elements of the macro-OER ecosystem, contributing to the individual sustainability of these projects through collaboration. .
- **Sustainability is a value system, not merely an economic return for an OER product**: An OER product, for instance a low-cost open textbook, is part of a larger system which should also include "volunteers and incentives, community and partnerships, co-production and sharing, distributed management and control" (Downes 2006)[26]. Consider for example, that school-level education in most countries are largely publicly-

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22 http://en.wikipedia.org/wiki/Human_ecosystem
23 http://www.downes.ca/cgi-bin/page.cgi?post=33401
24 U. M. Dholakia, J. King, and R. G. Baraniuk. 2006. *What Makes an Open Education Program Sustainable? The Case of Connexions*. OECD Centre for Educational Research and Innovation (CERI) Closed Workshop Report. Online: http://www.oecd.org/dataoecd/3/6/36781781.pdf
25 http://findarticles.com/p/articles/mi_kmafp/is_200503/ai_n13269158/?tag=content-inner;col1
26 S. Downes. 2006. *Models for Sustainable Open Educational Resources*, Online: http://www.downes.ca/cgi-bin/page.cgi?post=33401

funded systems, consequently OER sustainability in this sector would benefit significantly from refinements in the national funding models as an incentive for the OER ecosystem, rather than total reliance on a user-pay system where individual schools fund the development of OER products. By contrast, it is easier to achieve a membership-funding model through higher education consortia given higher levels of institutional autonomy. The sustainability strategy for the OER Foundation will focus on an institutional membership model for the tertiary sector component and initiate a national New Zealand collaboration for the school sector as the first step in modeling the benefits of national funding support for OER at the school level.

- **Support the development of a critical mass of active, engaged users that will scale**: Digital OER content is scalable, however, in the absence of a critical mass of educators who create, remix and reuse OER the value chain for sustainability is broken. In order to scale participation and the rate of OER production and reuse by an order of magnitude, (Atkins, Brown and Hammond 2007:24) suggest focusing on approaches which enable "micro-contributions from many". This will enable the ecosystem to propagate the threshold number of "elements" required for sustainable self-organisation of a macro-level OER participatory learning infrastructure. The Wikipedia model has demonstrated the scalability of content development through micro-contributions. However, the development of educational resources are more complex when compared to an encyclopaedia article. Consequently, a focused project like WikiEducator, where 72% of the users are educators working in the formal education sector provides a solid foundation on which to improve and refine approaches for collaborative development of OER in the formal education sector using the wiki model when compared to open public wiki communities. The large number of active participants now provides WikiEducator with the basis to move strategic interventions from pioneering individuals to institutional support for OER. In this regard, the OER Foundation will continue building capacity through the Learning4Content training project but increase its focus on coordinating more training actives at the institutional level. The Focus on technological refinements which make it easier for educators to contribute to OER will also support the growth of a critical mass of educators.

While emergent knowledge and experience with reference to the sustainability of OER is improving, this is still both a complex and demanding challenge for the movement. In assessing the probability for the OER Foundation and WikiEducator contributing to the future success of a sustainable OER ecosystem, the following questions are relevant:

- What are the foundations on which future sustainability will be built?

- What is the business model for future sustainability?

- What are the existing gaps or strategic leverage points that will be prioritised for this proposal as a contribution to the OER ecosystem?

Responses to these questions are discussed in the subsections which follow.

1.4.1 Sustainability foundations established

Reviewing the performance of the WikiEducator to date, the initiative has succeeded in laying the foundations and providing key building blocks for addressing the sustainability challenge. These include, for example:

- Achieving critical mass for a viable and sustainable wiki community. Moreover, WikiEducator has reported a positive growth trend since the inception of the project. (To date, WikiEducator has over 9,300 registered users[27], and currently has a top 100K web site traffic ranking (base on Alexa.com rankings for the current 3-month average) placing WikiEducator within the top 1% of most visited websites in the world.[28])

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27 For the period 16 February to 12 May 2009, WikiEducator has averaged 26 000 unique visitors per week (ranging between 2500 on weekends to 5000 unique visitors per day). Over the corresponding period and average of 4,864 visitors per week have been repeat visitors – which constitutes about 18.7 percent of the visitors to the site.

28 Global traffic rankings are not necessarily an indicator of future sustainability. However, the probability of achieving a

- Successfully implementing a self-organising training project using OER which scales in two ways:
    - Increasing the number of trainers and facilitators with each training workshop -- graduates of the Learning4Content workshops become trainers for future workshops.
    - A sufficiently large community which helps identify large numbers of prospective Learning4Content participants[29].
- Evidence of shifts from individual participation to organised collaboratives and institutional engagement. For example: the launch of a national WikiEducator node for India and subsequent government requests by the Government of India to extend Learning4Content training workshops to all state universities in the country; regional collaborations under the FLOSS4Edu project in Africa; co-ordinated OER course development by institutions (for instance Otago Polytechnic and the University of Education, Winneba in Ghana), training projects launched by the Ministry of Education in support of the National Open School of Trinidad and Tobago; the inception of the OER Foundation, a non-profit entity which will implement a membership contribution model for achieving economic sustainability of the WikiEducator project in the higher education sector.
- Increased profile of WikiEducator and OER among policy makers as evidenced, for example, by the respective Ministers of Education opening Learning4Content workshops in Barbados, St Kitts and Nevis and a Member of Parliament officiating at the launch of the Indian node for WikiEducator.

1.4.2 Sustainability strategy of the OER Foundation

The aim of the OER Foundation is to foster and support the development of sustainable OER ecosystems (See Policy statement, Appendix G). Sustainability is a corporate strategic aim of the OER Foundation and not merely a peripheral interest..

Our sustainability strategy is designed to "distribute and to share cost and expertise" (Atkins, Brown & Hammond 2007: 24)[30] through open network models pioneered by the free and open source software movement. Wiki-based projects have the advantage of significantly lower break-even thresholds (where revenue equals operational costs) due to significant cost efficiencies possible through mass-collaboration when compared to other approaches. As a non-profit entity registered for charitable educational purposes, the OER Foundation will reinvest surplus funds back into the

Relationship between, revenue, operational cost, break-even and future investment in OER development
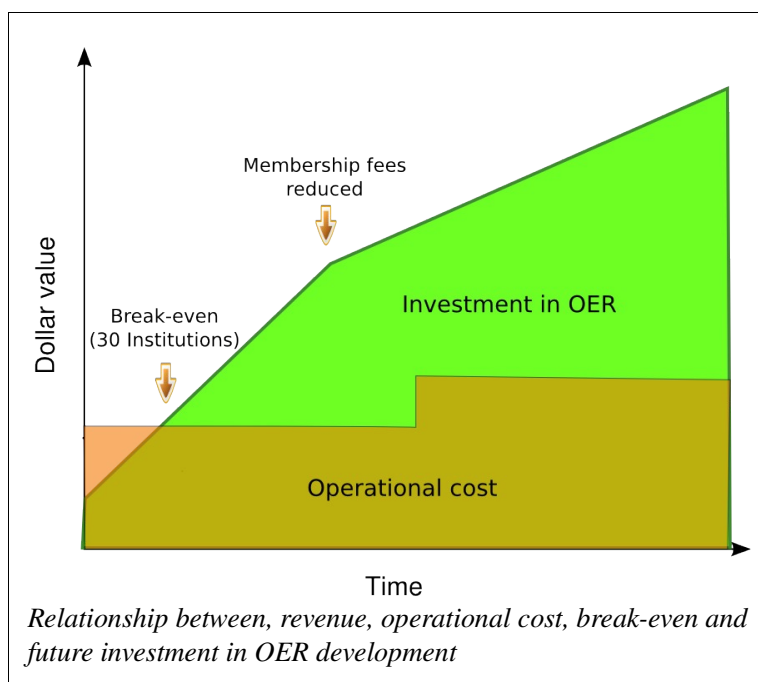
development of open content (depicted by the green shaded area in the graphic) by remunerating authors and learning design professionals for the development of commissioned OER materials and open textbooks.

The business plan for the OER Foundation and WikiEducator will achieve economic sustainability through multiple and diverse revenue streams, including:

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sustainable site is arguably higher for web sites reporting positive growth trends than those sites with negative growth trends.

29 As a result of the scalability drivers with the first round of the Learning4Content project, the number of Learning4Content workshops that will be funded under this proposal has been reduced by 50%.

30 http://www.hewlett.org/download?guid=745fe08c-54de-102c-ae2b-0002b3e9a4de

- **Membership contributions** from educational institutions (national and international) to support the technical infrastructure of the initiative while benefiting from value added services provided by the OER Foundation and profiled access to an international OER network of educators.
- **Government contributions** most notably in supporting the realisation of national education priorities through OER and sector-wide savings in selected open textbook projects and ear-marked funding for the collaborative development of OER content resources for eLearning in support of national curricula. In addition, the project will source funding from national aid agencies to support WikiEducator's work and extensive reach in the the developing world.
- **Grant funding** from international donor agencies and foundations. This category of funding is reserved for strategic investments in building a participatory OER learning infrastructure so as to avoid dependencies on donor funding for operations.
- **Corporate philanthropy** where corporate citizenship divisions sponsor key projects of WikiEducator and the OER Foundation. For instance, the OER Foundation plans to implement a FTE4WikiEducator project whereby institutions in the developing world, who may not be able to afford contributing membership fees, may join the initiative by allocating a nominal staff-time allotment to work on the project and OERs for their institution. The OER Foundation will seek corporate sponsorship for these FTE4WikiEducator members as a contribution to supporting the technology infrastructure of a large international OER collaboration.
- **Public philanthropy** through voluntary electronic contributions (for example, automated micro payments);
- Building **corporate revenue streams** for value added services around OER. For example, partnerships with the publishing industry whereby a nominal commission is levied for OER texts published and distributed. This provides a "win-win" solution for all stakeholders:
    - Surplus revenue generated through partnerships with the corporate sector are reinvested back into further OER content development;
    - Publishers can reduce the risks and upfront development costs associated with educational texts utilising the benefits of print-on-demand publishing and opportunities for cost-effective distribution of highly customised texts. The OER movement benefits from marketing expertise and distribution channels of the publishing industry thus widening access to OER and promoting local income generation.
    - Students benefit from lower cost textbooks. The market price will be regulated through the principles of self-organisation because there will always be a digital version of the content available for free download on WikiEducator thus avoiding the threat of monopolies and promoting cost-efficient publishing. Implementing mass-customisation approaches and cost-efficiencies of industrial-scale printing technologies, publishers will be able to produce texts at market prices which are less than the comparable cost of an individual printing locally on a desktop printer while still maintaining a feasible profit margin for parallel OER publishing.

1.4.3 Strategic gaps and leverage points for future sustainability

An analysis of WikiEducator data and provisional discussions with stakeholders highlights areas of strategic focus pertinent to this proposal that will contribute to further maturation of a sustainable OER ecosystem:

- Proportional representation of OER developers in WikiEducator from the school sector (28% of users) is noticeably lower than members working in the tertiary education sector (50% of users). Therefore, increasing participation rates in OER collaboration from the school sector is a strategic priority. The WikiEducator project achieves economies by using a shared infrastructure for all sectors including school and higher education sectors. Discussions with the Ministry of Education in New Zealand and a number of teachers in the school system advise that it would be more productive and effective to focus OER projects on the development of lesson plans, worksheets, and digital resources to support classroom teaching as a first step towards extending work to open textbooks. This is also corroborated by Atkins, Brown and Hammond

2007:24) who recommend focusing on smaller individual projects[31]. Open Textbooks would be the next logical step, once a culture of OER acceptance, collaboration and adoption has been established within the school sector. Through reuse, these smaller components will become the building blocks for larger open textbook projects to follow. The OER movement is not well known in the New Zealand school sector, with the majority of digital content resources accessed and used in the sector, licensed under all rights reserved. This project aims to establish OER as a viable and sustainable alternative for New Zealand schools. The Ministry of Education has also confirmed its support for using WikiEducator in hosting OER for the school sector under the Managed Learning Environments project.

• The maturation of the WikiEducator community has now identified the need for approaches and strategies to establish national OER collaborations. Apart from the pioneering work in India, we do not have models or guidelines to assist countries with instituting their own OER collaborations. This proposal seeks to pilot and document the establishment of a national OER collaboration in New Zealand which could form the basis of a model that can be adapted and replicated in other countries around the world. For instance, Samoa has indicated their intent to establish a national WikiEducator node, and this project will encourage other countries to mirror our initiative in their respective countries as all corresponding resources will be available as OER.

• Notwithstanding the extent and detail of the statistics WikiEducator records and tracks through the servers and online surveys, metrics which provide a deeper understanding of how this OER community develops and the nature and extent of its outcomes and impact are restricted. Consequently we seek to institute and implement a more robust and analytical monitoring and evaluation plan for the WikiEducator initiative.

1.4.4 Proposed solution

The third initiative of this proposal is designed to bring together the key components of the theory of action while simultaneously addressing strategic gaps in the WikiEducator project in fostering the development of a sustainable OER ecosystem as discussed in the subsection above. The New Zealand OER collaboration for school teachers will:

• establish a new national OER **community** node;

• build **capacity** among teachers;

• develop OER **content** and;

• implement relevant technology **connections** and strategic networks.

The significance of this initiative lies in the collaboration with the Ministry of Education as a significant component in achieving sustainability of OER in the school sector at a national level. The project will also provide a focused attempt to prototype approaches to remix content from Wikipedia in the form of OER lesson content mapped to the national curriculum. New Zealand is a popular market space in the corporate world for trailing and prototyping new products and approaches before scaling these for the international market and the country has a acquired a reputation as a "petri dish" for innovation.

New Zealand provides a fertile environment for developing emergent strategies for OER sustainability. With a relatively small population (4.2 million) there is a close relationship between national policy (Government) and implementation (Society). The New Zealand school sector is representative of a broad spectrum of ICT enabled schools ranging from large technologically advanced schools in the urban centres to small rural schools where the digital-divide is still evident, hence the applicability of this work for the developing world. These factors combined with a strong New Zealand culture for innovation provides an ideal environment for modelling approaches to establish sustainable OER collaborations.

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31 D.E. Atkins, J.S. Brown & A.L. Hammond. 2007. *A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities*. Report to The William and Flora Hewlett Foundation. Online: http://www.hewlett.org/download?guid=745fe08c-54de-102c-ae2b-0002b3e9a4de

3. Alignment with Hewlett grant-making priorities

In accordance with Hewlett's grant submission guidelines for the proposal narative, the OER Foundation confirms that the initiatives are well aligned with the OER grant-making priorities for 2009. The three proposed initiatives will contribute to the attainment of the following priorities:

- **Sustainability**: The aim of the OER Foundation and WikiEducator is to foster the development of a scalable and sustainable OER ecosystem using free content and open networks. WikiEducator is a highly adaptive and open system driven by the gifting culture of thousands of teachers, lecturers and trainers committed to the core educational value of sharing knowledge freely. Herein lies our greatest asset for sustainable futures -- namely, a commited community which has demonstrated positive growth in both membership and content development since its inception. The wiki approach is a low-cost model when compared to other large OER initiatives with proven ability to scale.
- **Research and metrics**: WikiEducator keeps detailed statistics of growth, editing trends, and feedback from user surveys. We are an active participant in Hewlett's metrics project using Google Analytics. Furthermore, this proposal will implement a robust monitoring and evaluation plan to acquire a deeper understanding of key trends and patterns in the evolution of mass-collaboration approaches to OER development.
- **Open textbooks / Courses**: WikiEducator is a unique project which spans a wide range of OER approaches from the production of more traditional texts to innovative online courses based on emergent theories of connectivism (Siemens 2004)[32]. For example: WikiEducator, in partnership with COSL, has used collaborative authoring to produce the OER Handbook for Educators, a textbook available for free download or in a bound printed version which can be purchased through Lulu.com; Leigh Blackall and Bronwyn Hegarty from Otago Polytechnic have pioneered an OER course on Flexible Learning which uses a unique combination of activities hosted on WikiEducator, a course blog site, and participant reflections using individual blogs[33]. WikiEducator has pioneered the use of pedagogical templates which is conflating the boundaries between traditional textbooks and flexible learning approaches by incorporating educational activities and formative assessment within OER content in ways that will facilitate reuse in different learning contexts.
- **Intellectual property awareness**: This is a high priority for WikiEducator. Our community has developed OER training materials on the meaning of "free content" in accordance with the requirements of the free cultural works definition. The Executive Director of CC Learn is a member of the WikiEducator Community Council and the Learning4Content training project continues to raise awareness around intellectual property issues as evidenced by approximately 70% of visitors to the WikiEducator tutorials viewing the training resource on "free content". This advocacy work has reached more than 7,300 educators over the past three years and will continue to grow.

B. Background

WikiEducator was launched in May 2006 under the auspices of the Commonwealth of Learning (COL), an intergovernmental organisation created by Commonwealth Heads of Government to encourage the development and sharing of open learning and distance education knowledge, resources and technologies. Under COL's custodianship, WikiEducator has demonstrated rapid growth exceeding strategic targets set at 2,500 registered users by June 2009 in COL's initiative planning for the project[34]. Named the Best Educational wiki in 2007 by Stephen Downes and inaugural recipient of the MERLOT Africa Network's award for exemplary OER practices in 2008, Wikieducator has

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32 G.Siemens. 2004. *Connectivism: A Learning Theory for the Digital Age.* Online: http://www.elearnspace.org/Articles/connectivism.htm

33 http://wikieducator.org/Flexible_learning

34 The target of 2,500 users incorporated into COL's planning for the WikiEducator project was derived by forecasting growth based comparable trends of open source software projects in the formal education sector, including for example Eduforge.org and Exelearning.org.

matured into a viable prototype for scalable and sustainable OER operations. The project has outgrown its founding home at COL and has become an independent project. As of 1 May 2009, WikiEducator will be led by an independent not-for-profit entity, headquartered at the new International Centre for Open Education, at Otago Polytechnic in Dunedin, New Zealand.

COMMONWEALTH of LEARNING

Exceeding strategic targets

Predicted users — Actual users

9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0

June 06   June 07   June 08   June 09

Exceeded predicted growth target of 2500 users 18 months in advance

WikiEducator's move to the OER Foundation will enable the project to overcome material restrictions while operating under the auspices of a Commonwealth intergovernmental agency:

- Funded by Commonwealth governments, COL was not able to authorise the installation of localisations for WikiEducator in languages which are not official languages of the Commonwealth member states.

- WikiEducator's funded training activities were restricted to Commonwealth countries.

- As an international agency, financial policies would not have permitted WikiEducator to implement a membership contribution model thus restricting the project's potential to achieve financial sustainability through contributions from education institutions.

- COL's status as an international agency restricted the potential to implement a micro-payment system for general public donations or strategies to secure sponsorship through corporate philanthropy for WikiEducator.

- COL's mission and operational policies could not approve the appointment of dedicated technical staff for software development or full-time technical support of the WikiEducator websites.

The Council of Otago Polytechnic have approved the establishment of the OER Foundation as a new non-profit entity founded for charitable education purposes. The OER Foundation is the legally registered as the entity for raising and administering the funding for WikiEducator and is driven by the strategic vision of building a scalable and sustainable OER ecosystem. The WikiEducator project has planned for continuity to ensure effective succession during this new phase of growth:

- Dr Wayne Mackintosh, founder of the WikiEducator project and elected member of the Community Council will assume an executive role as Director of the International Centre for Open Education at Otago Polytechnic and Deputy Chair on the Board of Directors of the OER Foundation, thus continuing his leadership role in WikiEducator.
- Dr Robin Day, Deputy Chief Executive of Otago Polytechnic is Chair of the Board of Directors of the OER Foundation, and has played a leadership role instituting a progressive OER intellectual property policy at the Polytechnic.
- WikiEducator's Community Governance Council continues to lead the governance of the project.
- COL's president and Chief Executive Officer has confirmed financial support for the operation of the WikiEducator websites for the next three years.

The decision to locate the headquarters of the OER Foundation at Otago Polytechnic was carefully researched. Otago Polytechnic are leaders in open education. The polytechnic has specified sustainable education as a priority in the strategic plan for 2008 – 2012. They are the first New Zealand tertiary education institution to sign the Cape Town

Open Education Declaration[35]. Moreover, Otago Polytechnic is one of the first institutions in the world to implement an intellectual property policy which defaults content developments to a Creative Commons Attribution license[36]. An innovative and highly skilled team based at the Educational Development Centre, together with a progressive intellectual property policy, have been the catalysts for prolific growth in OER content development at the Polytechnic[37]. Otago Polytechnic has initiated an open process by recently hosting the "Heywire8 Think Tank" to bring together key educational practitioners, policy makers and decision makers to explore opportunities and pathways for establishing a New Zealand national OER collaboration. This open planning meeting included representation from Universities, the Wānanga (a type of publicly owned tertiary institution that provides education in a Maori cultural context), Institutes of Technology and Polytechnics, the Ministry of Education and the Commonwealth of Learning[38]. This open process provides a solid foundation for progressing a national OER collaboration under this funding proposal. Otago Polytechnic are committed to achieving sustainable education as a strategic priority and their commitment is evidenced by registering an independent non-profit entity to achieve these objectives.

With generous funding support from the William and Flora Hewlett foundation, the WikiEducator community have successfully launched and implemented the Learning4Content training project which is likely the world's largest attempt to develop wiki skills for education. As of 31 March 2009, 2360 participants have registered for 73 Learning4Content workshops since the inception of the training initiative in January 2008. On average, WikiEducator has succeeded in presenting 1.14 workshops per week for the duration of the project. This represents 23 online and 50 face-to-face workshops in 30 different countries, including: Bangladesh, Barbados, Belize, Botswana, Canada, Cameroon, Israel, India, Ghana, Grenada, Guyana, Kenya, Kingdom of Tonga, Lesotho, Malaysia, Mozambique, Namibia, Nauru, New Zealand, Pakistan, Papua New Guinea, Samoa, Saint Kitts & Nevis, Seychelles, Solomon Islands, Sri Lanka, Trinidad and Tobago, Tuvalu, Uganda and Zambia.

C. Inputs

The inputs for this project proposal and corresponding outputs and outcomes should be read in conjunction with the corporate-level logical model for the WikiEducator project summarised under the Theory of Action (Section 2A) of this proposal.

The successful implementation of this project proposal is based on the following inputs:

- **Technology infrastructure**: WikiEducator uses open source software which is a core value commitment of our community to the essential freedoms and intents of the OER movement to share, reuse and remix educational materials as a social good. WikiEducator uses MediaWiki, the same software which powers Wikipedia and the other Wikimedia Foundation projects, and therefore has a solid foundation on which to grow as an international OER initiative using software with a proven track record in supporting a top ten website.
- **Training resources for Learning4Content**: WikiEducator has developed 11 OER tutorials which support the Learning4Content training project. In addition, there is a workshop toolkit and facilitator's manual to assist new trainers in organising and presenting workshops.
- **Facilitators for Learning4Content workshops**: WikiEducator has established a team of experienced Learning4Content facilitators based in Africa, Asia, the Caribbean, North America and the Pacific region. Our base of prospective trainers continues to grow with each workshop and we have implemented a system whereby new trainers can gain experience by co-facilitating with one of WikiEducator's more accomplished facilitators.
- **Software developers**: WikiEducator's technical team include senior and experienced open source software

35 http://www.capetowndeclaration.org/
36 http://www.wikieducator.org/Otago_Polytechnic:_An_IP_policy_for_the_times
37 http://www.wikieducator.org/Otago_Polytechnic:WikiEducator_helps_advance_open_learning_at_the_Polytechnic
38 http://www.wikieducator.org/Heywire8_Think_Tank

development capability, which to date has been provided largely by a community volunteer model. In addition, the OER Foundation team includes senior-level management experience in leading open source development projects and our system administrator has extensive experience as Lead Software Engineer on numerous projects. WikiEducator has a proven track record of collaboration on software development with the Wikimedia Foundation who are the custodians of the MediaWiki software. (See letter of endorsement from Wikimedia Foundation, Appendix A.)

- **School teachers**: This project proposal seeks to prioritise a national OER collaboration for the school sector. WikiEducator is working in close collaboration with the New Zealand Ministry of Education on the development of reusable and portable OER content, which has been identified as one of five priority tasks under the Ministry's Managed Learning Environment initiative. This will enable the project to extend participation and reach with New Zealand teachers on a national scale. (See letter of endorsement from Ministry of Education, Appendix B.)

- **External funding**: The constitution and policy statement of the OER Foundation requires the institution to "raise and administer funds for the purpose of supporting the adoption and implementation of open education resources for the benefit of education institutions and the learner communities they serve". In the context of this project proposal, the OER Foundation will raise funding and sponsorship to: extend the number of workshops and educators trained under the Learning4Content training initiative, and to support the development of dedicated tools and MediaWiki extensions to lower the technology related barriers of entry to participation in collaborative OER development.

- **Project leadership**: The founder of WikiEducator, Dr Wayne Mackintosh will be leading this project. Dr Mackintosh has a proven international track record in free software and free content for education, and he will be working full-time towards the attainment of sustainable OER ecosystems in his new role as founding Director of the International Centre for Open Education at Otago Polytechnic. Jim Tittsler, with more than 30 years experience in computer hardware and software design will be joining the project as Lead Software Engineer. WikiEducator plans to implement a rigorous monitoring and evaluation plan to improve metrics, reporting and knowledge on peer-collaboration approaches to OER development. Dr Jonathan Miller, a leading authority on ICT policy and practice for developing countries and co-author of the World Bank's publication, *Monitoring and Evaluation of ICT in Education Projects: A Handbook for Developing Countries*[39] will assist as external evaluator for the implementation of WikiEducator's monitoring and evaluation plan. (See curriculum vitae of key participants in Appendix D – E.)

D. Initiatives, Activities, Outputs and Outcomes

This section is structured according to the three initiatives identified in the proposal. Each initiative is subdivided into a number of activities with corresponding outputs and outcomes.

An overview of the initiatives and proportional budget allocations is provided in the following table:

Proposed Initiative	Budget	Percentage
Initiative 1 Build OER content interoperability and improve pedagogical reusability between the Connexions and WikiEducator/MediaWiki platforms	$115,000	57%
Initiative 2 Build OER capacity through Learning4Content (L4C) training workshops	$45,000	23%
Initiative 3 Establish a national OER collaboration for the New Zealand school sector	$25,000	13%

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39 http://www.infodev.org/en/Publication.9.html

Initiative 4 Implement an independent monitoring and evaluation review for WikiEducator	$15,000	7%
Total	$200,000	100%

The respective initiatives are discussed in more detail in the subsections which follow. The monitoring and evaluation initiative is covered in the evaluation section (Section E) of the proposal.

1. Build OER content interoperability and improve pedagogical reusability between the Connexions and WikiEducator/MediaWiki platforms

Ultimate outcome: *Reduce cost, improve quality and scale-up access to OER through more effective remixing and reuse of existing OER*

Budget: $115,000

Intermediate outcomes:

- Improve remixing and reuse of OER content through content interoperability between Connexions, WikiEducator and MediaWiki OER installations.
- Improve potential for pedagogical reuse in different contexts by defining educational elements (iDevices) as identifiable components of digital OERs, thus adding value to Connexions and all MediaWiki installations used for education by providing a practical solution to the reusability paradox. This will enable OER developers to embed learning activities and incorporate formative assessment elements without compromising reuse potential.

Outputs:

Content interoperability

Develop a final release, Mediawiki extension as open source software that will successfully :

- Export a Connexions page or content module into WikiEducator for collaborative wiki editing.
- Import a WikiEducator page or content collection into Connexions for enhanced work flow and hosting of static instances of wiki produced content.
- Add pedagogical value to both platforms through the incorporation of iDevices (educational elements) into OER content in both platforms.
- Improving reuse potential of the Wikimedia Commons repository, and content collaborations among Connexions, WikiEducator, and the Wikimedia Foundation projects, which all subscribe to licensing which meet the free cultural works definition.

Pedagogical reusability
- Describe the content and form elements of a set of iDevices (instructional devices) typically used by educators when developing educational materials based on the work of the eLearning XHTML Editor (eXe) open source authoring tool.
- Define anticipated behaviours of the learner-content interactions (e.g. teacher feedback on learner activities) for alternate delivery options (e.g. online and print-based materials).
- Specify user options for different reuse scenarios, for example:
  - exporting OER without iDevices
  - exporting OER with placeholders for iDevice content

- exporting OER with selected or all orginal iDevices.
- Extend the Connexions XML schema (CNXML) to incorporate iDevices.
- Develop self-contained MediaWiki extension for iDevices.
- Define import/export behaviours for OER technologies which do not support the use of iDevices.
- Develop import/export capability of iDevices between Connexions and WikiEducator/MediaWiki.

Issues

Monitoring and tracking content repurposed between the respective platforms and whether these OER derivative works will be contributed back to Connexions and/or WikiEducator platforms provides a significant challenge particularly when content is reused outside of these environments. In this regard, the project will implement the following monitoring mechanisms:

- Develop a script that will record all content sourced from Connexions and imported into WikiEducator as well as content exported from WikiEducator to the Connexions platform. It will be more difficult to track remix once the content leaves these platforms.

- Research and implement solutions with Creative Commons for tagging the content with machine readable metadata to improve the potential for tracking remixed content from these platforms in external environments.

- Based on this research, incorporate relevant indicators for monitoring and evaluating the repurposing of OER content during the refinement phase of the evaluation plan described in Subsection E of the proposal. (Currently, this technical capability does not exist and is therefore not incorporated into the current monitoring and evaluation plan in Appendix C).

Activity	Obstacles and risk management strategy	Monitoring mechanism
Develop use cases	*Limited experience of reuse between Connexions content and MediaWiki installations: Low risk* • Connexions and WikiEducator are established communities with extensive experience of authoring within their respective environments. These communities are well versed in the current limitations and prospective scenarios for reuse to develop effective use cases for content interoperability between the two platforms. • Use cases will be developed as open content and both communities will encourage engagement from users to refine and improve the use case scenarios. *The iDevice concept is not currently a mainstream OER authoring approach thus impeding the development of appropriate use cases: Low risk* • The eXe open source software project has more than 5 years experience with the implementation of iDevices as an educational authoring concept and has been honoured with a Leadership Award by the IMS Global Learning Impact Awards in 2008 and was rated Best in Show for "Content Authoring" for interoperable content. • eXe has an extensive international user base of educators who use iDevices in the development of their digital content, thus creating opportunities to port this experience for the benefit of the OER movement.	• Consensus achieved on future use case scenarios. • Consensus achieved on use cases for iDevices between Connexions and WikiEducator users.

Requirements specification	*Incompatible systems architecture to facilitate content interoperability: Low risk* • Connexions and MediaWiki/WikiEducator are both open source software projects adhering to open standards. As such the source code of both projects are open for analysis and adaptation as may be necessary for the requirements specification for this project. • Connexions uses an openly published and tested XML schema and the MediaWiki software provides direct, high-level access to the data contained in the MediaWiki databases through the MediaWiki-API (Application Programing Interface) thus providing an open and accessible basis for developing the requirements specification. • WikiEducator, MediaWiki and Connexions have an established relationship for collaborating on this project as evidenced by the letters of endorsement. • *iDevices prove difficult to identify and define for structured mark-up languages: Low risk'* • Learning design refers to the art of balancing *what we teach* (content) and *how we teach it* (form) showing strong parallels between the division of content and form (presentation) in structured mark-up languages. • The eXe project has already defined and tested a core set of iDevices which are available under a free software license for reuse in the Connexions-WikiEducator content interoperability activity. • WikiEducator has pioneered the use of pedagogical templates, a wiki-based equivalent of devices and has the capability of specifying different behaviours for online and print-versions of the same digital materials. • The connexions structured mark-up language (CNXML) is a close cousin of XHTML used by eXe which is also a markup language with the depth of HTML but still conforming to the XML syntax thus enabling automated transformations between these mark-up approaches for the development of specifications.	• Requirements specification agreed by Connexions and WikiEducator/Media Wiki developers.
Development, implementation and testing	*Technically, the development task proves too complex for the time/budget limitations of the project: Low risk'* • WikiEducator has developed a proof of concept demonstrating the export potential of a Connexions page into MediaWiki. • In instances where content collections in WikiEducator may not meet the module hierarchy or metadata requirements in Connexions, the export/import interface will be used to eliminate these potential conflicts.	• Successful imports/exports between the respective platforms achieved and tested.
Maintenance and user training	*Connexions and WikiEducator/MediaWiki do not succeed in achieving a sustainable software development and user community for these technologies: Medium risk*	• User training tutorials completed to support user

	• In open source projects, the dependency of donor funding may deter from ongoing software development by the community. All code in this project will be released under the GNU General Public License (GPL) and will always be open and available for ongoing development. • Both MediaWiki and the Zope/Plone open source software which power the WikiEducator and Connexions platforms respectively have stable development communities. Moreover, both Connexions and WikiEducator have large international usage which minimises the risk for future maintenance. • Both WikiEducator and the Connexions team have a proven track record in leading open source software development projects; • Both projects promote and implement user training as part of their operations.	community • Production versions of the interoperability refinements released.

2. Build OER capacity through Learning4Content (L4C) training workshops

Ultimate outcome: *Establish a thriving community of educators with the capability and collaborative authoring skills to develop, remix and reuse OER for all educational levels and all sectors.*

Estimated budget

• $45,000 (Excluding external sponsorship target which will increase the stated outputs proportionality)

Intermediate outcomes:

• Double the number of WikiEducator users by 31 July 2011 targeting 17,000 educators[19].
• Double the output of OER content production by 31 July 2011 targeting 120 OER book equivalents.
• Expand the base of OER training materials on how to develop OER in collaborative authoring environments.

Outputs

• Train 1,150 teachers/educators from around the world in basic wiki skills.
• Schedule and present 30 workshops (targeting 24 online and 6 face-to-face workshops).
• Develop 4 - 6 intermediate-level L4C tutorials.
• Secure a minimum of $20 000 additional sponsorship for Learning4Content training to increase the stated outputs and widen access to wiki training in education around the world. (Note: The output targets specified above are not dependant on this additional sponsorship. Additional sponsorship will result in the achievement of higher output targets.)

Activity	Obstacles and risk management strategy	Monitoring mechanism
Recruit participants, organise and present L4C workshops	*Unable to scale L4C training due to shortage of facilitators and/or demand for training: Low risk* • L4C workshops increase the number of potential facilitators as selected graduates become future trainers. • All training materials and support resources are	• Tracking and reporting against stated output targets.

	available as OER, lowering the entry barriers for institutions and prospective facilitators to initiative training workshops. • A growing support base of experienced facilitators are available to support and provide guidance for the project. • WikiEducator represents a large community of educators around the world who assist with the recruitment of new L4C participants. • Workshop materials are designed as self-study materials and as such can be used for a wide variety of workshop and delivery formats.	
Complete needs analysis, development and implementation of L4C intermediate-level tutorials	*Low demand for more advanced wiki training & corresponding challenges in determining training priorities: Low risk* • Currently, with more than 2,300 L4C graduates having completed the basic L4C course and 1,470 educators targeted for the next L4C cycle there is a growing user base for an intermediate level course. • The WikiEducator community have been requesting and suggesting topics to be covered for more advanced training, and through community discussions with experienced authors, WikiEducator will be able to determine training priorities. • An analysis of WikiEducator website and queries posted on the main discussion list will clearly identify the most pressing training needs in the community.	• Consensus achieved in determining training priorities for an intermediate-level curriculum through open discussion with the community. • Tutorials completed and implemented as part of the L4C training project.
Secure funding/sponsorship for additional L4C workshops	*External funders/sponsors do not regard L4C representing a high "return on investment": Low risk* • L4C has a proven track record of success as the largest wiki training project in education. • L4C is a low cost training model compared to more traditional interventions designed to scale. • Sponsorship can be applied directly to training educators in the country, region or institution providing additional funding support. • WikiEducator is a high profile project with a wide international reach and value-based commitment to improving education through OER. This provides a compelling justification for corporate citizenship divisions in supporting educators to widen access to OER as a sustainable and renewable resource.	• Additional sponsorship targets achieved.

Establish a national OER collaboration for the New Zealand school sector

Ultimate outcome: *Develop and refine models for establishing national, regional and international OER collaborations which can be replicated to advance peer-collaboration OER approaches in all countries.*

Estimated budget

- $25,000 (excluding additional funding for additional tool development).

Intermediate outcomes:

- Increase proportional representation of educators from the school sector to 35% of the total number of WikiEducator users.
- Support the New Zealand school sector in utilising WikiEducator as a national OER Repository for reusable and portable content under the Managed Learning Environment (MLE) initiative of the Ministry of Education.
- Establish a New Zealand community of teachers working collaboratively on OER and sharing of best practices.

Outputs

- Train 300 New Zealand teachers in developing OERs to support teaching in the classroom.
- Train a minimum of 20 facilitators to extend the base of New Zealand trainers to scale professional development and support for the national OER collaboration.
- Research, consult and implement a selection of OER lesson plan templates and formats appropriate for use in the school sector.
- Commission 75 demonstrator lessons to be developed by New Zealand teachers and mapped to the New Zealand national curriculum, including content projects based on remixing from Wikipedia.
- Secure $30,000 additional funding to support the development of dedicated tools and MediaWiki extensions customised for use and adoption by the school sector (Note: This output is not a critical dependency for the achievement of the other output targets. The attainment of this output will result in extending the specified outputs for this initiative.)

Activity	Obstacles and risk management strategy	Monitoring mechanism
Train 300 teachers and 20 New Zealand facilitators	*Targets too ambitious to achieve within the alloted time frame: Low risk* • This output forms part of the Learning4Content training activity above which has an established track record in training large numbers of educators. • The OER Foundation and WikiEducator are working closely with the Ministry of Education and will collaborate with the Information and Communication Technologies Professional Development (ICTPD) School Clusters Programme of New Zealand in achieving our targets.	• Training targets achieved.
Develop templates for lesson plans and digital OER resources for the school sector	*Unable to develop a representative sample of OER templates for use in the school sector: Low risk* • Individual WikiEducator projects have already developed a variety of examples and approaches which can be refined for this project. • The project will research and compare approaches used by other repositories in consultation with New Zealand teachers. • The wiki-model is flexible and therefore not limited by	• Consensus achieved on representative sample of OER templates for the school sector.

Activity	Obstacles and risk management strategy	Monitoring mechanism
	the traditional constraints of content management systems or classical lesson-plan databases. • The WikiEducator community discussion forum will provide ongoing support for educators in developing appropriate OER templates.	
Commission the development of 150 demonstrator OER lessons / digital resources.	*Project fails to identify teachers to participate in the development of demonstrator OERs: Low risk* • WikiEducator will implement a bounty approach which is a reward or honorarium payment aimed at encouraging the best teachers in New Zealand to participate in the project. A bounty is similar to a fixed price contract when compared to the statement of work and specified deliverables, but is more in tune with the approaches associated with the free culture movement, where community kudos is worth considerably more than the honorarium. • WikiEducator will work in close consultation with the Ministry of Education and the New Zealand teacher community in developing the criteria for bounty projects. • The project will be advertised widely through multiple communication channels used in the sector.	• OER demonstrator lessons completed in accordance with specified criteria.

E. Evaluation

WikiEducator has developed a detailed monitoring and evalusation plan for the initiative and will appoint an independent consultant for the evaluation of the project to validate and report on the data collected.

• **Anticipated budget**: $15,000

The logical framework for WikiEducator's monitoring and evaluation plan specifies: the expected results, objectively verifiable indicators and means of verification against WikiEducator's strategic objectives. A copy of the monitoring and evaluation plan is provided in Appendix C. The following evaluation activities are scheduled for the duration of this proposal:

• Refinement of the monitoring and evaluation plan based on project status at the inception of the plan.
• Establishing baseline data and recalibration of the plan as required.
• Development of survey instruments.
• Four data collection points (six monthly).
• Two external evaluation reports by independent evaluator.

F.   Intellectual property rights

The OER Foundation and WikiEducator subscribe to the Free Cultural Works definition which defines the licenses which meet the essential freedoms espoused by the Free Software Foundation. Otago Polytechnic -- as host institution of the OER Foundation -- has approved and adopted an intellectual property policy which defaults to a Creative Commons Attribution license (CC-BY). Therefore all content resources developed by the OER Foundation will default to a Creative Commons Attribution license. However, some content contributions from third party participants

may choose to use the Creative Commons Attribution Share-Alike license (CC-BY-SA) as the Copyleft alternative. (Both licenses meet the requirements of the Free Cultural Works definition and the OER Foundation will NOT entertain non-free license alternatives).
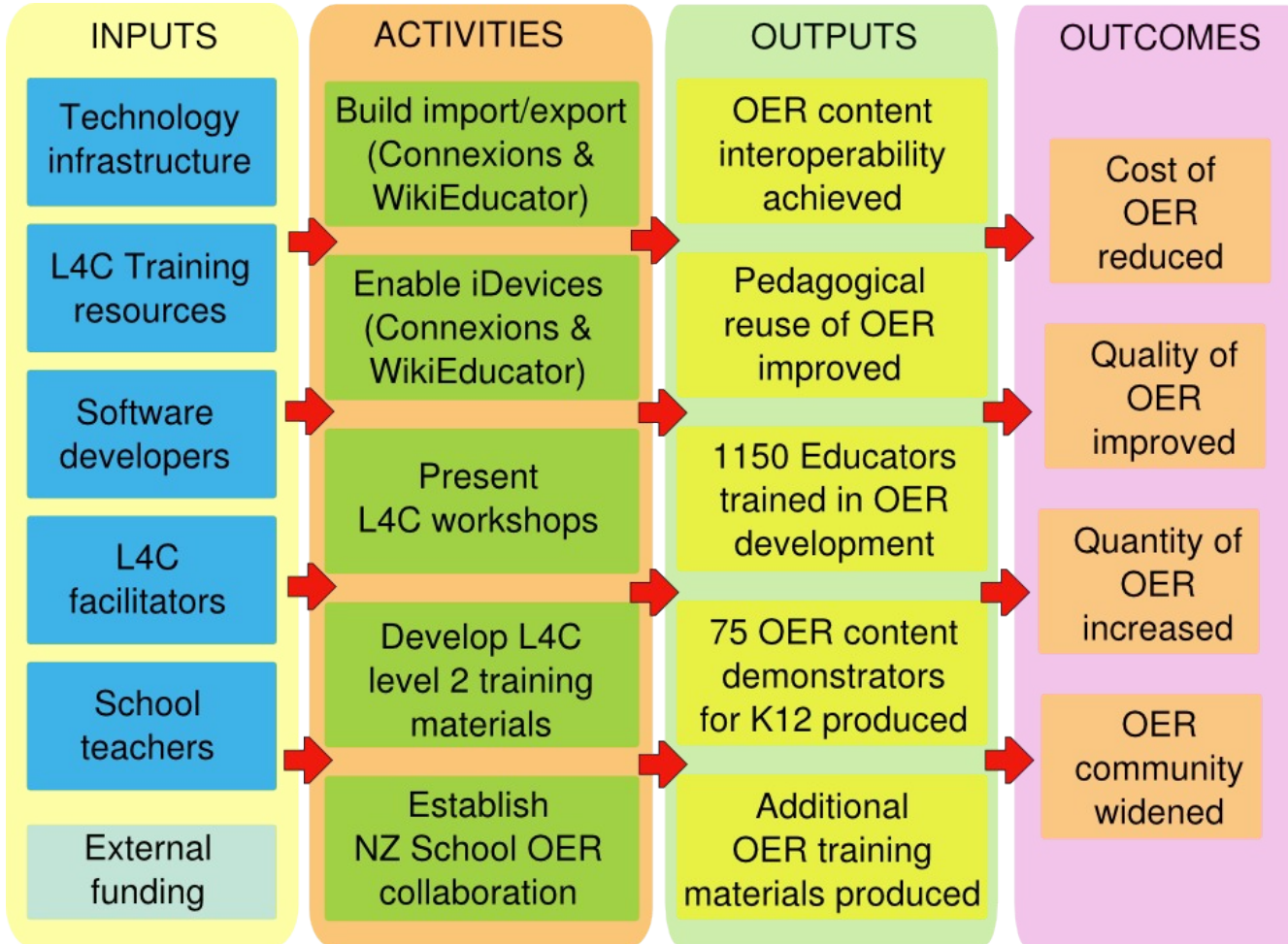
G. Compelling Reasons for the Grant

This proposal addresses three strategic shortcomings in the OER movement:

- Establishing content interoperability between mainstream OER initiatives which will improve pedagogical reuse and remixing of open digital content resources.
- Establishing national OER collaborations and potential models for replication in other countries.
- Dedicated institutional focus on building sustainable OER ecosystems.

SECTION 3: LOGIC MODEL

Note: This logic model is restricted to providing a visual representation illustrating high-level connections between inputs, activities, outputs and outcomes. Detailed discussion of the initiatives, specific output targets and outcomes are provided in Section 2 of the proposal.

INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES
Technology infrastructure	Build import/export (Connexions & WikiEducator)	OER content interoperability achieved	Cost of OER reduced
L4C Training resources	Enable iDevices (Connexions & WikiEducator)	Pedagogical reuse of OER improved	Quality of OER improved
Software developers	Present L4C workshops	1150 Educators trained in OER development	Quantity of OER increased
L4C facilitators	Develop L4C level 2 training materials	75 OER content demonstrators for K12 produced	OER community widened
School teachers	Establish NZ School OER collaboration	Additional OER training materials produced	
External funding			

SECTION 4: PROGRAM CHART

Main Activities	Indicators of progress	Sub activities	Targets	Target date
Develop use cases for interoperable OER content and pedagogical iDevices	• Discussions among educators, Ministry officials and developers published on WikiEducator. • Use cases published on Connexions and WikiEducator sites. • Use case scenarios agreed by Connexions and WikiEducator users.	• Develop potential use case scenarios for Connexions authors to export/import content to/from WikiEducator. • Develop potential use case scenarios for WikiEducator authors to export/import content to/from Connexions. • Define generic and interactive iDevices likely to be used by educators based on authoring experience from eXe users. • Define content and form elements of iDevices for the Connexions and WikiEducator platforms. • Develop use case scenarios for the behaviour of interactive iDevices for online and print-based applications. • Develop potential use case scenarios for reuse and import/export of media files hosted by Wikimedia Commons.	• Target: Develop the number of use cases required for functional import/export capability among Connexions, WikiEducator and Wikimedia Commons.	• 30 Sep 2009
Requirements specification	• Discussions among developers and educators published on WikiEducator. • Requirements specification agreed by Connexions and	• Open development and publishing of requirements on WikiEducator. • Mapping of requirements to use cases ensuring all use case scenarios are addressed.	• Target: Specify requirements taking into account the benefits of an iterative development approach.	• 31 Oct 2009

Main Activities	Indicators of progress	Sub activities	Targets	Target date
	WikiEducator/MediaWiki developers.			
Development, implementation and testing	• Proof-of-concept demonstrators completed. • Mockups developed and discussed. • Research of relevant technology approaches/solutions published on WikiEducator.	• The project will adopt an incremental development approach and as an open source software development, frequent releases will be made for the duration of the project: • imports/exports between the respective platforms achieved and tested. • Production versions of the interoperability refinements released.	• Target: minimum of 6-monthly releases (more frequent releases are expected).	The following release dates are scheduled: • 30 Apr 2010 • 31 Oct 2010 • 30 Apr 2011 • 31 Jul 2011 (Stable release version)
Recruit participants, organise and present L4C workshops	• Monthly progress towards specified outputs. • Community discussions on training needs.	• Schedule and advertise L4C basic-level workshops. • Enable online registration on the wiki. • Present L4C workshops. • Report progress on the L4C wiki site. • Complete needs analysis, development and implementation of L4C intermediate-level tutorials.	*Targets* • 1,150 teachers/educators trained in basic wiki skills. • 30 L4C workshops completed. • 4 - 6 L4C intermediate-level tutorials completed and integrated into an online course.	*1 Aug 2009 - 31 Jan 2010* • 210 international educators trained • 65 New Zealand teachers trained • 10 New Zealand L4C facilitators trained • 7 L4C workshops completed *1 Feb 2009 - 31 Jul 2010* • 210 international educators trained • 65 New Zealand teachers trained • 10 New Zealand L4C facilitators trained • 8 L4C workshops completed *1 Aug 2010 - 31 Jan 2011* • 215 international educators trained • 75 New Zealand teachers trained • 7 L4C workshops completed • *1 Feb 2011 - 31 Jul 2011* • 215 international educators trained • 75 New Zealand teachers trained • 8 L4C workshops completed

Main Activities	Indicators of progress	Sub activities	Targets	Target date
Establish a national OER collaboration for the New Zealand school sector	• Monthly progress towards specified outputs. • Desktop research of comparable OER lesson templates published on WikiEducator. • Community discussions among teachers and Ministry officials. • Number of participating teachers.	• Develop templates for lesson plans and digital OER resources for the school sector. • Develop criteria for selection of demonstrator lesson authors and requirements for successful completion to qualify for the honorarium. • Commission the development of demonstrator OER lessons / digital resources.	*Targets* • Achieve consensus on potential OER templates from a representative sample of New Zealand school teachers. • Develop templates and a pilot example for each template. • 150 OER demonstrate lessons/digital resources developed. • Community of New Zealand teachers working collaboratively on OER established.	*30 Sep 2009* • Example OER templates completed *31 Oct 2009* • Pilot example lessons completed • Criteria for selecting authors for demonstrator lessons completed. *1 Nov 2009 to 31 May 2010* • 25 demonstrator lessons selected & commissioned *1 June to 31 Dec 2010* • 35 demonstrator lessons selected & commissioned *1 Jan 2011 - 31 July 2010* • 15 demonstrator lessons selected & commissioned
WikiEducator monitoring and evaluation	• Community discussions on objectively variable indicators • Community discussion on development of survey instruments • Data collected	• Refinement of the monitoring and evaluation plan based on project status at the inception of the plan. • Establish baseline data and recalibration of the plan as required. • Development of survey instruments. • Data collection. • Monitoring and evaluation reports by independent evaluator.	• *Targets* • 4 data collection points. • 2 Monitoring and validation reviews. • 2 Evaluation reports.	*30 Sept 2009* • Refine monitoring and evaluation plan • Establish baseline data, retrospective to 1 August 2009 *31 Oct 2009* • Complete user survey instruments *31 January 2010* • Data collection point *28 Feb 2010* • Monitoring review and data validation • *31 July 2010* • Data collection point • *31 Aug 2010* • First independent evaluation report • *31 Jan 2011* • Data collection point • *28 Feb 2011*

Main Activities	Indicators of progress	Sub activities	Targets	Target date
				• Monitoring review and data validation • *31 July 2011* • Data collection point • *31 Aug 2011* • Final independent evaluation report