

Collaborative Learning and the Open Educational Resource Movement

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Chapter 1

Collaborative Learning and the Open Educational Resource Movement¹

Collaborative Learning and the Open Educational Resource Movement

Dirk Bowles

Abstract

Open Educational Resources (OERs) are bringing a wealth of information, through various technologies, to all corners of the planet. This vital new movement has greatly impacted how our next generation now learns, but the promise is far grander. For the movement to reach it's full potential, it must keep pace with technology. As Web 1.0 has moved on to the more interactive Web 2.0, so must the OER movement progress to the more interactive, student-centered, social learning environment of Learning 2.0. In this analysis I will share current examples of social learning in OER's. First, I will look at the trend of consumers becoming producers on websites such as Connexions and Rip Mix Learner. Second, I will examine the current and future role of education in social and interactive sites like Facebook and Wikipedia. Third, I will address how social learning is incorporated into OER's that are created for developing countries. And finally, I will discuss future trends and how OER's can, and must, continue to drive learners to interact and connect when they are in disparate areas.

Keywords

Open Educational Resources (OER), Collaborative Learning, Social Learning, Social Web Sites, Learning 2.0, Web 2.0

1. Introduction

As the Internet continues to change the landscape of society, education is certainly not immune to the impacts of the digital age. To the contrary, education must be on the front line of these changes if we are to best prepare our students for the future. There are an infinite number of examples of how education and technology are meeting. Whether it is in Science with projects like the University of Illinois' Bugscope project, that gives students access to high powered electron microscopes through the internet², or in the arts with projects like Theatrelink that allows students in disparate locations to write plays together³, learning collaboratively is fostered more effectively everyday through technology. I would like to examine one aspect of this revolution, and that is where collaborative learning meets the Open Educational Resource (OER) movement. OERs are bringing a wealth of information, through various technologies, to all corners of the planet. This vital new movement has greatly impacted how our next generation now learns, but the promise

¹This content is available online at <<http://cnx.org/content/m22251/1.1/>>.

²Retrieved April 6, 2009, from Bugscope Web site: <http://bugscope.beckman.uiuc.edu/> (<<http://bugscope.beckman.uiuc.edu/>>)

³Retrieved April 6, 2009, from TheatreLink Web site:http://www.theatrelink.org/public/index.cfm?please_login (<http://www.theatrelink.org/public/index.cfm?please_login>)

is far grander. For the movement to reach it's full potential it must keep pace with technology. As Web 1.0 has moved on to the more interactive Web 2.0, so must the OER movement progress to the more interactive, student-centered, social learning environment of Learning 2.0. In this analysis I will share current examples of collaborative learning in OERs. We will begin by discussing how consumers have become producers. The very creation of many OERs has become a lesson in collaborative learning. Then we will look at social sites like Facebook, MySpace, and Elgg and the impact they are having on the OER movement. Next we will look at how collaborative learning through OERs can foster a more effective approach to pedagogy in developing countries. And finally, we will look into the potential of Learning 3.0. We will see what's next for collaborative learning in OERs in the years to come.

1. Defining Collaborative Learning and OER

Collaborative learning is a name that is frequently used interchangeably with names like social learning and cooperative learning. For our purposes we will define all of these under a similar umbrella. Collaborative learning, as described by Wikipedia, is where "(g)roups of students work together in searching for understanding, meaning or solutions or in creating an artifact of their learning such as a product".⁴ The phrase "the best way to learn is to teach" has long been a colloquialism that has held true for many, and there has been research that supports that phrase. When we engage about information, ask questions, and express our challenges, our level of understanding and retention increases. But Wikipedia's definition immediately encounters problems as we begin thinking about technology. How do people sitting alone in front of their computers, in disparate locations, collaborate to create and learn? When we incorporate technology into this style of learning the names change to Asynchronous Learning, Blended Learning and Computer Supported Collaborative Learning (CSCL), among others.

Open Education Resources (OER) is simply defined by Wikipedia as, "an Internet empowered worldwide community effort to create an education commons". Wikipedia continues by telling us that, "Open educational resources are educational materials and resources offered freely and openly for anyone to use and under some licenses to re-mix, improve and redistribute".⁵ OERs are an attempt to expand upon a goal laid out by the United Nations in the 1948 Universal Declaration of Human Rights. Article 26 said, "education should be free, at least in the elementary and fundamental stages".⁶ Fundamentalists in the OER movement believe that everyone should have the right to free education for life. With the advent of the Internet, those that believe education is a right, and not a privilege, have a nexus.

As the Internet has progressed from merely delivering information (Web 1.0), to allowing us to shape and interact with information (Web 2.0), learning too has progressed. The pioneering OER, OpenCourseWare (OCW) from MIT, has inspired followers from universities like Tufts and Utah State to open their catalog of classes and make them free online. Their approach, although, is more of a traditional approach to education where knowledge is disseminated from authority to learner, putting these OERs in the category of Learning 1.0. We will examine the progression to Learning 2.0 as we continue to discover ways to bring OERs into the 21st century and make them more social.

1. Consumers Become Producers: The Open Sourcing of Education

Digital Video Recorders allow us to shape our time in front of the television, free from advertisers and the rigid schedule of television networks, and we can now log on to a website and program our television from any Internet connected computer. The carmaker Scion gives you an extensive number of options so you can design a car online to match your personality and will be unique to you. Dell will allow you to create a computer online to your exact specifications that they will build and ship immediately. We are a society that wants things the way we want them, when we want them, and the web is key in driving this trend

⁴Retrieved April 2, 2009, from Wikipedia Web site: http://en.wikipedia.org/wiki/Collaborative_learning (<http://en.wikipedia.org/wiki/Collaborative_learning>)

⁵Retrieved March 31, 2009, from Wikipedia Website: http://en.wikipedia.org/wiki/Open_educational_resources (<http://en.wikipedia.org/wiki/Open_educational_resources>)

⁶United Nations, (1948, December 10). The Universal Declaration of Human Rights. Retrieved April 2, 2009, Web site: <http://www.un.org/Overview/rights.html#a26> (<<http://www.un.org/Overview/rights.html#a26>>)

of consumers becoming producers. Linux Operating System and Mozilla Search Engine are also examples of consumers becoming producers. They are a part of what is called Open Source Software (OSS). This is where a community of people believed they could make software better than the similar commercial software on the market (i.e. Microsoft Windows and Microsoft Explorer) and took a social, or collaborative, approach to create, maintain, and continually improve this alternative software. More than that, they made it free and accessible to anyone for download and use. These malleable environments are examples of progressing away from Web 1.0, which is typically described as a time when the Internet merely provided information, to the more collaborative Web 2.0, where we are able to shape content to fit our needs. Education is also progressing from its own Learning 1.0, which is the traditional form of learning where you have a transfer of knowledge from teacher to learner. Learning 2.0 is also more collaborative and research is telling us that a more social approach to learning can be more effective. The collaborative approach plays to our need to be a part of the process, having things done with us and not to us.

This collaborative approach is playing out in the creation of OERs. Sites like Connexions⁷ out of Rice University, as well as Merlot⁸, Curriki⁹, and OERCommons¹⁰ have become a repository for information, but unlike MIT's OCW, they take it a step further. They allow visitors to take bits of information, referred to as modules, and pull them together to create lessons that can be used for their own students. Once the new information has been created, or current information has been re-mixed, it is posted back on the site for any other user to re-use or build upon. Another approach to creating OERs comes out of Wikiversity.¹¹ They go even further than sites like Merlot and Connexions by using wiki software. This allows users to edit already posted information on the site, typically eliminating the prior posting, as learners collaborate with experts to create information that is frequently more thorough and accurate than competing online encyclopedias like Encarta or Britannica. These are examples of OERs in their purest form. Much of the information can be re-shaped, re-mixed and the code can be changed, and re-posted, all under a common license.

Rip Mix Learner is another OER project based out of the University of Western Cape in South Africa.¹² The premise is that of Connexions, but while Connexions and most the other OER sites tend to be resources that are geared more towards teachers and scholars, Rip Mix Learner is geared exclusively towards students. Students create podcasts, use blogs to publish their assignments, collaboratively author content in wikis, and peer review each other's work. This peer-to-peer (P2P) collaboration has shown its strength in the creation of the aforementioned OSS mentioned above, and in the development of the free to use Apache server (used to serve the Amazon website).

1. Social Sites and Free Education

Social networking sites like Facebook, MySpace, Second Life, and LinkedIn have changed the way we interact with the Internet. Facebook alone has over 175 million active users. These sites allow people to keep track of their friends while making new friends with similar interests by creating communities established around those interests. While the educational use of sites like Facebook and MySpace are still being investigated, their entrenchment into pop culture is already having an effect on education. In the 2008 article "Minds on Fire: Open Education, The Long Tail, and Learning 2.0", John Seely Brown and Richard P. Adler cite an example of the impact of social sites.

John King, the associate provost of the University of Michigan, has attempted to bring attention to this phenomenon (of social networking) by asking how many students are being taught each year by his institution. Although about 40,000 students are enrolled in classes on the university's campus in Ann Arbor,

⁷Retrieved March 29, 2009, from Connexions Web site: <http://cnx.org/> (<<http://cnx.org/>>)

⁸Retrieved March 29, 2009, from Merlot Web site: <http://www.merlot.org/merlot/index.htm> (<<http://www.merlot.org/merlot/index.htm>>)

⁹Kurshan, B (2008, September). OER Models that Build a Culture of Collaboration: A Case Exemplified by Curriki. *eLearning Papers*, Retrieved 4-4-2009, from <http://www.elearningeuropa.info/files/media/media16678.pdf> (<<http://www.elearningeuropa.info/files/media/media16678.pdf>>)

¹⁰Retrieved April 2, 2009, from OERCommons Web site: <http://www.oercommons.org/> (<<http://www.oercommons.org/>>)

¹¹Retrieved April 2, 2009, from Wikiversity Web site: http://en.wikiversity.org/wiki/Wikiversity:Main_Page (<http://en.wikiversity.org/wiki/Wikiversity:Main_Page>)

¹²Retrieved April 3, 2009, from Rip Mix Learner Web site: <http://freecourseware.uwc.ac.za/ripmixlearners/start> (<<http://freecourseware.uwc.ac.za/ripmixlearners/start>>)

King believes that the actual number of students being reached by the school today is closer to 250,000. For the past few years, he points out, incoming students have been bringing along their online social networks, allowing them to stay in touch with their old friends and former classmates through tools like SMS, IM, Facebook, and MySpace. Through these continuing connections, the University of Michigan students can extend the discussions, debates, bull sessions, and study groups that naturally arise on campus to include their broader networks. Even though these extended connections were not developed to serve educational purposes, they amplify the impact that the university is having while also benefiting students on campus. If King is right, it makes sense for colleges and universities to consider how they can leverage these new connections through the variety of social software platforms that are being established for other reasons.

¹³

John King's comment does not even address the reciprocal impact of the non-student on the knowledge and thinking of the university. This collaboration can provoke thought and challenge processes in ways that would not have been possible before these technologies.

Elgg is a website that takes a more direct approach to education by straddling the line between virtual learning environments (VLE) like Phoenix University, or the University of Illinois' Global Campus, and more traditional social sites like Facebook and LinkedIn. One of the creators describes it this way:

Elgg focuses on the learner and interactions whereas VLE's focus on the course and content delivery. It's about providing an informal space that lets learners exercise their own thoughts, reflections, make their own connections and be able to compile a body of evidence that would normally slip through the cracks with the more highly structured approach that a VLE offers. ¹⁴

Elgg acts like a traditional social site in its approach, but keeps its focus on education. The result is a more social approach to learning. David Tosh and Ben Werdmuller at Edinburgh University created Elgg as David began his PhD in e-portfolios. Ben encouraged Dave to blog on his studies, and when he did, he immediately began to receive comments from people directing him to sources relevant to his course work. Tosh and Werdmuller took this response to be an example of how people can informally connect to help one another in their educational pursuits. And with that, Elgg was born. People can upload files, podcasts, and images, and manage those by making them accessible to everyone in the wiki format to change, alter, and re-use, or make the information read-only or available to only a particular group. This level of control, along with the educational focus, distinguishes Elgg from the strictly social networking sites. It is a personal and social way of learning that could be the educational model for larger social sites. ¹⁵

A social networking site that has begun to transform education is Second Life. Second Life differentiates itself by being a virtual world. Members create an avatar (digital image) to represent themselves and move around the virtual world just as they would in the regular world. There are real world spaces like music venues, social clubs, and educational institutions. The UK's Open University, Texas State, Stanford, and the University of Queensland (Australia) all maintain institutions in Second Life. Sir John Daniel, UNESCO's former Assistant-Director General for education said in 1996:

More than one-third of the world's population is under 20. There are over 30 million people today qualified to enter a university who have no place to go. During the next decade, this 30 million will grow to 100 million. To meet this staggering demand, a major university needs to be created each week. ¹⁶

This phenomenon has created a great opportunity for Second Life. If, as Sir John Daniel suggests, we cannot build "brick and mortar" institutions fast enough, we must create alternatives. None other than Harvard Law, in the fall of 2006, offered a course called "CyberOne: Law in the Court of Opinion". This

¹³Brown, J.S., & Adler, R.P. (2008). Minds on Fire. *EDUCAUSE*, 43, Retrieved March 2, 2009, from <http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823> (<<http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823>>).

¹⁴O'Hear, S (2006, August 11). Elgg - social network software for education. *ReadWriteWeb*, Retrieved April 4, 2009, from <http://www.readriteweb.com/archives/elgg.php> (<<http://www.readriteweb.com/archives/elgg.php>>)

¹⁵O'Hear, S (2006, March 7). A space on the web that we control. *The Guardian*, Retrieved April 4, 2009, from <http://www.guardian.co.uk/education/2006/mar/07/elearning.technology13> (<<http://www.guardian.co.uk/education/2006/mar/07/elearning.technology13>>)

¹⁶Brown, J.S., & Adler, R.P. (2008). Minds on Fire. *EDUCAUSE*, 43, Retrieved March 2, 2009, from <http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823> (<<http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823>>)

class was available in three tiers. The first tier provided a service by giving remote access to students that were taking the class live. Tier two allowed people to pay for the class and join it remotely, fostering study groups and providing office hours with the professors. And in the spirit of OERs, in tier three, anyone could review the lectures and course materials after registering for Second Life, which is a free service.

1. Social Learning, OERs, and Developing Nations

The challenges of getting OERs into developing areas are numerous. A few of the obstacles include the following; a lack of Information and Communication Technologies (ICT); the majority of OERs are produced only in English; people in developing countries do not know where to find OERs; if OERs are located, the quality can be questionable.¹⁷ A decidedly low-tech approach is bringing OERs to primary and secondary students in rural areas and urban slums in India, while incorporating a cooperative approach to learning. These impoverished communities suffer not only from a lack of financial resources, but also from a lack of qualified teachers. The Digital Study Hall is a non-profit that takes video of the best-trained teachers available and creates a DVD, and then in a Net-Flix style of distribution, sends the material to these areas in need. The Digital Study Hall provides a television (sometimes with a battery due to a lack of electricity) and a DVD player and use what they refer to as a “mediation-based pedagogy” to make the learning process social and interactive. This social approach to learning involves a teacher, or even an exceptionally bright student, who will stop the DVD on occasion to ask questions to spark dialogue or conduct an activity that corresponds with the video. This involves no computers or cutting edge technology, just OERs reaching those in need and making the interaction collaborative to increase retention and results. The results have been higher test scores, improved teaching skills and increased student participation.¹⁸

A similar approach to this is in a program called Blended Learning Open Source Science or Math Initiatives (BLOSSOM). It is the brainchild of a consortium that began at MIT created to address the problem of leaving behind the Less Developed Countries (LDC) in the OER movement. What had begun as a Middle Eastern Initiative has worked its way into 10 African countries. Like The Digital Study Hall, BLOSSOM tapes highly skilled volunteer teachers and through either streaming Internet video, DVD, CD, or videotape, the program sends the OER to a local teacher who blends the lesson with off-line activities.¹⁹

1. The Future of Social Learning Through OERs

Early fears questioned whether OERs existed under a sustainable model, but due to the commitment from educational institutions like Rice University and MIT, as well as charitable foundations like the Alfred P. Sloan Foundation and the William and Flora Hewitt Foundation, OERs are proving to be a resource that is believed to be necessary and sustainable. As OERs become more pervasive, the next logical step will be to make them as effective as possible. Second Life like virtual communities provide promise as only a handful of institutions now conduct classes there. And while Harvard has begun OERs in Second Life with the free access to the “CyberOne” class mentioned above, imagine MIT releasing its 2000 course catalog, already free and open, in the interactive world of Second Life.

Seeing that our youngest generation is being raised in a highly connected society, and they spend much of their time socializing on the Internet, we can assume that they will be the drivers in how we learn in the future. The statistics are described in the 2009 book *Blogs, Wikis, Podcasts and Other Powerful Web Tools for Classrooms* by author, and tech “evangelist” for the classroom, Will Richardson.

Results of a Netday survey released in March 2005 assert that technology has become ‘an indispensable tool in the education of today’s students’. The survey showed that 81 percent of students in Grades 7-12

¹⁷Singh, S.K. (2007, April 17). A perspective of OER in developing countries. Retrieved April 5, 2009, from Connexions Web site: <http://cnx.org/content/m14422/latest/> (<<http://cnx.org/content/m14422/latest/>>)

¹⁸Retrieved April 4, 2009, from The Digital Study Hall Web site: <http://dsh.cs.washington.edu/info/overview.html> (<<http://dsh.cs.washington.edu/info/overview.html>>)

¹⁹Larson, R.C., & Murray, M.E. Open Educational Resources for Blended Learning in High Schools: Overcoming Impediments in Developing Countries. *Journal of Asynchronous Learning Networks*, 12, Retrieved April 6, 2009, from http://www.distanceandaccesseducation.org/contents/JALN_v12n1_Larson.pdf. (<http://www.distanceandaccesseducation.org/contents/JALN_v12n1_Larson.pdf>)

had e-mail accounts, 75 percent have at least one Instant Messenger (IM) screen name, and that 97 percent believe strongly that technology use is important in education. And, the fastest growing age group for using the Internet is 2- to 5-year-olds. According to author and technologist Marc Prensky, ‘this online life is a whole lot bigger than just the Internet. This online life has become an entire strategy for how to live, survive, and thrive in the twenty-first century where cyberspace is a part of everyday life.’²⁰

This is the most promising aspect for OERs. As demonstrated by the fact that “googling” has become a verb, the next generation expects information to be readily available. Just to compete, institutions will need to follow suit. Their habits will also be key in driving the social aspect of learning. They will have already been learning in a social way through IM’s, blogs and chat rooms. Their comfort with the new technologies will drive their comfort in socializing and learning from others in this new and evolving frontier.

Richardson also paints a picture in a 2009 article of a 21st century classroom that is already in full swing at Concord School in Melbourne, Australia.²¹ Richard Olsen, a former teacher and ICT Coordinator at the school created Lumil to house and organize pictures in a Flickr-style website, then he used Scuttle for social bookmarking so students could seek and share common interests through websites, then Wordpress MU was used to blog their experiences, and finally, he used Scratch to allow students to collaborate or work individually to create interactive stories, animations, games, music and art to share with their peers. The commonality with all this software is that it is OSS, free and adjustable to fit the particular needs of the students. The future of OERs and collaborative learning is here, it just needs to be seized.

1. Conclusion

It may not be ideal to educate people through technology. For some, trying to learn in the somewhat detached environment of cyberspace can be a challenge as compared to the engagement that can occur in a physical classroom. But regardless of what the ideal actually is, we must address two facts. First, there is not enough space in our brick and mortar institutions to house all those that seek an education. Second, technology is core in the lives of many of our youth. As technology continues to precipitously progress, our youth will expect it in pedagogy. So, how do we make the most effective use of technology in education?

In the article “Minds on Fire”, Adler and Brown describe a study on collaborative learning.

*Compelling evidence for the importance of social interaction to learning comes from the landmark study by Richard J. Light, of the Harvard Graduate School of Education, of students’ college/university experience. Light discovered that one of the strongest determinants of students’ success in higher education—more important than the details of their instructors’ teaching styles—was their ability to form or participate in small study groups. Students who studied in groups, even only once a week, were more engaged in their studies, were better prepared for class, and learned significantly more than students who worked on their own.*²²

We have to completely re-think the way technology and education interact. The good news is that the process has already begun. The younger generation is already teaching us how to connect to technology and how technology can connect us to one another.

The phenomenon of consumer becoming producer has created a map for education to follow with sites like Rip Mix Learner leading the way and teaching us to think differently about how to teach. Social sites are bringing people together in ways and in numbers that we have never seen before. Elgg and Second Life have shown us how we can use these models for education. Getting a quality, collaborative education to those that need it most is being demonstrated with a low-tech approach through pioneering programs like Digital Study Hall and BLOSSOM. All of these approaches demonstrate our ability to connect virtually

²⁰Richardson, W (2009). *Blogs, Wikis, Podcasts and Other Powerful Web Tools for Classrooms*. Thousand Oaks, California: Corwin Publishing. (Pg. 7)

²¹Richardson, W (2009, March 31). One School’s Journey to Online Social Learning. *Weblogg-ed*, Retrieved April 6, 2009, from <http://weblogg-ed.com/2009/one-schools-journey-to-online-social-learning/> (<<http://weblogg-ed.com/2009/one-schools-journey-to-online-social-learning/>>)

²²Brown, J.S., & Adler, R.P. (2008). Minds on Fire. *EDUCAUSE*, 43, Retrieved March 2, 2009, from <http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823> (<<http://connect.educause.edu/Library/EDUCAUSE+Review/MindsonFireOpenEducation/45823>>)

when it is not possible to connect physically, and to teach collaboratively when we can only connect through technology.

Chapter 2

Kim Tucker - FLOSS, OER, Equality and Digital Inclusion¹

NOTE: Author - Kim Tucker, "FLOSS, OER, Equality and Digital Inclusion". Originally submitted May 2nd, 2007 to the OSS and OER in Education Series, Terra Incognita blog (Penn State World Campus), edited by Ken Udas.

2.1 FLOSS, OER, Equality and Digital Inclusion

This posting is intended to direct the discussion towards the rationale for software libre² in education and the broader impact on sustainable development³.

I start by revisiting the topic for the series, and share some experiences to re-emphasise a few of the points made in previous postings. I move on to recontextualise the discussion with respect to the big picture, pose some questions for discussion and invite participants to suggest additional questions which may arise

2.2 Topic Revisited

Regarding the topic, "Impact of OSS on Education," I suspect that both education and software development are subject to similar influences as technology enables connections among people with common interests and learning needs.

For example, it is difficult to determine the impact of FLOSS⁴ (Free Libre Open Source Software) on education - the context is enabling educators and learners to benefit from the connectedness FLOSS communities have enjoyed and made good use of for more than a decade. Knowledge sharing across FLOSS and OER⁵ communities seems to have streamlined (stimulated, facilitated and catalysed) FLOSS adoption and technology-assisted collaborative learning in the education space. Several FLOSS projects have been pedagogically inspired (e.g. Moodle⁶, Fle3⁷, Kewl.NextGen⁸, etc.), while others have been orientated (initially or primarily) towards administration (e.g. Sakai⁹, SchoolTool¹⁰, etc.).

¹This content is available online at <<http://cnx.org/content/m14729/1.5/>>.

²http://en.wikipedia.org/wiki/Software_libre

³http://en.wikipedia.org/wiki/Sustainable_development

⁴<http://en.wikipedia.org/wiki/FOSS>

⁵http://en.wikipedia.org/wiki/Open_educational_resources

⁶<http://www.moodle.org>

⁷<http://fle3.uiah.fi>

⁸<http://avoir.uwc.ac.za>

⁹<http://www.sakaiproject.org/>

¹⁰<http://www.schooltool.org/>

FLOSS communities, and more recently Wikipedia communities, have been inspirational in demonstrating what can be achieved through commons-based peer production¹¹. We are rising to the challenge of realising this level of success in education through libre and open resources for education. Efforts in this direction include Connexions¹², Wikieducator¹³ and eXe¹⁴, Le Mill¹⁵, EduCommons¹⁶, Wikiversity¹⁷, and many more.

All of these run on FLOSS platforms, all have followed open (transparent) development processes, and all carefully consider open standards and reusability of learning components (variously called learning objects, iDevices, etc, ...).

However, for reusability in education, “localisation/ recontextualisation is always required.” The educational and learning needs vary across contexts. Interestingly, agile software development teams seldom code for re-use unless development of re-usable components is core to their business (Alistair Cockburn, late 1990s, Cape Town; see for example *DoTheSimplestThingThatCouldPossiblyWork*¹⁸).

Note that this type of peer production activity has been most evident in the “developed” world. Yochai Benkler¹⁹ emphasizes that most of his research on peer production has focused on the more powerful economies.

1. Is the learning from and between FLOSS, OER and other peer production case studies applicable in “developing” economies?
2. What are the priorities for education, and how could FLOSS have an impact?
3. What are the motivators and barriers to FLOSS adoption?
4. If we were to overcome those barriers and provide physical access to the world’s knowledge resources (via FLOSS), would we achieve “equality”?

2.3 A1. Is the learning about FLOSS, Open Content and peer production applicable in developing economies?

Most of the population does not have access to the facilities that enable peer-production (personal computers, the Internet and high bandwidth). However, the cultures seem well disposed towards collaborative knowledge production.

“Developing” countries typically include “developed” areas functioning as part of the global knowledge economy.

Conversely, some “developed” countries face challenges normally associated with “developing” countries (such as poverty, health issues, unemployment, unequal access to education and public services, etc.) - though the scales may be vastly different.

Developing countries are generally not entrenched in set ways of using ICT in education. This is an opportunity to develop, adopt and adapt new and contextually appropriate approaches, and to build innovative supporting software infrastructures to address local/regional needs. FLOSS, free/open content, open standards, and free file format²⁰s permit this freedom to innovate²¹.

By addressing the issues where they can be addressed, we will be better prepared to service new areas and people when they become connected (for example, if software and learning resources are already localised)

¹¹http://en.wikipedia.org/wiki/Commons-based_peer_production

¹²<http://cnx.org>

¹³<http://wikieducator.org>

¹⁴<http://exelarning.org>

¹⁵<http://lemill.net/>

¹⁶<http://educommons.org>

¹⁷<http://www.wikiversity.org>

¹⁸<http://c2.com/xp/DoTheSimplestThingThatCouldPossiblyWork.html>

¹⁹<http://www.benkler.org>

²⁰http://en.wikipedia.org/wiki/Free_file_format

²¹<http://www.ftisa.org.za>

2.4 A2. What are the priorities for education, and how could FLOSS have an impact?

In many schools, the priorities are for buildings, water supply, electricity, nutrition for the learners, health, etc.. These needs mirror those of the communities. If ICT²² (Information Communications Technology) is indeed an enabler for meeting development needs, then the priority software and knowledge resources are those which facilitate access to knowledge on sustainable agriculture, primary health care, technical/vocational and entrepreneurial skills, and survival in the relevant context.

There is a worldwide shortage of teachers, and learners do not necessarily have parents available to support them in doing what it takes to get an education.

HIV AIDS is having an impact on the age pyramid in developing countries, eroding not only the aged cohorts, who form a key part of the extended family support systems, but of the current adult generations. The result is a lack of leadership from the aged, a lack of income and parental care, and care for the aged - a lost generation “Beyond Thunderdome.”

Institutions might (initially) prioritise administrative software over pedagogically inspired technology and resources. Learners the reverse, and educators need both. FLOSS packages for both of these functions are gradually being integrated.

Efforts to localise software may lead to redesign and development of completely new systems after analysing the local needs.

Creating one’s own educational resources, relevant to the local context, may prove easier and more effective than re-using resources obtained from elsewhere.

Priorities may be viewed from a global level. For example, FLOSS and open content show great promise towards the “Education for All” goal (UNESCO²³ and others), and are key enablers towards achieving the Millennium Development Goals²⁴.

2.5 A3. What are the motivators and barriers to FLOSS adoption?

Motivators

In South Africa, after some lobbying by technical people with an understanding of the broader implications, the motivation for FLOSS adoption in government was driven top-down. The intention is to release funds previously earmarked for software licensing for use in capacity development and for addressing other development needs, while developing the local ICT industries and effecting self-determination (at least in terms of the software we use). The following documents were produced as part of the process:

- 2002 Open Software & Open Standards in South Africa: A Critical Issue for Addressing the Digital Divide <http://www.naci.org.za/floss/>²⁵
- 2003 Using open source software in the South African government: a proposed strategy compiled by the Government Information Technology Officers’ Council <http://www.oss.gov.za/>²⁶
- 2004 Free/Libre and Open Source Software and Open Standards in South Africa: A Critical Issue for Addressing the Digital Divide <http://www.naci.org.za/floss/>²⁷
- 2005 Declaration on the South African National Strategy on Free and Open Source Software and Open Content (“National Open Source Strategy”) <http://wiki.go-opensource.org/taskforce/>²⁸
- 2007 Policy on Free and Open Source Software use for South African government <http://www.oss.gov.za/>²⁹

²²http://search.smb.target.com/sDefinition/0,,sid44_gci928405,00.html

²³<http://en.wikipedia.org/wiki/UNESCO>

²⁴<http://www.un.org/millenniumgoals/>

²⁵<http://www.naci.org.za/floss/>

²⁶<http://www.oss.gov.za/>

²⁷<http://www.naci.org.za/floss/>

²⁸<http://wiki.go-opensource.org/taskforce/>

²⁹<http://www.oss.gov.za/>

However, some government departments have gone ahead of this process and conducted partial FLOSS migrations of their own. I expect this type of “do what is needed” will continue with innovative individuals leading in response to the needs of the communities they serve.

Motivation at other levels typically relate to improved software development processes, greater flexibility and reduced licensing costs.

A key motivator implicit in this posting is to do the right thing.

Barriers

The barriers to FLOSS adoption were discussed previously (see posting by Pat Masson). More generally, in terms of participation in the knowledge society, using current technology, there are several building blocks which reflect part of the challenge we face for maximum impact:

1. Basic literacy - learn to read, ideally in one’s own language.
2. Computer literacy - e.g. mouse, keyboard, files and folders, . . . , or the equivalent features on a cell phone, etc.
3. Using office software - for employability.
4. Content (co-)creation - localisation and creation of multimedia knowledge resources.
5. Sharing resources.
6. Engaging in decision making processes at higher levels.

What opportunities do these present to FLOSS and OER developers, and to the communities of users? Which initiatives exist already providing or developing such building blocks? What should be prioritised to streamline participation in the global knowledge society?

2.6 A4. If we could provide access to all the world’s knowledge and educational resources, would we have “equality in education”? What does that mean?

Equality does not end at “access” unless we define “access” to mean physical access (to a computer or some other device) with sufficient bandwidth, and the ability to use the resources effectively. Relevance of the resources is important, as is the freedom to adapt/modify and share alike.

The barriers alluded to previously apply.

Some General Comments

Early Adoption of FLOSS by the OER Community

The OER community is quick to adopt FLOSS and develop and integrate features to support their learners. Recently, this has been incorporation of Web 2.0 features (mashups, use of resources such as del.icio.us³⁰ , Flickr³¹ , YouTube³² , GoogleMaps³³ , etc.). This is all great - where sufficient bandwidth is available at all times.

Bandwidth and Learning Resources

Recognising the bandwidth issue in much of the developing world, a group of people came up with the idea of “Education in a Box” which later became “Education out of the Box” - a collection of CDs containing FLOSS and free/open content for Education. The intention was to set up a web site with resources from which one could select and download for use in a local setting. The recipients would be free to use, copy, learn with, adapt, improve and share - i.e. take control of their own destinies and offer professional services (such as localisation, redistribution, support, etc.) enhancing the potential impact of these resources on meeting local needs.

³⁰<http://del.icio.us>

³¹<http://flickr.com/>

³²<http://youtube.com/>

³³<http://maps.google.com/>

The project did not receive direct funding but was supported indirectly by the Developer Roadshows (OSI, OSISA³⁴ and OSIWA³⁵). It is a “libre project” - anyone is free to take the idea³⁶ further in their own way.

Initiatives in South Africa which provide FLOSS and free/open content, which have exchanged notes, include the Digital Doorway³⁷ (minimally invasive education), the FreedomToaster³⁸, and tuXlabs³⁹. The latter started out deploying FLOSS computer labs in schools, developing an effective methodology for doing this. At last count there were over 240 schools with tuXlabs. SchoolNet Namibia⁴⁰ has done something similar with over 340 schools so far. The FreedomToaster provides FLOSS and some free educational content to anyone who arrives with blank CDs/DVDs. The digital doorway provides access to people in environments not normally suitable for computers (on account of crime and vandalism for example).

For connectivity within a community, the WirelessAfrica⁴¹ project suggests ways in which a community may set up a network. If there is high bandwidth to the Internet available somewhere in the community, everyone may gain access via the mesh.

Computer labs may not be a great way to support learning with ICT in schools with limited resources. One laptop per child⁴² is one alternative poised to be launched in several countries in the near future. Mobile phone penetration tends to be much higher in developing countries than for personal computers. MobilED⁴³ is one project exploring use of mobile phones in education.

In terms of language barriers, there are research projects looking at tools to help with translation, text to speech, etc. See for example, the work of the Meraka Institute’s HLT group⁴⁴

Regarding FLOSS capacity building see Open ICDL⁴⁵ and Learn Linux⁴⁶ as two examples in South Africa. More broadly, a new project is starting to gain momentum: FLOSS4Edu⁴⁷.

The golden thread running through all the initiatives above is the emphasis on FLOSS and sharing the learning - libre knowledge.

I hope the trend generalises towards a vision such as “Enabling individuals and communities to empower themselves with knowledge, towards wisdom, for a sustainable world”.

Defining “equality” is difficult, and the challenges around achieving it are significant. It seems to me that best we can do is endeavour to maximise the options and opportunities for individuals and the freedoms to take these opportunities, whatever their context.

The reading list below is indicative of the perspective of this posting.

2.7 Reading List and Links

- Yochai Benkler - The Wealth of Networks⁴⁸
- Lawrence Lessig - Free culture⁴⁹
- Richard Stallman - Selected Essays⁵⁰
- Eric von Hippel - Democratising Innovation⁵¹

³⁴<http://www.osisa.org/>

³⁵<http://www.osiwa.org/en/node>

³⁶<http://www.developer-roadshow.org/wa/wiki/CurrentContentOfEducationOutOfTheBox>

³⁷<http://www.digitaldoorway.co.za>

³⁸<http://www.freedomtoaster.org>

³⁹<http://www.tuxlabs.co.za>

⁴⁰<http://www.schoolnet.na>

⁴¹<http://wirelessafrica.meraka.org.za>

⁴²<http://www.laptop.org>

⁴³<http://mobile.uiah.fi>

⁴⁴<http://www.meraka.org.za/hlt>

⁴⁵<http://openicdl.org>

⁴⁶<http://learnlinux.tsf.org.za/>

⁴⁷<http://www.wikieducator.org/FLOSS4Edu>

⁴⁸<http://www.benkler.org>

⁴⁹<http://www.free-culture.cc/>

⁵⁰<http://www.gnu.org/doc/book13.html>

⁵¹<http://web.mit.edu/evhippel/www/books.htm>

- Amartya Sen - Development as Freedom⁵²
- Libre Knowledge⁵³
- Free Software⁵⁴
- FLOSS research: FLOSSWorld⁵⁵ , FLOSSpols⁵⁶ and other projects linked at these sites.
- UNDP FOSS Primers⁵⁷ .
- Singazenzela⁵⁸ - an isiZulu Word meaning ‘we can do things for ourselves’.
- Meraka⁵⁹ - contributing to the digital meraka (a word used in Sesotho, Sesotho sa Leboa and Setswana to refer to an area of shared land most commonly used for cattle grazing - a commons).

2.8 Comments

7 Responses to “FLOSS, OER, Equality and Digital Inclusion”

1. Ken Udas - May 3rd, 2007 at 4:55 am

Kim, I have found this to be a very thought provoking and information rich posting. As I read through the questions that you asked and the abbreviated responses that you provided, I kept returning to a number of related questions of my own. The principal question being:

Is there the need to develop curriculum around commons-based peer development?

That is, would treating commons-based peer development through the formal educational curriculum in primary, secondary, and tertiary education across an array of topics and subject areas strike at equity issues associated with access? Would it help to generate a culture that supports and actively promotes peer development, investment in technologies that support collaborative creation, law that favors (reduces barriers and creates incentives) community production, etc?

If so, it would seem natural for FLOSS and OER to be used as practical applications areas within a curriculum and also serve as sources of examples (artifacts) to be studied and refined. If it were possible to integrate commons-based peer development into an action-oriented curriculum, following for example a participatory action research approach to facilitated teaching and learning, a virtuous cycle could develop in which FLOSS and OER production and use impacts education, formal education becomes directly relevant to societal change, and societal change in turn promotes and is fueled by the use of FLOSS and OER in education. Eventually the application of the skills and patterns developed through the active study of commons-based peer development are also applied to the production of other intellectual capacity (work flows, processes, physical artifacts, etc.).

In partial response to your first question, “*Q1. Is the learning from and between FLOSS, OER and other peer production case studies applicable in “developing” economies?*” I believe that a curriculum that includes commons-based peer development principles would be more likely to thrive in “developing” economies than in developed economies that have a whole value system based on deformed information markets (artificial barriers that impede the free flow of information and ideas).

2. Wayne Mackintosh -May 4th, 2007 at 12:03 am

Hey Kim, Its always a pleasure to read your postings on libre content! Your coverage of cutting edge projects across the globe is impressive and you always provide a wealth of resources and links to what is going on in the field - particularly from the developing world perspective. South Africa is becoming a global leader in FLOSS and free content adoption, and I can assure you that we are learning much from your experiences. Thanks for an informative and challenging post!

The general public may not be aware of this — but your leadership thinking around the concept of “free knowledge communities” which evolved to libre communities was an instrumental catalyst in the foundation

⁵²http://en.wikipedia.org/wiki/Development_as_Freedom

⁵³http://en.wikipedia.org/wiki/Libre_knowledge

⁵⁴<http://www.gnu.org>

⁵⁵<http://www.flossworld.org>

⁵⁶<http://www.flosspols.org>;

⁵⁷<http://www.iosn.net/foss-primers/>

⁵⁸<http://www.singazenzela.org>

⁵⁹<http://www.meraka.org.za>

of WikiEducator. Thanks for the inspiration!

I'm very pleased that you raised the issue of bandwidth in your post. Sadly most of the industrialized world uses bandwidth as an excuse to focus on legacy technologies for development at the expense of the potential of digital technologies for creating development futures.

For example - it's relatively easy to develop wiki ==> pdf technologies that would provide access to learners in Africa who do not have connectivity. At COL we are working on funding solutions (with a very restricted budget ..;- () to achieve these objectives.

So I guess my question is how do we lobby the donor community and free content projects to collaborate on the technological solutions that will make a difference in Africa?

In other words - how do we make the future happen for Africa using free content?

I can assure you that we'll be collaborating with you to achieve these ideals

Cheers, Wayne

3. Kim Tucker - May 7th, 2007 at 7:09 am

Response to Ken:

I am glad you raise additional questions. Drawing out "good strategic questions" is one of the most significant things we can do in this process.

Questions draw us towards the future ("which will be different from the past" to quote Wayne) ... sowing the seeds of action in the now ...

This is what we tried to do while discussing a research agenda for OER - http://oerwiki.iiep-unesco.org/index.php?title=OER_research_agenda⁶⁰ >

Re: Is there the need to develop curriculum around commons-based peer development?

Certainly include cbpp-like learning activities (among others) for most curricula (learn by doing) - reminiscent of progressive inquiry and social constructionist activities highlighted in FLOSS such as <http://fle3.uiah.fi>⁶¹ and <http://www.moodle.org>.⁶² [In both of these, developments in the software were inspired by learning theory (and not the other way round)].

For teacher training curricula ... yes! - facilitating learning via cbpp. If learners have access, collaboration with peers will occur, the challenge for teachers is to become facilitators and keep the learners "productive" towards common goals. In South Africa, it has been our experience that it is difficult to convince teachers to change their ways (another challenge) - building this into teacher training will ensure that the new crop of teachers is well primed.

I agree it would strike at equity issues: enabling people to empower themselves with knowledge and to be able to engage in cbpp.

One of Yochai Benkler's claims is that "when you have the kind of information/cultural production system that wikipedia represents, injected into modern complex democracies, you can see significant improvements in autonomy, democracy and, to a limited extent but with some probability, social justice or at least a more just form of global development." (YB, Wikimania 2006).

My concern is that most people in developing countries do not have access, so such benefits will not be as pronounced or immediate. In the interim, it might be better to assemble connected experts in the countries to produce base educational content of high quality and get that out there however possible (e.g. in printed form as Wayne suggests) - perhaps including peer production-type or social construction activities which do not require Internet access. Again, skilled facilitation may be necessary to achieve inclusiveness among participants.

Re: would it help to generate a culture that supports and actively promotes peer development, ... [and] ... law that favors ... community production, etc?

One thing we must do is question our assumptions, and I suspect there are some in the implicit affirmative answer to this question. Would it help what? (reduce inequalities of access to knowledge/learning?). Whom would it help in what way? (those that are ahead already may simply move further ahead together at a

⁶⁰http://oerwiki.iiep-unesco.org/index.php?title=OER_research_agenda

⁶¹<http://fle3.uiah.fi>

⁶²<http://www.moodle.org>

faster rate). When? (only after people have physical access to computers and the Internet?). Why do we think this is important? (will it lead to a sustainable planet and world peace?).

A question which arises for me (which might help map out intermediate objectives) is “Why do we not have such a culture right now?” - Perhaps we do, but behaviour is modified by the restrictive legal and economic climate created by those with a vested interest in outdated business models (Wikipedia, Apache and GNU/Linux exist in spite of the dominant economic models and legal climate). The Creative Commons offers a way round the legal restraints, and we see a blossoming of new business models in the open source world (<http://www.opensourcestrategies.org/>) and in publishing (e.g. <http://commons.org/2007/03/29/new-business-models-are-catching-on-%e2%80%93-let-hem-gives-away-film-rights/>⁶³).

However, there is still a need to counter the pervading overly restrictive copyright regime.

So, I agree, it would help to embed cbpp activities across the curriculum, and to use FLOSS and free/libre/open resources for education as examples, etc.

Re: the virtuous cycle you described:

The chain might well work. It reminds me of what sounded to me like an impassioned plea from Larry Lessig at Wikimania last year: to demonstrate the benefits of cbpp, sharing of knowledge and a read-write Internet to society in areas beyond Wikipedia. Efforts in the education space (such as Wikieducator, LeMill, Connexions, Wikiversity, Educommons, OCW, etc.) may turn out to be particularly significant in this regard.

Some education systems are moving in compatible directions. In South Africa there has been a move towards “outcomes-based education (and training)” - OBE(T). <http://www.saqa.org.za/show.asp?main=structure/nqf/docs/curricul2005.html&menu=docspol>⁶⁴

One would assume that once the required outcomes are defined, there is some freedom permitted in the approach to achieving those objectives. The materials produced in this process are released to the public domain. However, the process seems bogged down in bureaucracy and the complexities of gaining approval from SAQA. It has also proved difficult to convince educators to change their ways towards becoming facilitators of technology assisted learning (rather than fountains of knowledge).

The Thutong portal <http://www.thutong.org.za/>⁶⁵ is becoming “freedom-friendly” by including a meta-data field for the license of learning objects along with a host of others to enable effective search. It is not a wiki environment however, and cbpp is not yet accommodated within the portal itself.

The (world-wide) challenge is to go ahead and create learning resources which embed cbpp among the learning activities, encourage wide use of the resources and the approach, to evaluate and demonstrate the effectiveness. In a Wiki environment (e.g. Wikieducator, Wikiversity, etc.) this is likely to be almost automatic.

Another question that arises is “How do we integrate software development into this process?”

Not everyone can or desires to develop software. I recall learning a lot about ecological processes through modelling. At the time, we mostly used spreadsheets and the programmers in the class were happy to share their knowledge in exchange for ecological insights. Together we produced models which seemed plausible. Although these models were not capable of quantitative prediction, they did illustrate the effects of variables on the systems under investigation, and helped us understand the processes. The key to this is either deskilling software development, or collaboration across disciplines. Raise awareness among FLOSS developers of the needs in education and encourage them to work with educators and learners. This is a good way to demonstrate the value of shared knowledge in problem solving.

[A project I encountered some time ago intended to do something similar for non-profit organisations, though it seems more general now: <http://www.socialsourcecommons.org/>⁶⁶]

One of the take-home messages from the modelling exercise above was that the real value of modelling is in the learning and insight gained through the modelling process (i.e. as opposed to the models produced or their qualitative predictions).

⁶³<http://commons.org/2007/03/29/new-business-models-are-catching-on-%e2%80%93-let-hem-gives-away-film-rights/>

⁶⁴<http://www.saqa.org.za/show.asp?main=structure/nqf/docs/curricul2005.html&menu=docspol>

⁶⁵<http://www.thutong.org.za/>

⁶⁶<http://www.socialsourcecommons.org/>

Here is a useful set of models for learning physics I discovered some time ago: <http://phet-web.colorado.edu/>⁶⁷

Would it make sense to construct learning activities with incomplete versions of such software – students could then develop the programs (e.g. define formulae) their own way as part of the learning. The complete source code would represent a solution to the exercise?

In a wiki environment, I can imagine pages on specific needs for a piece of software, describing new use cases which software developers might like to implement in collaboration with the learners etc. as part of their software engineering programmes.

In terms of content development, I recently heard of a project using collaborative video production as a means of “crossing cultural borders”.

The great thing about software development and video co-production, is that they are sufficiently complex to require some co-planning, role and design negotiation, critical thinking and technical skill. Here is a project which emphasises a general ability which all learners should acquire through school: “. . . the skill of analysis. . . the ability to break a complex problem into pieces, identify familiar patterns in the pieces, solve them using existing tools, and synthesize the results into a view or answer.” <http://www.kusasa.org/>⁶⁸

“We want to ensure that learners graduate with this ability, making them effective, successful, productive and fulfilled members of society.”

It might be useful to extend some of the ideas here into other levels of education and introduce social constructionist learning and cbpp in the development of the tool

For content production, see also <http://www.elephantsdream.org/>⁶⁹ as an example of an open movie built with FLOSS (www.blender.org) and with production files freely available.

Much of the above type of activity is happening already (links welcome), we are not short of ideas and encouraging such activities can only help - even if it is done in low/no connectivity environments, and is seen as nurturing the existing culture of collaboration and sharing in readiness for cbpp when access for all becomes a reality.

I think we agree that the people in Africa are likely to take to cbpp quite naturally on account of the traditional cultures, and by being less affected by the artificial barriers.

In summary, embedding cbpp across curricular is recommended, and generating a culture of collaborative learning is a good idea, though the impact may be delayed and less pronounced in places where access is limited. FLOSS and collaborative free/libre/open content development may serve as good vehicles to promote cbpp, though the required culture of sharing may be nurtured even without the Internet.

Speaking of peer production, it might be useful to share:

- links to sites and papers of relevance to this discussion.
- research questions
- software – FLOSS for Education.

4. Kim Tucker - May 7th, 2007 at 7:49 am

Response to Wayne:

It is great to see so much happening around libre and open resources for education.

As you have pointed out before, there are special needs in Africa, and the context calls for innovation.

Part of the answer to your question is to facilitate communication across initiatives, and develop a common vision and a common understanding of the context and the way forward.

The context is constantly changing and we need a realistic plan leading towards a desired future.

Here are two perspectives:

1. ALL investment should go into enabling access. Only then do we even think about content, and enable this via the local communities. Actually, it is not about content - it is about learning activities which will be greatly enhanced when it is possible to engage with the global knowledge society.

⁶⁷<http://phet-web.colorado.edu/>

⁶⁸<http://www.kusasa.org/>

⁶⁹<http://www.elephantsdream.org/>

2. Focus on developing (libre) learning resources among those who have access. These automatically become a foundation as soon as new communities gain access. Moreover, in this process, local skills will be developed to take it forward.

5. Wayne Mackintosh - May 7th, 2007 at 11:58 am

Hey Kim - Enabling access is a strategic priority in Africa - couldn't agree more. In addition to enabling access - I would like to add a left-brain strategy, namely projects which generate universal demand for access - in other words generating the need for access in parallel to technical infrastructure.

For this reason I believe that libre content is a missing link in the chain. Learning activities are derived from our pursuit of knowledge and I suggest that the more free content we can produce - the greater the need for access.

Conceptually it is possible to provide access to the 1.7 million free content articles of Wikipedia by creating wiki ==> pdf functionality. This could be a foundation for billions of learners - especially those without textbooks to high quality content, even though they may not have access to the web themselves.

I was playing around with a use case scenario - still needs a little work, but you'll get the gist of my thinking. See: Thinking creatively about access to free content⁷⁰

Chat to you soon. Wayne

6. Ken Udas - May 9th, 2007 at 5:12 am

Response to Kim

Thank you for your thoughtful reply. I appreciate the links you have provided and the questions that you have posed. Together we are generating a lot of questions, and I would like to focus on a small group of them that flowed from a question that I asked in my first comment, in which I asked:

Would it help to generate a culture that supports and actively promotes peer development, investment in technologies that support collaborative creation, law that favors (reduces barriers and creates incentives) community production, etc?

And you followed up with these other questions:

Kim: *Would it help what? (reduce inequalities of access to knowledge/learning?).*

Yes, it seems that complex problems are not well suited to centralized and authoritarian solution generation and decision-making. Traditional "top of the pyramid" oriented decision making tends to disproportionately (sometimes exclusively) respect and reflect the values of the decision maker or the group that he or she represents. This will frequently result in marginalizing, to varying degrees (sometimes extremely), the values held by other less powerful groups. By definition, the decision maker is in some sort of local power position, which might extend to a global scale depending on the nature of the political and economic organization that the decision-maker is representing. I see commons-based peer development as a method to normatively balance concentration of power with the investment of communal decision-making. I was really pointing to commons-based peer development as a way of seeding values in organizations. Education is an important area because of its impact on the development and transmission of values. These values are then imbued, ala Freire, in the cultural artifacts that are created, which could include learning materials, technologies, organizational structure, governance, etc. There is a positively reinforcing cycle that starts with applying principles of commons-based peer development to OER and FLOSS, including the methods in teacher education, and the general curriculum, keeping in mind that curriculum extend outside of the "schoolhouse".

Kim: *Whom would it help in what way? (those that are ahead already may simply move further ahead together at a faster rate).*

I might have at least partially responded to this question above, while also perhaps exposing a certain naivety and idyllic notion of how things work, or at least might work. A culture that supported the underlying values of commons-based peer development would benefit everybody because it would, I think, lead to a sustainable society. This of course assumes that as individual and societies we never really have enough resources to meet everybody's appetites. That is, if left to market forces we will always have unlimited wants and needs and limited resources. On a societal scale wealth and resources are concentrated creating

⁷⁰http://www.wikieducator.org/Metawikieducator/Print_web_service

inequity, which is not a humane or sustainable way to manage a society or planet. Everybody feels the consequences eventually. This obviously is not only about social change, it is also about effective teaching and learning and basic access to quality and locally relevant educational resources, but if we can move mountains in the process, why not?

Kim: *When? (only after people have physical access to computers and the Internet?).*

Great question, no, I do not think that this starts only after everybody has access to computers and the Internet. I will follow your and Wayne's lead on this. Commons-based peer development, OER, FLOSS, CIT, education, crime, economic development, etc. are all part of an ecosystem that that will develop together, systemically, and holistically. Investment in developing paper-based OER using commons-based peer development will create demand for CIT, and CIT will become more impactful when they are made available if a process and culture of commons-based peer development is already in place. This will be particularly true if commons-based peer development is already being taught as part of the curriculum and being modeled in educational environments including schools

Kim: *Why do we think this is important? (will it lead to a sustainable planet and world peace?).*

Oops, I responded to this above.

7. Kim Tucker - May 23rd, 2007 at 3:29 am

A link of interest to this discussion (apologies if this is duplication):
<http://oedb.org/library/features/how-the-open-source-movement-has-changed-education-10-success-stories>⁷¹

⁷¹<http://oedb.org/library/features/how-the-open-source-movement-has-changed-education-10-success-stories>

Chapter 3

Wayne Mackintosh - WikiEducator: Memoirs, Myths, Misrepresentations and the Magic¹

NOTE: Wayne Mackintosh, WikiEducator: Memoirs, Myths, Misrepresentations and the Magic. Originally submitted April 4th, 2007 to the OSS and OER in Education Series, Terra Incognita blog (Penn State World Campus), edited by Ken Udas.

We're living in exciting times! The free culture², mass collaboration³, and self organisation⁴ are transforming traditional models of society and the economy in fundamental ways. I don't pretend to have the answers, but I'm confident that the convergence among these forces combined with the shifts from organisational hierarchy to the individual will help us find the answers together. Finding the answers, holds huge promise for radically advancing access to education and knowledge. I use radical⁵ in the original sense of the word referring to the radix or root of fundamental change as opposed to revolutionary change.

This is a post about freedom and how it can support education as a common good. If you suffer from hypertension best to read this post under parental guidance. Now that I've cleared the health warnings, I want to move onto the more important stuff.

"In education, if you give knowledge away freely - you will still have it for yourself to use."

This is why Sir John Daniel⁶ of the Commonwealth of Learning (COL⁷) argues that education will not suffer the tragedy of the commons.

3.1 An overview

WikiEducator is working with others in the freedom culture to develop a free version of the entire education curriculum by 2015. It's an ambitious target riddled with complexity, but the importance of our work is underscored by our vision to turn the digital divide into digital dividends using free content and open networks.

¹This content is available online at <<http://cnx.org/content/m14687/1.8/>>.

²http://en.wikipedia.org/wiki/Free_Culture_movement

³http://en.wikipedia.org/wiki/Mass_collaboration

⁴http://en.wikipedia.org/wiki/Self_organisation

⁵<http://dictionary.reference.com/browse/radical>

⁶<http://www.col.org/colweb/site/pid/4042>

⁷<http://www.col.org/>

I want to set the context with a short history of WikiEducator and its growth over the last year. With particular reference to free cultural works⁸, I will reflect on two academic myths associated with our industrial models of education, clear up a few misrepresentations where things I have said are sometimes used out of context, but more importantly try to capture some of the magic I have experienced being part of the WikiEducator free content community. This is the magic that will turn the divide into dividends — magic which is produced through self organisation and mass collaboration.

3.2 Rationale for the post

Ken’s invitation to post a contribution for the OSS series covering the impact of free software in education couldn’t have come at a better time. We’re preparing to celebrate the first birthday of WikiEducator⁹. This OSS series is an appropriate forum to reflect on Wikieducator’s beginnings because we:

- use free software (in particular, Mediawiki¹⁰, the same engine used for Wikipedia’s¹¹ online encyclopedia);
- promote and advocate the use of free software in education; and
- our meaning of free content is derived from the experiences of the free software movement.

This post will reflect on some of my personal experiences in founding the site and its potential contribution to widening access to education in meaningful ways. If anything, I hope this reflection encourages constructive debate in building the value proposition for why we need to support free content production in preservation of the educational values that should underpin our knowledge practice.

3.3 Memoirs: The origins of WikiEducator

A good place to start is with the original reasons for establishing WikiEducator. I set up the wiki primarily to support the collaborative authoring requirements for free content in support of COL’s¹² facilitation role in guiding the development of the Virtual University for Small States of the Commonwealth (VUSSC¹³). VUSSC is a project involving 27 small states, working together as a network, including the development of free content to support the educational needs in these countries. I always hoped that the WikiEducator would grow organically from this small nexus into something bigger. Reading the statistics, this is proving to be true.

I don’t see this early history to be compelling reading for our audience, so I have linked to this content. Nonetheless I have used Ken’s invitation to document the early beginnings of WikiEducator. I cover this under the following headings which you may want to read when you have more time on hand:

- **History is important:** In order to dispel any new myths which may or may not arise from this post, I feel that I should document some of WikiEducator’s early history¹⁴ . . .
- **The first prototype:** Getting back to the inception date of WikiEducator, in preparation for my move to COL in Vancouver, I set up a prototype installation of WikiEducator¹⁵ on a desktop machine. . .
- **Reflections on choosing the domain name¹⁶:** I registered the WikiEducator domain name on 12 February 2006 in New Zealand, which was not put into production until April 2006 when we moved the prototype onto a hosted server. . . and
- **Why not Wikiversity:** I should point out that I seriously considered joining forces with Wikiversity¹⁷

⁸<http://freedomdefined.org/Definition>

⁹http://www.wikieducator.org/Main_Page

¹⁰<http://www.mediawiki.org/wiki/MediaWiki>

¹¹http://en.wikipedia.org/wiki/Main_Page

¹²<http://www.col.org/>

¹³<http://www.col.org/colweb/site/pid/4256>

¹⁴http://www.wikieducator.org/WikiEducator_Early_History#History_is_important

¹⁵http://www.wikieducator.org/WikiEducator_Early_History#The_first_prototype

¹⁶http://www.wikieducator.org/WikiEducator_Early_History#Reflections_on_choosing_the_domain_name

¹⁷http://www.wikieducator.org/WikiEducator_Early_History#Why_not_Wikiversity.3F

in the early days before “going it alone”, so to speak...

History enthusiasts aside, it’s more important to look at the outputs after our first year and the numbers provide some indication of what our community has achieved.

3.4 Early signs of exponential growth?

Popularised by Mark Twain¹⁸, we know that there are three kinds of lies: “Lies, dammed lies, and statistics.”

On the verge of WikiEducator’s first birthday, we have logged about 2.3 million hits. This week we were ranked by Alexa as the 354,568 most visited website. This puts WikiEducator within the top 8% of websites on the planet. That’s not too bad for a small wiki working on the development of free content for education, especially when considering that there are approximately 48 million active websites in the world (according to Netcraft’s¹⁹ 2006 figures). The statistics for March 2006 show an average of 20,000 hits **per day** from approximately 900 unique visits. We are currently recording visits from 61% of the 193 countries in the world.

An interesting way to look at WikiEducator’s growth is to compare the number of days it has taken to reach cumulative totals in steps of a half-million hits. It took WikiEducator:

- 157 days to reach its first half-million hits
- 02 days to reach the next half-million
- 41 days to reach the 1.5 million mark
- 21 days to reach the 2.0 million threshold

¹⁸http://en.wikipedia.org/wiki/Lies,_damned_lies,_and_statistics

¹⁹<http://www.pandia.com/sew/383-web-size.html>

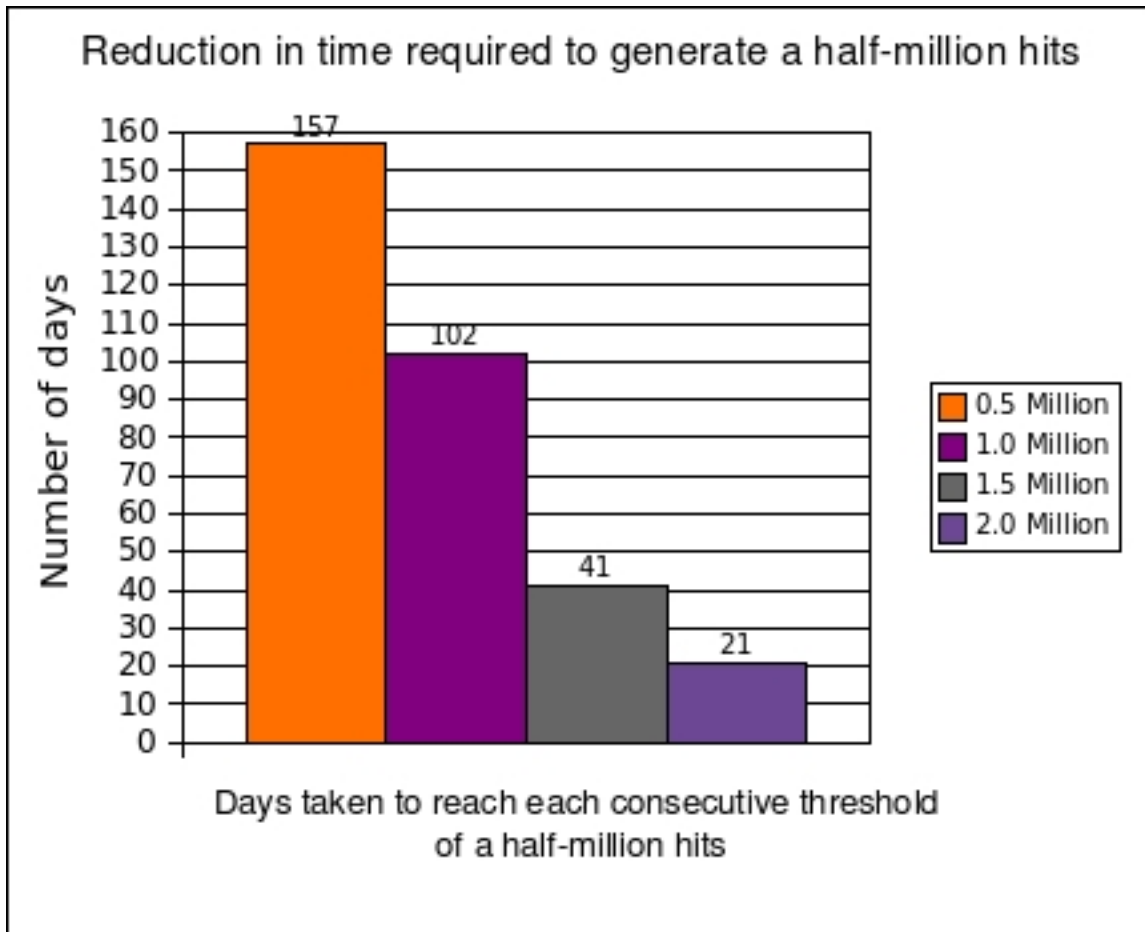


Figure 3.1

3.5

3.6 An evolving vision

The historical interactions mentioned above have encouraged WikiEducator to think critically about its evolving vision. Particularly with regards to how it differentiates itself from similar projects. Given the magnitude of our collective task to develop a free curriculum by 2015, we cannot afford duplication of effort. Where things stand at the moment — taking into account that WikiEducator is a dynamic community — I think the project differentiates itself in the following ways:

- WikiEducator has a strong commitment to the developing world in making sure that all citizens can engage as equal participants in the development of free content. This commitment is endorsed by COL's "Learning for Development" — the thrust of our current strategic plan²⁰.

²⁰http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/3YP-06-09_web.pdf

- WikiEducator has a commitment to build capacity in parallel with free content development, thus leveraging the advantages of a learn-by-doing approach. (See, for example WikiEducator’s Newbie Tutorials²¹ .)
- WikiEducator has a forward looking disposition and encourages responsible experimentation with evolving technologies in our search for sustainable solutions for e-learning futures. (See, for example WikiEducator’s Tectonic Shift Think Tank²²)
- WikiEducator facilitates networking nodes of a range of projects in conjunction with our mission to develop free content for education. (See, for example FLOSS4Edu²³ and the Future of Learning in a Networked World FLNW2²⁴ .)

3.7 Myths

I use the notion of “myth” with caution. In fiction, there is no requirement to validate the truth. Similarly there is no impediment to basing a fictional work on fact. The myths I’m referring to are the traditional stories (sometimes ancient) of the academy which attempt to explain selected aspects about our educational realities. By interrogating these myths, hopefully we can establish plausible grounds for mainstreaming the free content movement in contributing to the sustainability and common good of education. Perhaps we should take the time to engineer new myths that will sustain and direct our educational futures. I encourage readers to help me in this creative story writing process.

3.7.1 The first myth: Universities have been around a long time - technology doesn’t restructure our pedagogy

Yes, universities have been around since medieval times and are one of a handful of organisations that survived the industrial revolution. Why should this be any different in the knowledge economy? The reality is that technology has succeeded in restructuring pedagogy and there is no reason why it can’t do so again. In deconstructing the myth I refer to one substantive example of technology precipitated change that has altered the pedagogy of the university in fundamental ways. I’m referring to the inception of the large-scale distance education universities. Two observations:

- Institutionalised forms of distance education did not exist prior to the onset of the industrial revolution.
- The specific roles that the learning technologies assume in the teaching-learning situation can actually alter the pedagogical structure. For example: Media resources that are used as adjuncts in support of face-to-face pedagogy, (for example slide show presentations) do not alter the pedagogical structure of classroom teaching. However, asynchronous learning resources must actually carry or mediate all the functions of teaching including the presentation of content, forms of interaction (both simulated and real dialogue) and assessment. Incidentally, this is the reason why slide show presentations don’t migrate well into eLearning contexts.

3.7.2 The second myth: Publically funded education is economically sustainable as a common good

The massification of education as a publicly funded system has achieved considerable success in widening access, with impressive results evidenced by the exponential growth in the participation rates for higher education after the Second World War. However the long term sustainability of higher education is coming into question. The trouble with our traditional model is:

²¹<http://www.wikieducator.org/Help:Contents>

²²http://www.wikieducator.org/Tectonic_shift_think_tank

²³<http://www.wikieducator.org/FLOSS4Edu>

²⁴<http://www.wikieducator.org/FLNW2>

- The greater your success in widening education, the less sustainable it becomes over the long term, especially for cash-strapped governments in the developing world;
- Education provision does not function as a perfect economy. If it did - why don't we see a radical reduction in the cost of provision - given the global demand for education. Is this a supply problem? Does this suggest a return to elitism for survival?

I contend that the economic model for higher education is fundamentally broken. The increase in student fees in the United States over the past decade has been in excess of the national inflation index. How long will the system be able to sustain itself?

We are now twenty year's away from Drucker's predictions in that famous interview in Forbes magazine back in 1997 where he predicted that "Thirty years from now, the big university campuses will be relics. Universities won't survive ..." (March 10, 1997, pp.126-127). These predictions were made just before the the hype and subsequent bursting of the dot com bubble. Drucker's predictions became the Trojan Horse for many commentators arguing for the transformation of the university to survive in the e-world. Less cited are the real reasons for Drucker's concerns, namely:

"Do you realize that the cost of higher education has risen as fast as the cost of health care? ...Such totally uncontrollable expenditures, without any visible improvement in either the content or the quality of education, means that the system is rapidly becoming untenable. Higher education is in deep crisis..." (Drucker, Forbes Magazine, March 10, 1997, pp.126-127)

The deconstruction of these myths set up the value proposition for free content. It is certainly plausible that we can reduce the design and development costs of asynchronous learning materials, while improving quality by an order of magnitude through mass collaboration adhering to the principles of self organisation. Moreover, we could see new (de)institutional arrangements emerging from the free cultural works movement that supplement or compete with the traditional educational models. This is possible because of deep seated changes we are seeing in the World Wide Web. In the "old days" the web was this amazing information resource where you would go out and find what you needed. Today, information finds you. The same information we may choose to co-create as individuals through the read-write web.

There is nothing new in these ideas - they are well documented in the literature. My concern is that the traditional academy does not have a good track record in educational innovation and is one of the reasons I have taken a short leave of absence from the academy. I want to see whether it's possible to achieve sustainable innovation with free content from the "outside" - because it's important for humanity. In justification of my assertion, I should point out that the big university icons that have pioneered the Open Education Resources (OERs) movement have adopted non-free content licenses. What's the point of OERs that regulate the very freedom they are supposed to encourage? This is a contradiction in terms. It's important that we get this right - our academic freedom depends on it.

Stated differently - Assuming the freedom culture achieves a free version of the education curriculum, what are the implications for your institution?

3.8 Misrepresentations

I do not use non-free software because I do not want to face the ethical dilemmas arising from the tensions between honesty and educational service when helping my neighbour. As an educator, I do not want to be tempted into the illegal reproduction of software or closed learning resources when helping a learner. As a teacher, I don't want to be in a situation where I must refuse access to knowledge at the expense of helping someone to learn or for that matter earning a living. It's a personal choice. Sometimes my choices are a catalyst for emotional debate among my peers. In these situations, I frequently make statements that challenge the hegemony of closed content and the traditional pedagogy we have grown accustomed to in education. On the rare occasion, what I say is used out of context fueling misrepresentations. I'd like to set the records straight. I'll concentrate on two examples.

3.8.1 It's far better to have a poor quality educational resource that is free, than a high quality resource that is non-free

Yes, you've guessed it — I have been accused of disregarding quality and its importance in education.

I usually make this statement challenging those OER projects that have adopted the Non-Commercial (NC) restriction in their choice of license. First of all, quality has nothing to do with the freedom of a resource. In my experience of education, quality is a function of the design and processes implemented during the development of those resources. Quality is not a function of the commercial restrictions placed on a resource. In fact, these commercial restrictions limit essential freedoms to widen access to education, not to mention the incompatibility with the growing number of resources available under free content licenses which you can legally mix and match. Free content must be available to sell because we should not deny any individual the freedom to earn a living. This is the cornerstone of a modern economy. Besides, competition encourages quality and I would argue that we should encourage commercial activity to promote the quality of free content.

However, my major concern is the waste of human effort in many OER projects which essentially render the products almost useless for the very people they are intended to serve. I've yet to find a set of lecture notes developed by another teacher that I can use without the need for adaptation for my local context or personal style of teaching. The problem is that adaptation requires effort and consequently incurs cost. It would be nice if I could find bits and pieces of free content that I could mix and match thus reducing my personal effort in the adaptation process - in other words creating a digital mash-up from free content for my learners. The problem with the NC restriction is that you cannot mix the NC materials with any of the "copyleft" content licenses because you are creating a derivative work. Effectively the NC restriction shuts off modifications and adaptations by leveraging on the availability of existing investments in free content.

One advantage of a poor quality in a free-content resource is that you have the freedom to improve it!

3.8.2 Monolithic learning management systems are a barrier to widening access to education through eLearning

I've become increasingly disillusioned with Learning Management Systems (LMSs) and I suspect that they're constraining innovation in education. I am an eLearning practitioner and have previously been responsible for leading eLearning strategy in the university environment and have extensive experience with many LMSs - so I'm not an eLearning luddite with a nostalgic reluctance to adopt technology in education. On the contrary, I firmly support Sugata Mitra's²⁵ advice that we must use the most advanced digital technologies for the most disadvantaged learners. I'm on the side of eLearning here.

My disillusionment with LMSs fuels speculation among my peers and colleagues. I see the looks of surprise when I chat with my colleagues suggesting that LMSs are the barrier to eLearning. Their unspoken diagnosis of a temporary bout of digital amnesia is tangible. I observe the disappointment most among my free software associates that have slaved for years in the implementation of free software LMS solutions. In my view, we made an error in judgment assuming that unrestricted access to the source code of free software LMSs would facilitate innovation in eLearning. Unfortunately we have reached the point where every eLearning problem is a nail - because the only tool we have on campus is a large LMS hammer.

I think we can learn a lot from the Personalised Learning Environment²⁶ cohort and the work on the eFramework²⁷ - essentially a description of a web services architecture for eLearning. However this work is essentially a framework specification not an implementation. Given our experiences on the eLearning XHTML²⁸ project, which has developed an authoring tool using internationally accepted specifications for interoperability, I'm not too optimistic that we will see an e-framework implementation as mainstream technology very soon. I have yet to see an elegant deployment of the LMS/SCORM specifications in any

²⁵http://www.col.org/colweb/webdav/site/myjahiasite/shared/docs/PCF4_keynote_Outdoctrination.ppt

²⁶<http://www.cetis.ac.uk/members/ple/>

²⁷<http://www.e-framework.org/>

²⁸<http://exelearning.org/>

LMS (both proprietary and open source). When you view a SCORM import in all the LMSs I have tested - you feel that you are viewing alien content that is not part of the instructional strategy.

Why go through the pains of an SCORM export/import when you can simply upload and reference the relevant web content on a server using W3C protocols? (Even better, start using RSS/RDF content feeds.) The reason is that some local authority has taken responsibility to manage your freedoms to educate. We don't tolerate these intrusions in the traditional classroom, yet under elearning we accept this in the name of cost-efficiency (or some other "justifiable" reason). This is why LMSs won't survive - they are not aligned with the Web 2.0 culture of enabling individuals to teach as they see fit. LMSs are typically organisational installations and restrict educational freedom to work as individuals across institutional boundaries. In my view, this is why we will witness exponential growth in the technologies that service these educational needs. The phenomenal growth in Youtube, MySpace, Open Wiki installations, Flickr being an early example of the shift from organisation to you as individual.

You may be wondering what this has to do with free content, but it's an important debate. We have to figure out ways in which we will deliver free content to our learners. I'm not too optimistic that interoperability specifications are going provide the solution. We've got to get smarter.

3.9 The Magic of WikiEducator

There is real magic in the WikiEducator community and it's both addictive and contagious. However, I don't have the skills to articulate this dynamic. WikiEducator is a living organism as evidenced by a few examples:

- I have observed a free software champion based in Kenya conceptualise the FLOSS4Edu project and capitalise on the space provided by WikiEducator to mobilise educators in East and West Africa to commence development of free content for Africa by African educators.
- I have been involved with two VUSSC boot camps where 25 countries are collaborating online in the development of free content.
- I meet with Country Mike, based in New Zealand on WikiEducator's Internet Relay Channel and we share thoughts about the strategic directions for WikiEducator.
- After a recent keynote presentation in India, I was taken back by the passionate defense of WikiEducator from the floor by a senior Indian academic.
- I was moved by a reflection from a teacher based in Germany who announced in one of our forums that "After discovering the WikiEducator site I was quite exited, and I told my family at supper: Listen, I have something to celebrate, I just found something very promising!"
- I interact with experienced technical gurus like Eloquence from the Wikimedia foundation in identifying sustainable innovation alternatives for open content authoring in the future.

Networked communities have their own energy and they organise themselves without the need for a centralised hierarchy. Community projects take on a life of their own, and WikiEducator's no exception. The compelling value proposition of free content and the freedom to participate actively in the destiny of WikiEducator is triggering exponential growth in the initiative.

Administrator's frequently have difficulty understanding this community impetus and attempt to over regulate this energy, leading to projects that are destined to failure in the medium term. Fortunately, WikiEducator has adopted a clean slate approach. The starting point was simply a declaration of community values - the rest followed from that. In hindsight this has been the success of the WikiEducator community. It's a delicate balance because the Commonwealth of Learning has funded the development of WikiEducator and the agency has a clearly defined strategy to support learning for development. We have refrained from interference in the evolution of the community and this is paying handsome dividends in the realisation of our aims.

In many respects the evolution of open networked communities is like golf (Although, I'm not an authority as I do not play the game). You can spend many hours perfecting your swing, but you have very little control

over where the ball will rest. The old adage that your luck in getting it right will increase proportionally with the time you spend practicing, will help us move forward in the right direction.

I hope you will help us.

3.9.1 Comments

3.9.1.1 1. Ken Udas - April 5th, 2007 at 4:53 am

Wayne, WOW this is such an interesting posting that I hardly know where to start. As I read through your reflections and assertions dozens of questions rose to the surface. This being the case, I am going to start with a very general observation and question, but I also want to invite others to respond to Wayne's posting and to the comments (like this one) that are also posted.

Observation: Clearly, as I read your posting I see a strong relationship developing between Open Source Software (OSS) and Open Educational Resources (OER). I believe that as this series progresses some of those relationships and connections will be reinforced, refined, and challenged. I am actually very happy to see OSS and OER being treated together, but feel then that it is important that we understand the relationships and, as importantly, what impact they have on education.

Question: I have the sneaking suspicion that the really important touchstones between OSS and OER are not so much with the code or content, but more with the nature of the rules around distribution – that is the level of “Freedom” that is conferred to individuals and organizations that can potentially use and benefit from the assets (physical assets as well as the development of community). So, what do you think are the characteristics that allow us to talk about OSS and OER at the same time, what can the OSS and OER communities learn from each other, and how do both OS and OER impact on education?

I know that these questions are large, but perhaps the responses do not need to be.

3.9.1.2 2. richardwyles - April 5th, 2007 at 5:13 am

Fantastic read thank-you Wayne. I'm not going to pick up the cudgels (too much ;-) on any of it really but will offer some personal observations as we've known of our respective efforts well these past few years. I'll restrict my comments to wikis and LMSs as application technologies.

I remember many a conversation on the limitations of LMS and it's something that Ken and I used to discuss a lot in the earlier days of NZOSVLE. I've always simplified the construct of an LMS to being analogous to a classroom environment. We wanted to include spaces for informal learning analogous to social learning on a campus. Early efforts were with trying to create this space (we called it a learning portal) with a system called TikiWiki that would have single-sign-on. This was in early 2005 but it seems ages ago. In short, we failed - too few resources and really we were grappling with trying to mash together disparate systems that were like apples and oranges. Changing direction, we developed MyMoodle and the ability for a learner to set up a community space within the LMS. But this is still under the umbrella notion of an institutional LMS though which I agree tends to reflect the focus on administration and was an unsatisfactory answer. Hence Mahara which is a first stage attempt at a PLE. This thinking is also a driver behind Moodle Networks and the Web Services API we've recently developed.

I don't want to come across as defensive of the LMS but it is simply an aggregation of tools (and the best LMSs have loose coupling of the tool-sets i.e. pluggable), many of which are Web 2.0 tools and can be used in a wide variety of contexts. Agreed though that in most instances the LMS and its typical usage is a reflection of the institution, a desire for organisation and control. But I still think these technologies have a lot of life left in them. For example, Moodle 1.7 has customised roles which allows all sorts of possibilities of supporting a spectrum of permissions for people within and external to institutions. I'm about to use this to support an idea I've had for a while which is to support small grassroots non-profit community groups with access to these online community spaces. Change the language pack, alter a few tools and bingo ... In 1.8 Moodle Networks enable almost any configuration of organisational construct you can imagine and we are using SSO with web services. I would argue that we have the first stages of an eFramework implementation! And Mahara Moodle interface underway right now.

My apologies - rambling on again about my projects and I've already had my say. What I am trying to convey though is that there are many routes to similar goals. I don't think wikis are the (total) silver bullet - the technology has some way to go, there's still barriers to entry with varieties of syntax, poor editors and they don't support many activities (yet!). But an open wiki is an admirable and important part of the mix, no doubt. I am a big fan of the direction of WikiEducator. I'm just wanting to get across that I don't want to throw the baby out with the bath-water when it comes to LMSs - they can and are evolving and I find them a hotbed of innovation. Totally agree on SCORM though, massive waste of time and energy and for what? "alien content" - spot on. Why have a LMS if it's just a SCORM player?

Go WikiEducator and radical thinking for the betterment of the world's learners.

Cheers Richard

3.9.1.3 3. Wayne Mackintosh - April 5th, 2007 at 12:42 pm

Hey Richard - great to touch base on Terra Incognito.

I think the success of New Zealand's open source work in Education is strongly linked to the No.8 Wire approach to Kiwi ingenuity. Their has been a strong reflective culture and the willingness to experiment taking calculated risks. Without this approach - we wouldn't be where we are today.

My concern with LMSs is that they are increasingly becoming the "Leatherman" of eLearning - You have every conceivable tool- none of which does the job properly. For example, the wiki-in-drag implementations of this collaborative innovation within a cohort-based LMS environment or the tweaking of personalised publishing tools like blogs into learning environments. Sure they add value - but at the same time constrain the potential of what these Web 2.0 tools were designed for.

If only we could add a flash drive to our super tool. Image courtesy of Wikicommons



Figure 3.2

My main problem is that I don't have a sense of excitement with LMSs. I don't see how LMSs are going to make a difference to widening access to education through free content to the kids in the developing world who are not connected.

However, I'm very excited about wiki technology - this is one of the most significant social revolutions of our time. A wiki is not a technology. It's a self-organising community that by some magical way functions in mass-collaboration environments. I am very excited about the potential of collaborative wiki environments to make a real difference in reaching 4 billion of the world's 6 billion people - who educationally speaking are underserved. See for example my preparations²⁹ for the Tectonic Shift Think Tank³⁰ next week in Vancouver.

I take your point about the analogy of the LMS with the classroom. It is useful in communicating the concept of eLearning and LMSs to the uninitiated. Paradoxically - at the same time is the barrier to innovation in the design of asynchronous learning systems, given the structural differences in pedagogy. Resources designed for asynchronous learning migrate pretty well into the face-to-face classroom. The reverse isn't true.

Thanks for post Richard - I feel as if we're chatting in my office.

3.9.1.4 4. Wayne Mackintosh - April 5th, 2007 at 1:14 pm

In response to Ken

Ken wrote: >

Ken - I think that you're right on this one. There are obvious differences between computer code and content. For one - its far easier to author content than writing a piece of software code. Incidentally - this is why I think we will achieve a free curriculum in a shorter time when compared to the Free Software Movement, which took about 22 years.

The link between free software and free content is very important. We have the benefit of experience from the free software movement. In my view - the link is not in the fine print of the Open Source Software definition - but rather in the philosophy which should underpin the development and use of free content development. This is a philosophy entrenched in our understanding of modern democracies - namely "freedom of speech."

As educators, I think we need to spend to ask ourselves: What are the essential freedoms we associate with free content? If we're unsure of what freedom is - How will we defend it? If we go through history we see that freedom is easily lost.

There are folk who have spent some time documenting what free content is - and I subscribe and support the Free Cultural Works Definition³¹ .

If anyone is interested in exploring what the Wikieducator community mean by free content - we have a Newbie tutorial available³² .

Cheers

3.9.1.5 5. richardwyles - April 5th, 2007 at 6:48 pm

Yes it does feel as though we're having a continuing chat, sometimes in person, sometimes in forums like this. Thanks Ken - a great initiative. I like the Leatherman analogy - the thing is in certain circumstances a Leatherman is a highly useful thing. What is happening now though is that with protocols like XML-RPC, SOAP and the like is that the tools in the toolkit are getting more loosely coupled. Mahara has been built to be pluggable. Drupal and Moodle are other examples of these evolving architectures and they're getting better and more flexible all the time. A terrible acronym it makes but I see LMSs like Moodle evolving to a Learning Operating System with a kernel of pluggable and highly useful tools. It's already a long way there

²⁹http://www.wikieducator.org/Tectonic_shift_think_tank/Wayne's_wishlist

³⁰http://www.wikieducator.org/Tectonic_shift_think_tank

³¹<http://freedomdefined.org/>

³²http://www.wikieducator.org/Wikieducator_tutorial/What_is_free_content

which is why I get frustrated when folk bang on about SOA as though you have to scrap everything that exists and start afresh.

I take your point about wikis in themselves being about self-organising communities. MySpace is also self-organising within the bounds of the software application it is built on. A wiki is built on wiki technologies and I still think there's a way to go here with many variants on wikitext - there's no commonly accepted standard wikitext language - grammar, structure, features, keywords and so on are dependent on the particular wiki software used and is a language that users have to adapt to. Transformations (e.g. to clean XHTML) are not yet straight forward with many wiki technologies. I'm sure this will all happen and is not far away. Wikis are indeed a very exciting part of the landscape. RSS is also an underutilised technology in educational contexts.

Cheers

3.9.1.6 6. Wayne Mackintosh - April 5th, 2007 at 7:43 pm

Hey Richard, Working on a Saturday - I hope that they're paying you overtime :-)

I think you're right. The smart implementation of XML technologies is going to be the future in education. I'm borrowing a citation from Hewletts OER report on page 66, namely the "[k]ey to making the whole more than the sum of the parts is to create some XML" which you can download here. This pluggable technology is very exiting.

My concerns are social ones. Pluggable implies that you must plug the technology in somewhere. So the next questions are: - Where do I plug this in? Do I need permission to plug something in? What if I don't like the socket where I'm expected to plug the technology in?

I also think, particularly when focusing on the developing world we are going to see resurgence of client side technologies that have smart ways of linking with server-based technologies through XML. Its going to be interesting to see how this all pans out in the near future.

You're absolutely right that RSS/RDF etc is a grossly underutilised technology in education.

I'm on about the freedom of the teacher to teach -

How many IT policies in teaching organisations restrict downloads of software without some form of external control?

How many teaching organisations lock down desktops?

So it is conceivable in this pluggable environment that the freedoms of educators are restricted to the plugins they can use. "You can use any plugin as long as it fits our socket!" . This would be a tragedy for academic autonomy and the free cultural works movement.

I think that we are facing a new set of challenges - the guise that a free software installation on campus is a manifestation of the organisational commitment to freedom. For example, lets say I plan this big OER project and I embed my resources in Moodle. There is a considerable effort and cost required to reconfigure those resources for another environment. How do we facilitate mass-collaboration using the principles of self organisation in a LMS environment. LMSs were not designed for collaborative authoring. The were designed for teaching. Wiki's were designed for collaborative authoring and are the most mature technologies to achieve this aim. Sure there are challenges associated with a standard wiki text - but I don't know of any LMS that uses a standard authoring syntax. Try and take a course developed in Blackboard and port this to Moodle - you'll see what I mean. The two LMSs have their own pedagogical structure - so it doesn't matter how effective SCORM/IMS packaging is - there is a pedagogical mismatch.

Speaking from experience - I know that many educational organisations are uncomfortable with their content sitting on an open web-server. Why is that? Native (X)HTML is far more efficient than plugging all this stuff into the LMS database. W3C is a mature open standard. We can significantly reduce server load on the LMS by simply referencing free content from the LMS itself. What is the obsession to embed content within the LMS? As you've pointed out - the LMS is an aggregation of tools that facilitate interaction. I sense that there is a "political correctness" among some organisations to say that they're involved with the OER movement - yet they haven't bought into the philosophy. Take a look at the proliferation of non-free content licenses under so-called OER projects!

Don't worry too much about syntax of wiki's - we're going to get this sorted with our Tectonic Shift Think Tank next week :-). I hope you can help us with a vision statement. We'd love to have you on board as a remote participant.

As always - good post Richard! You're making me earn my "money". Pity I can't buy you a beer.

3.9.1.7 7. richardwyles - April 5th, 2007 at 9:29 pm

Thanks for the invite. I'm afraid I'm totally flat tack on another wee initiative here - not a tectonic shift but a small step in an aligned direction ;-). That's why I'm working during Easter and unfortunately need to pay myself pretty much these days, not always easy ;-/

"For example, lets say I plan this big OER project and I embed my resources in Moodle. There is a considerable effort and cost required to reconfigure those resources for another environment."

True and actually we are doing just that, well sort of. But we are using Moodle to simply showcase courses that have been built in a modular fashion. The "source files" are entered into an open access repository and can be pulled out and used anywhere. The degree of modularity mitigates the problem of pedagogical structures - to a degree. There is effort involved in porting across, for sure. We've been using a few analogies so I'll throw in another. I often describe our OER project as like kitset housing. We've got a showhome but really what you get is the kitset to put together the course and extend or edit as you feel fit. There's effort involved in doing that and some pros and cons with the approach.

You're absolutely right that this approach is not conducive to self-organised collaborative authoring. If doing it again we might do some things differently but overall I'm happy with the progress. The target constituency are Moodle and Blackboard users. They want, quizzes, forums, group activities, case study scenarios etc. and they also want courseware with an embedded QA process. In this model there is a quality assured 'official' release of course materials. Anyone is then free to take that release, reduce it, extend it, edit away etc but there will still be that core release. This is similar to how many open source software communities operate - there are moderator(s) to ensure quality of the code.

This is not the same type of openness as an open wiki and in some ways nor can it be given the context of quality assured credentialing frameworks etc. Within the courseware we also have flash based objects, audio and video rendered in flash. I know this won't fit with your philosophies on openness as proprietary tools may be necessary to edit the content.

In our defense:

- We're not using any NC restrictions. Commercial entities can repurpose this stuff.
- We've designed the materials as OERS, i.e high granularity, learning objects have XML engines to be more easily editable etc. This is as opposed to the trend to put up legacy courseware, call it open and then say you have an OER project when the materials are ill-suited for wider sharing and input.
- We've focused on high quality learning design so that there will be uptake amongst the tertiary education sector.
- The goal is to reduce barriers to entry and get better quality courses online for overall less investment at a system wide level. On that I'm a pragmatist and will use the best tools available proprietary or otherwise. There's shades of grey here. In my experience there's many open source projects and OER projects that aren't all that open anyway. But this isn't the final model, it's all a learning curve. A wiki environment and more extensive use of RSS are on the drawing board!

Now about that beer, coming your way in a few weeks ;-)

3.9.1.8 8. Wayne Mackintosh - April 5th, 2007 at 11:51 pm

Hey Richard,

This virtual environments are weird - I didn't connect this discussion with your short visit to Canada soon. No worries - I'll buy you that beer, and if its "Free beer" I'll buy you another :-).

You guys are doing pioneering work - that Kiwi No.8 Wire experimentation we were talking about. The rest of us are going to learn from your experiences - and I know from your work on the NZOSVLE that your experiences will be refactored back into the community - like this discussion.

The nut we still haven't cracked in the free content movement is the value proposition at the individual educator level. The "costs" of remixing in terms of time, ego (psychological ownership) etc. must be less than the real and perceived benefits. So in other words the benefits of mixing bits and pieces of free content must be more than the temptation to create my own resource from scratch. I don't think we have got this right yet (our wiki approach included).

The value of show casing is that we can visualise undiscovered potential. So go for it. I do think modularity helps overcome the pedagogical structure challenge. At the same time there is an inverse relationship between reusability and the "amount" of learning design we embed in our resources. The more learning design - the less reusable they become in other contexts. This is not a rebuttal against learning design - but a recognition that learning is always contextually bound. Its a tough challenge - but we've got to get smarter.

I like your house kitset example. It emphasizes modularity and some freedom of choice. The analogy breaks down if you want to build a boat. (Sorry - I come from Auckland, although the sailing would be better in Wellington given the wind you have down in your neck of the woods!)

I'm very interested in your experiences and suggestion that if you were to do this again, you might do things differently. What would you do differently? I know that you are hectically busy but if you could summarise this in a few bullets - we could avoid any mistakes you made - thus your contribution back to the community.

I take your point that typical LMS users want quizzes and forums. This harks back to my point about the unique differences between f-t-f and DE pedagogy. If we are smart we separate out those interactions that are typically facilitated by the LMS and other web-server technologies. However the monolithic attitude of LMSs is to control and divide. I can illustrate this with a practical example.

About halfway through the eXe project we came up with this neat idea to set up the parameters for a Discussion iDevice in eXe. The idea was that you could author the "content" for a discussion forum external to the LMS. With some neat XML, when you imported this external content into your LMS it would automatically instantiate a discussion forum, see eXe Discussion Forum iDevice³³. At the time, interoperability specifications did not drill down to this level of functionality. We hacked our own Moodle patch to demonstrate the utility of this approach. In our excitement we communicated with the lead developer of Moodle. My response from Martin was "I don't like it" - nothing more. I responded - Martin - why don't you like it? Was it because of security concerns that we can write a patch that instantiates a forum externally from the LMS or because this was a nail in the coffin of the LMS control over eLearning. I never got a response.

Regarding the requirement for formative quizzes, close activities, case studies etc. We can achieve these without a database or requirements to be connected to an LMS. We proved this with the eXe project. Therefore - there is a lot we can do outside of the LMS in terms of free content design and development. Lets use the LMS for the interactions that require student-lecture interaction - but keep free content development outside the LMS. If we don't - we're shooting ourselves in the foot.

LMSs are organizational based installations - exponential growth in free content will come from individuals. If we embed our OER initiatives in organisational-based technologies, we will not be able to scale up free content production or reuse across institutional boundaries.

The issue is that the overwhelming majority of institutions and educators don't buy into the free content model. However, at a global level we don't need 95% of the educators to build the free curriculum - we only need 5%. Lets give the 5% the freedom to help us build free content - the rest will follow.

In this world we have two choices - to lead or to follow.

I know what side you're on.

Cheers

³³[http://exelearning.org/eXe_and_the_power_of_interoperable_discussion_forums?highlight=\(forum\)%7C\(discussion\)](http://exelearning.org/eXe_and_the_power_of_interoperable_discussion_forums?highlight=(forum)%7C(discussion))

3.9.1.9 9. richardwyles - April 6th, 2007 at 6:17 am

What would I do differently? What we've done is the model I discussed further up. We've developed 10 courses for about 800 hours of learning. It's not a huge amount but it's enough to explore an OER model. Done again with the same limitations on resources I'd explore, say 3, significantly different models concurrently and then build on the findings combining the best of each.

e.g.

- An open wiki model
- A RSS based framework
- The modular but still LMS centered approach we've taken

The purpose of our OER project is to determine a sustainable model. In my view the business case for OERS is at the macro or pan institutional level. Individual institutional efforts tend to be a form of marketing rather than truly free open fit for purpose courseware developments and hence the problem of NC restrictions. That's the supply side though.

On the demand side "the nut we still haven't cracked in the free content movement is the value proposition at the individual educator level. The "costs" of remixing in terms of time, ego (psychological ownership) etc. must be less than the real and perceived benefits."

Part of the problem I see is that the cost of course materials is, more often than not, borne by the student in the form of text-books or course fees when digital library resources come into play. The academic writes the text, gets kudos and small returns while the publishing house receives the profit. In this scenario the educator is rewarded for being published certainly in terms of their research credentials. Open Journals are on the rise but it still doesn't crack that nut. In the music industry remixes (in essence mash-ups) are well established and musicians are credited with that skill. We need leading institutions to start publishing research and commissioning courseware in open formats and provide the recognition. So we're back at the supply side and the need for this movement to be embraced at a macro level. I've been saying as much to the Ministry of Education here lately!

This is why initiatives such as Wikieducator are so important.

Cheers

3.9.1.10 10. Wayne Mackintosh - April 6th, 2007 at 2:24 pm

Richard, that's insightful - thanks mate.

I'd like to combine the wiki and RSS framework models together. This way we get the benefits of collaborative authoring combined with an easy way to get the content out for remix. I will table these ideas at the Tectonic Shift Think Tank gathering next week.

Clearly we will need a holistic approach. At the micro-level remix must be painless and easy to do. That is overcoming the problem of using "someone else's lecture notes". Even with text books - institution A will choose one textbook above another. This is part of academic autonomy and must be respected. You're right - when dealing with textbooks - the students pay, so there is no institutional incentive to reduce cost here.

However, in the development of eLearning courses - this is a cost addition in most face-to-face institutions. (Even if its a hidden cost - that is academic time used to develop eLearning materials instead of doing something else like research or teaching.) So there is conceptually a motivation to share development costs but I suspect in the early phases this will be at the personal motivation level of the individual academic. How do I save time yet improve my eTeaching?. The trouble is that institutional reward and incentive systems don't recognise time spent authoring materials (in f-t-f institutions).

In single-mode distance education institutions - there is a strong value proposition. About 80% of the costs of producing DE materials is academic authoring time. So it makes economic sense to share.

There are a number of countries in the Commonwealth where authors are commissioned to develop school textbooks - unfortunately under closed copyright. I have no problems whatsoever in ministerial funding of free content development. This is a classic win-win scenario. Authors earn a living and can pay their bills. The ministry still gets the textbooks and over the medium term costs will be reduced through mass

collaboration. The use of a free content license provides the freedom for local adaptations. Revisions are easier and content can be updated more frequently. There are also examples of nationally funded projects to develop online support materials for learners in identified subject areas. Again - these examples are under all rights reserved. This coming year - I'm hoping to find one or more Education ministries that will invest in a free-text book and/or development of free content web resources as a pilot so we can evaluate and build the costing models using this approach. We must find hard evidence of the value proposition.

Just thinking aloud here - you know all this stuff.

Cheers

3.9.1.11 11. Ken Udas - April 9th, 2007 at 6:53 am

Sorry for dropping out of sight for a few days. There is some great dialog going on here. I would like to follow-up on one of two points in the discussion. Although minor points, I think that they are relevant. I hope that this serves to summarize some of the dialog while also iterating some of the questions.

I do think that there is some motivation for individual faculty members and institutions to create and to use OERs, under certain circumstances in place of traditional textbooks. Some examples include:

- When there are niche local needs such as language requirements, need for specific types of examples in particular content areas, traditional textbooks are banned or censored by governments and/or school administrations, etc.
- It is not economically feasible to use traditional textbooks.
- The content in the course is very dynamic and traditional publishing operations and licensing agreements are not adequate for purposes of relevance.
- Etc.

These might all be reasons to suggest that engagement by individual faculty members and institutions potentially extend beyond “marketing” efforts. In Slovakia, for example, there was a process through which we published “course notes” and made them available to students and other faculty with no explicit restrictions. The course notes were a combination of a syllabus, instructions for using the notes, assignments, assessment criteria, examinations, and content. They were in essence annotated textbooks designed to meet the localization and economic needs of a university operating in a developing economy. There were no formal mechanisms in place at the time to distribute the content beyond Comenius University, so the usefulness of the content was sub-optimized.

As Wayne and Richard point out, there are potential economic drivers outside of the situations outlined above. Wayne and Richard, you have both worked at institutions that have large course design and production functions and understand the financial commitment and economics of traditional large-scale production of courses and education materials. There are some indefinable potential benefits to OERs for these types of shops. For example:

- Lower costs associated with creating and recreating existing content including graphics, audio files, case studies, original interviews, etc.
- Lower costs associated with regularly revising course materials that are dynamic.
- Higher quality revisions and materials when they are modified, checked, and edited by multiple authors on short and dynamic development cycles.
- Etc.

Following along with the article and following comments above, that these and other potential benefits will be liberated when some barriers are reduced and a “economy” for OERs is established. Just to summarize, two of the barriers discussed above include:

- Low barrier (free) tools to design, create, publish, edit, package, publish, identify, catalog, search, etc. content, and
- Appropriate distribution licensing.

Just as an aside, following up on the use and non-use of the NC license element, here is a table that outlines the licensing agreements that have been adopted by a number of the larger US open courseware initiatives:

Open Courseware Project	Creative Commons License
Rice University, Connexions	Attribution
MIT OpenCourseWare	Attribution - NonCommercial – ShareAlike
Johns Hopkins	Attribution - NonCommercial – ShareAlike
Tufts University	Attribution - NonCommercial – ShareAlike
Carnegie Mellon	Attribution - NonCommercial – ShareAlike
Notre Dame	Attribution - NonCommercial – ShareAlike
Utah State	Attribution - NonCommercial – ShareAlike
UC Irvine	Attribution – NonCommercial - No Derivatives

Table 3.1

This prompts me to ask:

- If we could identify just a few factors that would promote an OER Economy, what might they be?
- What OSS (free) software tools are available to reduce some of the barriers?
- What OSS tools still need to be developed?

3.9.1.12 12. Wayne Mackintosh - April 9th, 2007 at 3:25 pm

Hi Ken,

I like your suggestions regarding the use of OERs in place of text books - particularly in the area's you've identified. Smart thinking! These are the area's we should prioritise in the free content movement from a strategic management perspective.

Regarding the tabulation of licenses used you can add OpenLearn of the British Open University that also uses the NC restriction. I can't find the link at the moment, but David Wiley announced after much research and debate on the NC restriction that the Center for Open and Sustainable Learning at Utah State University had taken a decision to remove the NC restriction from their courses - which speaking from memory was about a third of their OCW offerings.

I must stress that all the projects using the NC license are using a non-free content license that does not meet the requirements of the Free Cultural Works definition. The freedom culture are working hard behind the scenes with the Creative Commons to separate out non-free licenses from those that are free. All free content is per definition open content - however, not all OERs are free. There are two substantive reasons why not to use the NC restriction:

Ensuring the maintenance of academic freedom and autonomy: The academy has a long tradition of independence. In most countries, the university is the custodian of the critical voice of society founded on the principles of freedom of speech. We have a responsibility to protect the open pursuit of knowledge and unrestricted right to critique and reflect on the world's knowledge even if that means commercial activity! As Educators we have a responsibility to promote free access to knowledge - otherwise we risk losing our custodianship of the worlds knowledge. Consequently - if institutions of higher education decide to participate in the freedom culture through the OER initiative, in my view they have an obligation to protect the essential freedoms.

The inclusion of the NC restriction is a contradiction in terms - it suggests a world of conditional freedom in contrast to our fundamental beliefs associated with academic freedom and freedom of speech. It's a sad world when we start saying "You have freedom of speech as long as you're not engaged in commercial activity".

Universities have no problem charging student fees to access an education but many in the OER world have a problem with others engaging in commercial activity. That's double standards.

The academy has no major reservations to commercial activity associated with text-book production and distribution - yet there is an inherent fear of commercialism when it comes to OERs. If universities are concerned about commercial exploitation around OERs - they have adequate protection through the copyleft provisions of the share-alike license. (Any modifications — i.e. a derivative work must be released back into the community - so the resource will always be free). If Universities want to encourage commercial activity around free content (which I personally support) they use the CC-BY license as in the case of Connexions. In my view, the inclusion of the NC restriction is a signal that the institution does not value the essential freedoms associated with freedom of speech. It's a slippery slope where we might lose our academic freedom.

Pragmatic reasons The use of the NC restriction effectively shuts off the OERs from remixing with wealth of free content available under copyleft licenses. Moreover, the definition of "non-commercial" is unclear and it typically results in additional transactions costs for the very users we are trying to help.

The use of non-free licenses in the OER movement is the greatest barrier to radically advancing the rate of free content production. Universities risk being left behind - because the freedom culture will not comprise on the essential freedoms and they will continue with their mission. We hope that Universities will join us - it will be a great loss to society if they don't.

Ken, relating to your tools question - I believe that those technologies that facilitate mass-collaboration based on the principles of self-organisation combined with emerging XML structured content to facilitate easy remix are going to become the tools of choice. The only technology that currently meets these requirements is the Wiki. However, we still need to do a lot of work in lowering the barriers of entry to participating in the free content authoring process. For most academics - the wiki syntax is still too hard. That's why we were holding the Tectonic Shift Think Tank Meeting. We are plotting the future development path to overcome these problems.

Hey - you've really got me thinking this morning. Thanks Ken.

3.9.1.13 13. richardwyles - April 9th, 2007 at 9:40 pm

Hi Ken and Wayne,

Thanks Ken for the table, interesting! I agree with Wayne's comments. The NC restriction severely reduces the multiplier effect which is a key benefit of OERs. I've never understood the logic anyhow and put it down to the ubiquitous politics prevalent in large educational institutions plus general fear of the unknown. As Wayne points out, derivative works must also be free so even if a company were to commercialise an OER there's extraordinary downward pressure on price because it's share-alike. Commercialisation can really benefit the user - e.g. I might be very happy to pay a company for quality type-setting, binding and a hardcover or simply for having edited it or extended it so that it is fit for purpose for my needs. But the commercial entity can hardly exploit that opportunity as I'd simply commission someone else to do the editing and binding. Here's an example, we've created an OER course on employment law. It's designed for 100 hours of learning in a tertiary education environment. 100 hours of learning is not what a company wants their employees to have, more like 2-6 hrs. I'm more than happy that a private firm distills the OER package we created so that it is fit for purpose and that they receive a fee for their time. More people have access to the learning and the multiplier effect kicks in - i.e. the economy benefits.

Reuse is one of the fundamental reasons behind OERS so any barriers to reuse must be minimised.

3.9.1.14 14. Wayne Mackintosh - 9th, 2007 at 11:20 pm

Hi Richard,

You have raised key issues. On the one hand commercial publishing has done a sterling job of improving the quality and peer review of published texts not to mention widening the distribution channels for academic texts where Universities are not geared up to support this value-add to the model.

Why would we want to constrain new economic models that could widen access and distribution channels of free content? After all the user can decide whether they want to purchase a hard cover bound text when

the source version is freely available?

I won't go down the MDG route - but one of our prime objectives is to reduce poverty. What rights do we have as authors of OERs to deny a small entrepreneur in the developing world the right to earn a living from free content? Opponents to this argument would cite the CC developing world license in defense, which I would argue is discrimination ;-)

You're absolutely right - the multiplier effect is the sustainability model for free content!

Cheers

3.9.1.15 15. opencontent - April 11th, 2007 at 8:58 am

David Wiley from Utah State University here. I've enjoyed this thread immensely and have posted (what started out as a long reply) on my own blog at <http://opencontent.org/blog/archives/325>³⁴ - I hope you will find time to give it a quick read.

3.9.1.16 16. Ken Udas - April 11th, 2007 at 9:16 am

David, Thank you very much for linking to your thoughts on the dialog that is developing in the comments above. I think that the focus of your comment is really spot-on. Any new concept and activity will evolve and hopefully improve in concept and execution as we learn from experience and dialog critically. That said, the move forward will be more rapid, thoughtful, inclusive, and sustainable if we are embracing in our questioning and critique and appreciative of each other's contributions. This is a building process. I hope that our dialog is developing in that spirit. There is no question that we are all building on the efforts of the institutions that took early steps. Because of the diversity of licenses that are being used in a number of successful OCW projects, we have the opportunity to test our notions about the impact of the NC license feature.

Ken

3.9.1.17 17. PhilippSchmidt - April 11th, 2007 at 10:14 am

Thanks for a fascinating discussion, and sorry for jumping in so very late . . .

Richard, I really liked your short summary of why NC does not make sense. I have been arguing this point for a long time, but don't think I have been able to explain it as well as you do. Thanks!

A few points that were brought up seem related to the perspective we are considering, either that of the teacher/lecturer or that of the students. I find that once we start looking towards students as the sources for content and innovation in education, some things we are still struggling with might start to fall into place more naturally.

- Wayne said something about still having to crack the nut of getting teachers to remix lectures

I propose changing the nutcracker, and getting students to remix the lecture content instead (or in addition rather). They are doing this already on flickr and myspace and facebook - as was pointed out - and the social feedback mechanisms seem to be more powerful incentives for students than for lecturers.

- The users of our software want quizzes, tests, etc.

This is true, only if you ask the lecturers. I would argue that we have not seen a great deal of innovation in teaching and learning, because we have relied on the lecturers to innovate - and they lacked the right incentives. If we want innovation, I think we need to turn to the students. A comparison of free software development models also makes a lot more sense if you include students as "developers" of open education.

A friend and I just started blogging about applying some of the incentive mechanisms from software to other fields. Have a look for the grumpy old guys from the muppet show over at icommons.org³⁵ if you are interested, and join the conversation.

/Philipp (Freecourseware Project, University of the Western Cape)

³⁴<http://opencontent.org/blog/archives/325>

³⁵<http://icommons.org/>

3.9.1.18 18. richardwyles - 11th, 2007 at 11:20 pm

Hi David, I've read your post and sure thing, I think all of us in this space are very much aware of the personal effort that goes into this. But I don't think anyone is detracting from that. I'll rebut the notion that anyone is being insulting of those efforts. Challenging perhaps, but it's not an emotive response. In fact I think "ubiquitous politics prevalent in large educational institutions plus general fear of the unknown" is the way I described just what you're talking about. We're all working in contexts where we're trying to move towards openness but have various constraints to overcome. I really like your header "iterating towards openness" as that sums it up nicely.

So I think that characterising this as negativity is incorrect. We are having a dialogue on an important issue. Constructive debate is a way for each of us to find some answers and I've always found robust discussion as one of the faster ways for me to learn. And even if I agree with Ken or Wayne then it's often more fun to engage in debate. Wayne's been on my case for years that I use Windows on a daily basis - arrgh, it's out in the open now ;-) - but due to our IT department I have to add...

3.9.1.19 19. richardwyles - April 11th, 2007 at 11:30 pm

Hi Philipp, I remember those guys from the Muppets - they would end up arguing away until each had completely swapped their positions - best skit on the show. The students as creators is definitely a rich avenue for OERs and you can imagine how rapidly the quality would improve if each course is an iterative improvement on the last and creating the course materials is part of the assessment.

3.9.1.20 20. Wayne Mackintosh - 12th, 2007 at 12:34 am

Philip wrote: >

This is why I like the wiki model so much :-). The openness of the authoring model means that we can conflate the functions of teaching and learners. Learners can become teachers by authoring new content. Teachers can become learners by observing what changes learners are making to the content resources they authored.

So I'm in total agreement with your recommendations!

3.9.1.21 21. Wayne Mackintosh - April 12th, 2007 at 1:01 am

In response to David's post

David, you make a compelling and valid point:

"When an institution enters a new world (like the world of open educational resources) we can and should expect the early adopters to move in baby steps, dipping their toes in before diving in head first."

I think this is true of life, and this argument can provide a justification for the proliferation of the NC restriction in many OER projects.

I'd like to respond as an academic. I hold a terminal degree and have spent the majority of my career in the University. I've had the privilege of holding senior management positions in the university sector. I also know that you are a pioneer of the "open content" movement - pushing the envelope around free content long before the concept of "Open Education Resources" was coined by that UNESCO meeting. (I was reading your stuff long before you attained guru status :-)) My point being - Why is it that we as academics "get" the problems of the NC restriction when other academics don't?

Let's face it - the university is an institution that is endowed with some of the smartest people on the planet. What are the reasons why these smart people don't get the value proposition of free content when our culture of research is built on sharing knowledge? Both of us as researchers stand on the shoulders the

giants that have gone before us. We have no problems sharing knowledge when it comes to research (and attributing our sources) - but we have this aversion to sharing teaching resources. It doesn't add up.

I'm very interested in exploring the reasons why the removal of the NC restriction is such a big step. It doesn't add up with our core values of academic freedom.

mmmmm - another research project?

3.9.1.22 22. Ken Udas - April 12th, 2007 at 8:31 am

Response to Philipp:

I think that you are spot-on. I have been teaching/facilitating online since the mid-90s and have designed each of the classes to be heavily conversational and project-based. With this type of course design, 99% of all content and is generated by the learners during the class experience and all of the learning activities are based on learner contributions. Ignoring what learners create would be an enormous missed opportunity.

So, does this speak to some learning design and class facilitation principles, techniques, and patterns that promote the generation of usable and reusable content and learning activities?

3.9.1.23 23. Ken Udas - April 12th, 2007 at 10:38 am

Response to David/opencontent:

Like Richard, I think that there is benefit in hearty and respectful exchange of opinions, but I am really turning to the likes of Rice, USU, MIT, etc. for guidance as early adopters, innovators, and thoughtful practitioners. Although we are just starting to dabble in OER/OCW at Penn State, I believe that there is an enormous watershed of interest in OERs. In fact, I know that there is. My concern is that we turn uncritically to the larger community and just do what the early adopters did. After all, if it is good enough for MIT, USU, CMU, and Tufts surely it is good enough for us. I am in the process of generating a dialog around the importance of:

- Adopting a standard CC license instead of creating one that is unique to Penn State.
- Adopting a license that is as open as possible and does not restrict commercial use.
- Considering how we design materials in such a way that they are most useful to the broadest audience possible (level of granularity, ease of localization, bandwidth challenges, etc.)
- Thinking about open educational resources that are not courseware.

In any event, it is critical for me, and I think other later adopters, to be able to get insights into what is working well and what is not working so well. How we can improve on what is being done, how to avoid some of the pit falls, and how to take advantage of lessons learned. In doing so we are turning to the early adopters in the hopes that they will be reflective and transparent. As Wayne mentions above, it is part of the tradition of standing on the shoulders of giants.

3.9.1.24 24. Wayne Mackintosh - April 14th, 2007 at 1:08 am

Ken, I must compliment Penn State's reflective approach based on solid academic tradition, before taking a substantive decision like licensing of OERs. Your institution has the benefit of hindsight which the early pioneers did not have at their disposal.

While I'm not an expert on the US Higher Education system - I think that the dialog around this issues you have listed are well aligned with the original mission of the Land Grant universities. The critical question is closely linked to what it means to be a Land Grant university in the knowledge society - particularly with the rapid growth in free content made possible by Web 2.0 technologies.

It's by no means an easy decision - but who said leadership would be easy?

Have enjoyed the interactions generated by these replies which confirms that we're busy with important work!

Cheers

3.9.1.25 25. Ken Udas - 14th, 2007 at 12:27 pm

This was a great exchange. Thank you Wayne and to thanks to everybody who contributed and who have been following along. Stay tuned for the summary, which will be posted soon.

Index of Keywords and Terms

Keywords are listed by the section with that keyword (page numbers are in parentheses). Keywords do not necessarily appear in the text of the page. They are merely associated with that section. *Ex.* apples, § 1.1 (1) **Terms** are referenced by the page they appear on. *Ex.* apples, 1

- C** Collaborative Learning, § 1(1)
- D** digital inclusion, § 2(9)
- F** Free Libre Open Source Software (FLOSS), § 2(9)
- K** Kim Tucker, § 2(9)
- L** Learning 2.0, § 1(1)
- N** New Zealand, § 3(21)
- O** Open Educational Resources (OER), § 1(1), § 2(9), § 3(21)
Open Source Software (OSS), § 2(9), § 3(21)
OSS and OER in Education Series, § 2(9), § 3(21)
- S** Social Learning, § 1(1)
Social Web Sites, § 1(1)
South Africa, § 3(21)
- W** Wayne MacKintosh, § 3(21)
Web 2.0, § 1(1)

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Collaborative Learning and the Open Educational Resource Movement

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