In this presentation for UNCTAD's Advisory Group on "Developing skills, knowledge and capacities through innovation: E-Learning, M-Learning, cloud-Learning" I outline major forms of open online learning, contrasting between formal and informal learning mechanisms, publishing and community-based production models, and forms of recognition and certification. The audio has a lot of echo (feedback from the other venue) - The transcript of the presntation is available here http://halfanhour.blogspot.ca/2013/12/presentation-to-unctads-advisory-group.html. Presentation by Stephen Downes, United Nations Committee on Trade and Development, Geneva, Switzerland, by Google Hangout, http://unctad.org/en/Pages/MeetingDetails.aspx?meetingid=482

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Access

I'd like to begin with the issue of access. This is not where I usually begin a talk, because the main thing, I have to say, about issues of access is that's, to be outside the scope of the areas that I work in.

But from the perspective of the learner, the online learner, there are two major forms of access that need to be considered. First of all, there is technological access, ranging from power to Internet access, to mobile delivery.

The main thing that, I want to say, there is that there is a very large difference between any sort of access, and all-the-time broadband access and that this degree of access might facilitate a difference in your ability to enjoy and use e-Learning.

As well as digital access, I want to talk about cognitive access, because this is equally a factor in online delivery. In particular, we face issues of, not only literacy, but also, digital literacy, that is, the ability to actually make use of the online learning materials that are made available to you.

As well, people are facing issues finding time to learn. We've discovered in recent offerings of online courses, people started out enthusiastically, but are unable to finish the course because they've run out of time.

As well, there is the idea that, learning is something that needs to be valued. This is something that does not come from the online course, or even the online environment. This is something that is created by the community, the child's parents, or leaders in the community, the idea that learning and scholarships are something to be valued, and something to be pursued.

E-Learning

You're probably familiar with traditional e-Learning. e-Learning looks at the online course, as a course.

What I mean by that is the traditional college/university course. Indeed, e-learning in many respects begins as a set of course tools for web support. That's what the original learning management system was: course outlines and tests and things like that that the instructor could put online.

From this early beginning, they began to put course content online, which typically consisted of a text and perhaps some images and graphics. Only after this, do we move into the idea, of learning design and pedagogy, which is drawn primarily from the field of distance learning, where courses are rounded up as packages, or what we might call program texts, designed to lead the student through a course of instruction.

As e-learning developed in the late 1990s, early 2000s, the online course almost began to resemble a book, where the structure of the book was the structure of the pedagogy, and where course content was contained in small learning objects, which were digital materials of chunked content intended for discovery, reuse, and application in multiple online learning environments.

Web course tools, then became mechanisms for collecting, packaging, and presenting these. The course, as a result, began to resemble a publication. You begin to think in course packages complete with content, learning design, everything you need for an online course.

Massive Open Online Course

The Massive Open Online Course, or MOOC, is a bit of a reaction to this. It is, in many ways, an unbundling of this traditional course design. I'll talk about that as we go along.

Very briefly, what I mean by a Massive Open Online Course, is a course that satisfies each of those four terms. You've heard from Google and others about EdX, and Coursera, and the rest, and I caution that many of these online courses do not satisfy all four of these criteria.

By *massive*, I mean, massive by design, capable of handling large numbers of students, but not necessarily actually reaching them. The idea is to build into the design the elimination of bottlenecks or choke points that would make it difficult to deal with very large numbers of participants.

By *open*, I mean, open across many dimensions. Open, not in the sense of anybody can enroll, but open, in the sense of the content is free and open to use, to reuse, and there aren't limits on the use of the course materials.

Online, obviously means online. That does not mean that all course activity must take place specifically, and only online, but that there are no necessary elements of the course that must be taken offline. Put more plainly, you do not have to show up at a certain university campus, at a certain time and place, in order to pass a course.

By *course*, I don't mean course as in course package, in the sense we've just discussed, but rather course in the sense that it has a start date and end date and a sequence of materials in the middle.

Open Educational Resources

The Massive Open Online Course in the sense should be thought of as a form of Open Educational Resource. This Open Educational Resource is a concept that was identified and named by UNESCO in 2002 or 2003[1]. The idea of an Open Educational Resource is that it's a digital resource that can be used to support learning.

Now, there is some dispute about the *educational* in Open Educational Resource, and we could have a long digression here, but what's important is that, it can be used to support learning. In a sense, any digital resource can be an Open Educational Resource.

As Open Educational Resources have been developed, they've been used to form courseware and this, in the traditional sense that I discussed earlier. An example of that is Open Education Resource University (OERu), created by the Commonwealth of Learning, which is made up of what is called anchor partners, universities from various commonwealth countries.[2]

The idea is that, courses are created as course packages using open educational resources. These course packages are offered by different universities for a credit degree.

They follow what is called the logic model, as created by Jim Davies from the University of Southern Queensland. The idea is that you go through stages of openness, from open content, to open learning design, to open educational activities and classes, through open assessment, and open credentialing.[3]

Now OERU does not go all the way to the top. Credentialing in the OERU level is closed to all but the participating universities, but with the idea of progression (through types of openness) is a well-established model.

Sustainability

With open educational resources comes the concept of sustainability. The concept of sustainability refers to the capacity of those supporting resources to continue to fund the productions and distribution of these resources. Models of sustainability[4] can be broken down to the commercial models and the non-commercial models.

The commercial model includes the end up selling of extended services, the use of the platform for advertising and marketing, or to support a product, or to support a labor force. So, in all of these cases, the resource will be paid for by some commercial entity, and that commercial entity will expect some return on that initial investment.

Non-commercial models include public knowledge such as, the models provided by public broadcasting corporations such as, TVC, BBC and National Public Radio.

They also include the charity model. OECD released a report called "Giving Knowledge for Free"[5], which really depicts OERs as charity. A third model is based on a foundation or the community such as, the Apache Foundation, the Wikipedia foundation and the open source model, where the costs are borne by the community that is interested in releasing the software.

Publications vs Community

Now, in the study of open educational resources, which I did a number of years ago, for OECD, I looked at the different models of openness, and it seemed to me, at that time, and stills seems to me, that the open model of educational resources themselves significantly acts as a sustainability model.

In a sense, there are two ways of producing an educational resource, which we might distinguish: the publications model and the community model.

In the publication model, a contractor is hired, or in some author is engaged, to produce the resource. Sometimes it is a university, sometimes it is commercial publisher, sometimes it is private contracting firm. The idea is that, first the resource is produced, and then it is distributed as a part of a course.

In the community model, the idea is that the community benefits from both the resource and the production of the resource for itself. One example of this is the student produced resources, where students themselves create the resources that will be used in their courses. This is the model that I advocated to the OECD, and forms the basis of the massive open online courses that we have offered.

This is a major difference between the courses we offer, and those produced by Cousera, edX and the rest. These courses use a publisher model of open educational resources, as opposed to a community model open educational resources.

Formal and Informal Learning

This also points to a significant difference in use application, of open online learning. There are many reasons to take a MOOC. And for the purpose of this discussion, I distinguish two major types. First of all learning in order *to know*, and second, learning in order *to do*. These characterize the differences between formal and informal learning.

In formal learning, the course is defined by the content. While in informal learning, the course is defined not by the content, but rather by the desire of the interest of the user in accomplishing some task or some goal external to the course.

So, there are two different definitions of success. In one case, the formal learning case, success is demonstrated by mastery in the material. But in the case of informal learning, success is demonstrated by completing the task.

This creates a different source of support and a different source of authority for each of the two models.

In the formal learning model, support is intended to be derived from the professor, or the institution offering the course, while the community model receives an example of mutual dependence, and indeed, impendence, for support comes from the community that made the task, and the environment in which the person is working.

Now, in the creation of open line courses, this need for support, I would argue, creates one of these bottlenecks that we are trying to avoid with the design mass of open online courses. And there is a lot of talk about the need of the instructor to be present, with the interaction between the student and instructor, or a student and a team of teaching assistants, or whatever.

This contrasts with the community model, where support is distributed across the community of learners. And it is this distribution of the support, which eliminates the bottlenecks that are inherent in the formal courses.

Learning and Performance Support System

The technology and support that completes the provision of delivery of open online courses, that is to say, what I am describing in the sense to the community model, can be described within a rubric of a program that, we in NRC, are undertaking what is called a learning and performance support system. This will be a $19 million, five-year program. This program is divided into five major components.

First of all, *access to resources* or repositories of resources. Here, I refer not to specifically ordinary published materials because that is the model of the formal course. But rather the productions created by the surrounding the student learner.

It also involves the *cloud storage infrastructure*, In most applications of cloud infrastructure in an educational context the student's cloud, is managed by, or is essentially the property of, the institutional host of the course. However, what we are looking at is this cloud infrastructure managed by and operated by the student. And this creates the question of synchronization, across multiple cloud providers.

If you look at that, for example, there are many available cloud providers such Google Drive, Dropbox, Box, Cubby, and the rest. A personal cloud is a method of managing access

to synchronization of their materials in this cloud infrastructure. Also, this cloud infrastructure serves in turn, as a portal for their E-portfolio, or collection of materials that they created.
There's still a lot of discussions with E-portfolio, and the focus here is to manage on personal, rather than institutional basis, on the portfolio. The major components of informal learning, and personal online learning is the *personal learning record* - this could be a whole-talk in itself.
Delivery, need to be enabled in a variety of environments and there's a lot of talk about mobile devices. But, in my perspective, this is one and for many platforms which learning needs to be available. This leads to the concept of the *personal learning assistant*.
In particular, we would speak the idea of projecting learning resources, and projecting learning resources means, making content services available, wherever the person is, whether it be a laptop, desktop, a mobile computer, working with a tool or appliance, working with software system, or any other vehicle. There is a wide range of possible support.
Finally, in the LPSS, or Learning in Performance Support System, is *analytics, competence and assessment*, and this is essentially the application of artificial intelligence, and the pattern recognition to identify the ways in which a person can become competent at some skill or task, and the gap between where they are, and becoming competent.

Options

Finally, I just want to talk about the model of delivering this type of learning. One model is associated with the Udacity model which is to give up and focus on corporate learning. Of more interest is the Coursera option, but it's only part of the way toward the solution.
The Coursera option is essentially first of all, to focus on the provider, as offering a unique experience. But secondly is the promotion of the creation of learning communities. Now, Coursera has set-up a set of physical learn communities around the world. This is based mostly at US Consulates and similar sorts of infrastructure provided by the American Government around the world.[6]
I think, full support of a community-based model of all online learning is to follow what we might call, 'The Triad Model', or "The Host-Provider Framework," Where, the MOOC stands as an independent entity, not belonging to any particular institution, which can be thought of as an event hosted by an online community practice, that start/stops dates and contents in the middle.
Where experts, or people who are in active in the field, make presentation, provides resources, and generally serve as a focus or an attractor to bring people to the event.
The host is the learning community itself. This maybe online. But very often this will be a physically-based community, where a mutual support network is created for people in the community to talk about, and discuss among themselves, to create resources for this online course.
Host communities may be online, or may be community based groups or a combination of both.
The idea in here is that the community brings a part of itself into the community-based open online course. So course becomes, not only a method of propagating and distributing learning, as though it were a publication or a book, but rather an mechanism for sharing and exchanging information and learning, and creating new learning in the model of conversation in the community.
That concludes my talk, I'd be happy to entertain any questions or comments that you may have.
Audience Member: *I don't think you can see me, but I'm particularly interested in books right now, I'm doing a feasibility study for OECD which is examining how as an organization that could use massive online courses for its own knowledge production, examination and so on.*
I have two questions. One, is on your perspective on MOOC aggregators so the course has new densities and so on. Except for the xMOOCs.
Is there, from your standpoint, a comparison to be made between these aggregators and what else are there and read other sort of journal publishers have done, by basically claiming content produced by universities, by researchers and then selling that content to the same universities, and the same institutions libraries? Just to get your perspective on that.

Thinking and listening to my second question, which is, what would be your advice or recommendation where an organization wants to develop, that makes the decision to develop a massive open online course.
Does an organization today, this is a non-profit organization. Does it need the organization or the partnership with a formal learning institution or a higher education institution, in order to deliver on a promise of not to be scaling up and opening up knowledge and learning? That's my second question.
Scaling Up

I'll answer your second question first, because it's easy. The answer is no. What really matters is that the organization is able to engage on the community, that is interested in learning, in some way, shape or form. If it was an organization like OECD for example, which just released its PISA results.[7] Just as an example.
OECD could easily create a MOOC around the results by setting up a series of discussions, five, six, seven discussions like people who are involved in the case study creating online event and then encouraging the creation of community supported resources around that.
And any organization can do this. It doesn't require educational institutions; it requires mostly some technical smarts, and the idea, that contact of creating that resource. In any open online course created this way you can use open-source technology.
We use technology that developed, but you don't need to use that. You should use, for example, WordPress with the BuddyPress plugin, in order to create a community and aggregate content across that community. I can go into that in a lot more detail, but the short answer is that the idea of a PISA MOOC.
It would not be for people to master the material or learn all of the content. It would be a way for people to get together, to explore the idea of these, and to develop their own thoughts and their own ideas around it.
And people would draw from it, different senses, different communities, different learnings and application of that learning.
Publishing
To answer the first question, it's really hard to distinguish between platform, Udacity, Coursera and the like. The model is...and it's interesting the question was phrased in comparison with a publishing model where professors, universities are invited to contribute their material to a publication, which in turn sells them access to their own material.
The difference between this and Coursera or Udacity is that the publishers are selling the content back to the institution, what they are doing is selling access to the platform in which the content is located back in the institutions.
Technically, in a sense, it's not a case of selling the institutional content back to itself. But that might just be accomplished in any case by sleight of hand. My own preference, and people have heard me express this a lot, is for institutions to manage and publish their own content, their own learning content, their own academic content, their public relations content. There are many good reasons for this, and they are mostly significantly, this content for some raw material on open online course, potential raw material maybe in open online courses, created in many different ways.
If the content is made available for free, then it can be re-used by people offering online courses where they're first setting up an open online course and inviting participants to populate that course useful converted materials, simply by linking to it. This greatly reduces the cost of production and greatly facilitates the ease of creating a course, not just by your academic institutions, but by any institutional provider around the world.
One of the ways I like to talk about this, and it's an alternative way of thinking about this, is that the academic content that is produced by professors, and universities, and institutes, and the like, is not content to be learned and retained by the learners or students, but rather becomes the words in a vocabulary that they use in order to communicate with each other.
Instead of sending sentences, in text, to each other, they send content which they refer to and talk about to each other, and very often content which they modify, and recombine or mash up with other content, to each other.
This content becomes the raw material, not just for the production of other courses, but for the conversations that people have among each other. It is for this reason that open

online content is really essential in order to support a community-based model of online learning.
It is for this reason that I found myself, as have many others, butting heads against the publishers, who choose to put a subscription or other barrier in front of this content. What they're doing when they do this, is that they're creating barriers to the conversation that happens between academics and between students with academics and with each other. It makes conversation impossible.
Audience Member: *I have one question, Stephen, from my side. You mentioned something about the personal learning record. Just try to enlighten my mind, because this could be like medical stuff. How do you see, what is your vision about it?*
Personal Learning Records
There's definitely an overlap in the concept between the personal learning record, and the personal health record. One of the important elements here, and I'll start with that, because as I think it characterizes it, is that the personal learning record needs to belong, essentially, to the individual holding the record.
It's not some other institute's record of your learning. It's my record of my learning. This record would need to be able to be supported, or substantiated with reference to individuals, so at least a part of the personal learning record would consist of links to credentials, academic or otherwise, that are held by other institutions.
Much like your wallet contains a driver's license, which is connected to a record in the government department for transportation, certifying that you're able to drive, and contains some insurance record which is connected to an insurance company record, which is a statement of their policy.
What's important here is that, like your wallet, it's personal. You don't show it to people. Other people can't look at it without your permission. You show it only to people that you want to see it.
The other aspect of the personal learning record is that, it contains links, references, and metadata regarding your performance. This would refer directly to evidence of that performance in the form of an e-portfolio or records in academic content service providers, et cetera.
In its widest sense, the personal learning record will keep track of all of the learning that you've done. This is the basis of a lot of analytics that providers of the MOOCs and learning management systems will talk about, where they talk of tracking a student's performance.
The difference between a personal learning record and a platform-based analytics, is that a personal learning record, can extend beyond the limits of the platform.
While a platform, such as an LMS, can only analyze your performance inside the LMS, a personal learning record would look at your work inside the LMS and would look at your work in social networks like Facebook, Twitter, or whatever.
It would look at your work in application programs such as Word, PowerPoint, et cetera. It provides a comprehensive picture of your own personal performance. This is why it's very important that access be restricted and security managed, so that your record remains personal only.
The thing is, this can be used as the basis of what we might call personal analytics, as compared to platform analytics, creating a network of voluntary exchanges of information, about personal performance and academic achievement among a community of learners, to create analytics based on the whole person in comparison with relevant information, to other members of the community, or of other members in the community.
Audience Member: *I don't know if you can answer this question, but you were talking about the difference between formal learning and informal learning. You were talking about the fact that the formal learning part is more about, how do you define success is by people completing the course, the formal course.*
I wonder, because we had someone from Google just before you. We were talking about that, saying that open learning is the news. It seems that people are not really so much interested in getting a certificate of the courses they have done.
I wonder if you had any sense of this evolution, or do you know the percentage of...are people interested in this completion course or certification anymore or not?
Because in the UN system, we are very much into the formal learning approach and the very formal certificate approach of credentials, or maybe compliance legislation. We don't have it good so far, sometimes. I wonder what's your knowledge about that.
Credentials

I think, probably the major observation of massive online courses has been that, their completion rates are low, and therefore certificates are offered for completion of the course. The certificate rate is low.
A big part of this is caused by the phenomenon of drop-ins, or tourists as they're sometimes called, people who just look at the course because they're interested in the content of the course, but they don't have the intent of moving from start to finish.
I will say that, the model of learning, where you proceed through course material from start to finish, and complete with some sort of a capstone exercise, such as a test or a presentation or project of some sort, is a very common model in learning.
It's a common model that characterized e-learning for many years. This model is well-known. The difference between MOOCs which follow this model, and traditional online courses is actually pretty minimal, the only difference being that the content available to MOOCs would be openly accessible.
Generally, there tends to be a limit or a restriction on completion or certification. As I mentioned, OERu requires that you enroll at the university to receive the capstone. Coursera has a model where they verify a person's identity for a fee, and that's how you get your certificate there.
I think there is demonstrated interest in obtaining the certificates. It's not the majority of participants, but it's a significant, non-negligible number of participants. I'm thinking of a graph that was drawn by Phil Hill and Michael Feldstein.[8]
Looking at the size of these populations, and as I recall the graph in my mind, it's in the 15 percent range, plus or minus ten percent of people who were interested in the certification.
This is especially the case, among that population that is outside Western Europe and North America, and where there are significant challenges to employment, and where even something like the Coursera certificate, say, would be a significant advantage in obtaining a job.
We do see this and that explains quite reasonably why certificates of completion are of interest to organizations such as UN. Where do I want to go with that?
Community Assessment
From that perspective, I think, Massive Open Online Learning forms a better alternative than the traditional system, but not a dramatically better initiative because the need for certificates faces the same barriers of technological and cognitive access.
It faces the same sort of bottleneck in terms of evaluation and assessment of the credential. The more you attempt to assess a credential, the more time and labor intensive it becomes, and that's a real concern.
Just to put this in context, and to explain partially why, I think that the open community-based model will ultimately be a better alternative, I think we're right at the point where, instead of evaluating learners by capstone exercises or credentials, we'll be able to evaluate people according to their portfolios, and according their performance in open online networks.
You see this in communities like the open-source software community already, where people are able to demonstrate their leadership capabilities and their software capabilities in an open community and can obtain employment, by that means.
This is true for Google... we might have mentioned that Google, in particular, has been known to hire people directly out of open source projects, for example people who created Mozilla foundation on the basis of the work that they've done in this environment.[9]
With intelligent analytics, and with learning and performance data shared in an open online environment, it will be possible to create a learning profile of people, drawing on their personal learning record, such that we no longer need these credentials offered by an institution, but rather only need the actual evidence of their performance, in order to create a comprehensive picture.
I think, we're looking at a coming sea change in the nature of assessment and certification. It's not here yet. It's going to take five or ten years, but I think it's definitely coming.
Audience Member: *I don't see any more questions from the floor, but just one sentence can sum up your vision or... I know it's hard, but just so we can go through.*
One Sentence

I think that the future of education is in people working communities to provide their own learning, as opposed to having their learning provided for them by publishers or institutions. How's that?

Audience Member: I just have one comment, which concerns the ISO norms in terms of accreditation. We haven't been mentioning it and I'm wondering if someone could. We are not very aware of this inside of the WFP. We know that this has been an initiative. What is actually your experience concerning this?

Standardization

Stephen: I now know, what you mean by ISO. I would say ISO. It points to, even if you're using the same language, the problem of translation.

There's a lot about ISO I don't know. I'm familiar with the ISO metadata for learning, I forget the exact...it's LMR. I forget what the "R" stands for - Metadata for learning resources, which is a classification, a categorization scheme.[10]

I would not be surprised if there were other ISO standards that I'm not aware of, but I'm going to be careful and say, I don't know the full range of ISO standards with respect to learning, because ISO is just so huge. It's a question of standardization of quality in general. It's expressed not only by ISO but also, for example, in initiatives like Common Core in the United States and even to some degree in the PISA evaluations which are setting baselines for math, language and science learning (Interestingly, not art, geography, or history, but that's a different issue as well).

It does point to the danger of standardization, and the danger is probably most characterized by the difference between formal and informal learning.

That is, this standardization presumes that everybody has the same objectives, the same understanding of quality, the same concept of mind. That's true of formal learning but it's less true of informal learning.

Standardization implies in many respects, that there is a definition of quality that can be created for a particular set of resources or a particular domain, and again, that's not necessarily going to be the case in informal learning.

That is not to say that, there is no distinction between quality and lack of quality, but rather that quality is a relative property. Quality is in many ways in the eyes of the beholder, and in the case of education, the beholder includes not only the student but the education provider and the society in which the education is provided. If we look at the different values of different societies, we see that there's going to be a very different understanding of quality.

In my own case, I like to distinguish for the purpose of standardization between *syntactic* and*semantic* activities.

Syntactic activities refer to the mechanics of the interaction. We think of plumbing. Think of the pipe fitting, the size of pipes, the gauge of the thread, and material used in pipes. These standards are made, in order to make sure that pipes fit together with each other. Electricity has standards regarding wattage, amps, the gauge of wires, the width of the light bulb that screw into the light socket, et cetera. This is to make sure the light bulb fits into the light socket. The standards do not address what you run through the pipes, mostly. It certainly does not address what you use the water for, what you use the liquid for. The standards do not address what you're going to light with the light that you're lighting. In cases of meaning, value, content, et cetera. I don't think that they can apply standards.

In cases where you're dealing with semantic elements of learning, I think that it would be a mistake to establish standards, because each person approaches semantics from a slightly different perspective. That, I think, is the role of standardization, where can I identify my syntax mechanism for interaction.

I think, they're really important, but where we're looking at communicating values, I think, we need to look at other non-standardized approaches. It would be a community kind of approach where these things are determined as a result of interaction among people operating in and information network, and that's a short version of a very long concept.

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[1] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/

[2] http://wikieducator.org/OERu
[3] http://wikieducator.org/OERu/Logic_model
[4] http://www.oecd.org/edu/ceri/36781698.pdf
[5]http://www.oecd.org/edu/ceri/givingknowledgeforfreetheemergenceofopeneducational resources.htm
[6] http://www.downes.ca/post/61316
[7] http://www.oecd.org/pisa/keyfindings/pisa-2012-results.htm
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[10] http://en.wikipedia.org/wiki/ISO/IEC_19788

Security risks and protection in online learning: A survey
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http://www.downes.ca/cgi-bin/page.cgi?post=61528
Interesting results from a fairly extensive literature and blog articles survey: "while scholars have identified diverse security risks and have proposed solutions to mitigate the security threats in online learning, bloggers have not discussed security in online learning with great frequency. The differences shown in the survey results generated by the two different methods confirm that online learning providers and practitioners have not considered security as a top priority." Note especially (in the 'reserach trends' section) the discussion regarding Personal Learning Environments (PLEs) and security. "A one-stop solution that is not dependent on a series of characters but on a technology, which is unique and can only be possessed by a specific individual, is needed for PLE."
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61528
Direct Link:
http://www.irrodl.org/index.php/irrodl/article/view/1632

Security Risks and Protection in Online Learning: A Survey


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Abstract

This paper describes a survey of online learning which attempts to determine online learning providers' awareness of potential security risks and the protection measures that will diminish them. The authors use a combination of two methods: blog mining and a traditional literature search. The findings indicate that, while scholars have identified diverse security risks and have proposed solutions to mitigate the security threats in online learning, bloggers have not discussed security in online learning with great frequency. The differences shown in the survey results generated by the two different methods confirm that online learning providers and practitioners have not considered security as a top priority. The paper also discusses the next generation of an online learning system: a safer personal learning environment which requires a one-stop solution for authentication, assures the security of online assessments, and balances security and usability.

Keywords: Online learning; security; risk; threat; protection; e-learning

Introduction

Due to the development of the Internet, more and more people are taking online courses. According to a recent SLOAN-C annual report (2011), a survey conducted in 2011 among 4,523 degree-granting institutions of higher education in the United States reveals that over 6.1 million students were taking at least one online course during the fall 2010 term and 31% of current higher education students have taken at least one course online. Furthermore, 65% of higher education institutions now say that online learning is a critical part of their long-term strategy (SLOAN-C, 2011; Floyd, Schultz, & Fulton, 2012). Meanwhile, in the business world, numerous online courses for job and skill training are offered, to allow professionals to increase their competency and to upgrade their skills (Oncu & Cakir, 2011).

Online learning is "a type of delivery method used in distance education that allows synchronous and asynchronous exchanges of resource over a communication network" (Khan, 1998). It uses content repositories to store content and uses Web-based technologies to help learners interact with instructors and with other learners (Sasikumar, 2013). For example, a number of Web 2.0 tools such as blogs, podcasting, and wikis have been widely used in online learning to facilitate learning, collaboration, and knowledge sharing (Zuev, 2012). Newer web-based technologies such as social media have inspired educators to think differently about the ways in which learning occurs (Neville & Heavin, 2013) because the social media allow learners to create their own content freely and to form learning communities as the media support collaboration among learners and teachers (Redecker, Ala-Mutka, & Punie, 2010). More recently, massive open online courses (MOOCs) have received a lot of attention among institutions of higher education across the world (Meyer & Zhu, 2013); they are expected to change the learning landscape of higher education during the next decade.

As an Internet-based learning method, online learning depends on the Internet for its execution (Alwi & Fan, 2010). However, there are any number of illegal activities and security threats taking place on the Internet. Consequently, the e-learning environment is inevitably exposed to constant security threats, risks, and attacks. Unfortunately, many educational institutions are rushing into adopting online learning management systems without careful planning and without a thorough understanding of the security aspects of online learning (Alwi & Fan, 2010). A recent survey conducted by Campus Computing (campuscomputing.net) and WCET (wcet.info) found that almost 88% of the surveyed institutions have adopted a learning management system (LMS) as their medium for offering online courses.

In online learning, security means that "learning resources are available and unimpaired to all authorized users when they are needed" (Adams & Blandford, 2003). Since online learning takes place via the Internet, every element in an online learning system can be a potential target of hacking or attacks. This may lead to unauthorized modification and/or destruction of educational assets (Zuev, 2012). Online learning must consider the inherent security risks on the Internet, such as identity theft, impersonation, and inadequate authentication (Ayodele, Shoniregun, & Akmayeva, 2011). Online learning systems have attracted the attention of cybercriminals who thrive on their ability to hack into such systems. The risk is great; as the functionalities and features of online learning systems become more complex, online learning is increasingly exposed to security threats (Alwi & Fan, 2010).

In response to increasing threats, researchers have developed a number of countermeasures and solutions to improve security in online learning. The purpose of this paper is to synthesize the related discussions in the literature, to provide an in-depth review of the security aspects of online learning, and to identify the future trends and challenges to security in online learning. Currently, the discussion of security risks of online learning is disparate, fragmented, and distributed among different outlets such as academic articles, white papers, educational reports, and news articles. This paper hopes to coordinate this information and to aid administrators and providers of online learning and online learning systems to understand the state of the art in this fast-moving field. This paper will offer necessary insights and tips so that online learning providers can become proactive and knowledgeable as they mitigate the security risks found in online learning.

Background

Security in online learning refers to protection from malicious or accidental misuse of resources in online learning (Adams & Blandford, 2003; Neumann, 1994). Previous literature indicates that security has three basic requirements: confidentiality, integrity, and availability (Adams & Blandford, 2003; Serb, Defta, Iacob, & Apetrei, 2013; Weippl & Ebner, 2008). Confidentiality refers to the protecting of sensitive information from being accessed by unauthorized persons (Serb, Defta, Iacob, & Apetrei, 2013; Adams & Blandford, 2003) and the absence of unauthorized disclosure of information (Weippl & Ebner, 2008). Since there are a large number of users in any online learning environment (among them students, visitors, instructors, tutors, and administrators), both a login system and a strong delimitation marking registered users and user groups are needed to safeguard the access to the appropriate user (Serb, Defta, Iacob, & Apetrei, 2013). In order to protect personal information, security safeguards such as authentication and encryption are usually implemented. Integrity, a critical element of security, refers to "the protection of data from intentional or accidental unauthorized changes" (Serb, Defta, Iacob, & Apetrei, 2013) and "the absence of improper system alterations" (Weippl & Ebner, 2008). It assures that "information and data have not been accidentally or maliciously modified or destroyed, and are in accurate, correct, and complete original form" (Raitman, Ngo, Augar, & Zhou, 2005). Access control is the key to maintaining integrity in the online learning environment (Serb, Defta, Iacob, & Apetrei, 2013). Availability means the readiness for correct service (Weippl & Ebner, 2008). It connotes that an online learning system can be accessed by authorized users whenever needed (Serb, Defta, Iacob, & Apetrei, 2013). And it assures that "information and communication resources are readily accessible and reliable in a timely manner by authorized persons" (Raitman, Ngo, Augar, & Zhou, 2005). Availability can mainly be damaged by denial of service and/or loss of data processing capabilities (Serb, Defta, Iacob, & Apetrei, 2013).

According to Graf (2002), applications of information communication technology in online learning can cause many security risks, such as loss of confidentiality and availability, the exposure of critical data, and vandalism of public information services. Usually, online learning security issues have been attributed to users' poor knowledge of security measures, improper behaviors, and lack of education, because security protection mechanisms have been adopted in online learning programs. For example, in almost all institutions, the main online learning providers have installed firewalls and anti-virus software to protect their learning resources (Weippl & Ebner, 2008). Furthermore, they continue to enhance the content and technology in their online learning systems to secure online learning (Alwi & Fan, 2010; Srivastava & Sinha, 2013). But in recent years, even though users' security knowledge and skills have grown, security issues such as information manipulation by outsiders and insiders (by students or insiders) and loss of confidentiality still happen from time to time (Dietinger, 2003).

Security is essential as a means to retain users' trust in the online learning environment because any risk can dramatically affect students' perceptions of a system's reliability and trustworthiness (Adams & Blandford, 2003). As a result, it is crucial to identify the underlying factors that can cause security issues in online learning and to identify the limitations of the current security protection methods. Then, counter-measures can be developed to mitigate the security risks inherent in online learning.

Method

This study adopts two approaches to carrying out the review of security risks and protection in online learning.

First, an extensive literature search was conducted, via academic databases including the Web of Knowledge, the ACM Digital Library, the AACE Digital Library, and a web search engine (Google Scholar), using queries regarding security risks, threats, and protection in online learning. Since security has been a hot topic in the domain of online learning for some time, many articles were discovered. However, the discussions of security in online learning are disparate and fragmented.

Second, blog mining, a novel research method, was employed in this study, in order to further identify security risks and threats in online learning and to explore effective security protection strategies available to online learning. Blogs allow self-motivated bloggers to freely and easily post ideas, individual experiences, and opinions (Rubin, Burkel, & Quan-Haase, 2011; Furukawa, Ishizuka, Matsuo, Ohmukai, & Uchiyama, 2007). As blogs have a "high degree of exophoricity, quotation, brevity, and rapid of content update" (Ulicny, Baclawski, & Magnus, 2007, p. 1), running a blog mining analysis can improve the currency and relevance of this study (Chau & Xu, 2012).

However, blog posts can have an inherent bias. For example, the information on blogs is not peer-reviewed; the authorship of some blog pages is either not clear or unknown; and some blog information might be posted for commercial purposes. Therefore, researchers need to be aware of these drawbacks as they carry out blog mining analysis. Overall, this study combines blog mining with an extensive literature search to overcome these shortcomings, in order to engender a comprehensive understanding of the current state of security risks and protection in online learning.

Below is a description of how the blog mining was conducted.

Step one: Keywords, such as "online learning", " elearning", "distance learning", "security", and "risk", were typed in the advanced search option of Google Blog Search (http://www.google.com/blogsearch), a search tool specially designed to retrieve content from blogs that are freely and publicly available on the Internet. To identify the latest blog content discussing security risks and protection in online learning, the query time period was set from January 01, 2010 to June 20, 2013. Next, the query was performed. During this process, Google filtered similar blog posts first and then returned 312 posts that were relevant to the keywords.

To track Internet users' search interests regarding "online learning security" in recent years, we applied Google Trends, a web-based search tool that provides the frequency of some specific search terms or keywords queried over a specific period of time. The result generated by Google Trends (see Figure 1) indicated that although the search frequency of online learning security has fluctuated in a narrow range since 2010, the overall attention paid to it has not changed much. This was consistent with the result we got via a Google Blog search.

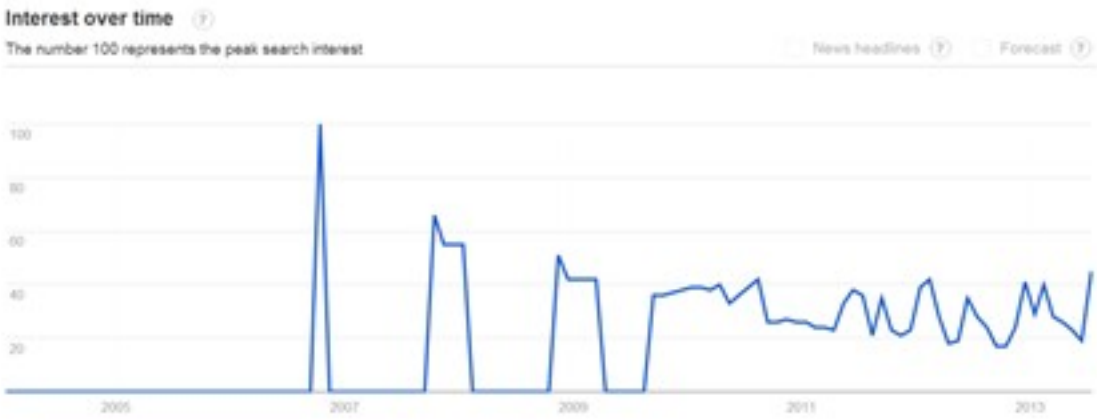

Figure 1. Search frequency of "online learning security" shown by Google Trends.

Step two: The authors read through each page of the 312 blogs generated, removed 62 irrelevant and repetitive posts, and saved the content of the rest of the posts in a single Word document as the sample data set. The sample data set provided a glimpse into the ongoing concerns and discussion regarding security risks and protection in online learning.

Step three: A concept analysis and mapping (CAAM) technique was applied to the data by loading the data file into a special CAAM software tool called Leximancer (http://www.leximancer.com), which extracted and classified the key concepts and themes in the data, and further identified the patterns and the relationships between concepts and themes. Leximancer has been adopted in quite a few studies in recent years (Cretchley, Rooney, & Gallois, 2010; Smith & Humphreys, 2006; Watson, Smith, & Watter, 2005). The Leximancer system is "a method for transforming lexical co-occurrence information from natural language into semantic patterns in an unsupervised manner" (Watson, Smith, & Watter, 2005). It uses word frequency and co-occurrence data to identify which concepts (words that

occur very frequently) exist in a set of texts (Cretchley, Rooney, & Gallois, 2010). The technology behind the system is based on Bayesian theory, which argues that fragmented information can be used to predict what happens in a system (Watson, Smith, & Watter, 2005). Cretchley, Rooney, and Gallois (2010) describe in detail the way in which Leximancer works:

The software includes an interactive concept-mapping facility, which provides an overview of the conceptual structure of the data set that assists the researcher in interpretation. Concepts that co-occur often within the same two-sentence coding block attract one another strongly when the map is clustered, so that similar concepts tend to settle together in close proximity. Clusters of concepts are grouped by theme circles to summarize the main ideas in particular clusters. Each theme is named after the most prominent concept in that group, which is also indicated by the largest dot in the theme cluster. (p. 319)

Figure 2 is a screenshot of the interface of Leximancer 4.0. The map in the middle indicates the importance of the concepts. Red is the most important, followed by orange and so on, according to the color wheel.

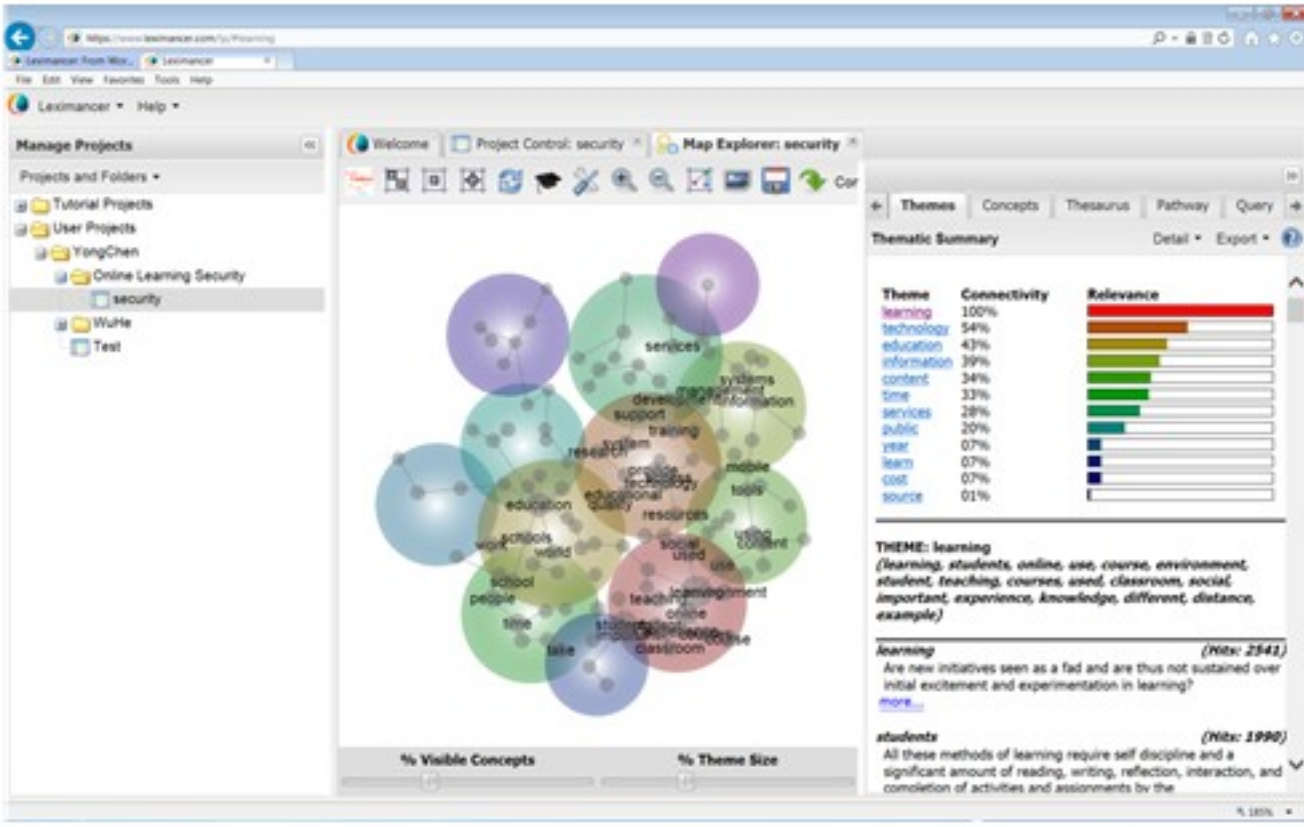

Figure 2. A screenshot of the interface of Leximancer 4.0.

Results

According to an extensive literature search via academic databases and Google Scholar, online learning faces various security risks (shown in Table 1), which mainly come from external intruders.

Table 1

Security Risks and Protection Measures in Online Learning

Security risks	Protection measures
• ARP cache poisoning and MITM attack • Brute force attack • Cross-Site Request Forgery (CSRF) • Cross Site Scripting (XSS) • Denial of Service (Dos) • IP spoofing • Masquerade • Rootkits • SQL Injection • Session Hijacking • Session Prediction • Stack-smashing attacks (Serb, Defta, Iacob, & Apetrei, 2013; Costinela-Luminita & Nicoleta-Magdalena, 2012; Barik & Karforma, 2012; Srivastava & Sinha, 2013)	• Installing firewalls and ant virus software (Weippl & E 2008) • Implementing Security Management (ISM) (Adams & Blandford, 2003 Alwi & Fan, 2010) • Improving authentication, authorization, confidential and accountability (Cardenas & Sanchez, 2005 Agulla, Rifon, Castro, & Ma 2008) • Using digital right manage and cryptography (Barik & Karforma, 2012) • Training security professio (Srivastava & Sinha, 2013)

To mitigate these risks, scholars have offered quite a few protection proposals (shown in Table 1). In contrast, in the concept map generated by Leximancer, neither the risks nor the protection measures can be easily identified. Figure 3 shows the concept map that Leximancer generated after the blog data was loaded. The large circles represent the clusters of concepts and the dots represent the main concepts. Leximancer can generate many concept terms using its text analytics algorithms. For our study, those clusters and concepts that appear with the highest frequency are listed in Table 2. It should be noted that compared with Table 1, Table 2 shows quite different content.

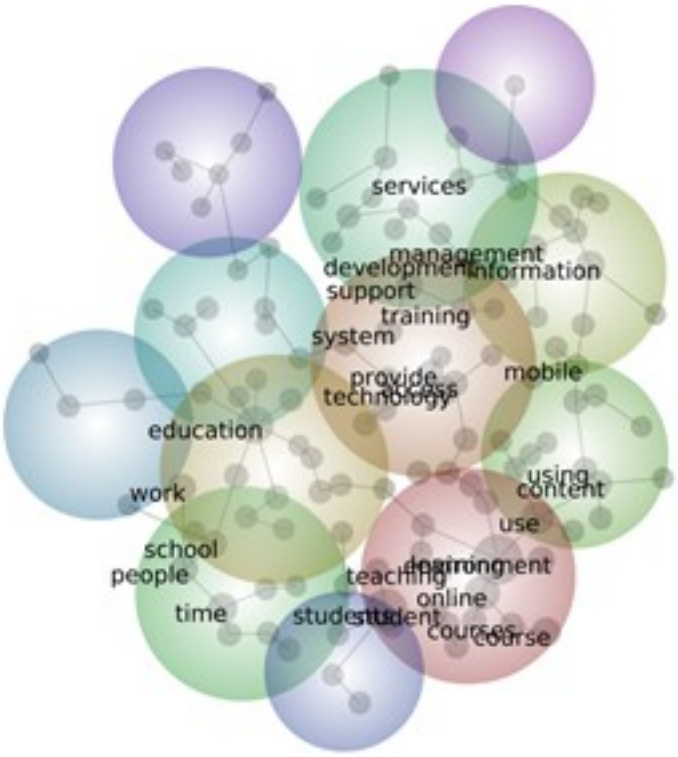

Figure 3. An example of the concept map generated by Leximancer with the sa
data.

Table 2

Cluster of Concepts Associated with Security in Online Learning in Blog Posts

Cluster of concepts	Concept
Learning	learning, students, online, use, course, environment, teaching, courses, used, classroom, social, important, experience, knowledge, different, distance, example, virtual
Technology	technology, support, system, development, access, training, provide, research, resources, educational, quality, skills, institutions, developed
Education	education, work, world, schools, community, higher, better, program, become, life, group, programs, makir
Information	information, management, mobile, systems, software data, design, based, web, include, applications, performance, network, provides
Content	content, using, tools, available, process, technologies, learning, digital, level, computer, communication, off assessment

Discussion

Based on our extensive literature search and blog mining, we would like to provide a more detailed discussion on the causes of security threats, security protection measures, and the status of existing security protection for online learning.

Causes of Security Threats

Security threats in online learning can be examined from two aspects: the user side and the management side. As far as the user side is concerned, emerging ICT applications and imprudent human behavior are the main causes that lead to security issues in online learning. Besides, of the security risks inherent in the Internet, the development of new learning technologies such as Web 2.0 and social media have allowed for many new security breaches and a much larger security impact (Adams & Blandford, 2003; He, 2012). The amount of malicious content and the number of cyber-attacks on these new Web applications is rapidly increasing in both frequency and sophistication. Nowadays, many instructors are using social media sites such as Tumblr, Facebook, Wikis, online forums, and Twitter to support collaborative learning in their online courses (He, 2011; Camarero, Rodríguez, & José, 2012; Patel et al., 2012). However, for unwary instructors and students, these social media sites pose a variety of serious security risks and threats. For example, as a collaborative learning environment, a wiki also becomes a ripe environment for hacking, deception, abuse, and misuse (Patel et al., 2012). Personal data posted on social media sites can be misused in many ways (e.g., for virtual insult or, worse, for financial gain). Furthermore, recent studies show that social media sites are more likely to be used for delivering malware than were previously popular methods of email delivery (Kaspersky, 2009; He, 2013).

Other scholars analyze security issues from the standpoint of the user. For example, Adams and Blandford (2003) argue that threats to online learning security are caused by two main reasons: 1) The security mechanisms used in online learning programs lack usability; and/or 2) security discipline is not user-centered and therefore can lead the user to overlook serious security risks. They point out that

the need-to-know principle (restricting information only to those who need to know) coupled with the unwillingness of security departments to know their users can cause a low usability of security mechanisms. Due to the lack of usability, many online learning systems do not provide users with adequate feedback or with the control rights that would allow them to protect their data (Adams & Blandford, 2003). Furthermore, poor user-centered design of security mechanisms and policy can contribute to insecurity and to users' low motivation to seek security (Adams & Sasse, 1999).

From the perspective of management, online learning providers have made some mistakes. In the domain of online learning, threats not only come from outsiders, but also from insiders (Alwi & Fan, 2010). Many scholars argue that security risks are caused by online learning providers' underdeveloped security policies and immature security measures. For instance, Serb, Defta, Iacob, and Apetrei (2013) note that although more people are currently taking online courses, the security risks inherent in online learning have not been seriously taken into account in the actual educational context. Alwi and Fan (2010) point out that many online learning providers rush into adopting information communication technology without fully understanding the related security concerns. Yao and Ji (2011) note that online learning system designers consider the quality of online course content a considerably bigger issue than the security of their online systems. Furthermore, Weippl and Ebner (2008) indicate that even though almost all institutions have firewalls and anti-virus software to protect their campus resources, they often fail to perform adequate information system security management. Unfortunately, content and technology are still the focuses of online learning (Srivastava & Sinha, 2013). We feel that more attention should be put on the security aspect of online learning. In fact, security is very important for online learning because lacking security in online learning will cause a number of serious problems. For example, as Adams and Blandford (2003) point out, any security risk in online learning can dramatically affect students' perception of reliability and trustworthiness about learning via the Internet. As such, online learning will be less attractive and the development of online learning will be hindered. In addition, ICT applications make user authentication a big challenge for student assessment in online learning. When assessing students' asignments, as Alwi and Fan (2010) argue, it is very hard to verify whether an assignment is completed and/or submited by a valid student. If student assessment is not conducted correctly, the quality of online learning will be harmed greatly.

Security Protection Measures

Scholars have discussed security protection from the user side and management side as well. From the user side, protection motivation theory (PMT), a theory originally from social psychology, is introduced into the field of information system security. Based on this theory, information is perceived and evaluated, and then provides supports for users to take actions (Crossler, 2010). This theory explains the cognitive mediating process and coping modes when users encounter information sources. The PMT theory is helpful for understanding security protection measures adopted by online learning users.

From the management side, general deterrence theory (GDT), a theory from criminal justice, is adopted by information system security scholars to explain how security countermeasures can increase the perceptions of members in an organization regarding the severity and certainty of punishment for any misuse of information (Straub, 1990).

Security policies and mechanisms in online learning must support authentication, authorization, confidentiality, and accountability (Cardenas & Sanchez, 2005; Agulla, Rifon, Castro, & Mateo, 2008). Authentication refers to the validation of a person's identity before the access is assigned. Authorization defines what rights and services a person can access after the authentication process is passed. Confidentiality means that some specific information or data cannot be disclosed to anyone who is not authorized. Accountability refers to the methodology by which users' resource consumption information is collected for billing, auditing, and capacity-planning purposes (Song, Lee, & Nam, 2013).

To mitigate security threats and risks in online learning, researchers have proposed many remedies from a variety of points of view. For example, Alwi and Fan (2010) propose information security management (ISM) for online learning providers, in order to build an effective security architecture that can fight existing and emerging information security threats. They argue that ISM should include policies, process, procedures, organizational structures, and software and hardware functions, in order

to enhance the execution of security measures. Furnell and Karweni (2001) depict a framework that includes five aspects: 1) authentication and accountability; 2) access control; 3) protection of communications; 4) non-repudiation issues; 5) learning resource provider server protection. Srivastava and Sinha (2013) highly recommend that information security professionals improve their security knowledge and skills by using the Virtual Training Environment (VTE), a web-based knowledge library launched by the Carnegie Mellon Software Engineering Institute.

Security Protection Status

By comparing the results from the two research methods (Table 1 and Table 2), it is obvious that security is not a prime focus of blog posts discussing online learning, even though the topic has attracted much attention in the academic domain. Given the analysis of the causes of security risks in online learning, security is not at the top of the priority list in distance learning providers' hands. As long as a decade ago, Furnell and Karweni (2001) noted, "Security represents an aspect that may not suggest itself as a high priority in an education environment." The differences between the results generated by the two research methods confirm the scholars' conclusions, as mentioned above: The security risks inherent in online learning have not been seriously taken into account in an educational context. It may be that security issues have not caused as much damage in the realm of distance learning as they have in the business world. Since nothing serious about security has yet happened in the realm of online learning, not much attention has been paid to it in blog posts so far.

Research Trends

During the past decade, online learning has quickly grown. It has grown, perhaps, too quickly – too little attention has been paid to its security. Online learning will become more user-centered and more secure with the help of new technologies.

1. Personal Learning Environment and Biometric Authentication

Authentication has been widely adopted in online learning as a tool to improve confidentiality. Generally speaking, there are three ways to authenticate a user: 1) knowledge-based authentication that requires that users provide something that only they know (e.g., type in a password, answer a secret question, or submit a personal identification number); 2) token-based authentication that requires that users show something that only they own (e.g., a key card, a mobile device, or a security token); 3) biometrics that require that users provide something for measurement (e.g., a fingerprint, a palm print, a retinal image, or a face gesture) (Garfinkel & Spfford, 1996; Alotaibi & Argles, 2011). Among these authentication methods, passwords and personal identification numbers (PINs) are most widely used (Adams & Blandford, 2003). As Raitman, Ngo, Augar, and Zhou (2005) note, user logins are the simplest means for providing identity and access services.

The next generation of online learning system is a personal learning environment (PLE), "a learning environment where the student is able to customize his/her learning environment based on pedagogical and personal choices" (Kolas & Staupe, 2007). As a new way of using the web or Web 2.0 for learning, the PLE focuses on the individual and "presents learners with learning resources based on individual interests, education level, attitude and cultural, social and other factors" (Li & Gu, 2009). It is a framework that integrates Web 2.0 and social tools, such as blogs, wikis, Facebook, podcasting, and videocasting, according to the choice of learners (Alotaibi & Argles, 2011; Kompen, Edirisingha, & Mobbs, 2008). As Alotaibi and Argles (2011) point out, the widespread authentication mechanism of username and password is out of date for use in the PLE, because learners have to sign on to multiple systems, each of which may involve a different username and password. As intruders and hackers become smarter and more technologically savvy (Science News, 2002), easy passwords make intrusion very achievable for malicious users, even as long and complex passwords are impractical for learners to remember (Gligor, 1993). According to a survey carried out in Alotaibi and Argles (2011), the average internet user has to remember 15 access control passwords.

Thus, a one-stop solution that is not dependent on a series of characters but on a technology, which is unique and can only be possessed by a specific individual, is needed for PLE. As such, Alotaibi and Argles (2011) have proposed a biometric authentication system, FingerID, which requires a fingerprint

scan and human interaction to utilize a service. Meanwhile, Song, Lee, and Nam (2013) have proposed another method that uses brain wave and eye movement to authenticate users of online learning systems. Biometrics refers to the use of identification mechanisms, such as a fingerprint and retina scan, to certify that a person in front of a computer is indeed the intended person (Sasikumar, 2013). Biometric authentication seems to be the option for the next generation of authentication (Wang, Ge, Zhang, Chen, Xin, & Li, 2013).

2. Security for Online Assessments

As a major component in online learning, online assessments are important, both to ascertain students' progress and because they can be carried out flexibly in different locations and at different times (Reeves, 2000; Meyer & Zhu, 2013). According to a study carried out by King, Guyette, and Piotrowski (2009), 73.6% of students think that it is easier to cheat in an online environment than in a conventional one. Methods of cheating on online assessments include online communication, telecommunication, internet surfing (Rogers, 2006), copying and pasting from online sources (Underwood & Szabo, 2003), obtaining answer keys in an illegitimate way, taking the same assessment several times, and getting unauthorized help (Rowe, 2004).

Other means of cheating on online tests include someone other than the actual student taking the online test and the copying of answers from elsewhere (Sasikumar, 2013). Ndume, Tilya, and Twaakyondo (2008) argue that preventing cheating in online course assessments is much harder than in traditional classrooms and that secure assessment of online courses requires the improvement of system security, the registration of learners with unique identification, and the overall administration of the online assessment. Therefore, improving the security of online learning will improve the security of online assessments, and this should not be neglected. The one-stop security solution for the next generation of online learning needs to assure the security of online assessment, as well.

3. The Goal of Security for Online Learning

Online learning is built on trust, information exchange, and discussion. However, a secure environment can rely on distrust, restricted information flow, and autocratic rules (Adams & Blandford, 2003). These attributes can make online learning and security mutually exclusive concepts. In addition, Weippl and Ebner (2008) indicate that no system can ever be totally secure while still remaining usable. What level of security does online learning need? Needless to say, the goal of security in online learning is definitely not to limit its usability. However, currently, online learning providers are facing a difficult balance, as they try to provide sufficient security to protect online learning resources while not inhibiting the appropriate use of these resources. Maintaining such a balance is challenging due to diversity – the diversity of computers and devices as well as a large number of diverse users (Pendegraft, Rounds, & Stone, 2010). Although this study shows that security is not a top priority for many online learning providers right now, serious efforts are needed to improve the security in online learning. The goal of security for online learning is to maintain the confidentiality, integrity, and availability of the resources in online learning at a certain level while keeping their usability acceptable for learners.

Conclusion

The growing availability of the Internet and the number of diverse end user devices facilitate the demands of online learning. The application of Web 2.0 and MOOCs are heralding a new era in education. Online learning brings with it all of the security risks inherent to the use of the Internet. However, although more people are taking online courses, online learning providers have not been seriously taking security risks into account. Many of them rush into adopting information communication technologies without fully understanding the related security concerns. Scholars have identified diverse security risks and have proposed solutions to mitigate the security threats in online learning. To our surprise, our study found that security is not a hot topic among blog posts which discuss online learning. So far, online learning providers and practitioners have not considered security as a top priority, possibly because few serious security incidents have happened in the realm of online learning. As more and more people are studying online, more attention and efforts are needed from online learning providers and practitioners to prevent possible security breaches in online learning before it is too late.

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Supportive systems for continuous and online professional development

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http://www.downes.ca/cgi-bin/page.cgi?post=61525

Ove Jobring wrote to me responding to my LPSS posting to describe similar work he has been engaged in related to learning and work support. This main link is to a paper (presumably in e-Learning papers, though I note the page design still does not reflect this) describing the concept (direct link to PDF here http://openeducationeuropa.eu/en/download/file/fid/19552, as it's very hard to find on the page). In particular note figure 2, describing differences between e-learning and support systems. Jobring also sent me a link to this proposal presentation http://openeducationeuropa.eu/en/download/file/fid/19552 detailing a project in the area.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61525

Direct Link: http://openeducationeuropa.eu/en/article/Supportive-systems-for-continuous-and-online-professional-development

Due to the development of social media and online environments, the content and form of educational systems change. At the same time, demands on the individual professional to ensure that he or she is continually updated and employable are on the rise. In this article, we develop an alternative to established education and forms of training in the shape of a supportive system. Even today, new forms of social media and online environments constitute supportive systems for individual learning, but could be developed using institutional input. System development, whereby individuals' qualifications can be developed qualitatively and in a sustainable manner, can guide and make things easier for people who are consciously aspiring to enhance their competence and proficiency through informal ways of working in online environments. In the article, we show how such an online system differs from previous educational forms, putting forward an outline of a supportive system. The purpose of the article is to outline the fundamental features of an online system that offers a continuous and supportive process for developing occupational groups' qualifications, whereby qualifications stand for a combination of knowledge, proficiency and competence.

The interwoven individual development processes taking place in an online environment have a special feature, which constitutes an essential prerequisite for developing a supportive system. We highlight four differences between formal educational systems and supportive systems which have to be taken into account in order to design a system rooted in online environments and social media. These differences are: 1) from pre-produced to user-generated content, 2) from individual subject motives to joint qualification interests, 3) from limited duration to continuous and sustainable activity, 4) from subject and thematic areas to a broad perspective on the participants' skills.

On the basis of the four prerequisites, some fundamental features of a supportive system are outlined. The system is based on existing forms of online environment but which are further developed and supported methodically and systematically. A supportive system can consist of a combination of individual PLEs (personal learning environments), which are coordinated via shared online learning communities (OLC) or a PLN (personal learning network). A developed methodology based on circular ways of working supports processes in the various media and works towards progressing the individual's development.

Opening Up | Next Steps for MOOCs and Libraries

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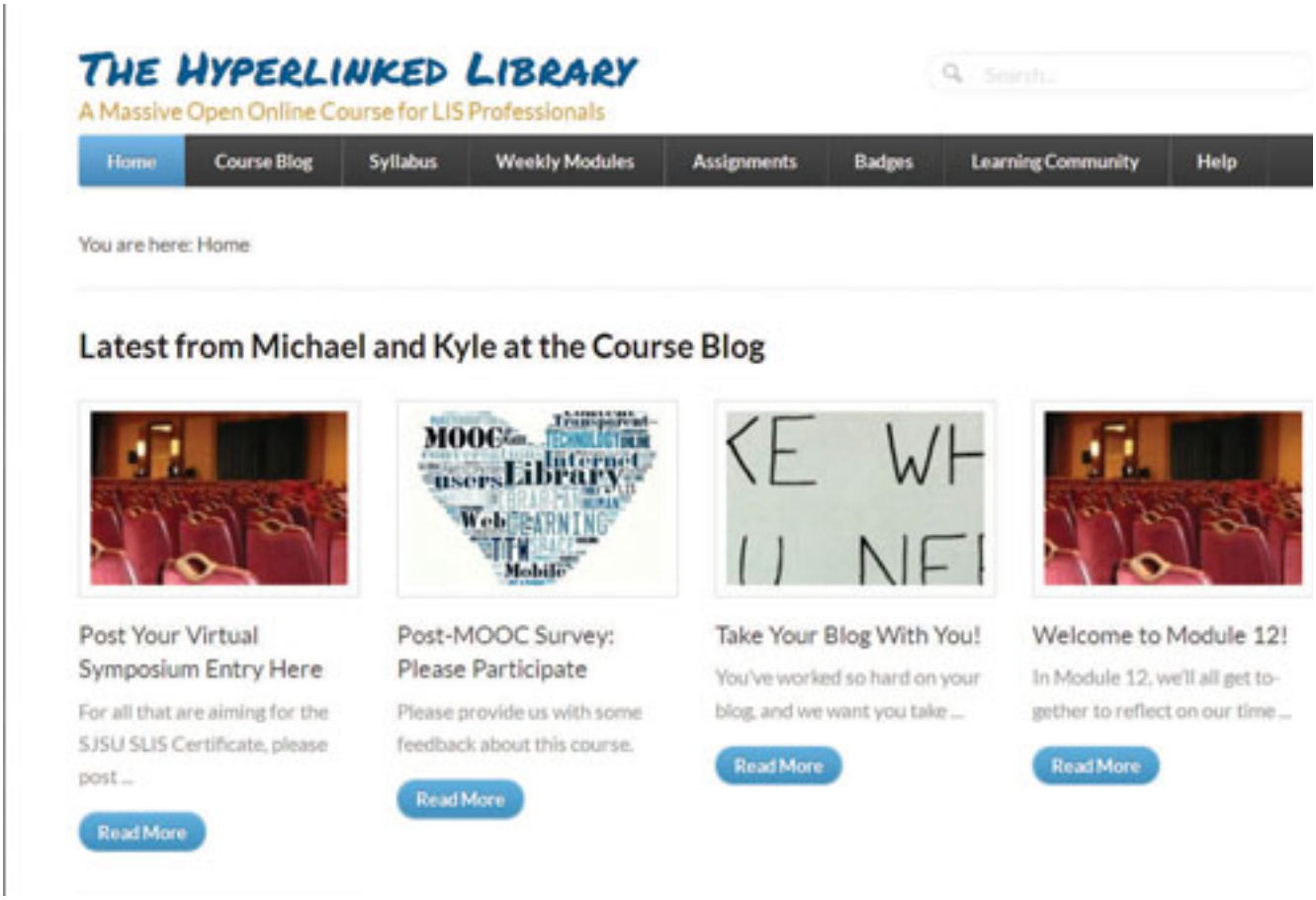
http://www.downes.ca/cgi-bin/page.cgi?post=61524
I've never really looked at libraries as being a useful resource for MOOCs because, ironically, libraries have in the digital age collaborated with closed-access publishers to implement barriers to access to digital materials. But this article poinst to some of the ways libraries support MOOCs. One way is through access to the internet itself. "For MOOC students who may have limited access to the Internet at home, public library resources make online learning a viable option." Other libraries have developed their own MOOCs in order to, for example, "create a bridge between the program and the collection." Of course, this depends on access to the collection, which may be limited. And offering a "guided MOOC," the third option suggested, regresses back into the world of traditional e-learning. What we really don't have in this article is a description of how libraries can make resources available.I'd love to see libraries support MOOCs more by enabling free and open digital access to collections, where students can do more than just look, but take digital copies and use them in their own work. In time, perhaps.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61524
Direct Link:
http://lj.libraryjournal.com/2013/12/digital-content/opening-up/

Opening Up | Next Steps for MOOCs and Libraries

By Ian Chant on December 10, 2013 Leave a Comment

Since *LJ* first covered massive open online courses (MOOC)s in May's "Massive Open Opportunity," they have expanded in several directions in academic, public, and LIS spaces. Below, *LJ* checks in with an academic library offering its own MOOCs instead of just supporting faculty and a public library using a MOOC as the foundation for its adult summer reading programand updates new developments at the intersection of MOOC and librarianship, including the results of two MOOCs that addressed the LIS audience. The following is an update to a story that ran in the print version of *LJ*'s December issue in truncated form.

Since the term was coined five years ago, *massive open online courses*, or MOOCs, have been a subject of much debate in educational circles. In their brief life span, the courses, in which up to many thousands of students can participate, have demonstrated the promise of new technology to democratize education by some and been declared failed experiments by others. MOOC professors, though, say that it's too early to judge how MOOCs perform, and that after just a few years, even those in the know are still figuring out what MOOCs really are and what shape—or shapes—they'll take in the future. Whatever MOOCs look like going forward, though, libraries—in the academic and public sphere alike—will play a key role in helping to determine their design and success. In just the few months since we looked in *LJ* at the MOOC environment ("Massive Open Opportunity," *LJ* 5/1/13), the quickly moving field has evolved significantly.



MOOCS IN THE PUBLIC LIBRARY

Among the biggest contributions libraries can make to the MOOC ecosystem is also one of the simplest—they can provide the Internet connection and resource access that students need to succeed in a MOOC. Chicago Public Library (CPL), where public libraries are looking for ways to increase their worth to the local learning environment by bringing more, tech librarian Michelle Frisque points out that for MOOC students who may have limited access to the Internet at home, public library resources make online learning a viable option. “We are the biggest provider of public technology and wireless access,” says Frisque. “And we have the resources people can use to do the homework in these courses.”

At CPL, Frisque is hoping to one day bring MOOC elements to the library’s One Book, One Chicago program, which encourages all Chicago library patrons to consider the same work together. MOOC-inspired offerings and platforms could help to connect readers and communities to the project. “These long-term programs are great in person,” said Frisque. “But we’d like to create a virtual presence for them as well.”

In the County of Los Angeles Public Library (CoLAPL) system, librarians are already putting those same resources to work. Director Margaret Donellan Todd and her staff saw making the library a center for learning as a key part of their strategic plan going forward.

Having a virtual component was key to that mission, Todd says. To that end, CoLAPL partnered with Gale Cengage to offer patrons access to a wide variety of online classes through the company’s Learn4Life program. Learn4Life focuses on offering adults and professionals access to lessons in skills they never picked up or want to sharpen. Among the offerings available are courses in “warehouse management, sewing, and cooking,” says Todd. “There are courses on serious, academic-type topics and courses for people who just want to learn something new.”

MAKING THEIR OWN MOOCS

Some library systems, such as the New York Public Library (NYPL), have dipped their toes into creating original MOOC content, like the Sinology 101 MOOC developed for NYPL by former reference librarian Raymond Pun (a 2012 *LJ* Mover & Shaker). NYPL's Stephen A. Schwarzman building houses a huge collection of research and scholarship on the history of China, one that Pun wanted to see promoted more effectively to lifelong learners. Presenting at *LJ*'s The Digital Shift virtual event on October 16, Pun said that he created the Sinology 101 MOOC as a way to "create a bridge between the program and the collection."

The MOOC portion of the course complemented an in-person workshop on research techniques, but was taken at students' own pace, allowing them to focus on the subjects in Chinese history they found most interesting. The content presented in the MOOC portion of the course also helped to shape the in-person research workshops Pun oversaw. "I got to spend less time on lectures and more time on hands-on training," says Pun.

The course's MOOC component was taken at students' own paces, allowing them to focus on the subjects in Chinese history they found most interesting while not making too many demands on their time. The content presented in the MOOC portion of the course also helped to shape the in-person research workshops Pun oversaw. "I got to spend less time on lectures and more time on hands-on training," said Pun, making the blend of history-heavy MOOC and personalized research workshop as an experiment in the popular notion of the "flipped classroom," which makes use of online resources for lectures, leaving instructors more time to engage students in practical exercises where they pick up skills rather than learning new facts.

The content creation NYPL got into may be too ambitious for a lot of organizations, though. "We've decided we're not going to create our own content but create partners and host them on our site," Todd says of L.A. County's future MOOC plans. "We're looking at local and community colleges we might be able to work with, as well as developing programs with other county agencies, like the Department of Health and the Department of Children and Family Services."

Getting MOOCs to work for people who just need to hone their skills for their own use, whether it is repairing a car or programming in Python, is surely in line with library missions. And libraries may also be able to take lessons from MOOC-style learning to drive social engagement for existing programs. For MOOCs to live up to their potential, though, they must be turned from a tool for casual continued education to one underserved populations can use for low- or no-cost credits that are accepted by colleges and employers. And that may prove more difficult than it once seemed.

LEARNING FROM LIBRARY MOOCS

David Lankes, a professor at Syracuse University's School of Information Studies (SU iSchool), NY, helped to develop and teach a MOOC titled New Librarianship Master Class. As an experiment in learning how MOOCs could supplement or even replace standard online courses, Lankes's course was split into two sections. Students could take the MOOC more casually, on their own schedule and at their own pace, viewing lectures and completing assignments as suited them from materials that are still available online. But Lankes and his colleagues also offered students the option to take the course for academic credit at Syracuse through a so-called "guided" section of the class that took place this past summer. The guided MOOC featured more hands-on attention from Lankes and the other teachers involved, and students could take it for academic credit SU. "We've always tried to push out

that [from] online classes…you get the same level of interaction with the professors that you would in person," says Lankes. . "We needed to continue that idea in the MOOC. It couldn't be just good luck, you're on your own." Of the 3,000 people who participated in the guided portion of the class, only one took it for credit, performing extra work, including penning a term paper for the course, and paying $3,800 for the credits she, as an SU student, needed for her program. Lankes acknowledges that the cost represented a significant barrier but says that the New Librarianship MOOC was also an experiment meant to "explore different business models and ways of supporting MOOCs," Lankes says.

In the end, only 281 of the 2,405 students who enrolled in Lankes's new librarianship MOOC completed the course and earned a certificate to that effect. While the completion rate wasn't impressive, Lankes says he was surprised by the engagement many students showed—not only in class but in forums outside of it. "I was surprised at how much discussion and support took place outside of the formal class platform… via Twitter, a Facebook group, even in person meetings," says Lankes. That level of engagement inspired him to think about what would happen if he let the course breathe a bit more, saying that if he had it to do over again, he would have expanded the time available for the guided course, rather than trying "to put a semester's worth of content into four weeks."

More than any one trend or style of approaching MOOCs, that sort of experimentation Lankes is engaged in may really be the name of the game when talking about MOOCs today, says Michael Stephens, a professor in the MLS program at San José State University (SJSU), CA, and an *LJ*columnist. Stephens coteaches the Hyperlinked Library MOOC alongside lecturer Kyle Jones. The not-for-credit course is hosted by SJSU but is aimed less at the library science students that Stephens teaches in his smaller, accredited courses and more at midcareer professionals aiming to develop further their skills in using the latest technology in their own libraries.As such, the coursework tends to be less theoretical and framed in more professional terms, including assignment s that librarians can actually use in their own day-to-day work, like developing a social media policy for their institution and briefing their directors on emerging technologies they could put to good use.

In the Hyperlinked Library MOOC, Stephens modified the common MOOC style of watching a video lecture or reading a lesson and then taking a quiz on the covered material. Instead, student work is reviewed by their peers, who offer their thoughts on what's working and where there's room for improvement. Stephens, Jones, and a team of assistants also view the work, but peer evaluation is a huge asset to the structure of the course, Stephens says.While the first course offering hasn't wrapped up quite yet, he Stephens said that more than 100 of the 363 students registered for the course are well on their way to completing the coursework. Like Lankes, he notes some problems with the pacing, a dilemma he attempted to approach by introducing a week-long break in the course to let students catch on assignments without missing new material. While that sort of break can be a luxury for full-time students, when working with professionals with careers outside the classroom, it may be necessary, said Stephens.

And it's not just peers in class that are looking at one another's work. Since the course is open to the public and not protected by a password, anyone can take a look at the ideas being discussed and weigh in on them. "We just did a Q&A in a Google Hangout," says Stephens. "Not only is that going up in the MOOC space, but it's being tweeted and reshared in other places as well." Taking cues from social media not only helps students feel more connected to one another in a MOOC environment, Stephens says, it also makes them more

connected to the world at large, citing instances where the authors of readings for the course have weighed in on assignments regarding their work, much to the delight of students in the course.

The next step, as far as Stephens sees it, is taking MOOCs to even larger audiences, including those in far-flung regions who might most benefit from group learning to which they otherwise may not have access. “Reaching isolated librarians with this type of learning will probably be one of the biggest impact factors of this MOOC,” says Stephens.

As Lankes and Stephens both note, one place where MOOCs have the potential to serve is as small, particularly focused social networks, rather than traditional courses. While those networks may be great places for learning, however, getting college credit or an employer’s approval to participate is another matter.

MAKING MOOCS MEANINGFUL

According to Philipp Schmidt, the cofounder of online education platform Peer 2 Peer University, that sort of learning may be where MOOCs can make the most impact—by helping people learn from one another in a connected environment without worrying about whether that learning is officially recognized by universities. That recognition, Schmidt says, can actually get in the way of education. “Accreditation is the single biggest obstacle to real learning,” Schmidt says. “There’s this idea that learning is only important to get college credit and college degrees. A lot of learning happens after you leave school, by working with other people and starting projects.” Whether accreditation is good or bad, though, experiments in offering credit for MOOC participation are just beginning and are unlikely to scale up soon. And without that boost to the perceived validity of the education they provide, it’s going to be hard for MOOCs to live up to the promise of leveling the playing field for higher education. In the meantime, that may leave scholars and academic libraries in the facilitator role Todd is trying to introduce in Los Angeles County.

At Syracuse, Lankes sees MOOCs as fertile ground for academic libraries and the presses they find themselves frequently partnering with these days. A new breed of MOOC could be as closely connected to the world of publishing as they are to teaching. “Academic presses should be working with scholars and faculty to write and publish not only their next book but their next MOOC as well, Lankes says. The MOOC format, he says, could be a great way to supplement traditional publishing, one that can make research mean more in the world of education by sharing it more effectively.

Despite their much touted promise and oft-cited issues, these courses and communities are still largely in their infancy, and finding out what they’re going to grow into necessarily involves some growing pains. “We need to be more ready to fail,” says Stephens of the ecosystem around MOOCs today. Libraries, both academic and public, are particularly well placed to be part of those experiments, whether in helping to design them or ensuring that people have the chance to participate in them. “Libraries play a central role in the learning ecosystem in their community,” says CPL’s Frisque. “We want to look at making MOOCs a library event where we can bring a sense of personal community that will help keep people engaged.”

The State of Open Access

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http://www.downes.ca/cgi-bin/page.cgi?post=61523
Interview with Peter Suber
http://cyber.law.harvard.edu/%7Epsuber/wiki/Peter_Suber,
Director of the Harvard Open Access Project
https://osc.hul.harvard.edu/, and Elizabeth Silva
http://www.plos.org/staff/elizabeth-silva/, associate
editor at the Public Library of Science (PLOS
http://www.plos.org/). While I would disagree, Silva says
"PLOS is now synonymous with open access publishing." I
think people outside PLOS view open access more widely. But
where there is no dispute is in the value of open access.
Suber says, "The lack of OA slows down research. It
distorts inquiry... It hides results... It limits the
correction of scientific error... It prevents the use of
text and data mining to supplement human analysis with
machine analysis. It hinders the reproducibility of
research by excluding many who would want to reproduce it.
At the same time, and ironically, it increases the
inefficient duplication of research."
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61523
Direct Link:
http://osc.centerforopenscience.org/2013/11/27/the-state-of-open-access/

The State of Open Access

by Shauna Gordon-McKeon

To celebrate Open Access Week last month, we asked people four questions about the state of open access and how its changing. Here are some in depth answers from two people working on open access: Peter Suber, Director of theHarvard Office for Scholarly Communication and the Harvard Open Access Project, and Elizabeth Silva, associate editor at the Public Library of Science (PLOS).

How is your work relevant to the changing landscape of Open Access? What would be a successful outcome of your work in this area?

Elizabeth: PLOS is now synonymous with open access publishing, so it's hard to believe that 10 years ago, when PLOS was founded, most researchers were not even aware that availability of research was a problem. We all published our best research in the best journals. We assumed our colleagues could access it, and we weren't aware of (or didn't recognize the problem with) the inability of people outside of the ivory tower to see this work. At that time it was apparent to the founders of PLOS, who were among the few researchers who recognized the problem, that the best way to convince researchers to publish open access would be for PLOS to become an open access publisher, and prove that OA could be a viable business model and an attractive publishing venue at the same time. I think that we can safely say that the founders of PLOS succeeded in this mission, and they did it decisively.

We're now at an exciting time, where open access in the natural sciences is all but inevitable. We now get to work on new challenges, trying to solve other issues in research communication.

Peter: My current job has two parts. I direct the Harvard Office for Scholarly Communication (OSC), and I direct the Harvard Open Access Project (HOAP). The OSC aims to provide OA to research done at Harvard University. We implement Harvard's OA policies and maintain its OA repository. We focus on peer-reviewed articles by faculty, but are expanding to other categories of research and researchers. In my HOAP work, I consult pro bono with universities, scholarly societies, publishers, funding agencies, and governments, to help them adopt effective OA policies. HOAP also maintains a guide to good practices for university OA policies, manages the Open Access Tracking Project, writes reference pages on federal OA-related legislation, such as FASTR, and makes regular contributions to the Open Access Directory and the catalog of OA journals from society publishers.

To me success would be making OA the default for new research in every field and language. However, this kind of success more like a new plateau than a finish line. We often focus on the goal of OA itself, or the goal of removing access barriers to knowledge. But that's merely a precondition for an exciting range of new possibilities for making use of that knowledge. In that sense, OA is closer to the minimum than the maximum of how to take advantage of the internet for improving research. Once OA is the default for new research, we can give less energy to attaining it and more energy to reaping the benefits, for example, integrating OA texts with open data, improving the methods of meta-analysis and reproducibility, and building better tools for knowledge extraction, text and data mining, question answering, reference linking, impact measurement, current awareness, search, summary, translation, organization, and recommendation.

From the researcher's side, making OA the new default means that essentially all the new work they write, and essentially all the new work they want to read, will be OA. From the publisher's side, making OA the new default means that sustainability cannot depend on access barriers that subtract value, and must depend on creative ways to add value to research that is already and irrevocably OA.

How do you think the lack of Open Access is currently impacting how science is practiced?

Peter: The lack of OA slows down research. It distorts inquiry by making the retrievability of research a function of publisher prices and library budgets rather than author consent and internet connectivity. It hides results that happen to sit in journals that exceed the affordability threshold for you or your institution. It limits the correction of scientific error by limiting the number of eyeballs that can examine new results. It prevents the use of text and data mining to supplement human analysis with machine analysis. It hinders the reproducibility of research by excluding many who would want to reproduce it. At the same time, and ironically, it increases the inefficient duplication of research by scholars who don't realize that certain experiments have already been done.

It prevents journalists from reading the latest developments, reporting on them, and providing direct, usable links for interested readers. It prevents unaffiliated scholars and the lay public from reading new work in which they may have an interest, especially in the humanities and medicine. It blocks research-driven industries from creating jobs, products, and innovations. It prevents taxpayers from maximizing the return on their enormous investment in publicly-funded research.

I assume we're talking about research that authors publish voluntarily, as opposed to notes, emails, and unfinished manuscripts, and I assume we're talking about research that authors write without expectation of revenue. If so, then the lack of OA harms research and researchers without qualification. The lack of OA benefits no one except conventional publishers who want to own it, sell it, and limit the audience to paying customers.

Elizabeth: There is a prevailing idea that those that need access to the literature already have it; that those that have the ability to understand the content are at institutions that can afford the subscriptions. First, this ignores the needs of physicians, educators, science communicators, and smaller institutions and companies. More fundamentally, limiting access to knowledge, so that rests in the hands of an elite 1%, is archaic, backwards, and counterproductive. There has never been a greater urgency to find solutions to problems that fundamentally threaten human existence – climate change, disease transmission, food security – and in the face of this why would we advocate

limited dissemination of knowledge? Full adoption of open access has the potential to fundamentally change the pace of scientific progress, as we make this information available to everyone, worldwide.

When it comes to issues of reproducibility, fraud or misreporting, all journals face similar issues regardless of the business model. Researchers design their experiments and collect their data long before they decide the publishing venue, and the quality of the reporting likely won't change based on whether the venue is OA. I think that these issues are better tackled by requirements for open data and improved reporting. Of course these philosophies are certainly intrinsically linked – improved transparency and access can only improve matters.

What do you think is the biggest reason that people resist Open Access? Do you think there are good reasons for not making a paper open access?
Elizabeth: Of course there are many publishers who resist open access, which reflects a need to protect established revenue streams. In addition to large commercial publishers, there are a lot of scholarly societies whose primary sources of income are the subscriptions for the journals they publish.

Resistance from authors, in my experience, comes principally in two forms. The first is linked to the impact factor, rather than the business model. Researchers are stuck in a paradigm that requires them to publish as 'high' as possible to achieve career advancement. While there are plenty of high impact OA publications with which people choose to publish, it just so happens that the highest are subscription journals. We know that open access increases utility, visibility and impact of individual pieces of research, but the fallacy that a high impact journal is equivalent to high impact research persists.

The second reason cited is that the cost is prohibitory. This is a problem everyone at PLOS can really appreciate, and we very much sympathize with authors who do not have the money in their budget to pay author publication charges (APCs). However, it's a problem that should really be a lot easier to overcome. If research institutions were to pay publication fees, rather than subscription fees, they would save a fortune; a few institutions have realized this and are paying the APCs for authors who choose to go OA. It would also help if funders could recognize publishing as an intrinsic part of the research, folding the APC into the grant. We are also moving the technology forward in

an effort to reduce costs, so that savings can be passed onto authors. PLOS ONE has been around for nearly 7 years, and the fees have not changed. This reflects efforts to keep costs as low as we can. Ironically, the biggest of the pay-walled journals already charge authors to publish: for example, it can be between $500 and $1000 for the first color figure, and a few hundred for each additional one; on top of this there are page charges and reprint costs. Not only is the public paying for the research and the subscription, they are paying for papers that they can't read.

Peter: There are no good reasons for not making a paper OA, or at least for not wanting to.

There are sometimes reasons not to publish in an OA journal. For example, the best journals in your field may not be OA. Your promotion and tenure committee may give you artificial incentives to limit yourself to a certain list of journals. Or the best OA journals in your field may charge publication fees which your funder or employer will not pay on your behalf. However, in those cases you can publish in a non-OA journal and deposit the peer-reviewed manuscript in an OA repository.

The resistance of non-OA publishers is easier to grasp. But if we're talking about publishing scholars, not publishers, then the largest cause of resistance by far is misunderstanding. Far too many researchers still accept false assumptions about OA, such as these 10:

--that the only way to make an article OA is to publish it in an OA journal --that all or most OA journals charge publication fees --that all or most publication fees are paid by authors out of pocket --that all or most OA journals are not peer reviewed --that peer-reviewed OA journals cannot use the same standards and even the same people as the best non-OA journals --that publishing in a non-OA journal closes the door on lawfully making the same article OA --that making work OA makes it harder rather than easier to find --that making work OA limits rather than enhances author rights over it --that OA mandates are about submitting new work to OA journals rather than depositing it in OA repositories, or --that everyone who needs access already has access.

In a recent article in *The Guardian* I corrected six of the most widespread and harmful myths about OA. In a 2009 article, I corrected 25. And in my 2012book, I tried to take on the whole legendarium.

How has the Open Access movement changed in the last five years? How do you think it will change in the next five years?

Peter: OA has been making unmistakable progress for more than 20 years. Five years ago we were not in a qualitatively different place. We were just a bit further down the slope from where we are today.

Over the next five years, I expect more than just another five years' worth of progress as usual. I expect five years' worth of progress toward the kind of success I described in my answer to your first question. In fact, insofar as progress tends to add cooperating players and remove or convert resisting players, I expect five years' worth of compound interest and acceleration.

In some fields, like particle physics, OA is already the default. In the next five years we'll see this new reality move at an uneven rate across the research landscape. Every year more and more researchers will be able to stop struggling for access against needless legal, financial, and technical barriers. Every year, those still struggling will have the benefit of a widening circle of precedents, allies, tools, policies, best practices, accommodating publishers, and alternatives to publishers.

Green OA mandates are spreading among universities. They're also spreading among funding agencies, for example, in the US, the EU, and global south. This trend will definitely continue, especially with the support it has received from Global Research Council, Science Europe, the G8 Science Ministers, and the World Bank.

With the exception of the UK and the Netherlands, countries adopting new OA policies are learning from the experience of their predecessors and starting with green. I've argued in many places that mandating gold OA is a mistake. But it's a mistake mainly for historical reasons, and historical circumstances will change. Gold OA mandates are foolish today in part because too few journals are OA, and there's no reason to limit the freedom of authors to publish in the journals of their choice. But the percentage of peer-reviewed journals that are OA is growing and will continue to grow. (Today it's about 30%.) Gold OA mandates are also foolish today because gold OA is much more

expensive than green OA, and there's no reason to compromise the public interest in order to guarantee revenue for non-adaptive publishers. But the costs of OA journals will decline, as the growing number of OA journals compete for authors, and the money to pay for OA journals will grow as libraries redirect money from conventional journals to OA.

We'll see a rise in policies linking deposit in repositories with research assessment, promotion, and tenure. These policies were pioneered by the University of Liege, and since adopted at institutions in nine countries, and recommended by the Budapest Open Access Initiative, the UK House of Commons Select Committee on Business, Innovation and Skills, and the Mediterranean Open Access Network. Most recently, this kind of policy has been proposed at the national level by the Higher Education Funding Council for England. If it's adopted, it will mitigate the damage of a gold-first policy in the UK. A similar possibility has been suggested for the Netherlands.

I expect we'll see OA in the humanities start to catch up with OA in the sciences, and OA for books start to catch up with OA for articles. But in both cases, the pace of progress has already picked up significantly, and so has the number of people eager to see these two kinds of progress accelerate.

The recent decision that Google's book scanning is fair use means that a much larger swath of print literature will be digitized, if not in every country, then at least in the US, and if not for OA, then at least for searching. This won't open the doors to vaults that have been closed, but it will open windows to help us see what is inside.

Finally, I expect to see evolution in the genres or containers of research. Like most people, I'm accustomed to the genres I grew up with. I love articles and books, both as a reader and author. But they have limitations that we can overcome, and we don't have to drop them to enhance them or to create post-articles and post-books alongside them. The low barriers to digital experimentation mean that we can try out new breeds until we find some that carry more advantages than disadvantages for specific purposes. Last year I sketched out one idea along these lines, which I call an evidence rack, but it's only one in an indefinitely large space constrained only by the limits on our imagination.

Elizabeth: It's starting to feel like universal open access is no longer "if" but "when". In the next five years we will see funders and institutions recognize the importance of access and adopt policies that mandate and financially support OA; resistance will fade away, and it will simply be the way research is published. As that happens, I think the OA movement will shift towards tackling other issues in research communication: providing better measures of impact in the form of article level metrics, decreasing the time to publication, and improving reproducibility and utility of research.

The Seduction of the Leader in Higher Education

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http://www.downes.ca/cgi-bin/page.cgi?post=61522

What is the 'seduction of the leader?' This: "Many leaders are seduced by the notion that they’re receiving honest and thoughtful feedback about their ideas and effectiveness. Believing this leaves leaders isolated and uninformed." This article (42 page PDF, direct link http://www.academicimpressions.com/PDF/TheSeductionoftheLeader.pdf) is mostly about how to avoid that effect, but it points I think to a general weakness in power relatoons in organizations generally. The solutions offered are briefly stated (and don't really match up with the causes, which is a weakness) and generally point toward increasing the flow of communication and information (especially bad news). See also Rubin and Fernandes in IRRODL, The teacher as leader http://irrodl.us1.list-manage.com/track/click?u=d5e8b9866b8a89a545c675602&id=0510bcc824&e=b38b7d9733:

Effect of teaching behaviors on class community and agreement.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61522

Direct Link: http://www.academicimpressions.com/news/seduction-leader?awp=0&qq=21536s242910nK1001

The growing spate of votes of no confidence in institutional leaders is concerning, as it suggests a diagnostic of low trust, lack of meaningful engagement between leaders and constituents, and limited communication. Without access to unfiltered information—honest concerns, suggestions, and ideas—leaders risk being seduced into thinking that they are on the right path and that everyone is firmly behind them, when this may not be the case.

In **this paper**, **Patrick Sanaghan** and **Kimberly Eberbach** offers key insights into this dynamic and review **nine specific steps** that you can take to minimize this "seduction of the leader."

Leadership Essentials for Higher Education

Do you have the leadership skills to effectively address higher education's complex future?

This practically focused, **two-day leadership program** with Mary Hinton (Mount Saint Mary College) and Patrick Sanaghan (The Sanaghan Group) will provide you with tools and strategies that will enable you to develop the leadership skills and perspectives needed to effectively navigate the increasing complexity facing higher education.

What makes this program different from other resources out there?

1. This program provides practical tools and models—representing the best research in leadership development and organizational change. These tools, along with the skills you will develop during the conference, are unique to the leadership experience in higher education and can be used immediately.

2. This program addresses three key dimensions of leadership effectiveness:
    - Understanding yourself, your values, and your innate leadership skills and attitudes;
    - Learning how to leverage your self-understanding—when working with groups, teams, and task forces—to ensure you are using effective tools and practices;
    - Mastering the complexity of campus cultures and systems and understanding how to navigate and lead within them effectively.

(THIS IS ACTUALLY A 41 PAGE REPORT)

Top Ed-Tech Trends of 2013: Data vs Privacy

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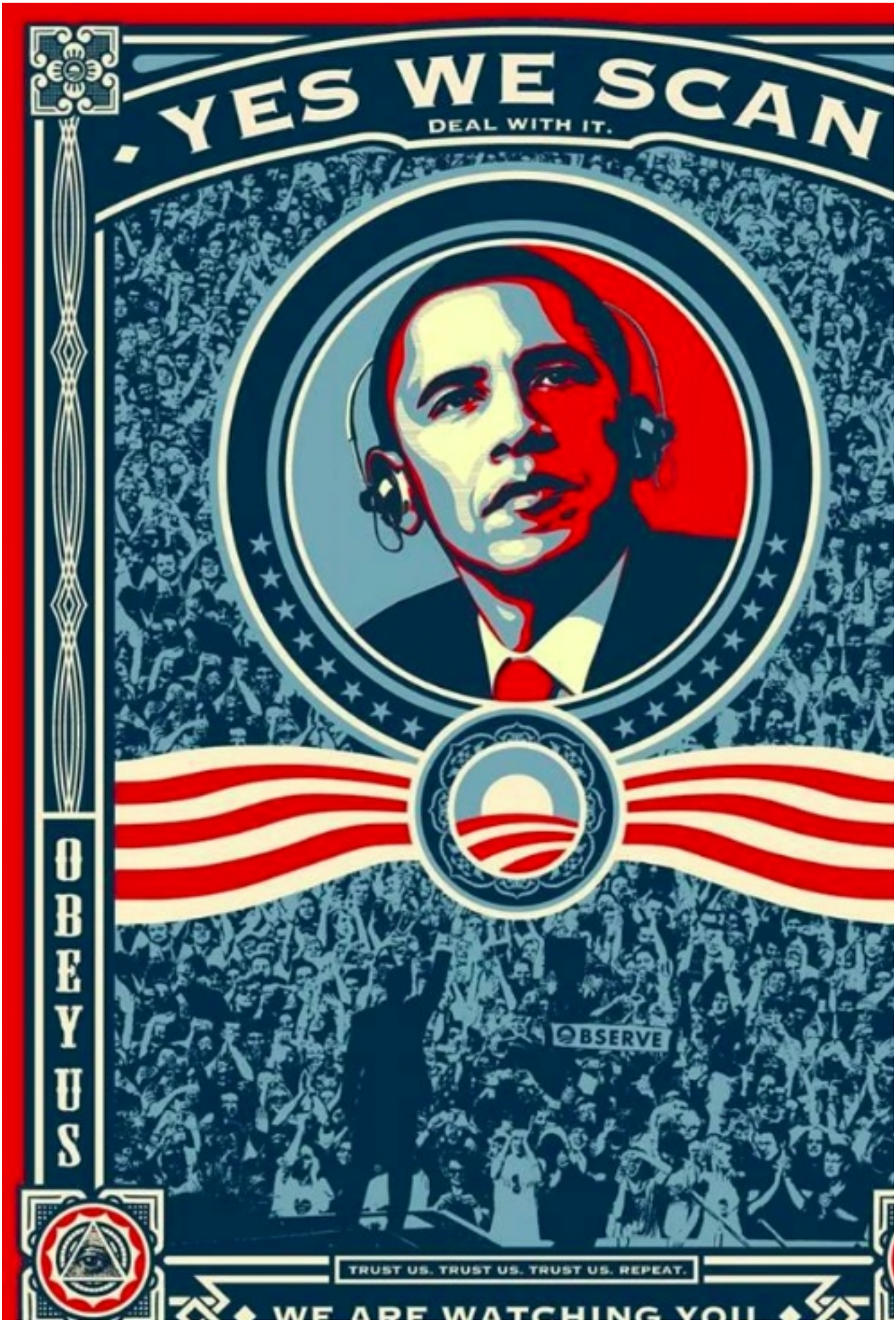
http://www.downes.ca/cgi-bin/page.cgi?post=61519

Another excellent summary article by Audrey Watters, this one on data and privacy (it was too bad we didn't see her at MRI13 - I certainly hope she's making lots of money with Hack Education and related projects, because it would be a shame to lose such an articulate voice in the field). She writes, "The appropriate choice for Person of the Year, some argue http://publiceditor.blogs.nytimes.com/2013/12/10/snowden-for-person-of-the-year-and-coverage-of-a-story-that-just-wont-quit/?smid=tw-share, would be Edward Snowden, who along with the journalist Glenn Greenwald, is certainly responsible for the most important story of the year: revelations about widespread government surveillance by the National Security Agency... Interestingly I heard very little outcry from ed-tech proponents about the troubling implications of NSA surveillance via the technologies that are being pushed in schools, about the impact that this might have on students’ privacy, – hardly a peep http://funnymonkey.com/blog/how-are-schools-using-apple-google-microsoft-and-facebook-explaining-surveillance from those who have gone 'all in' with Google Apps or iPads or YouTube for Schools or Skype in the Classroom or Facebook."

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61519

Direct Link: http://www.hackeducation.com/2013/12/11/top-ed-tech-trends-2013-data-privacy/

This is the third year in a row that I've chosen "data" as one of the "top trends" in ed-tech. (See 2011, 2012) If you're looking for a sunnier view of data in education, read those. 2013, in my opinion, was pretty grim.


YES WE SCAN
DEAL WITH IT.
OBEY US
OBSERVE
TRUST US. TRUST US. TRUST US. REPEAT.
WE ARE WATCHING YOU

Edward Snowden: Not TIME Person of the Year

TIME Magazine announced its Person of the Year this morning: Pope Francis. He seems like a pretty swell guy, don't get me wrong. But many folks have argued it's a dull even cowardly decision by the magazine. (Of course, its other recent selections include Barack Obama, Vladimir Putin, Ben Bernanke, and Mark Zuckerberg. TIME is not really known for bold choices, let's be honest).

The appropriate choice for Person of the Year, some argue, would be Edward Snowden, who along with the journalist Glenn Greenwald, is certainly responsible for the most important story of the year: revelations about widespread government surveillance by the National Security Agency – the collection of massive amounts of data from telephone and technology companies. "Email, video and voice chat, videos, photos, voice-over-IP chats, file transfers, social networking details, and more" siphoned from Apple, Google, Facebook, Microsoft, Yahoo, Skype, AOL, and others. Encryption undermined. Malware spread. Our social connections mapped. Warrantless spying by governments (not only by the US's) – not just on suspected terrorists, but on all of us.

Interestingly I heard very little outcry from ed-tech proponents about the troubling implications of NSA surveillance via the technologies that are being pushed in schools, about the impact that this might have on students' privacy, – hardly a peep from those who have gone "all in" with Google Apps or iPads or YouTube for Schools or Skype in the Classroom or Facebook.

That's not to say that there weren't any red flags raised this year about data collection, data mining, and privacy. But often, these were concerns about *corporations'* use of student data and not governments'. The Snowden revelations should serve as a reminder that the two are inseparable.

And perhaps some educators' excitement about tools like Google Glass should serve to remind us too that just as an uncritical embrace of "ooo! shiny!" runs deep in some ed-tech circles, a culture of surveillance runs deep in schools as well.

Surveillance and Ed-Tech

Google Glass became available to a small number of "explorers" this year – including a handful of educators – who paid $1500 for the privilege of testing the wearable computing devices. Glass has been hailed by some as a "cybernetic sensory organ." But it is a sensory organ that delivers its data to a corporate entity (a corporate entity that the government has tapped, so we've learned). This extraction of personal data – for the sake of profit or improved marketing or better algorithms – is a process that has spurred very little critical response among ed-tech proponents when it comes to the adoption of software and hardware. There are very few questions about data: who owns education data, who analyzes education data, who uses it. (More on that below.)

As ACLU's Christopher Soghoian recently tweeted that "Google built one of the largest surveillance networks in the world. Of course the NSA was going to find a way to use it too." I might add, "of course schools will try to use it as well."

For many educators enthralled by Google Glass, it's the unobtrusive and hands-free camera that they frequently tout the most. They shrug off privacy concerns, saying that students already have cameras in the classroom via their various computing devices. But

there are many important distinctions here – Glass's photos and metadata that are automatically shared with Google (and thanks to Google's Terms of Service, users' data consolidated across all Google services); it is much easier to take photos surreptitiously with Glass; and Glass is "always on" surveillance. Surveillance and sousveillance practices foster coercive and exploitative learning spaces. As Jeremy Bentham might argue, that's a feature, not a bug.

Interestingly, having more surveillance cameras in the classroom is one of the goals laid out by Bill Gates this year as part of the Gates Foundation's efforts to implement a $5 billion teacher monitoring and measurement system – one that includes installing cameras in every classroom in the US. (The Gates Foundation is, of course, best known for its funding of healthcare and education initiatives. But it also invested this year in the security company G4S. Again with the obligatory Bentham nod, I guess, eh?)

Other surveillance efforts undertaken by school districts this year:

Glendale Unified School District hired Geo Listening to monitor students on social media – all their public social media posts, even those made off-campus and after school hours. "For safety," insists the school (the same reason of course, the NSA gives for monitoring our data too).

Schools in West Cheshire (UK) and Longmont (Colorado) used RFID chips and GPS tracking systems in students' IDs and bus passes in order to track their locations. A student in San Antonio, Texas, suspended for refusing to wear an RFID-enabled ID, sued her school claiming that it violated her religion, but she lost the case. The district later dropped the RFID program, finding it uneconomical.

Arguing that IDs are too easily lost, some schools in Florida and South Carolina opted instead to scan students' irises for identification. Again "for safety" sake.

The universities of Sunderland and Ulster installed biometric monitoring systems on their satellite campuses to track if students – *international students* not British ones – are attending lecture.

Alabama University announced that it would use drones to monitor students on campus. Chicago Alderman George Cardenas suggested that the city deploy drones to monitor the city's "Safe Passage" routes used by children to get to and from school.

It's the normalization of military and police technology, you might argue, disguised as consumer and ed-tech: drones delivering Amazon packages, drones delivering textbooks, fingerprint scanners on Apple devices, any number of surveillance accessories and practices that parents can use on their children.

Don't Worry. It's "Just Metadata"

In the early days of the Snowden-NSA story, President Obama tried to reassure people that the government wasn't actually *reading* their email or *listening* to their phone calls. "Just the metadata," he insisted.

But analyzing metadata – even without looking at the explicit content of a message – is incredibly revealing. Who you emailed. How often. The IP address from which a website was accessed. Who you called. How long you talked. The geolocation of your cellphone. The patterns that all of these form, particularly when gathered at scale. Metadata *is* the message,argues Wired Magazine's Matt Blaze.

At such a scale, people's intuition about the relative invasiveness of content and metadata starts to fail them. Phone records can actually be more revealing than content when someone has as many records and as complete a set of them as the NSA does.

Voice content is hard to process. It ultimately requires at least some human analysis, and that inherently limits the scale at which it can be used, no matter how much raw material the NSA might have. Intelligence agencies are famously backlogged in translating and analyzing even high-priority intercepts. More content only makes the problem worse.

Metadata, on the other hand, is ideally suited to automated analysis by computer. Having more of it just makes it the analysis more accurate, easier, and better. So while the NSA quickly drowns in data with more voice content, it just builds up a clearer and more complete picture of us with more metadata.

But that's not the most revealing thing about metadata, or the only reason to be concerned about the privacy implications of a massive call records database. Metadata ultimately exposes something deeper, far more than what a target is talking about.

Metadata is our context. And that can reveal far more about us — both individually and as groups — than the words we speak.

Such is the promise of "big data" and analytics at scale. Such is the promise of big *educational*data and *learning* analytics at scale.

What Are and Who Owns Education Data?

Many people still consider "education data" to be simply what we've thought of as an individual student's educational record: name, home address, grade level, dates of attendance, final grade – the sort of stuff that appears on a report card. But thanks in no small part to our increasing use of technology, education data is so much more – *so much more "metadata."*

Students' search engine history. Learning management system log-ins and duration of their LMS sessions. Blog and forum comment history. Internet usage while on campus. Geolocation. Emails sent and received. Social media profiles, the frequency of social media profiles, and their "influence." Pages read in digital textbooks. Videos watched on Coursera or Khan Academy or Udacity, along with if and where they paused it. Exercises completed on any of these platforms. Keystrokes and mouse clicks logged. (That last item, along with biometric data, is how Coursera said it plans to verify students' identities as part of its "signature track.")

Again and again and again this year I've tried to ask "who owns education data?" Who controls it? Who sells it? Who analyzes it? To what end? Who gets to learn from it? (The answer in almost all cases is *not* "the student.")

A brief look at some of what we've learned from "the data" this year (granted, much of this from pretty "traditional" sources):

College enrollment is down; the *US News & World Report*'s college rankings are still worth ignoring; teens do pay attention to privacy and mobile apps; SAT scores remain flat; the majority of students in public schools in the American South and West are now low income; Division I public universities' spending on athletics is growing faster than their spending on academics; state universities are giving a growing share of financial aid support to wealthier students; 95% of teens use the Internet; most MOOCs have a completion rate of around 13%; teacher job satisfaction is at a 25-year low; per student public education spending in the US dropped for the first time in almost four decades; parents still think libraries are important no matter what crap Techcrunch tries to argue; 40 states have suspected cheating on K–12 standardized tests; PISA scores can probably confirm whatever education narrative you want to tell; the same probably goes for NAEP scores; the elite Hunter College High School is the saddest place in New York(based on a sentiment analysis of the city's Tweets, at least); American adults don't do well onOECD math tests; and journalists love to misconstrue academic research when it can provide them with a titillating headline like "Tenured Professors Make Worse Teachers." Maybe we'll do better in 2014 when data guru Nate Silver, who quit his gig at The New York Times this year, launches the new Five Thirty Eight blog. He did suggest in a Reddit Ask Me Anything this year that he might write more about education data (and hopefully that doesn't just mean writing about college sports stats, now that he's working for ESPN).

Public Data / Personal Data

One of the great challenges we face with collecting and analyzing education data is that it often exists in a murky and uncomfortable overlap between the public and the personal. When we push to open data from the former, we must weigh the implications for the latter – we must weigh the ethics and consider the politics of our data initiatives. Open data, while it claims to promote more governmental transparency, is *not* apolitical.

We can see this in the public records requests for emails relating to Facebook CEO Mark Zuckerberg's $100 million donations to Newark, New Jersey, for example, and for emails from former Indiana and Florida school chief Tony Bennett, revealing his move to change the grade of a campaign donor's school.

We can see this too in the ongoing attempts by many local newspapers to print teachers' VAM(value-added model) scores, despite the widespread recognition that these models are quite flawed: The LA Times, The Florida Times-Union, The Boston Globe, The Cleveland Plains Dealer all requesting districts provide them with teachers' names and scores (and sometimes suing when districts refused) so they could publish them publicly.

And we can see this – and we'll see more of it in 2014, I'm sure – in the call by President Obamato "enlist entrepreneurs and technology leaders with a 'Datapalooza' to catalyze new private-sector tools, services, and apps to help students evaluate and select colleges." Collecting, measuring, analyzing data – "data-driven decision-making" – is a cornerstone of the Obama Administration's education policies at both the K–12 and higher education level.

Privacy, Data, and the Law

OK, sure. The NSA's surveillance program might have made much of this moot, but *there are laws* that purport to protect students' and children's data. Some legal and legislative updates this year:

A revised COPPA (the Children's Online Privacy Protection Act) went into effect on July 1. The update clearly reflects lobbying efforts by tech companies as contextual advertising is now exempt – data can be collected from minors without parental permission using this method). But oh! Lest we think that the FTC doesn't care a whit about kids' privacy (snicker), it did fine Path $800,000 this year for letting kids under 13 sign up.

In November, Senators Edward Markey (D-MA) and Mark Kirk (R-IL) and Representatives Joe Barton (R-TX) and Rep. Bobby Rush (D-IL) re-introduced their Do Not Track Kids Act, an attempt to extend COPPA provisions to make it tougher to disclose kids' data, particularly around geolocation and to create an "eraser button" for kids data.

Speaking of erasers, California passed a bill that would do just that: require Web companies(starting in 2015) to remove online activity should a minor in the state request it. (A good idea in theory, perhaps, but there are lots of problems with how this will actually work.)

A bill was proposed in Massachusetts that would, according to Wired, "ban companies that provide cloud computing services from processing student data for commercial purposes." Turns out the bill was backed by Microsoft in an attempt to unseat Google Apps from schools in the state. Like a lot of recent things Microsoft, the bill went nowhere.

The Atlanta Public Schools cheating scandal started to wind its way through the courts this year, with a former elementary teacher pleading guilty to obstruction of justice and an administratorbeing acquitted of witness tampering.

And lest one think legislation about student data has all been written and submitted, Education Week suggests that this will be a major push of the corporate lobbying group the American Legislative Exchange Council (ALEC) in 2014. It will push legislation that would require states to have a chief privacy officer to monitor student data collection. (There are other proposals out there regarding CPOs, incidentally, ones that more privacy-focused.)

Data as "The New Oil"

Privacy concerns and legal protections aside, lots of people are betting on "big data" to "fix" education, to offer insights into how people learn, and/or to make a neat profit.

Indeed, data is seen as incredibly lucrative – "the new oil" – in both commercial and education software. To that end, LinkedIn opened its service to younger students this year, making a concerted effort to recruit high school students to the site.

Facebook changed its privacy policy for minors, allowing them to share their data more publicly. (Remember kids, if you aren't paying for the product, you are the product.) The Wall Street Journal noted that "kids apps are data magnets." But again, this isn't simply a consumer product issue; it's an ed-tech issue too.

McKinsey issued a report in October arguing that opening up education data could have a potential value of $890 billion to $1.18 trillion. But Common Sense Media cautioned against doing so at the expense of children's privacy.

If data really is "the new oil," then we should probably pay attention to data spills – that is, data leaks. FSU admitted this year that it had leaked data from over 47,000 student teachers-in-training. The personal data of some 72,000 past and present employees of the University of Delaware was leaked. One security company said that these sorts of leaks were facilitated, in no small part, by the fact that a quarter of higher ed institutions transmit sensitive data without encryption.

If data is "the new oil" we should probably think about the security of our mining practices. The New York Times questioned the data security of Edmodo in a story this summer, for example, prompting the company to switch on SSL for all users.

So once mined and drilled and extracted and processed, what does all this data give us?"Adaptive" technology! "Personalized" software! Algorithms! Recommendations! Analytics! Insights!

Oh, and if you're a company selling something that uses "data" in your slide deck to investors, perhaps a nice chunk of funding:

Panorama raised $4 million from Mark Zuckerberg's Startup: Education fund (the startup offers a survey tool to schools). Clever raised $10 million to standardize APIs for school information systems and "unlock and share" student data. Junyo, which pivoted last year away from selling schools dashboards to selling schools' data to other companies, acquired a database of K12 grants – "market intelligence." Pearson acquired Learning Catalytics, a learning analytics company co-founded by Harvard professor Eric Mazur. Kidaptive raised $10.1 million and launched its adaptive learning tools, including an iPad app so parents can track their kids' development. KnowRe raised $1.4 million for its "adaptive learning" platform. McGraw-Hillacquired a 20% equity stake in Area9 which is helping it build out its "adaptive learning" platform.

Desire2Learn acquired DegreeCompass, a tool that offers "personalized" course recommendations to students. Desire2Learn also acquired Knowillage for its "adaptive learning" technology. Knewton expanded its "adaptive learning" platform, partnering with Houghton Mifflin Harcourt and Macmillan.

A couple of important hiccups in the mining process this year:

Course Signals / Error Signals

Purdue University's Course Signals is probably one of the best known products in the relatively new field of learning analytics. The software uses predictive modeling to give students a red, yellow, or green "traffic light," informing them of whether they'll pass or fail a class. It's been shown to be quite good at helping students improve their grades. Not all courses at Purdue use Course Signals (it's integrated into the LMS), but this fall the university issued a press releaseclaiming that the software has a long-term effect on students and "boosts graduation rate 21 percent."

Mike Caulfield was one of the first to suggest that the math "doesn't add up" and that the experiment might suffer from a "reverse-causality" problem – something that led to

inquiries byMichael Feldstein, Alfred Essa, and Doug Clow (among others), along with questions about theethics of the university and even the future of the field of learning analytics. (A lengthy "explainer" by Caulfield can be found on the e-Literate blog).
While this might sound like a minor glitch in research or PR, it's a pretty significant stumble. AsFeldstein argues,

This is a problem that goes well beyond Course Signals itself for several reasons. First, both Desire2Learn and Blackboard have modeled their own retention early warning systems after Purdue's work. For that matter, I have praised Course Signals up and down and criticized these companies for not modeling their products more closely on that work, largely based on the results of the effectiveness studies. So we don't know what we thought we knew about effective early warning systems. The fact that the research results appear to be spurious does not mean that systems like Course Signals has no value, but it does mean that we don't have the proof that we thought we had of their value.

More generally, we need to work much harder as a community to critically evaluate effectiveness study results. Big decisions are being made based on this research. Products are being designed and bought. Grants are being awarded. Laws are starting to be written. I believe strongly in effectiveness research, but I also believe strongly that effectiveness research is hard. The Purdue results have been around for quite a while now. It is disturbing that they are only now getting critical examination.

InBloom Withers

While Course Signals has been widely praised (up until very recently at least) for its effective use of data to improve student outcomes, inBloom has never really been successful at convincing the education sector that it would be a good, useful, or even plausible project.

Initially called the Shared Learning Collaborative, the non-profit has received $100 million from the Gates Foundation and Carnegie Corporation and others to build a student data infrastructure for public schools – one that would improve both the storage of student information and the ease with which third party developers can access it.
The SLC rebranded in February of this year to inBloom (an indication, I reckon, that none of those folks know the lyrics to the Nirvana song "In Bloom" – the part about "sell the kids for food." Anyway…). It had a major presence at SXSWedu in March for its official launch: an inBloom lounge and an inBloom session track (in addition to the data track) and an inBloom party and an inBloom hackathon and lots of folks in inBloom t-shirts and a Gates Foundation party and a Bill Gates keynote. You get the picture.
At that launch at SXSWedu, inBloom boasted 9 state partners (Delaware, Massachusetts, Colorado, Louisiana, New York, Illinois, North Carolina, Georgia, and Kentucky). Many companies said they were on board too, with plans to use and integrate inBloom data, including Amazon, Clever, Compass Learning, Dell, eScholar, Goalbook,

Kickboard, LearnSprout, Promethean, Scholastic, and Schoology. But if you visit the partner pages on the inBloom site today, you can see a lot of those names are missing. inBloom has been abandoned right and left.

Louisiana pulled out in April. North Carolina pulled out in May. That same month, Kentucky, Georgia, and Delaware told Reuters that they'd never actually made a commitment to use the platform. Massachusetts said it was on the fence and hadn't shared any student data with inBloom. In November, the Jefferson County School Board (in Colorado) voted to scrap their partnership with inBloom, and the Chicago Public Schools opted to use their own state-run database instead. New York remains committed to the project, although a lawsuit was recently filed to block it from sharing data with the non-profit.

Much like the roll-out of the Common Core State Standards, opposition to inBloom comes from a variety of perspectives and politics – those fearing a "big brother" government; those fearing a Bill Gates and Rupert Murdoch-led data grab (Wireless Generation, part of Murdoch's News Corp, built part of the inBloom infrastructure); those fearing students' personal data will be used for nefarious purposes; those fearing students' personal data will be used for profit.

inBloom was never able to assuage these fears. It was never able to successfully articulate why an updated data infrastructure was necessary for public schools, often sidestepping inquiries about its plans for student data by pushing the decisions and the liabilities back onto states and districts.

Of course, the collection of student data isn't new. The storage of student data isn't new. The sharing of student data with third party vendors isn't new. There are several other data models (CEDS, SIF, EdFi) that facilitate this.

But inBloom, with its connections to the controversial figures of Bill Gates, Joel Klein, and Rupert Murdoch and with its rollout timed in parallel with the controversial Common Core, became this year a symbol to many of technology's role in the privatization of public education. It's unclear how inBloom, or more broadly speaking ed-tech, will be affected by this association.

Data, Privacy, and the Future of Ed-Tech

Facebook CEO Mark Zuckerberg famously declared privacy "dead" back in 2010. This year, incidentally, he bought the four houses adjacent to his after hearing that a developer had plans to market a neighboring property as being "next door to Mark Zuckerberg."

Nevertheless, you hear it a lot in technology circles – "privacy is dead" – often uttered by those with a stake in our handing over increasing amounts of personal data without question.

To see privacy as something will inevitably "die," to view it as a monolithic notion is quite ahistorical. To do so ignores the varied cultural and social expectations we have about privacy today. It ignores how power relations have always shaped who has rights and access to autonomy, self-determination, solitude. It ignores the ongoing resistance (by teens, for example, by activists, and by librarians) to surveillance.

Nonetheless, as the adoption of ed-tech continues (and with it, the increasing amount of data created – intentionally or unintentionally, as content or as "exhaust"), there are incredibly important discussions to be had about data and privacy:

- What role will predictive modeling and predictive policing have in education? Who will be marked as "deviant"? Why? Against whom will data discriminate?
- What role does privacy play – or phrase differently: what role does a respite from surveillance play – in a child's development?
- How can we foster agency and experimentation in a world of algorithms?
- What assumptions go into our algorithms and models? Who builds them? Are they transparent? (After all, data is not objective.)
- What can we *really* learn from big data in education? Bill Gates says big data will "save American schools." Really? Save from what? For whom? Or is all this data hype justbullshit?
- Who owns education data?
- What happens to our democracy if we give up our privacy and surrender our data to tech companies and to the federal government? What role will education play in resisting or acquiescing to these institutions' demands?

Image credits: PolicyMic (with a nod to Shepard Fairey) and The Noun Project

#FiveWordEdTechHorrors
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http://www.downes.ca/cgi-bin/page.cgi?post=61518
My favourite has to be, "We blog in the LMS." But I'm sure
you can think of many more. Some other faves: "My provost
heard about MOOCs." And "Pearson invested in our startup."
Here's the hashtag
https://twitter.com/search?q=%23FiveWordEdTechHorrors&src=hash.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61518
Direct Link: http://bavatuesdays.com/fivewordedtechhorrors/

#FiveWordEdTechHorrors

Posted on December 11, 2013 by Reverend

Earlier today on twitter I was watching the river flow when I saw the following tweet by the great Bud Hunt:

I was intrigued, and figured what would my five word edtech horror story be. I came up with the folowing:

I was hooked, for the next 45 minutes or so I was having a ball reading and writing FiveWordEdtechHorrors on Twitter, it was pretty remarkable to follow that hashtag and watch hundreds of edtechs chime in from all over the place in order to palyfully have fun with their frustrations. A fun loving professional catharsis in the form of a hastag—it's a beautiful thing. from what I understand Carl Hook just modified the trending #FiveWordTechHorrors, and a Twitter event was born.

There were a ton of fun Tweets, I'll include a few of my favorite below, but if you work in edtech, the stream is still going and it speaks to how creative and inspired a loosely distributed community can be if given the right prompt.

The following Tweet by Martin Weller is an inside joke given that someone made this pronouncement at the MOOC Research confernece, but it made me bust out laughing nonetheless.

Bud Hunt was on fire...

How can we forget MOOCs....

I always enjoy LMS bashing....

But there was something for everyone!

So much fun, this made my semester. I really haven't had a moment like this in a while on Twitter. Unexpected, but pure joy!

Update: Origins are always tricky, Frank Nochese seems to have been behind this madness 

“We Never Use Pen & Paper”

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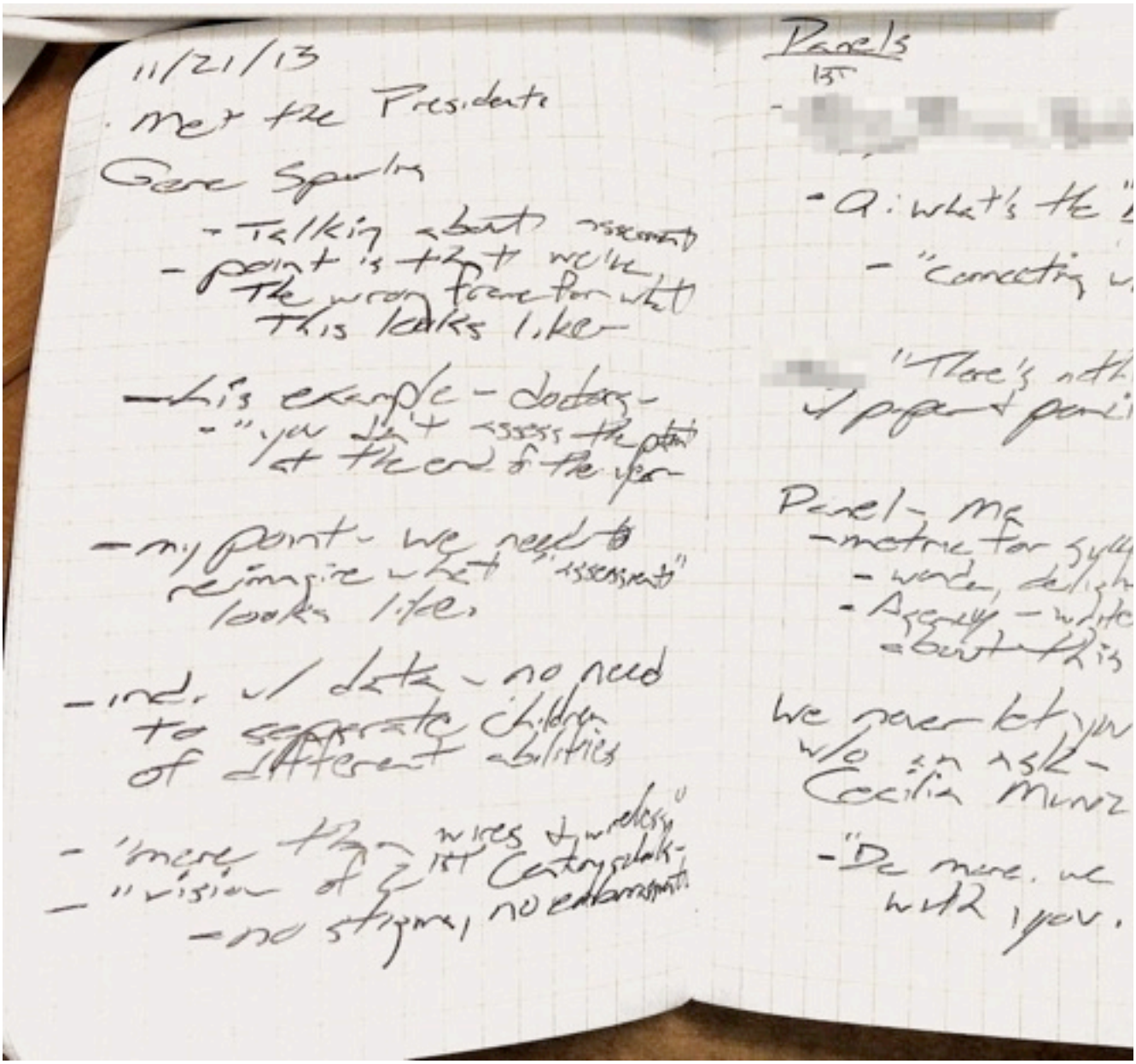
http://www.downes.ca/cgi-bin/page.cgi?post=61517
Even in 2013 I often find myself the only persopn around a table using a computer. The rest have their pens and notebooks out, keeping a record in a form that will never be indexed (or searched, or possibly even read) again. Keeping notes has intrinsic value - doing it helps you remember the conversation and creates interactivity and engagement. But I still prefere to take notes on a computer. So I find it surprising to read Bud Hunt react to claims that "we never use pen and paper." Even I would never make such a claim! As I write there's a scratch pad beside me (I did some quick calculations on it even today). And as Hunt says, "the important piece of tool selection is picking the right tool for the right job. That it’s digital or analog really doesn’t matter all that much. What matters is that you are making something."
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61517
Direct Link: http://budtheteacher.com/blog/2013/12/11/we-never-use-pen-paper/#p0

“We Never Use Pen & Paper”

Posted on **December 11, 2013** by **Bud Hunt**

Over the last few weeks, I’ve heard the phrase that is the title of this post used as a badge of honor. I’ve also heard it said this way: “There’s nothing we do with paper and pencil.” Folks have sworn that they never use, would never use, or would never have students use, pen and paper to further their learning, as if pen and paper were cancer-causing or habit forming.[1] What’s creepy is watching other people nod their heads and smile when a speaker says that. Those folks should challenge the speaker. Sometimes, we’re just entirely too polite.

The last time I heard this phrase and saw the head nod/smile response was during theChampions for Change event. My notes are below. My, ahem, paper notes. I hope the video of the conversation is posted soon.



Too many proponents of digital tools get stuck in the false either/or dichotomy that suggests that we must abandon paper to embrace the digital. That's silly. Paper is good for lots of things. Scribbling on a tablet isn't yet the best way to get thoughts down in a hurry. Paper is easily sharable and postable in ways that notes on a tablet or laptop aren't.

And anyway, the important piece of tool selection is picking the right tool for the right job. That it's digital or analog really doesn't matter all that much. What matters is that you are making something.[2]

I never leave my house without a notebook, or, more and more, a tablet computer. But if I'm only taking one, I'm taking the notebook. It's where I scribble and wonder and draft and note-take. When I'm using a pen to do so.

I wouldn't even mention this troubling phrase except that I've met many teachers turned off by digital things precisely because the people touting them

say things like “I never use a pen and paper.” That phrase rubs lots of people, pen and paper-loving people, the wrong way. There’s an implied sense that they have to give up what works in order to embrace digital tools. That’s just wrong.

To those teachers, I’d say don’t drop anything that’s working for you, and don’t be too quick to pick up anything new unless you see that it might have some value. Us geeks get into our technologies sometimes, but that doesn’t make us right.

To the rest of us – let’s use better language, particularly if we’re trying to encourage better habits in others and ourselves. As my school district is beginning our work with our iPad 1:1, I’ve been encouraging people to think about going “paperless.” My team realized quickly that “paperless” isn’t what we’re after. We’re after folks choosing the best tool in a bigger toolbox for the job they’re trying to get done. So instead of “paperless,” we’re starting to say “digital friendly.” It’s not yet the right phrase, but it is an attempt to break our use of language that characterizes paper as a bad thing.

How, I wonder, does the language you use get in the way of the thing you’re trying to accomplish? Let me know in the comments.

Learner support in MOOCs. An alternative perspective

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http://www.downes.ca/cgi-bin/page.cgi?post=61516

My thanks to Jenny Mackness for drawing out some key points of the recent panel discussion I took part in at MRI13 around the idea of learner support in MOOCs in terms of self-organisation. "This would mean," she writes, "providing learners with an environment in which they can self-organise and which itself is self-organising. In these terms support isn’t something we do for learners, but something that we support them in doing for themselves – a ‘once-removed’ form of support." She is right, I don't have all the details worked out. But it is, I think, an important concept in new models of learning, one which xMOOC providers haven't realized yet.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61516

Direct Link: http://jennymackness.wordpress.com/2013/12/12/learner-support-in-moocs-an-alternative-perspective/

Learner support in MOOCs. An alternative perspective

December 12, 2013 by jennymackness

One of the panel discussions at the MOOC Research conference held in Arlington, Texas at the beginning of this month was on Supporting Learners in MOOCs. Panelists were Sandi Boga, Amy Collier and Stephen Downes. The recording of the discussion made by Stephen Downes is here . (As an aside, I think this was the only session that was recorded during the conference– I haven't seen anything else. The lack of recordings and 'live-streaming' of the keynotes etc. was a bit of a surprise).

Stephen has summarized the panel discussion as:

> In this discussion a panel of MOOC experts explored questions surrounding supporting learning online. Some widely varying perspectives, ranging from preparing students to work without a curriculum to student support software in an xMOOC.

But he doesn't, in this summary, mention his own key point and that was to think of learner support in MOOCs in terms of self-organisation. This would mean providing learners with an environment in which they can self-organise and which itself is self-organising. In these terms support isn't something we do for learners, but something that we support them in doing for themselves – a 'once-removed' form of support.

This is a different way of thinking about learner support, which was largely overlooked in the panel discussion, where the thinking seemed to be about what the 'we' the MOOC conveners could do for 'them' the learners, which is the approach that seems to have been taken by many MOOCs. So for example Amy Collier in describing her experience with Stanford MOOCs talked of the good practice as being:

- a well-managed structured environment
- a coherent sequenced information-centred model
- great content

I have participated in two Coursera MOOCs and in many connectivist MOOCs, large and small. The Coursera MOOCs have tried to support learners in fairly traditional ways, e.g. by co-opting teaching assistants to help moderate the forums and answer learners' questions, and in one case by encouraging study groups and setting up teaching assistant and tutor online office hours. The smaller connectivist MOOCs have gone down a similar route inviting 'veteran' MOOCers to join the MOOC and help to support novice MOOCers (See FSLT 12 &13's work in this respect here andhere). This is in line with the early approach taken by Alec Couros and Lisa Lanewhere they put out a call for/or invite 'mentors' to voluntarily work on their open online courses.

These approaches try to replicate the type of support that is traditionally offered learners in smaller courses, but recognize that with 'massive' numbers, one-to-one support from a tutor or even a team of tutors is simply not possibly, hence a focus on peer-to-peer support and calling on those with more experience and expertise to support those with less.

But perhaps traditional approaches to learner support will never be a comfortable fit with massive open online courses. Learning in the 21st century requires some additional and different skills – skills such as being able to:

- locate, filter and select from vast amounts of information on the web
- recognise patterns in this information
- aggregate information from distributed digital sites
- remix and repurpose to create personal resources
- connect with people to learn from across the globe

In other words – self organise. As Stephen Downes explained, he doesn't have it all figured out yet, but he thinks of learner support in MOOCs in the following terms:

- the course and the learners are self-organising – they develop their own networks
- the instructors are simply two of the nodes in the network who may or may not be invisible
- instructors lead by example, participating in the forums. If their modeling and demonstration is of high quality they will be noticed, otherwise not.
- this mirrors the way the mind is organized and human memory works, i.e. learning is the development of networks, neuronal and social
- the course content is an attractor around which the course will organise
- everyone's contribution is valued
- learning is not thought of as provision
- learners learn to provide for themselves

So a key aspect of support is fostering a sense of self-reliance and this might require some 'de-schooling'. It gets away from the 'what can we do to support you' approach, to 'what can you do to support yourselves' approach. The support is still there but it takes a different form.

What would this mean in practice? Some of the following thoughts come to mind:

- Explicit, up front discussion about the meaning of 'support' in these terms.
- Clarity about and discussion of expectations

- Provision of an environment which is 'true' to these principles (such as described by the factors we have used in our research on emergent learning)
- Provision of tools that maximize the power of individuals to manage their own learning
- Modelling and demonstration of self-organisation by the course conveners
- Standing back and letting the learners get on with it, i.e. letting go of control

And perhaps the last point is where the shift might be difficult to make. So much of a traditional course is based on authority and control. Learners will not learn to self-organise unless we 'let go', even if that means letting go of traditional ways of thinking about learner support.

Attention OECD-PISA: Your Silence on China is Wrong

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http://www.downes.ca/cgi-bin/page.cgi?post=61515

I've mentioned this before, but it bears repeating: the PISA rankings should measure every child in China, not 'economies' such as Shanghai, Hong Kong and Macau (after all, Canada can't simply send in measurements for the Peel School Board or the Calgary Board of Education, both of which would score similarly well). And even the individual 'econom,ic zone' rankings are misleading. "Shanghai led the world in all three subjects—math, science, and reading. But that ranking is misleading http://www.brookings.edu/blogs/brown-center-chalkboard/posts/2013/10/09-pisa-china-problem-loveless"

target="_blank. Shanghai has a school system that excludes most migrant students, the children of families that have moved to the city from rural areas of China. And now for three years running, the OECD and PISA continue to promote a distorted picture of Shanghai’s school system by remaining silent on the plight of Chinese migrant children." (Note that TES, a European magazine, reported on December 6 that China has decided to participate as a nation in the next round of PISA http://www.tes.co.uk/article.aspx?storyCode=6379179"

target="_blank tests in 2015.)

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61515

Direct Link: http://educationnext.org/attention-oecd-pisa-your-silence-on-china-is-wrong/

On December 3, scores were released from the 2012 Programme for International Student Assessment (PISA), a test given every three years to 15 year-olds around the globe. Shanghai led the world in all three subjects—math, science, and reading. But that ranking is misleading. Shanghai has a school system that excludes most migrant students, the children of families that have moved to the city from rural areas of China. And now for three years running, the OECD and PISA continue to promote a distorted picture of Shanghai's school system by remaining silent on the plight of Chinese migrant children and what is one of the greatest human rights calamities of our time.

The numbers are staggering. There are an estimated 230 million migrants in China.[1] Approximately 5-6 million people have moved from rural areas to Shanghai since 2000. Imagine a population the size of Los Angeles and Houston combined relocating to a city that was already larger than New York City—and in only thirteen years! Shanghai's population today is estimated at about 24 million people, with 13 million native residents and 11 million migrants. For the most part, the migrants are poor laborers who fill the factories driving China's export-driven economic boom.

The exclusionary school enrollment practices are rooted in China's *hukou* (pronounced "who-cow") system. Although hukou dates back centuries, the current system was created by Mao Zedong's regime in 1958 to control internal mobility in China. Every family in China was issued a rural hukou by its home village or urban hukou by its home city, a document best understood as part domestic passport and part municipal license.

The hukou controls access to municipal services. Migrants in China with rural hukous are barred from a host city's services, in particular, social welfare programs, healthcare

providers, and much of the school system. Hukous are transferred from generation to generation. The children of migrants, even if born in Shanghai, receive their parents' rural hukou, which their children, too, will someday inherit no matter where they are born. As Kam Wing Chan, a Chinese migration and hukou expert at the University of Washington, puts it, "Under this system, some 700-800 million people are in effect treated as second class citizens, deprived of the opportunity to settle legally in cities and of access to most of the basic welfare and state-provided services enjoyed by regular urban residents."

Many Chinese officials recognize that hukous are harshly discriminatory. But reforms have been slow in coming. For decades, children from families with rural hukous were simply barred from big city public schools, shunted into dramatically inferior schools built especially for migrants. In a fall 2013 essay, Eli Friedman of Cornell University describes the migrant schools he visited in Beijing:

"These schools are hidden from sight, far from the towering monoliths of the central business district and the solemn Stalinist facades of Tian'anmen. They are tucked into narrow alleys strewn with trash and populated by mangy street dogs, seemingly a world away from the 'global' part of the city. Most schools are in dilapidated single-story brick buildings, with no indoor plumbing or central heating. While the city's public schools are all decked out in new multimedia appliances and computer labs, migrant schools often have only a single computer for the principal. Playgrounds in these schools hardly count as such — typically there's nothing more than a potholed concrete slab that serves as a basketball court for hundreds of students at a time. In the very first school I visited, children were playing in a mound of crushed coal, subaltern Beijing's equivalent of a sandbox."

Theoretically, at least, the ban against Shanghai's migrant children attending primary and middle schools (up to age 14) was lifted in 2008. For high schools (and the potential PISA population), Shanghai adopted a point system allowing some migrant children with highly educated parents or other high status characteristics to attend. That system went into effect July 1, 2013 so it is too early to gauge the impact of this very modest reform. And it obviously would have had no effect on Shanghai's school population for PISA 2012.

The barriers to migrants attending Shanghai's high schools remain almost insurmountable. High schools in Shanghai charge fees. Sometimes the fees are legal, but often in China, they are no more than bribes, as the *Washington Post* has reported. Students must take the national exam for college (*gaokao*) in the province that issued their hukou. An annual mass exodus of adolescents from city to countryside takes place, back to impoverished rural schools. At least there, migrant kids might have a shot at college admission. This phenomenon is unheard of anywhere else in the world; it's as if a sorcerer snaps his fingers, and millions of urban teens suddenly disappear.

The toll on children and parents is staggering. Families are torn apart. Some migrant parents leave their children with relatives in villages when they initially move to cities in search of work. The All China Women's Federation estimates 61 million children are "left behinds," as they are known in the country. These children's lives are marked by loneliness and despair. A recent book, *Diaries of China's Left Behind Children*, poignantly describes their plight. The book caused a huge sensation in China.

Children who accompany their parents to the city but are then sent back to rural areas for high school fare no betterthan the left behinds. In 2012, a 15 year-old Shanghai student, Zhan Haite, went on the internet to protest that she, despite living in Shanghai since she was six years old, was barred from enrolling in a Shanghai high school. Why, she asked, should she be sent to Jiangxi province for high school, a rural area from which her parents had come but where she had never lived?

China, Shanghai, and OECD-PISA

In 2010, Andreas Schleicher of the OECD revealed that the 2009 PISA was conducted in 12 provinces in China. The data from mainland provinces other than Shanghai have never been released, and OECD's list of participants in the 2009 PISA continues to omit them. A Chinese website leaked purported scores from other provinces, but the scores have never been confirmed by PISA officials in Paris.

This shroud of secrecy is peculiar in international assessment. Now the world has new data from the 2012 PISA. The OECD has not disclosed if other Chinese provinces secretly took part in the 2012 assessment. Nor have PISA officials disclosed who selected the provinces that participated. Did the Chinese government pick the provinces? Does the Chinese government decide which scores will be released? In 2012, the BBC reported that theChinese government did not "allow" the OECD to publish PISA 2009 data on provinces other than Shanghai. There is a lack of transparency surrounding PISA's relationship with China.

Shanghai is portrayed as a paragon of equity in PISA publications. A 2010 OECD publication,*Strong Performers and Successful Reformers in Education*, highlights model systems that the world should emulate. Shanghai is singled out for praise. One section on Shanghai is entitled, "Ahead of the pack in universal education." The city is described as an "education hub," and the only discussion that even remotely touches upon migrants is the following:

"Graduates from Shanghai's institutions are allowed to stay and work in Shanghai, regardless of their places of origin. For that reason, many 'education migrants now move to Shanghai mainly to educate their children." [2]

That description is surreal. PISA's blindness to what is really going on in Shanghai was also evident in the official release of PISA's latest scores. The 2012 data appear in volumes organized by themes. Volume II is entitled, *PISA 2012 Results: Excellence through Equity, Giving Every Student the Chance to Succeed*. Shanghai is named as one jurisdiction where schools "achieve high mathematics performance without introducing greater inequities in education outcomes (p. 28)" and one with "above average socio-economic diversity (p. 30)." In the 336 pages of this publication on equity, the word "migrant" appears only once, in a discussion of Mexico. The word "hukou" does not appear at all.

Is it possible that PISA officials are simply unaware of the hukou system and the media coverage cited above? That's doubtful, but even if it were the case, PISA's own data shout out that something is wrong with Shanghai's enrollment numbers. PISA reports that 90,796 of Shanghai's 15 year-olds are enrolled in school in grade 7 or above, out of a total population of 108,056 15 year-olds, producing an enrollment rate of about 84%. That's comparable to other PISA participants. [3] Shanghai appears as inclusive as any other PISA participant.

The denominator in that ratio, total population of 15 year-olds, is suspicious. Examine the statistics in Table 1 [4], the ten PISA participants most similar to Shanghai's total

numbers of 15 year-olds. As shown in the first column, the 15 year-old populations range from 84,200 in Hong Kong to 129,492 in Jordan. The second column shows the participating jurisdictions' total populations—adults, children, everyone. They range from 6.3 to 11.3 million. How is it that Shanghai, with a population two to four times that of these ten countries, yields a similar number of 15 year-olds? A back of the envelope calculation suggests that a jurisdiction with 24 million people should yield a minimum of 230,000 15 year-olds. The missing population in Shanghai exceeds the recognized one. Where did all of Shanghai's 15 year-olds go?

	15 year-old total population reported in PISA	Total population (mill)
Hong Kong	84,200	7.2
Austria	93,537	8.5
Czech Republic	96,946	10.5
Sweden	102,087	9.5
Portugal	108,728	10.5
Greece	110,521	11.3
Hungary	111,761	9.9
Israel	118,953	7.9
Belgium	123,469	11.1
Jordan	129,492	6.3
Shanghai	108,056	23.9

Table 1. Shanghai and Ten Other PISA Participants' Population Statistics

The most reasonable explanation is that migrant children are not counted in Shanghai's figures. But let's consider other explanations. Perhaps China's "one child" policy has been so effective that Shanghai has fewer children than other places. No, that doesn't make sense. The World Bank estimates that children ages 0-14 constitute 18% of China's overall population, which is comparable to most of the nations in Table 1. [5] Don't forget that for several years, European families have practiced their own "one child" policy without any guidance from government.

Perhaps Shanghai counted migrant children earlier in their school careers, but then, as indicated from the numerous accounts above, the children leave the city during the transition to high school. That is probably closer to the truth, but the numbers still do not square with other Shanghai data reported in PISA publications—for example, that Shanghai's enrollment rate at the age of compulsory education (primary and junior secondary) is 99.9% and that 97% attend senior secondary school. These figures can only be reconciled if migrant children, children without a Shanghai hukou, are *never* counted in school population statistics. That is stunning. Nevertheless, PISA praises Shanghai for achieving "universal primary and junior secondary education" and "almost universal senior secondary education."[6]

Also consider that the 108,056 figure reported in 2012 (and shown in Table 1) is a decline from the 112,000 total number of 15 year-olds reported in PISA 2009. How can that

possibly happen in a city that has been adding approximately one-half million people a year since 2000? If Shanghai added 1.5 million people from 2009-2012, how could the number of 15 year-olds decline? Again, it can only be because migrants aren't being counted. Shanghai's non-migrant population (those holding a Shanghai hukou) is indeed falling, and has been falling steadily for more than 15 years. Shanghai's population growth is entirely due to migrants. The decline in the number of 15 year-olds from 2009-2012 alone should have alerted PISA officials that something was amiss with the enrollment data coming out of Shanghai.

The only reasonable conclusion is this: officials in Shanghai are only counting children with Shanghai hukous as its population of 15 year-olds, about 108,000. And the OECD is accepting those numbers. It is as if the other children, numbering 120,000 or more, do not exist. This is not a sampling problem. PISA can sample all it wants from the official population. Migrant children have been filtered out. Professor Chan of Washington agrees with this hypothesis, saying in an email to me: "By the time PISA is given at age 15, almost all migrant children have been purged from the public schools. The data are clear."

What Now?

As a researcher who studies student achievement, I use PISA data. That requires trust and confidence in the integrity of the assessment. I can be confident, for example, that the scores from Portugal are from a representative sample of all 15 year-olds in Portuguese schools. I have no such faith in PISA scores from China. PISA-OECD has been silent about its special arrangement with China. All of the data from 2009 still have not been released. The data from Shanghai apparently only represent the privileged subset of 15 year-olds who hold Shanghai hukous. I don't know for sure. In the four volumes of data on PISA 2012, neither hukous nor the migrant children of China are discussed. Not a word. Not a peep.

PISA officials are not shy about offering policy advice to countries, especially policies that the OECD believes will promote equity. Delaying tracking and ability grouping, reforming policies governing immigration, distributing resources so that schools with less get more, and expanding early childhood education—all have been promoted as equity-based policies. But not a word about reforming hukou. Not a word on a discriminatory policy affecting the education of millions of Chinese children. Not a word on the human rights story of migrant families in China and the human suffering that they must endure.

TES, a European magazine, reported on December 6 that China has decided to participate as a nation in the next round of PISA tests in 2015. Let's hope that the PISA Governing Board (PGB) takes strong, effective action to clean up the mess surrounding PISA's testing in China by then.

—Tom Loveless

Post-Postmodernism: Technocratic Cultures?

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http://www.downes.ca/cgi-bin/page.cgi?post=61513
I have always felt myself to have a loose if grudging affiliation with postmodernism, at least, with respect to scepticism regarding things like the unification of truth and the march of progress (I'm also sceptical of logico-constructivist foundationalism, but I digress). But now there's a set of new schools of post-post-modernism http://www.columbiacurrent.org/2010/04/post-postmodernism/ calling for my affiliation - automodernism, complexism, hypermodernism, to name a few - and if I cared more I could probably refine my alignment more precisely. But I wonder whether this is true: "once one uses technology as the primum mobile of consciousness and global epistemological constructs, it’s easy to see how a next logical step would be a preferential shift to technocratic social organization, from individual communication to bodies politic." I would have thought the shift would be in the oppoisite direction. See also: Baudrillard's Proxy http://fringejournal.blogspot.ca/2013/11/baudrillards-proxy-disney-and.html.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61513
Direct Link: http://fringejournal.blogspot.ca/2013/11/post-postmodernism-technocratic-cultures.html

Post-Postmodernism: Technocratic Cultures?

I don’t think we’ll ever completely separate ourselves from postmodernist notions. After all, some postmodernist ideas have been percolating around in discourses of consciousness and meaning-making processes at least since Dante’s 13th-century *Letter to Cangrande della Scalla* in which the author (presumably Dante) discusses the fact that his work is polysemous. He expounds upon that notion and discusses four types of meanings which result in multiple strategies for interpreting texts.

Further, if postmodernist expanded the notion of “text” to include signs, natural phenomena, and more, well, we’ve had that in our consciousness ever since early Babylonian astrologers. In terms of creating patterns and developing codes / numerical strategies for text interpretations, we’ve certainly had that since Jewish*gematria*, and then also Kabbalistic practices.

This is not the place to develop a genealogy of postmodernist thoughts. I would love to do so, but I don’t want to deviate from the central idea, which is to say that for the last 10 or 20 years, theorists of all sorts have been attempting to declare postmodernism has declared officially “over” – and have proposed a wide array of alternative theories, many of which have to do with culture, technology, gender, and ethics.

There are aspects of postmodernist thought that I find very useful and I would not want to give them up. For example, I don’t want to give up some of the more interesting notions of reality and reality construction.

Perhaps it’s not productive to say that the world is completely an illusion, but it’s fun to think so. I also like the social constructivist ideas, especially when

connected with power. For example, I have to say that I agree when Foucault and Baudrillard suggests prisons exist not only to enforce behavioral norms, but also to delude us into thinking that there is a "free" world and that "freedom" is an absolute, when in reality, there are all kinds of constraints to our freedom, beginning with language itself, and ending in behaviors, beliefs, and values that may be, in essence, coercive.

I think it is interesting that many of the new ideas of post-postmodernism have much to do with new technologies and the impact on identity (digital communities), selfhood (genetic engineering), privacy (Internet, surveillance, UAVs), communication (communications technologies), understanding the world (computing, Big Data), and more.

In fact, once one uses technology as the *primum mobile* of consciousness and global epistemological constructs, it's easy to see how a next logical step would be a preferential shift to technocratic social organization, from individual communication to bodies politic. The implications could pretty scary. Technocracies are notoriously dehumanizing, especially when combined with command economies or oligopoly-tending capitalistic economies.

Here are a few recent ideas:

Pseudo-modernism / digimodernism: Digital technology can dismantle persistent postmodern issues such as "existential uncertainty" and "artistic anti-essentialism." Kirby argues that the post-postmodern generation reverts to modernism, at least in the sense that there is a renewed belief in agency and in individual ability to influence others (by means of technology). See Kirby (2009) *Digimodernism: How New Technologies Dismantle the Postmodern and Reconfigure our Culture*.

Automodernism: Robert Samuels argues that new technology allow a new level of neutrality to emerge. At the same time, postmodernist identity "flux" is supplanted by new, hardened identity politics.

Complexism: Philip Galanter has created a fusion of technology and the arts; it has been suggested that he echoes and updates the Russian and Italian Futurists (who were certainly pro-technology, with the idea that technology helps establish a coherent New World Order. Some of the enthusiasm died in WWI and in the early Soviet Union.

Hypermodernism: Hypermodernism, coined in the 1990s, is a chaotic, high-intensity, fast-paced world of rapid and always evolving identity and social relationships. The hypermodern is not characterized by indeterminacy (as would the postmodernist world), but in quick moments of stasis, followed by discrete, lenticular "pods" of culture / socioeconomic / socio-political ontology.

Altermodernism: Nicolas Bourriaud embraces alterity and takes it further, suggesting that the creolization of our cultures in the global context will create a universal aesthetic. Multiculturism is worn out. The next stage is the "creole"

(which will probably change, given the colonialist overtones implicit in the word itself.)

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The Publisher of The Future Acts Like An Agency Too

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http://www.downes.ca/cgi-bin/page.cgi?post=61512
Watch out. As goes publishing, so goes educational publishing. "'Four years ago advertisers just wanted impressions served to a publisher’s audience, now they want to be immersed in the content,' said Moksha Fitzgibbons, Complex Media’s head of sales. Brands also pay Complex to create content that isn’t published on its properties, he said. They buy it, and publish it on social networks or on their own sites." It's getting harder and harder, if not impossible, to distinguish between independent content, and branded paid-for content, especially in social media.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61512
Direct Link:
http://digiday.com/agencies/the-publisher-of-the-future-looks-like-an-agency-too/

On the Web, brands are now looking for ways to reach consumers through content and experiences, as opposed to straight-up, easily ignorable banners.

That's good news for publishers, whose experience and expertise in creating and distributing content makes them ideally placed to do so for brands. A growing number of publishers are building out their own branded content divisions, paid media operations, brand strategy units, and digital production services in-house. Brands need no longer rely on agencies to help them reach and engage their audiences, they can turn to publishers instead.

Look no further than Vice Media, which yesterday buffed up its agency capabilities with the addition of digital agency Carrot, with which it will help Vice clients with social campaigns and digital products, as well as serve Vice's own editorial needs. Vice already owns a brand strategy and creative shop it calls Virtue, and now hopes the combination of creative, technology, and distribution all under one roof will enable it to work even more effectively with brands.

"Brands need to respect the fact that publishers know their audience better than anyone. For us, it's not about making branded content, it's about making content that's on brand. There's a difference," Andrew Creighton, president of Vice Media, told Digiday. "Brands wont get the metrics they want by fooling an audience or hoodwinking them. There's a lot of that out there."

It appears brands agree. Increasingly they're hiring publishers to create content on their behalf. GE is working directly with publishers more than ever, according to its global brand marketing lead, Linda Boff. It enlisted the help of BuzzFeed, for example, to produce content

to align itself with theParis Air Show, as well as other cultural events and themes over the past couple of years."Publishers bring us depth on a particular topic and a passionate audience," Boff explained.
Brands still rely heavily on agencies, of course, and that won't change any time soon. It's unlikely publishers will be formulating global brand strategies or churning out TV ads in 2014. But when it comes to digital, they're well placed to capitalize on the brand need for interesting, engaging content. And it's easy to see why publishers are eager to get in on the content creation game; it's a lucrative business.

"Digital agencies are all trying to make content now," said Mike Germano, the founder of Carrot who will become chief digital officer of Vice Media. "For us to add that capability would have been a big investment, and it's not something we're naturally good at. When it comes to creating meaningful content, publishers like Vice are best at it."

This provides a clear opening for savvy publishers. The commoditized banner-ad world has driven ad prices to the ground, but brands are still willing to pony up for unique content-like programs. Witness Vice's work with Intel on "The Creators Project," a portion of the Vice site highlighting the impact of technology on music, art, film, and design. It's heavily branded, but it's the type of content Vice users expect from the brand editorially.

Publishers like Complex, which focuses on young men, see similar opportunities. This year Complex said it created an average of 47 pieces of content a month on behalf of major brands, including McDonalds, Gillette, Levi's, Toyota, Adidas and others. It also partnered with Pepsico to launch Green-Label.com, a Mountain Dew branded lifestyle site that's staffed by Complex's editorial employees and now attracts more than twice the traffic as MountainDew.com

"Four years ago advertisers just wanted impressions served to a publisher's audience, now they want to be immersed in the content," said Moksha Fitzgibbons, Complex Media's head of sales.

The "immersion" Fitzgibbons describes gives publishers a chance to charge far more than they can for banner ads. Content-programs tend to be long-term deals, attract higher rates than display ads, and often enable publishers to charge a service fee. Brands also pay Complex to create content that isn't published on its properties, he said. They buy it, and publish it on social networks or on their own sites. In those instances, Complex is competing with everything from creative agencies to PR agencies for those dollars.

There's also money to be made on the media side, too. BuzzFeed is building an in-house media agency of sorts, which buys promoted listings on social networks on behalf of brands, to drive more eyeballs to their content on the BuzzFeed site.

"We are seeing growing revenue from brands and agencies trusting us with their social budgets," said BuzzFeed CEO Jonah Peretti.

But when it comes to content creation, ultimately it's about what's in your DNA as a company. Major agencies are building content studios and editorial operations but their background is in advertising – content has never really been in their blood. That's why, in the short-term at least, publishers are best placed to fill the gap.

Or, if you ask Vice, they always should be.

"We don't want brands to tell us how to make content, and we won't tell them how to make their products," Creighton concluded. "It's about letting the experts do what they do well.

Unbundling Higher Education, A Doubly Updated Framework

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http://www.downes.ca/cgi-bin/page.cgi?post=61510

The subject of unbundling of education has been of interest to be over the years, from the Future of Online Learning http://www.downes.ca/future to the Role of the Educator http://www.huffingtonpost.com/stephen-downes/the-role-of-the-educator_b_790937.html.

This post takes a more structured (or at least, a more square) look at the subject. This redraft of Staton's model takes a more learner-centered approach to the subject. "In the end, people are buying knowledge and the process of acquiring knowledge," he writes. "They are not buying the Content Loop. The Content Loop is what content providers create to ensure they acquire the knowledge they need."

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61510

Direct Link: http://edumorphology.com/2013/12/unbundling-higher-education-a-doubly-updated-framework/

Unbundling Higher Education, A Doubly Updated Framework

December 11, 2013 in Disrupting Education, web 2.0 with 0 Comments

This is what people buy when they're buying a degree.

Over the past year, I've had to update my framework as I realize that the language I use just doesn't click with the audience. In particular, I kept describing the service from the service provider's point of view, rather than they value proposition from the customer's (student's) point of view. So, here's how I've changed a few value propositions.

"The Content Loop" is now "Knowledge Acquisition." In the end, people are buying knowledge and the process of acquiring knowledge. They are not buying the Content Loop. The Content Loop is what content providers create to ensure they acquire the knowledge they need. Within that quadrant, I've chosen to change Content Authoring to Expert Information. Again, authoring content is what the service provider does; expert information is what people pay for.

Within Access to Opportunities, I've changed "Signals of Achievement Velocity" to "Signals of Aptitude." Largely because these are the same thing, people just get Aptitude because of the SAT. Achievement Velocity, I think, communicates a long run bet on the economic productivity of the student. That being said, people had to think a minute to understand what I was saying when I said achievement velocity. When I say aptitude, they get it immediately.

"Metacontent and Skills" is now "Cognitive and Employable Skills." Metacontent aslo doesn't click with people. It means the subliminal things that are taught, largely by the instructor being an example: how to do a math problem, how to give a presentation, how to respond to complex and tough questions. Often when you interview alumni 10 years out they remember their instructors because of the metacontent, and they don't remember the content at all. However, "metacontent" isn't really a word. When I've used the phrase "cognitive skills" it seems to resonate. The education establishment seems to use "cognitive skills" to describe learnings that are picked up earlier in life: Grammar, grit, problem solving – things that get deeply embedded in the brain and character of individuals. This being said, young adults pick up a lot of behavioral models and life-skills that help them work for economic organizations while they're in college – and none of them are taught directly.

Within "Personal Transformation," I've changed "A Personal Platform" into "A Secured Life Transition." What I always meant was that people need an intermediate step in between where they are now and where they want to be. A Personal Platform makes sense, but it's confusing to most people. A Secured Life Transition has worked better in presentations, that's for sure.

Sorry for the confusion. Thanks for bearing with me. In the end, you always have to test ideas, products and services with the market. If the market doesn't get what you're saying, you have to adapt.

Curiosity and the Joy of Index

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http://www.downes.ca/cgi-bin/page.cgi?post=61509
I once wrote a two-line poem to the effect that I realized how much I love to sort my stuff. This article reminds me of that poem (which is otherwise forgettable). Chris Lott writes, "James Delbourgo’s essay The Triumph of the Strange
http://chronicle.com/article/Triumph-of-the-Strange/143365/
is a clever and fascinating rumination on the concept and politics of curiosity in history and art." It is all that, but it ends with the growing disparity between the capacity to know and the need to know.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61509
Direct Link:
http://chrislott.org/entry/curiosity-joy-index/

I can't say I've thoroughly unpacked it yet, but James Delbourgo's essay **"The Triumph of the Strange"** is a clever and fascinating rumination on the concept and politics of curiosity in history and art. A few choice bits that might entice you to read **the whole thing**:

> Curiosity, Dillon proposes, is a way of knowing that looks askance. It draws attention to the unexplained or overlooked fragment, to invite us, if possible, to look sideways and look closely at the same time. As such, its promise of knowledge is ambiguous. Does curiosity seek to unmask the strangeness that absorbs its attention, or is it an invitation to luxuriate in that strangeness? Does it carry an inherent Baconian injunction to go further and illuminate, or does it recommend the alternative pleasures of not knowing? "Enigma lies at the core of the curious experience," Marina Warner comments in a short essay included in Curiosity, "epiphany should not reveal all." So is curiosity a wake-up call or a waking dream?
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> [...]
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> Is curiosity, however, even a coherent concept? What, if anything, unites the walrus and the Rolodex? According to Dillon and Warner, curiosity is lustful and avaricious, yet as playful as Alice in Wonderland. It distracts itself by flirting with astonishment yet is driven to exacting inspection. It loves secrecy and enigma yet is insatiably questioning and bent on decipherment. It adores intricacy and ingenuity, only to find how evanescent, incommunicable, and random they can be. It's harmless fun and has "an innocent eye"—a central theme, suggested by the Hayward Gallery curator Roger Malbert—yet leads to dangerous revelations. Or maybe it makes dangerous revelations because of this innocence: It follows its own hunches because it doesn't see where they lead. Think of the character Jeffrey Beaumont in Blue Velvet: "I'm seeing something that was always hidden."
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> [...]
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> But Edward Snowden's revelations about the NSA raise fundamental questions about the intersection of curiosity, the Internet, and political power. Is the Internet liberating curiosity as never before, or bending it to corporate profit and state surveillance? In David

> Weinberger's heroic vision, spelled out in Everything Is Miscellaneous (2007), the Wunderkammer web democratically breaks down both intellectual and social barriers, allowing us to "confront the miscellaneous directly in all its unfulfilled glory." This dream of the Internet as virtual Wunderkammer is a dream of both free navigation and total information; a naïve dream, that is, at once epistemological and political, of unmediated knowledge.
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> [...]
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> The freedom to assemble endless digital miscellanies is arguably only a symptom of today's economic order, in which amassing vast personal fortunes threatens the liberty of ordinary citizens.

And, of course, given my routine ruminations on lists and curation (after all, curiosity and curation share the Latin root *cura*, or care), I enjoyed this bit:

> Early-modern curiosity collectors loved to catalog their cabinets: Call it the joy of index. Dillon suggests that such lists also constituted "a kind of story," but do they? The list is an open form, not a closed and completed one. Curiosity collections could absorb countless new objects precisely because they didn't propose a coherent narrative about them.

Delbourgo's essay started life as an examination of Brian Dillon's ***Curiosity: Art and the Pleasures of Knowing***, a book that looks fascinating on its own. I haven't thought too much about it (yet), but the intersection of thinking and activities behind cabinets of curiosities, lists and other curation–not to mention indices–feels like a rich area to explore.

A BBC Broadcast on Computing: The Joy of Logic

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http://www.downes.ca/cgi-bin/page.cgi?post=61508

How could you go wrong? "‘The Joy of Logic’ also hails logic’s all-time heroes: George Boole who moved logic beyond philosophy to mathematics; Bertrand Russell, who took 360+ pages but heroically proved that 1 + 1 = 2; Kurt Godel, who brought logic to its knees by demonstrating that some truths are unprovable; and Alan Turing, who, with what Cliff calls an ‘almost exquisite paradox’, was inspired by this huge setback to logic to conceive the computer."

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61508

Direct Link: http://computinged.wordpress.com/2013/12/11/a-bbc-broadcast-on-computing-the-joy-of-logic/

Not sure how (if?) we can see this in the US, but it sounds really good.

A sharp, witty, mind-expanding and exuberant foray into the world of logic with computer scientist Professor Dave Cliff. Following in the footsteps of the award-winning 'The Joy of Stats' and its sequel, 'Tails You Win – The Science of Chance', this film takes viewers on a new rollercoaster ride through philosophy, maths, science and technology- all of which, under the bonnet, run on logic.

Wielding the same wit and wisdom, animation and gleeful nerdery as its predecessors, this film journeys from Aristotle to Alice in Wonderland, sci-fi to supercomputers to tell the fascinating story of the quest for certainty and the fundamentals of sound reasoning itself.

Dave Cliff, professor of computer science and engineering at Bristol University, is no abstract theoretician. 15 years ago he combined logic and a bit of maths to write one of the first computer programs to outperform humans at trading stocks and shares. Giving away the software for free, he says, was not his most logical move…

With the help of 25 seven-year-olds, Professor Cliff creates, for the first time ever, a computer made entirely of children, running on nothing but logic. We also meet the world's brainiest whizz-kids, competing at the International Olympiad of Informatics in Brisbane, Australia.

'The Joy of Logic' also hails logic's all-time heroes: George Boole who moved logic beyond philosophy to mathematics; Bertrand Russell, who took 360+ pages but heroically proved that 1 + 1 = 2; Kurt Godel, who brought logic to its knees by demonstrating that some truths are unprovable; and Alan Turing, who, with what Cliff calls an 'almost exquisite paradox', was inspired by this huge setback to logic to conceive the computer.

Ultimately, the film asks, can humans really stay ahead? Could today\'s generation of logical computing machines be smarter than us? What does that tell us about our own brains, and just how 'logical' we really are…?

Learning about SOLO – using self regulation and feedback to increase student achievement

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http://www.downes.ca/cgi-bin/page.cgi?post=61505

Interesting post on the Structured Observed Learning Outcome (SOLO). "The reason why we are investing quite heavily into SOLO," writes Alice Leung, "is because as teachers, we know that self-regulation and quality feedback are the two of the most effective elements in increasing student achievement." This post outlines mechanisms for describing learning intentions and success criteria and has a sample activity (11 pages, Scribd) and presentation used with students (5 page Scribd). Reflection is good; this is a pretty simple tool but I like the way it approaches the need to be reflective.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61505

Direct Link: http://aliceleung.net/2013/12/04/learning-about-solo-using-self-regulation-and-feedback-to-increase-student-achievement/

This year my faculty have been designing units of work for the new NSW science syllabus for the Australian Curriculum with the Structured Observed Learning Outcome (SOLO) framework.(If you don't know what SOLO is, watch this video for a crash course) The reason why we are investing quite heavily into SOLO is because as teachers, we know that self-regulation and quality feedback are the two of the most effective elements in increasing student achievement. SOLO, with its associated learning intentions and success criteria, will allow our faculty to develop our students' self regulation skills and further improve the quality of teacher feedback and peer feedback.

For most of the year, we have been designing learning with the SOLO framework so that each series of lessons have learning intentions and success criteria catergorised by the different SOLO levels of thinking and understanding. A couple of weeks ago, we went a step further. The whole faculty sat down and designed an agreed approach to how we will use these learning intentions and success criteria. As a team, we decided learning intentions, success criteria and SOLO were examples of best practice, but we need to ensure that it filters down to every individual student. We agreed that learning intentions, success criteria and SOLO must be high visible and evident in everyday teacher practice for it to have maximum impact on student achievement.

As a team we decided on the following for communicating learning intentions and success criteria to students:

- At the start of a topic, students are given a list of the learning intentions and success criteria for the whole topic so they know where they are headed before they start learning about the topic.
- Each lesson will have the specific learning intentions and success criteria displayed. This can be written on the board, or displayed via a data projector or interactive whiteboard.
- The teacher will explain the learning intentions and success criteria to students at the start of the lesson.
- At the last 10 minutes of the lesson, students are to reflect on whether they have achieved the success criteria for the lesson and what they need to do next to be successful.

As a team we also agreed that we need to teach students about SOLO. We have designed different activities for students to learn about SOLO. Here's one of the activities

View this document on Scribd

As a team we also agreed to providing student feedback using the SOLO framework.

What we hope to see are:

- Students and teachers using a common language to discuss levels of thinking and understanding
- Students and teachers using SOLO as a way to see current levels of thinking and learning and where that thinking and learning needs to head
- More students moving from a fixed mindset to a growth mindset. Many students have a mindset that they are "not good" at science. We want our students to realise that to be good at science, there needs to be a certain level of thinking and learning that can be achieved with effort, as opposed to natural abilities. It's part of making learning and thinking visible.

Our faculty has also devised a draft plan to evaluate the impact of SOLO on students' achievements and mindsets, with help from a university academic. So watch this space for more updates on our SOLO journey.

The Collaborative Economy Is Real (And It's Here)

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http://www.downes.ca/cgi-bin/page.cgi?post=61504
So anyhow Jeremiah Owyang announced his new venture "Crowd Companies http://crowdcompanies.com/" target="_blank" at LeWeb in Paris and picked up some tech-business press, which is what LeWeb is all about. These are two very different perspectives. The Wired article http://www.wired.com/business/2013/12/sharing-economy-goes-corporate/ (of course) gushes. "Of all the big ideas to emerge out of Silicon Valley in the past decade, none seem to resonate with personal computing’s counterculture roots as much as the so-called sharing economy... As it turns out, however, sharing has also shown itself to have striking profit potential." David Armano http://darmano.typepad.com/logic_emotion/2013/12/collab.html focuses on "the collaborative economy" (and not so much sharing). "Individuals who have never met in real life (makers), collaborating over the Web... " to make products at a fraction of what they would have cost otherwise. I think there's value in community production - I gave two talks on the idea today - but I'm less sanguine abpout it being so easily monetized. When community becomes economy, it becomes all about factories, and never parks and schools.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61504
Direct Link: http://darmano.typepad.com/logic_emotion/2013/12/collab.html

It's not easy to determine which trends and movements are worth paying attention to. We live in an age where technology seems to move at pace that's impossible to keep up with. I spend a lot of my time dealing with global brands who are looking to scale and integrate social as part of their core marketing—and in some cases business strategies, and I can tell you first hand that these organizations have their work cut out for them as we are now in the trenches of operationalizing the disruptions caused by digital's latest iteration.

When my friend Jeremiah Owyang first briefed me on what he was doing around what he likes to call "The Collaborative Economy" (some call it the share economy), I was pressed to see the immediate impact on my day to day responsibilities as I work with these organizations. Gradually, I began to see the importance of the movement. I'm sure many of you reading this now use Uber to get around your area or when you travel—it's a new-ish model which relies partially on individuals and their personal vehicles which become part of the Uber system (and it's a fantastic customer experience) and of course there's the Air BnB's of the world and anything with the word "crowd" in it.

But the lights really went on for me when I watched this video of a boy born without a hand and his father who was determined to help him. The video which I highly recommend watching calls out a few specific factors which are signature attributes of the collaborative economy. Individuals who have never met in real life (makers), collaborating over the Web to create a simple but

effective prosthetic which can grasp items—a father who finds them and then obtains the directions (for free) and buys a 3D printer to "print" the pieces which he then assembles.

This example hits me on two levels. As a father, I can relate to searching for and finding an unconventional solution to help his kid out. And from a business perspective, I can't help but marvel at how disruptive this is. The solution detailed above cost but a fraction of what a traditional prosthetic would have and it allows the family to "print" upgraded designs as they are made available. This is good news for dads and sons (and anyone in a similar situation) and perhaps less good news for companies who make very expensive prosthetics. This is one of the many stories that signal the emergence of the collaborative economy.

Jeremiah Owyang is announcing the official launch of his new venture "Crowd Companies" at LeWeb in Paris. I'd encourage keeping a close eye on what he's covering and following related developments like the one in this story. When you work for a large organization that's been very successful for a long time, it's natural to feel like you only have to worry about your direct competitors. But the Collaborative Economy competes in a different way, inventing entirely new models and disrupting rather than competing directly. It's worth paying attention to both as a consumer and business leader.

Sun Tzu and the Art of Disrupting Higher Education

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http://www.downes.ca/cgi-bin/page.cgi?post=61503
I'm not sure Sun Tzu is the best model to use when discussing innovation in education (I prefer Lao Tse, "The excellence of water appears in its benefiting all things, and in its occupying, without striving, the low place which all men dislike). But it's business writing, so it's all Sturm und Drang, I guess. Anyhow, Len Sherman's point is that the sceptics are wrong to dismiss the Udacity pivot to corporate learning as a failure. "It fails," he writes, "to recognize that Thrun’s pivoted business model poses a far more serious threat to traditional higher education institutions than Udacity’s original approach." Udacity is now focusing on an area long shunned by traditional institutions, he says, and in so doing threatens to undermine one of the key foundations of the universities' business: employability.
I don't agree with all the details but I agree with his overall premise. In particular, I think Udacity's pivot was a failure - if it's going to do corporate learning, it will need new technology as well as a new focus, or it will be mashed by incumbents. And secondly, I think that post-secondary education has been investing in corporate learning, but not in such a way as to challenge the essential dominion of formal learning and credentials. So, with Sherman, I think higher education is prone to disruption. It wouldn't take much to create substantial change in the sector. But contra Sherman, I think it will take significantly more than that Udacity was offering to do the trick. Anyhow, good article, worth a careful read.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61503
Direct Link: http://www.lsherman.com/sun-tzu-and-the-art-of-disrupting-higher-education/

In 512 BC or thereabouts, the venerable Chinese general, Sun Tzu wrote *The Art of War* in which he proffered the following advice on military strategy:

The highest form of generalship is to balk the enemy's plans…the next best is to attack the enemy's army in the field; and the worst policy of all is to besiege walled cities.

Sun Tzu's advice applies equally well in business, as disruptive new ventures are well advised not to initiate an all out war aimed at taking over incumbent market leaders' core markets– their "walled cities." Sebastian Thrun, the self-declared father of the modern movement to disrupt higher education with Massive Open Online Courses — aka MOOCs — has learned this lesson well. And therein lies an instructive tale.

MOOCs and university walled cities

For those unfamiliar with this space, prior to 2011, Thrun was a tenured professor at Stanford University who taught one of the most popular computer science courses on campus, routinely packing his lecture hall with 200 students.

But after hearing Salman Khan's inspiring TED talk in March, 2011, Thrun reckoned that he could reach a far larger global audience by transforming his course to video format. He set out to convert his popular Stanford course to online delivery which initially featured videos produced with nothing more than a camera, a pen, and a napkin. Despite the low initial production quality, many of his 200 Stanford students chose to switch to his video version because they could absorb the material at their own pace and on their own schedule. Eventually, the 200 student classroom dwindled to a group of 30. Meanwhile, the course's popularity exploded online. Within two weeks of its announcement, 56,000 students from around the world had enrolled, swelling to 160,000 by the start of the virtual semester — more students than Thrun could reach in his physical classroom in 800 years.

The initial experience convinced Thrun that he could craft an even better course with interactive Web tools that adequately recreated the intimacy of one-on-one tutoring. The student value proposition seemed compelling: one of the best professors from one of the best universities teaching one of the most popular courses on his very best day (Thrun re-taped his lecture modules until perfected) — all for free! The audacity (root for the venture's ultimate name) and potentially vast scale of the endeavor — along with a dash of founder hubris — prompted Thrun to leave the comfort and prestige of his tenured position at Stanford. Thrun launched *Udacity* with a $5 million Series A investment from Charles River Ventures and $300,000 of his own money.

In response to its extraordinarily successful launch — at least as measured by student enrollments – Udacity rapidly expanded its online course offerings, and was soon joined in this space by a similar and even larger Stanford spinoff venture — Coursera — as well as by edX, a MOOC joint venture between MIT and Harvard. Collectively, the Big 3 MOOCs soon attracted >3 million course enrollments and over $100 million in venture investment.

As these new ventures entered their second year of operation, despite the lack of a clear sense of how they would convert eyeballs to dollars, it was hard to not get swept up in the noble aspiration to democratize the availability of first rate education to every citizen of the world within reach of a computer and a broadband network. Thrun was one of the

most vocal MOOC proselytizers, explaining his decision to leave traditional academia in January 2012 bysaying:

I can't teach at Stanford again, I feel like there's a red pill and a blue pill. And you can take the blue pill and go back to your classroom and lecture your students. But I've taken the red pill. I've seen Wonderland."

At the same time, Thrun also boldly predicted that Udacity would profoundly disrupt the traditional university system, noting:

In 50 years, there will be only ten institutions in the world delivering higher education and Udacity has a shot at being one of them."

In essence, Thrun was declaring disruptive war on the walled cities of established universities, threatening a technological revolution that would blow up a number of cherished institutions and traditions.

Sacré bleu, could it really be that the grandchildren of today's college students would no longer see ivy covered buildings adorned with honorific statues and gargoyles, large lecture halls filled with a mix of fascinated and napping students, tenured academic faculty pontificating on arcane research topics, guy- and gal-watching on manicured quad lawns and game day mania at college football and basketball games?!

Not so fast!

But less than two years after his bold pronouncement on the impending death of higher

education as we know it, a discouraged Sebastion Thrun downgraded his messianic view and hyperbolic enthusiasm by noting:

I'd aspired to give people a profound education–to teach them something substantial, but the data was at odds with this idea. We were on the front pages of newspapers and magazines, and at the same time, I was realizing, we don't educate people as others wished, or as I wished. We have a lousy product.

What precipitated such a dramatic fall from grace?

For one thing, Thrun and his fellow MOOC pioneers were undoubtedly troubled by stubbornly low student completion rates, which continued to hover in single digits for most courses, despite multiple attempts to improve pedagogy and student engagement. Then too, the path to profitability — at least for the VC-backed, for-profit ventures, Udacity and Coursera — remained cloudy. Simply throwing more free courses from more universities on a MOOC platform appeared unlikely to yield a viable investment return, notwithstanding attempts to add "freemium" services such as test validation, completion certificates and recruiting data services.

But perhaps the most bitter disappointment for Udacity was its widely noted failure in a pilot program to replace in-class education at San Jose State University in California. In late 2012, Thrun proposed a partnership to California Governor Jerry Brown, who had been struggling to cope with rising tuition costs, poor student performance, and overcrowding in state universities. At a press conference the following January, Brown and Thrun announced that Udacity would open online enrollment in three subjects–remedial math, college algebra, and elementary statistics–that would count toward credit at San Jose State University, a 30,000-student public institution.

Courses were offered for $150 each, and students were drawn from lower-income neighborhood high schools and the members of SJSU's student body for whom there was no space in conventional classrooms. The pilot's target students were struggling to keep up with requisite levels of educational achievement, prompting Thrun to declare at a press conference:

A lot of these failures are avoidable. I would love to set these students up for success, not for failure.

But when test results from the first pilot courses came out, it was clear that Udacity's online courses failed to deliver acceptable results. In particular, it was found that 74 percent or more of the students in comparable classroom courses passed, while no more than 51 percent of Udacity students passed any of the three online courses offered.

Notwithstanding the fact that this initial pilot targeted a particularly challenging student population — which in retrospect was ill-advised for a venture at such a primitive state of development – adverse publicity led to a temporary suspension of the Udacity online course experiment. Critics — and there had been many all along the way — cheered Thrun's comeuppance. Some declared that the poor pilot performance was "predictable" while others lamented the "immorality" of public funds being used to pay a for-profit company to experiment on students with an unproven new approach to higher education.

Academics' schadenfreude was understandable payback for Thrun's hyperbolic zeal in promoting the pilot program, and many were quick to claim victory against Thrun's unsuccessful attempt to invade their university walled city.

Immoral experimentation?

But if Thrun's victory laps were premature, so were critics' condemnations.

There are so many things wrong with such quick and sweeping condemnations of Udacity's approach, intent and even morality that's is difficult to know where to start. But as this debate gets to the heart of the future of higher education, it is important to set down some markers.

Experimentation and fast learning from failure lies at the very heart of technological progress, so drawing sweeping conclusions from an initial pilot test demonstrates a self-serving lack of understanding of how innovation works. As an analogy, I would hope we wouldn't suspend research on all cures for cancer because an initial clinical trial regrettably failed to save the lives of some terminally ill patients. Lest this sound like a deliberately draconian analogy, it is important to note that what compelled Governor Brown to seek out experimentation in this case was his recognition that California had neither the budget nor the resources to adequately educate the state's young adults, particularly the most vulnerable students requiring remedial attention. Despite the fact that state education expenditures per capita had increased by nearly 25% over the past decade, too many young adults were failing to receive the education required to live a fulfilling, productive life. Under the circumstances, those who so swiftly and harshly condemned the search for new solutions to a chronic and worsening education problem in California should reexamine the logic of simply throwing more money at a system that was not able to deliver acceptable results.

As it turns out, after a two month hiatus, Udacity's online courses returned for a second semester, with dramatically better results. As noted in the table below, for some courses, online learning achieved better outcomes than traditional classroom formats (at a fraction

of the cost). Whether this is the result of a significantly different student sample or due to improvements made in course design between the two trials is unclear. But that's exactly the point. We need *continuous disciplined experimentatio*n to determine the most cost effective approaches to higher education. And we should learn from, not condemn inevitable setbacks along the way.

	Spring Pilot 2013	Summer Pilot 2013	SJSU On-Ca (based on
Elementary Statistics	50.5%	83.0%	76.3%
College Algebra	25.4%	72.6%	64.7%
Entry Level Math	23.8%	29.8%	45.5%
General Psychology	*not offered*	67.3%	83.0%
Intro to Programming	*not offered*	70.4%	67.6%

*(*Represents students who scored a C or better)*

Looking more broadly beyond the San Jose experiment, it is important to recognize that the higher education model in the US is broken and will be disrupted by Udacity or others committed to find more cost effective mechanisms to deliver higher quality, more relevant higher education. To substantiate this assertion, let's start by observing that higher education meets *all* of the conditions that measure the vulnerability of *any* industry to disruptive transformation.

The fourth point on this list is worth noting. In my business strategy course at a Tier 1 university, I often ask my MBA students to cite some examples of the greatest technological breakthroughs in human history. Common responses include the wheel (big improvement!), the printing press, electricity and, for those with shorter memories, the iPhone. Then, as I stand before a blackboard poised to record the answers, I ask my students to cite the biggest technological leaps in the history of *education*. But this question usually stumps the audience, drawing only tepid responses including “chalk” and “Powerpoint”. Hardly the stuff of technological revolution! Indeed the structural characteristics of my class (if not the caliber of teaching) differs little from the great Socrates — a predecessor of Sun Tzu. We both gather a limited number of pre-selected students — he under a tree, and me in a classroom — to engage in an inherently labor intensive dialogue aimed at imparting knowledge, judgment and critical thinking.

When an instructor is talented and students are engaged, this method works quite well. However there are inevitable drawbacks to this time-honored approach: inherently high cost, inflexibility (requiring students to metaphorically “gather under a tree”), and a chronic dearth of talented teachers. This last point is worth stressing. Despite the widely reported increase in the costs of delivering higher education, many scholars — for example Clay Christensen andRichard Arum — have also documented declines in student learning outcomes, notably college graduates’ critical thinking and writing

skills. In short, we're paying considerably more for and getting less from higher education.

Is there something about education that makes it uniquely immune to technological progress?

Defenders of the status quo would say yes, pointing to the numerous past failures of communication technology breakthroughs — movies, radio, television and the Internet — to live up to lofty claims of changing education forever. So why should we believe that MOOCs — or whatever else you choose to call emerging online education formats — will be different this time?

New York Times columnist Thomas Friedman perhaps answered this question best when he said:

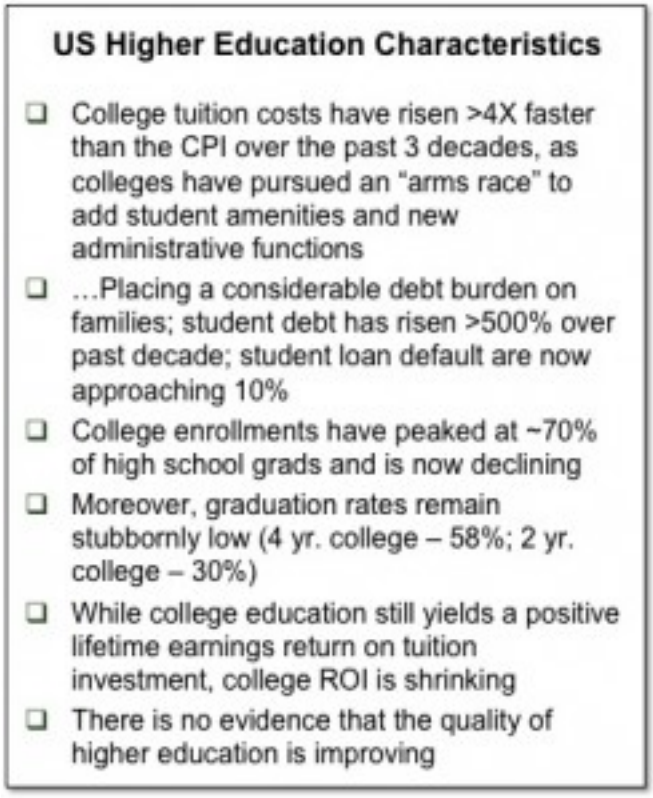
Big breakthroughs happen when what is suddenly possible meets what is desperately necessary

What makes disruption of higher education "suddenly possible" is the confluence of four emerging technologies:

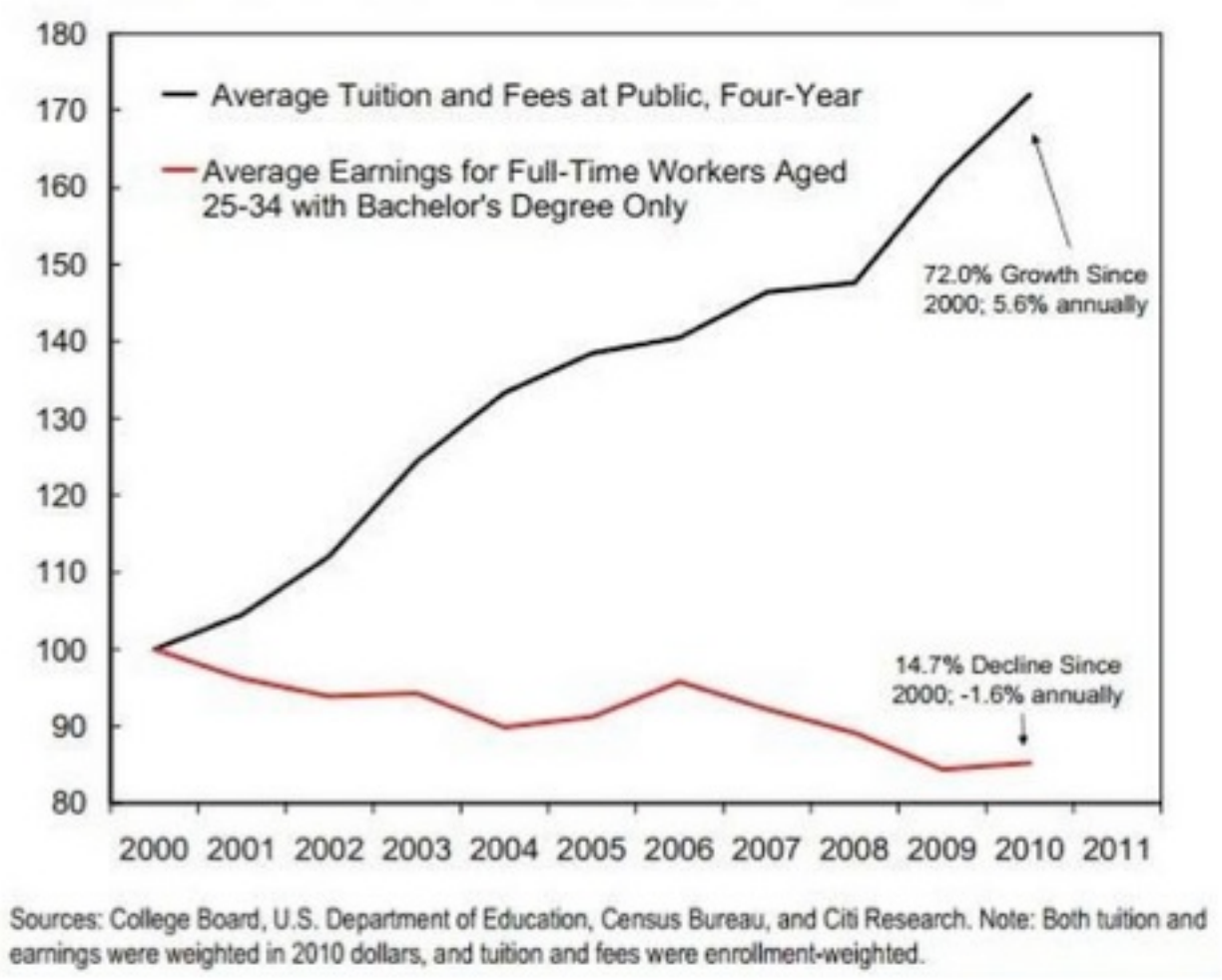
- Web 2.0 interactivity tools that allow much higher forms of interactive student engagement — with instructors and with each other
- Widespread high speed broadband availability
- Plummeting IT and video production costs
- Rapid advances in online pedagogical techniques, including adaptive, personalized courseware, automated grading (including free form text entry) and team-based project coordination

There have been some truly inspirational early success stories for online higher education as captured by Coursera co-founder Daphne Koller's mid-2012 TED talk. But while we still have a lot of room for improvement — as Udacity's San Jose State University experiment reveals — it's important to remember that we're still early in the process of redefining a set of institutions that were more than 2,500 years in the making. And from that historical perspective, the progress achieved in exploiting disruptive technologies for higher education the past few years has been encouraging.

As for the second half of Friedman's prediction, there should be little doubt in the "desperate necessity" to reform higher education in the US. Recent trends are more than discouraging, as noted below.



These points are beginning to take a toll. From 2010 through 2012, freshman enrollment at more than a quarter of U.S. private four-year colleges declined 10 percent or more, according to a recent analysis by The Wall Street Journal. Perhaps the most compelling evidence of the inevitability of disruptive change to higher education is captured in the chart below displaying the growing gap between tuition costs and college graduate starting salaries.



As NYU professor Clay Shirkey has bitingly noted:

The value of a college degree remains high in relative terms, but only because people with bachelor's degrees have seen their incomes shrink less over the last few years than people who don't have them. 'Give us hundreds of thousands of dollars and years of your life so you can suffer less than your peers' isn't much of a value proposition. More like a ransom note, really.

So the question is only when, not whether new approaches to higher education deliver more effective and more relevant learning outcomes at lower cost.

Udacity's pivot

In August, 2013, Udacity announced it was changing its business model, from offering an eclectic array of massive open online courses for free, to contractual arrangements with major corporations to produce targeted skill-building courses primarily aimed at prospective and current high tech employees on a fee-per-course basis. The new strategy had two important initiatives:

1. A partnership between Udacity, AT&T and Georgia Tech University to offer a fully accredited online MS in Computer Science for $6,600 — less than one-third of what an in-state student would pay at Georgia Tech, and one-seventh of the tuition charged to an out-of-state applicant. AT&T kicked in $2 million of funding to subsidize the first year of operation, presumably motivated by the opportunity to recruit talented graduates.
2. A partnership with Google, Intuit, Cloudera, Autodesk, Khan Academy et al in an "Open Education Alliance" wherein the memebers will fund and help design the creation of a defined curriculum designed for students pursuing jobs in technology. According to Udacity's press announcement, participating members will "assist in the curation and development of a new 21st century curriculum and connect learners with opportunities in industry," .

Once again, critics were quick to pounce, including this reaction from a widely published academic specializing in technology and education:

Well, there it is folks. After two years of hype, breathless proclamations about how Udacity will transform higher education, Silicon Valley blindness to existing learning research, and numerous articles/interviews featuring Sebastian Thrun, Udacity has failed.

I strongly disagree with this conclusion, not borne out of a strong conviction that Thrun will succeed (he well may not), but because this condemnation is intellectually flawed in two important respects:

1. It fundamentally misunderstands the importance and frequency of business pivots in startup ventures
2. It fails to recognize that Thrun's pivoted business model poses a far more serious threat to traditional higher education institutions than Udacity's original approach

Let's start with business *pivots*. When an early stage venture pivots its business model, it does*not* imply that the business has failed or even that it is in dire straits. It *does* mean that the venture has gained valuable insights about customer preferences and market dynamics in an initial trial of its business plan and is attempting to respond accordingly.

Business plan pivots reflect a logical and necessary evolution in developing successful businesses as the following examples attest:

- Post-It Notes languished in 3M's research labs for five years without a convincing business plan, then failed miserably in pilot tests in four cities, where the company tried to sell "Press & Peel Pads" (as it was then called) as a glorified sticky bookmark. Two years later, in a last ditch effort to make the product stick

(sorry!), 3M re-piloted what was now called Post-It-Notes in a massive free give-away. Thousands of sample products were sent to office managers, purchasing agents, lawyers and hospital personnel, coordinated with 3M personnel stationed at customer facilities to explain possible uses of the product. The pivoted marketing strategy was highly successful, word-of-mouth endorsements went viral, and Post-It-Notes emerged as a billion dollar brand.

- Google received its first tranche of venture capital from Kleiner, Perkins (et al) in June, 1999 on the strength of its promising technology, but with no viable business model in place to monetize their search engine. In fact, the founders were initially opposed to "contaminating" their site with advertisements. It took more than two years and several unsuccessful steps along the way for Google to pivot to a pay-per-click, ad-supported revenue model, and the rest is history.
- Nespresso languished for over a decade as a money-losing, slow-growing provider of single serve coffee machines and coffee pods to food service and office establishments. A new CEO, Jean-Paul Gaillard was hired in 1988 to reenergize the franchise, and refocused Nespresso's business on the consumer market as a high-end gourmet product. Gaillard's strategy pivot involved a number of a critical decisions, including selling Nespresso's single serve coffee pods only through its own phone-order channel and shunning mass advertising in favor of word-of-mouth referrals — both radical departures from normal business practices at Nestlé. Although Gaillard's strategy pivot evolved over time — Nespresso now also sells pods through its own retail boutiques and over the web — the fundamentals of the pivoted business model remained intact, propelling Nespresso to highly profitable, rapid growth (CAGR=35%!) over the ensuing two decades.

So obviously, pivots don't necessarily signal failure. Entrepreneurs often reverse early setbacks by incorporating market feedback to relaunch successful businesses.

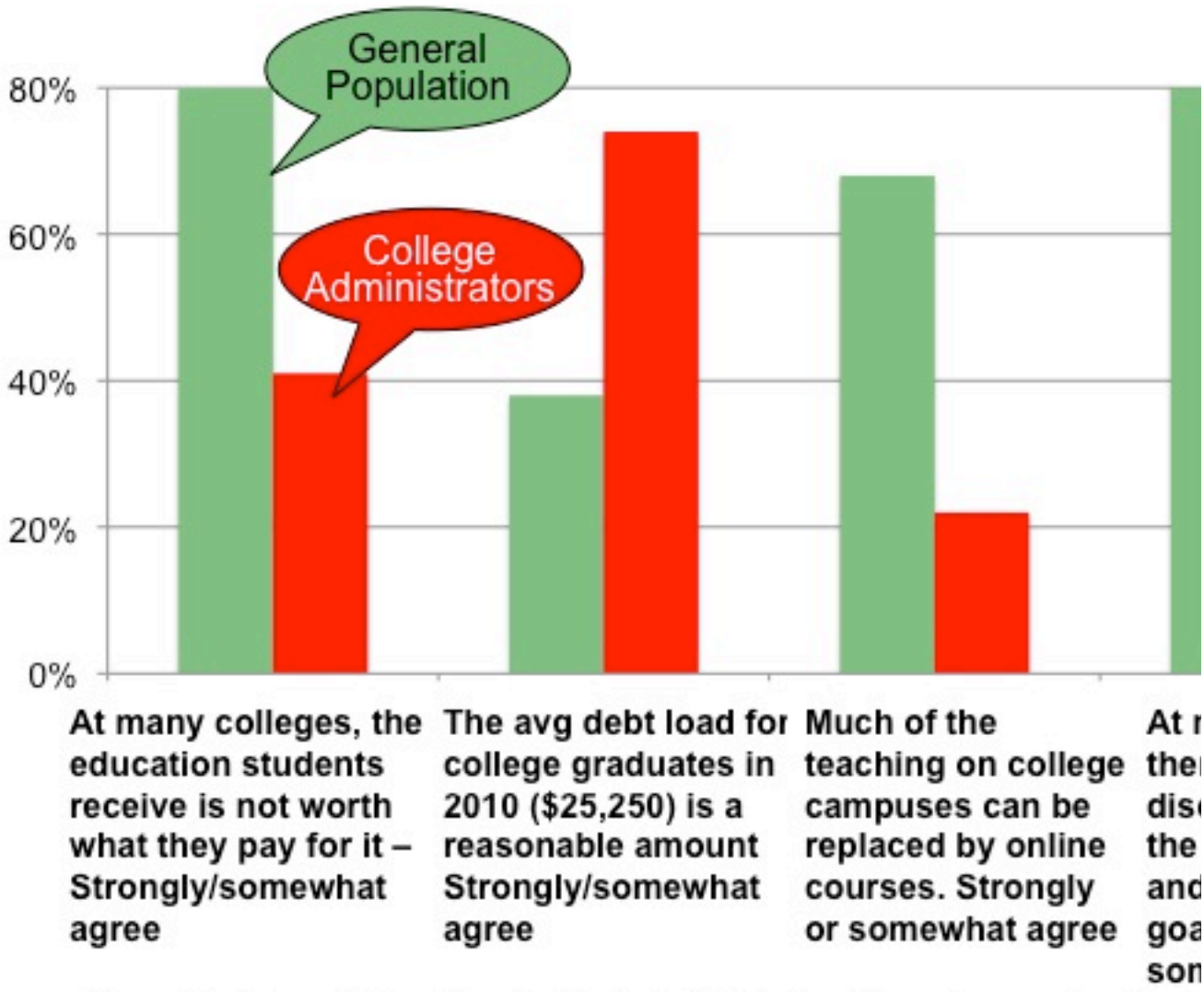
After two years of operation, Udacity undoubtedly came to the conclusion that its initial MOOC business model offered very little promise of financial viability. The company always knew that*free* is not a business model, but it also discovered that secondary sources of "freemium" revenues were unlikely to offset the high development costs of online education.

Thrun's pivot puts Udacity in a better position to disrupt higher eduction than its initial positioning. Why? Because instead of trying to outdo universities at their own game — that is, delivering a wide array of college courses — Udacity has shifted to focus on a job that higher education institutions have traditionally largely shunned: *corporate*

training. And in so doing, Udacity now threatens to break down a major pillar propping up the current business model of higher education – thereby "balking their plans," as Sun-Tzu said millennia ago.

Recall that the (weakening) justification for traditional college education has historically the attractive returns from higher lifetime earnings. But Udacity's new focus threatens to profoundly undermine this rationale. If employers experience positive results in hiring high tech employees who have acquired superior job skills from Udacity's new low cost training initiatives, student interest in attending, and employer interest in recruiting from many conventional institutions of higher education will decline.

Udacity is trying to bridge a serious gap in our higher education system: the disheartening disconnect between college graduates' growing difficulty in finding emotionally and financially satisfying jobs at the same time that employers chronically complain they can't find enough qualified employees amongst the ranks of recent college graduates. According to a recent study from McKinsey, while 72 percent of educational institutions believe recent graduates are ready for work, only 42 percent of employers agree. There appears to be an equally large disconnect between college administrators and the general population on how well colleges prepare students for their careers. This is the gap that Udacity is now trying to close.



Source: Time/Canrnegie Corp.poll conducted online by GIK Customer Research, surveyed a national of 1,000 US adults and 540 senior administrators at public and private two- and four-year colleges and universities, http://nation.time.com/2012/10/18/higher-education-poll/?pcd=teaser

It is far too early to tell how Udacity will fare, as its new partnership programs have yet to be fully implemented. But a few early indicators should be taken very seriously by academic leaders of our current higher education institutions:

- It appears that a growing number of companies are prepared to become more directly involved in addressing the challenge of preparing their employees for 21st century business problems — and are putting their money where their needs are
- Students are reacting positively to the opportunity not only to acquire accredited new job skills at sharply lower costs, but to do so with improved prospects for immediate employment from participating corporate sponsors. Over 2,300 students applied to the first entering class of Georgia Tech's new online MS degree program in computer science. To put this number in perspective, since Georgia Tech created its on-campus master's degree program in in computer

science in 1991, fewer than 2,000 degrees have been awarded. Under the new effort, that many online degrees could be awarded in a single year.

What are the implications for today's higher education institutions?
It is dismaying to see so many academics rushing to dismiss innovative initiatives which seek to improve our higher education system. Resistance from incumbent stakeholders will eventually be overcome by three large and powerful constituencies poorly served by today's status quo: the 70% of US adults who do not have a college degree, the majority of college graduates who are dissatisfied with the value of their degrees and the large number of employers challenged by a skills gap in the recruiting marketplace. The economic potential that can be unlocked by better serving these large constituencies will continue to attract investment in alternative education delivery models from both the private and public sector.

Higher education institutions can no longer ignore their imperative to do a far better job preparing students for more demanding and fast-changing careers. While the hubris and hyperbole of some high tech zealots have been admittedly grating, hopefully, leaders of higher education institutions now recognize that the question is no longer whether, but only how and when disruptive technologies will reshape higher educational delivery models.

As in any disrupted industry, the speed with which disruption occurs will vary widely across the higher education landscape. Many smaller colleges that rely almost entirely on tuition revenue are already facing severe financial distress. But no institution should feel immune from the disruptive forces at play, including the most highly endowed Tier 1 universities.

My advice to academic leaders would be to commit to two inter-related strategic imperatives.

1. *Be prepared to broadly rethink the mission and priorities of higher education*
   The factual evidence of a significant skills gap in college graduates' preparedness for 21st century careers is clear. Therefore, higher education institutions need to ask themselves: what is our responsibility and action plan to address this *societal* problem? Towards this end, colleges and universities will need to broadly rethink a wide array of business policies that currently inhibit the delivery of cost-effective, first-rate education. Many of the shibboleths that define higher education today are deeply entrenched in institutional norms and academic psyches and as such, will *not* be easy to change. The challenge of

course is to assess future priorities and strategic imperatives from the standpoint of market and societal needs, recognizing that the way forward may be at odds with the perceived welfare of some academic stakeholders. But with long term survival at stake, the requisite strategy pivots are likely to call for very different behaviors and skill sets than found on many current campuses. As a faculty member of a Tier 1 university, I am as convinced of the ongoing value of an on-campus higher education experience as I am of the need for profound changes in how that experience is delivered. Academic leaders must be prepared to disrupt their own institutions before external forces foreclose current options. These are not easy dialogues to initiate, but it will only get harder over time.

2. *Initiate and learn from multiple experiments on new pedagogies and delivery mechanisms*

   No one can claim to know the precise pace and form that disruptive learning technologies will take over the next decade. But I would argue that it is precisely because of this inherent uncertainty that the only appropriate response is to undertake extensive low-cost iterative experiments on college campuses. Universities need to discover for themselves how to best incorporate new technologies into their on-campus and extended learning environments. I would like to see more higher education institutions aggressively undertaking and sharing experiences from multiple digital learning experiments, including video lectures to "flip" classrooms, MOOC courses to extend learning reach and to gain familiarity with online pedagogical techniques, greater use of video technologies to beam global thought leaders into our classrooms, and experiments with different forms of automated grading for larger online and classroom audiences.

None of this will be easy, and there will undoubtedly be a number of painful pivots along the way. But leaders of higher education would be well advised to heed the advice of two recent pronouncements germane to the topic at hand. The first is from the 2006 U.S. Department of Education Task Force Report: "A Test of Leadership: Charting the Future of U.S. Higher Education" who noted that:

History is littered with examples of industries that, at their peril, failed to respond – or even to notice – changes in the world around them from railroads to steel manufacturers. Without serious self-examination and reform, institutions of higher education risk falling into the same trap, seeing their market share substantially reduced and their services increasingly characterized by obsolescence.

And the second piece of advice comes from Reid Hastings, CEO of Netflix who knows a thing or two about strategy pivots:

If you are not genuinely pained by the risk involved in your strategic choices, it's not much of a strategy.

Shady Software?

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http://www.downes.ca/cgi-bin/page.cgi?post=61502

Interesting article. A student group wants to set up on campus to explore digital rights and freedoms. Its work will include looking at and explaining things like Tor https://www.torproject.org/, a softwrae platform that preserves anonymity in online communications. But: "This is problematic for IT professionals at Iowa State University who are charged with monitoring activity on the university's network." The group would have to promise not to set up Tor nodes or free software which enables anonymity. The group wonders. "The admonition not to discuss or be involved with certain legal, ethical, and important free software projects was, we felt, misguided."

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61502

Direct Link: http://www.insidehighered.com/news/2013/12/10/digital-freedom-groups-road-recognition-sparks-legal-debate-iowa-state-u

Iowa State University has hundreds of recognized student organizations, from Cy's Gluten Free Friends to a glassblowing club, but Nikolas S. Kinkel couldn't find one where members discussed free speech in the digital age. Yet when he last month presented plans for the Digital Freedom Group to the Student Organization Recognition Board, it hesitated to give the club its stamp of approval.

The proposed group wanted to educate others on online anonymity software such as Tor, which complicates online surveillance by hiding its users among one another -- could that violate university policy?

“This is problematic for IT professionals at Iowa State University who are charged with monitoring activity on the university's network,” the board said in a follow-up email sent to Kinkel after the presentation. “If ISU Digital Freedom Group is willing to modify its description and its constitution stating that it will not use tor nodes or free software designed to enable online anonymity, we may reconsider.”

Kinkel, a software engineering and math major, said the Digital Freedom Group never planned to establish a Tor relay on campus -- only to include the idea in a larger discussion about privacy software.

“We completely understand the desire to safeguard and protect the integrity of the university network,” Kinkel said in an email. “However the admonition not to discuss or be involved with certain legal, ethical, and important free software projects was, we felt, misguided.”

Forming a student organization at Iowa State is a mostly automated process of signature-collecting and constitution-writing guided by a university staffer, then a last step involving a review by the Student Organization Recognition Board. Since that meeting represents the university's “one chance” to review the more than 800 student organizations on campus, the request for more information was a proactive move, said George Micalone, director of student activities.

“Essentially we just wanted clarification if [the] use of tor nodes would have any impact on the ISU networks or policies related to activity on our networks,” Micalone said in an email.

It is simple to see why the board took issue with the group’s plans. Iowa State lists “Engaging in activities intended to hide the user's identity” as an unacceptable system and network activity, but university CIO Jim Davis said the policy is meant to cover online impersonation scams, not forbid privacy.

The board never actually rejected the Digital Freedom Group's application, Micalone said, and once Iowa State's university counsel and information officers confirmed the group was following state and federal law, the board approved it.

“It was a pretty straightforward discussion,” Davis said, adding there is actually nothing in the IT policies that prevent the group from creating a Tor relay. “We want students to experiment with things as long as they're good neighbors with everyone else and not doing anything illegal.”

Anonymity and Criminality

From Snowden to Silk Road, 2013's headlines have been dominated by exposés of the dark corners of the Internet.

Tor and other forms of anonymity software are legal, though the same can't be said for some of the activities they enable. The online black market Silk Road, where users were free to bid on hard drugs, assassination contracts and weapons, ran as a Tor “hidden service” -- an anonymous website. Silk Road was seized by the FBI in October.

As documented by Edward Snowden, the National Security Administration leaker, the spy agency has targeted Tor and its users for years.

Tracy Mitrano, director of IT policy at Cornell University, said those stories have created a backdrop for higher education to examine where human rights and technologies issues intersect.

“[I]n the aftermath of 9/11 especially, the notion that people don't care if governments are snooping unless they have something to hide has not only created an unfortunate and incorrect association between anonymity and criminality, but it has diminished an understanding of how much more with digital technologies our lives are tracked and what entities, governmental and private corporations, do or can do with that information,” Mitrano, who also blogs for *Inside Higher Ed*, said in an email. “In short, that association diminishes the fundamental human value, and right, of privacy for personal autonomy.”

Micalone declined to say whether he media coverage of those cases has influenced how the recognition board viewed a growing interest in online anonymity on campus. Davis, formerly an associate professor of electrical and computer engineering, said “It’s a great topic for people to dive into.”

Kinkel said he felt the process of gaining recognition for the Digital Freedom Group was motivated by a fear that the group would violate

university policies, but also by a lack of understanding about online anonymity and the other topics the group would discuss.

“I think this is actually reflective of some disturbing trends in modern society (at least here in the Midwest): Surveillance is becoming so commonplace and integrated into daily life that the mere suggestion of educating ordinary computer users about popular tools and techniques to protect privacy can be seen by some as potentially dangerous and disruptive,” Kinkel wrote.

The university's follow-up email's description of Tor (“Tor directs Internet traffic through a free, worldwide, volunteer network consisting of more than four thousand relays”) is also taken verbatim from the software's Wikipedia entry. Micalone said he did not write the letter, and that he did not know where the description came from.

As the Digital Freedom Group’s status was pending, Kinkel contacted the Electronic Frontier Foundation, a digital rights advocacy organization. It published an open letter to universities “that may feel a similar hesitation on the topic of online anonymity and privacy.”

“The demonization of technology because of a few bad actors is a dangerous path,” the letter reads, linking to an entry about the Silk Road case. “Conversations about online privacy and security should be encouraged, and never silenced. The more that students understand how security threats function and the myriad ways they can protect their communications and identity, the less vulnerable they are to cybercrime or unwanted surveillance.”

Read more: http://www.insidehighered.com/news/2013/12/10/digital-freedom-groups-road-recognition-sparks-legal-debate-iowa-state-u#ixzz2nR4KS8NL

Inside Higher Ed

Private Distress

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http://www.downes.ca/cgi-bin/page.cgi?post=61500
I know that the plural of anecdote is not data, but at some point the sheer number of anecdotes, in comparison to the population size, has to compel some reflection. This article contains 19 anecdotes about small private colleges in trouble. Maybe it's coincidence? Or maybe it's a declining student population base, increasing competitiveness, and the growing popularity of (online) alternatives.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61500
Direct Link:
http://www.insidehighered.com/news/2013/12/09/private-colleges-remain-under-weather

Some private colleges that managed to weather the recession are finding new troubles.

So they are announcing layoffs, cutting programs and more. Almost all of these small to mid-sized privates are tuition-dependent and lack large endowments. National declines in the number of traditional college-age population mean students just aren't showing up to privates, which are facing competition from public colleges that are more stable now than a few years ago and the reality that privates cannot afford to indefinitely lure students by cutting prices with generous financial aid packages. And this could become a huge problem.

College presidents, private college trade groups and higher ed consultants blame a confluence of long- and short-term trends for battering some private colleges, particularly the small to mid-sized privates that depend on tuition dollars because they don't have significant endowments.

It's hard to tell if there is an existential threat brewing that could close a significant number of colleges, as some pundits have grandly predicted. But a sampling of the cuts — primarily driven by falling enrollment — suggests serious challenges for many institutions:

- Midway College in Kentucky is dealing with an 18 percent enrollment drop by laying off "around a dozen" of its 54 faculty, according to *The Lexington Herald-Leader*. It has also eliminated about 16 staff positions. In a recent speech, the new president said the college may try to become a "university," expand internationally and add graduate programs to help grow.
- Holy Family University in Philadelphia cut 40 staff positions – about 7 percent of the staff – and, partially through retirements, reduced the number of full-time faculty to 81 from 100. The university is also shelving low-demand programs, selling land and dorm units and working on other cost-saving measures.
- Anderson University in Indiana approved a plan to cut 16 of its 400 faculty and staff and end its majors in French, philosophy and theater. Anderson's president blamed a decline in enrollment and said to expect more cuts.

- Wittenberg University in Ohio recently eliminated nearly 30 of about 140 faculty spots — "15 occupied and 14 unoccupied faculty positions" — as part of a $4.5 million budget cut, according to *The Dayton Daily News*.
- Martin University in Indianapolis expected 700 students to enroll this fall but only 522 did, so the university cut 16 faculty and staff positions in October.
- Johnson C. Smith University in North Carolina, which was hit hard by changes to financial aid that hurt its enrollment, laid off 21 staffers, not filling 30 other positions and looking to furlough staff and outsource some services.
- Moody's Investors Service just gave Ashland University in Ohio a poor credit rating and warned it could default because of three years of declining enrollment and a relatively small amount of cash compared to debt.
- Central College in Iowa also got knocked by Moody's last month for a decline in first-year students from 412 in fall 2011 to 309 this year. This decline, the firm said, could cause a $3 million shortfall at Central.
- Moody's put Woodbury University in California on a negative credit outlook after a 22 percent drop in the size of the incoming class created a $1.1 million shortfall.
- Pine Manor, a women's college in, Massachusetts has dorm rooms for 600 students but decided to go co-ed and admit male students this summer when enrollment fell to 300.
- Goddard College, a nontraditional college in Vermont, is trying to cut faculty and staff pay to deal with a $550,000 deficit in a budget of less than $13 million.
- Burlington College in Vermont is increasing teaching load and looking to increase enrollment from 190 full-time equivalent students in an effort to become sustainable. The college recently lost three department chairs who left after they were asked to go from full-time to part-time, though the college plans to fill those vacancies.
- Nazareth College in New York has reportedly made unspecified cuts in an effort to come up with about $6 million in savings and $2 million more for student aid. The college's total income in 2011 tax year was about $99 million. Enrollment has fallen about 8 percent since 2000.
- Calvin College in Michigan recently announced a plan "to close current and projected budget deficits by eliminating or reducing programs, cutting staff, and raising revenue through enrollment growth and differential tuition rates," according to state news website MLive.
- Dowling College in New York made cuts and reassignments, which its president called "not significant" but which were reported as part of a "downsizing effort because of declining enrollment and struggling finances" by *Long Island Newsday*.

  Some colleges are looking to work together in new ways, another sign of stress:

- St. Bonaventure University and Hilbert College in New York, which began talks earlier this year that could result in a merger of the two Roman Catholic institutions.
- In November, Houghton College in New York and Indiana Wesleyan University in Indiana, which is some 500 miles away, also began talking about a long-distance partnership to allow Houghton, a small private, to use offer online courses using resources from Indiana.
- Point University in Georgia and Montreat College in North Carolina plan to merge.
- Johnson University, in Tennessee, and Florida Christian College merged this summer.

Cuts can be attempts to shore up institutions for a strong future. But some people say something fundamental and irreversible is afoot.

"I think the truth is it's really not going to get better under the old model," said Rick Staisloff, a consultant who is the former vice president for finance and administration at the College of Notre Dame of Maryland.

Houghton President Shirley Mullen said the crisis in higher ed is now of a greater magnitude than any she has seen. "I don't believe there is any going back" she said. "I just don't think that's the case. I think whatever happens going forward is something different than we've seen before – I don't think we know exactly what that's going to look like."

There isn't good real-time data on how institutions are doing. Indeed, some colleges have declined to comment on the extent of their problems to media and yet other institutions may be struggling silently in rural areas without aggressive higher ed reporting. Downgrades by bond-rating agencies tend to attract attention, but institutions in really bad shape that know they can't borrow may not even go in for a review.

But using anecdotes from here and there -- like this article does -- is dangerous, said Hal Hartley, senior vice president at the Council of Independent Colleges, which represents many private colleges "Clearly there are lot of difficult economic pressures hitting all colleges and universities – small and mid-sized private colleges are no exception – and for tuition-dependent colleges like the CIC colleges, enrollment is critical to the overall success and financial well-being of the institution," he said, "but I think it's dangerous to pick one year or a couple of examples and generalize that to broader trends."

The outside causes of recent troubles are numerous: a decline in high school graduates, worries about loan debt, students looking at college programs that would seem to ensure a job after college, new technology, competition from for-profit colleges, a decline in the amount of government aid, the recent economic downturn, the bond market and, because of some rebounds in the economy, a loss of graduate students coming back to college to get new skills.

Private colleges have their own unique challenges, too: small endowments mean they depend on enrollment to bring in tuition

dollars, they have smaller class sizes so can't subsidize operations with large lectures, they traditionally have mostly tenured faculty, they are often in rural areas with shrinking populations and they are perceived as being unaffordable.

Sister Francesca Onley has been president of Holy Family for 32 years. She said the Federal Reserve's decision to taper a bond-buying program and other uncertainty in the bond market helped force the university's hand, as well as new competition in the market, pressures on Philadelphia high schools and rhetoric from President Obama has people reluctant to pay private college tuition. "Mr. Obama should go around and talk about what banks are doing to higher education," she said, instead of talking only about the high cost of college.

Holy Family cut costs by shelving low-enrollment programs, laying off employees and working to save money on things like printing and marketing. It also decided to add new nursing and accounting programs and rebrand itself. "We have and stand ready to deal with reality," Sister Onley said. "And I think that's what we did last year: we dealt with realities that we were small, that we had this small endowment, but we had this mission."

Institutions most frequently blame demographic shifts in the country on their woes, but not Holy Family. Pennsylvania is expected to graduate about 6,000 fewer high school students in 2016 than last year. But Holy Family's interim chief financial officer Pat McCormick said that works out to a very small problem for Holy Family – if the university is able to enroll the same percentage of Pennsylvania graduates as it does now.

"I think we're worried about two students," he said. "Given that, if we maintain our market share, we're going to lose about two students."

Other colleges cannot be so optimistic. From 2010 through 2012, freshman enrollment at more than a quarter of U.S. private four-year college declined 10 percent or more, according to a recent analysis by *The Wall Street Journal.*

Mark Putnam, the president of Central College, did his dissertation on why colleges fail. He said temporary things don't worry him as much as long-term trends. Despite recent enrollment losses that spooked Moody's, Central, which has about 1,500 students, is already looking more than a decade ahead as it plans its future.

Putnam said college leaders need to make sure their institutions don't become too big that they depend on high enrollment or too small that they can't thrive.

"Managing those tolerances within any institution becomes the key work of management, to know there are thresholds of consequence, as I would put it," he said in a telephone interview. "And I as president need to know what those consequences are on the upside as well as the downside."

In a statement, he dismissed the implications of Moody's decision to downgrade Central based largely on its enrollment declines.

"This is not a new phenomenon in the history of higher education, nor are we alone," he said. "What is remarkable is that an institution that

has not posted an operating deficit, not tapped any line of credit to support operations and has increased its net assets, improved liquidity and cash position, would be downgraded by Moody's on predictable enrollment fluctuations alone."

The number of graduates in Iowa and the Midwest is projected to remain flat or fall for the foreseeable future, according to a recent report by the Western Interstate Commission for Higher Education. Nationally, about four in 10 privates colleges now report tuition revenue is not keeping pace with inflation.

Other demographic changes may be particularly challenging for some residential private colleges outside of major metropolitan areas. Some of these institutions are largely white and full of traditional college-age students at a time when demographers predict enrollment growth for part-time students, minority students and students from urban areas. "Historically these are not institutions that have been... visible in the minority community," said Richard Kneedler, former president of Franklin and Marshall College. "It means when their base shrinks it's really a challenge."

The president of Johnson C. Smith University, a historically black college in North Carolina, has similar worries.

"Watch this space," said President Ronald Carter, "see how predominantly white institutions will struggle if there are fewer white Americans to fill their seats. Will they fill them with international students? How many minority students can they really afford with gap funding?"

Carter said American higher ed needs to negotiate the demographic shift carefully. Minority students are generally coming with less money than white students, so colleges that are trying to plug their enrollment losses with minorities are going to have to find some way to help the students pay. If colleges simply cater only to students who can pay their own way and minorities are shut out, "That's a recipe for civil unrest," Carter predicted.

Carter is particularly sensitive to changes in aid policy at the federal level. He said he had to lay off staff because of sudden changes to the PLUS loan program that hit HBCUs hard. Carter scrambled to find institutional and donor-backed financial aid for a few hundred students who were going to have to leave the 1,700-student Johnson C. Smith because of the changes. He managed to keep many of them on campus.

Some of the larger worries about the health of privates have yet to play out in some data sets, said several private college experts.

Kneedler, who is carefully studying the tax filings of several hundred colleges, said he's seen an improvement in finances at privates since the recession. But that, he said, lags what may be happening now because tax filings come out longer after the budget year. Still, he is not particularly concerned about the mid-sized privates but only the smallest institutions without an endowment.

"I get really concerned when you drop down below 700 (students)," Kneedler said. "There, I think, it's really tough, and I think that's been

the case for some time and it's not going to get easier, but I wouldn't ring really loud alarm bells for a school of 1,500."

David Warren, the president of the National Association of Independent Colleges and Universities, said the number of privates that are closing has remained steady – about four a year. The number opening? About three a year.

He said there's no doubt institutions are encountering "whitewater" but they are also adapting. "I think over time you're going to see these institutions reshape themselves in the main and overwhelmingly," Warren said.

McCormick at Holy Family, for instance, said the university is able to launch its new accounting and nursing program only nine months after it decided to enter those markets. That flexibility, he said, does not necessarily exist at larger institutions. Programs like nursing already exist in the area, but Holy Family believes the market is "underserved."'

Mullen, the president at Houghton, said demographic pinches are forcing the college to do things it might not have done otherwise but that it should have.

First, she had to make choices several years ago, when the college reduced its contribution to employee retirement funds and cut pay for faculty and staff – by as much as 8 percent for top earners. The college has gradually increased pay, but not back to where it was.

Now, through its partnership with Indiana Wesleyan, Houghton hopes to begin an online program of some kind.

Mullen said it's too late for online education to be a short-term cash cow for her college, but with 1,032 full-time students, Houghton doesn't have margin for error if on-campus enrollment falls. Expanding online could change that.

"We believe that to prosper for the long haul we need to have a larger economy," Mullen said. "I think it's way too late think of online education as an instant revenue generator because so many other institutions are doing that."

Several experts on private colleges said it's time to expect colleges to look closely at new partnerships and even mergers.

Mullen, who said Houghton has no plans to merge, said colleges should team up while they still have strength. "I think if you wait too long you have what in the business world is a takeover more than a partnership," she warned.

Ann Duffield, founding principal of Ann Duffield & Colleagues and a former chief communications officer at the University of Pennsylvania, worries about colleges teetering without a nest egg and unable to invest in their future. Without thinking strategically, they could slip, fall and never get back on their feet.

"I think this is a time in American higher education history where we're really in danger of seeing the disappearance of liberal arts college and liberal arts colleges have, in fact, been the backbone of American higher education," Duffield said.

Read
more: http://www.insidehighered.com/news/2013/12/09/private-colleges-remain-under-weather#ixzz2nR4hPQTw
Inside Higher Ed

Give Me an M! Give Me a C! Blah Blah Blah To All This Theory!

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http://www.downes.ca/cgi-bin/page.cgi?post=61494

Another reaction to the MRI conference (no reason for me to stop running articles on this anytime soon). "There were two things I noticed at the conference. One is that some of my biggest problems with xMOOCs in the past has been the sense that the people pushing them are focusing too much on the M and C and not understanding the O’s at all." P.S. I've always known the difference between cMOOCs and xMOOCs - I was the one who coined the terms. So I don't get the remark that "I’m also glad he is finally realizing that xMOOCs are different than his vision of MOOCs https://twitter.com/Downes/status/408316340634533888" target="_blank." Plus: Joanne Jacobs discovers http://www.joannejacobs.com/2013/12/an-interesting-take-on-moocs/ Bonnie Stewart.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61494

Direct Link: http://www.edugeekjournal.com/2013/12/09/give-me-an-m-give-me-a-c-blah-blah-blah-to-all-this-theory/

So, yeah, there was this little conference that kind of became a big deal in Arlington right down the road from where I work. The MOOC Research Initiative exploded from the get go when people realized it wasn't just another "death to the universities!" propaganda event. Well, many of us expected Jim Groom to open some minds at the opening keynote – but he went beyond that. It was more like a great disturbance in the force, with a hundred minds being blown by awesomeness and then suddenly silenced by possibilities they had never imagined. And the awesome continued through the other keynotes, presentations, funny-but-thought-provoking quips by George Siemens in between events, andkeen observations on Twitter.

There were two things I noticed at the conference. One is that some of my biggest problems with xMOOCs in the past has been the sense that the people pushing them are focusing too much on the M and C and not understanding the O's at all. Many people pointed out at MRI13 that"course" is not really the best metaphor for describing a MOOC. Community is a much better idea. But if you are focusing too much on making a "course" and forgetting the community…. you are just re-creating a 1990's online course rookie mistake.

And how can I condense most problems with the hype about *Massive* in less that a book? Why does everyone focus so much on how these "courses" can scale *up*? Why aren't you worried if they scale *down* to smaller "courses"? Is your "course" really that good if it has to have 2000 students to work? If it was really a good "course", wouldn't it work just as well with 20? But than again, how far is too far on scaling down? I have been in xMOOCs that would work best with 1 student (because that would make it more of a self-guided mentorship). If you course works best with one student rather than 100,000 – you have yet another big problems.

Too many xMOOCs (and even a handful of cMOOCs) completely misuse the *Open* and *Online* part of MOOC. They tend to think that *Free* and*Digital* means *Open* and *Online*. As many people at MRI13 pointed out,*Open* is not just "Free." If content can't be remixed, its not open. If the design process is not open to allow students to contribute, its not open. If the content is still stuck in your proprietary delivery system, it is still just an LMS on steroids, even if you let everyone get in.

And finally, *Online*. Look, making content digital and putting it on the webs is not all there is to being *Online*. The web is a networked, interactive, social community. If your "course" is basically a digital version of a lecture hall that is put on the web, your "course" is not truly*Online*. Its just digitized bad pedagogy.

Which bring me to theory – the second thing I noticed. As Martin Weller points out, several people were suggesting that we move past theory or that theory no longer matters. That might be true if more people were actually getting the theory behind MOOCs correct in the first place. I rarely hear things like Heutagogy and Sociocultural Theory mentioned at these conferences even though they are really what we need to be focusing on. So the its not that we need to move past theory – its that we really haven't touched on theory enough. There is so much confusion over the research results because we don't have a strong enough theoretical base to frame the research and data properly in many cases. Look at it this way. Pedagogy and Andragogy focus on structured education. MOOCs tap into personal learning networks and all types of unstructured informal learning. Heutagogy focuses on learning how to learn, double loop learning, universal learning opportunities, a non-linear process, and true learner self-direction. Pedagogy and Andragogy focus on creating "courses." Sociocultural theory, when used in education, looks at the effect of communities and cultures on learning. When we continue to talk about Pedagogy and Andragogy, we are framing the conversation with concepts that no longer fully apply. There are strains of both in MOOCs to be sure, but MOOCs have also moved way past those basic concepts.

Another thing I noticed – while reading the Twitter stream and thinking "who wrote that awesome post" or "who is this cool person" I was shocked to see people in my own Ph.D. program that I have never met! This made me realize that for the most part, we are still thinking of MOOCs and courses as silos that don't interact with other courses. The colleagues of mine are probably in the online cohort, which I never get to interact with. Or at least in some other courses that I haven't taken yet. But why do we not have online cohorts interacting and learning with residence courses? Why are we not interacting with and learning from other universities that are offering similar courses? Why are we so isolated in our courses? Can the *Massive* part of MOOC also describe the scale of who we interact with? A Massive conglomerate of people that are learning the same topic? I don't know if that is a problem with *Massive* or*Open* or both… but something that seems to get missed in all but a few cMOOCs.

My only other regret from MRI13 was that I missed so much due to the ice storm. Jim Groom and I never got to go grab TexMex and go thrashing (skateboarding for you posers out there) in downtown Arlington. Letting ice stop you is for wimps. I also hear that Shirley Alexander, Bonnie Stewart, Amy Collier, and Tanya Joosten killed it during their panel – wish I could have caught that. I also couldn't track down Blacktimelord and other people that looked really cool by their Twitter profiles. But I did get to see some people speak that I had never heard before. I ran into old co-workers and bosses that are still staying a part of the emerging conversation. I found out that George Siemens in now officially a co-worker, with a temp office two doors down from mine. Of course, he is leading a project that Harriet and I proposed over 5 years ago and were told it was too radical and out there for UTA to ever go for…. so I'll try not to be bitter :) A prophet is not welcome in their own hometown after all. At least I have found other Universities here that want to work on my ideas – I was being quite literal in this post when I said I was working on some of those ideas :) I have come to accept my role as squeaky wheel on the edge of things that most people ignore because I am constantly questioning every thing.

Oh yeah – there was also Stephen Downes on a steer. I really like Stephen even though he occasionally misunderstands what I'm blogging about :) I wish I had gotten a chance to meet him and pick his brain of all the awesomeness that is in there. I'm also glad he is finally realizing that xMOOCs are different than his vision of MOOCs.

We really need to do this again or keep the momentum going or something.

he Open-Access Movement is Not Really about Open Access
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http://www.downes.ca/cgi-bin/page.cgi?post=61493
I found this article to be pretty funny, though I suspect it's a serious attempt to discredit the open access movement. "The OA movement is an anti-corporatist movement that wants to deny the freedom of the press to companies it disagrees with. The movement is also actively imposing onerous mandates on researchers, mandates that restrict individual freedom. To boost the open-access movement, its leaders sacrifice the academic futures of young scholars and those from developing countries, pressuring them to publish in lower-quality open-access journals." Enjoy.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61493
Direct Link:
http://triplec.at/index.php/tripleC/article/view/525

tripleC 11(2): 589-597, 2013 http://www.triple-c.at

The Open-Access Movement is Not Really about Open Access

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Abstract: While the open-access (OA) movement purports to be about making scholarly content open-access, its true motives are much different. The OA movement is an anti-corporatist movement that wants to deny the freedom of the press to companies it disagrees with. The movement is also actively imposing onerous mandates on researchers, mandates that restrict individual freedom. To boost the open-access movement, its leaders sacrifice the academic futures of young scholars and those from developing countries, pressuring them to publish in lower-quality open-access journals. The open-access movement has fostered the creation of numerous predatory publishers and standalone journals, increasing the amount of research misconduct in scholarly publications and the amount of pseudo-science that is published as if it were authentic science.

Keywords: scholarly communication, scholarly publishing, predatory publishers, open access, anti-corporatism, collectivism, pseudo-science, social movements, freedom of the press

1. Introduction

If you ask most open-access (OA) advocates about scholarly publishing, they will tell you that we are in a crisis situation. Greedy publishers have ruined scholarly communication, they'll claim, placing work they obtained for free behind expensive paywalls, locking up research that the world needs to progress.

The OA zealots will explain how publishers exploit scholars, profiting from the research, manuscripts, and peer review that they provide for free to the publishers, who then turn around and sell this research back to academic libraries in the form of journal subscriptions.

They will also tell you that Elsevier, the worst of the worst among publishers, actually cre- ated bogus journals to help promote a large pharmaceutical company's products. Imagine the horror. Because of this, we can never trust a subscription publisher again. Ever. Moreo- ver, the advent of the Internet means that we really don't need publishers anymore anyway. We can self-publish our work or do it cooperatively. Libraries can be the new publishers. All we have to do is upload our research to the Internet and our research will be published, and the big publishers will wither up and die freeing up academic library budgets and creating a just and perfect system of scholarly publishing.

The story those promoting OA tell is simple and convincing. Unfortunately, the story is in- complete, negligent, and full of bunk. I'm an academic crime fighter (Bohannon 2013b). I am here to set the record straight.

The logic behind the open-access movement is so obvious, simple, and convincing that no one could disagree with it, except that OA advocates don't tell the whole story. Open ac- cess will grant free access to research to everyone, including research-starved people in the Global South who have never read a scholarly article before. How could anyone oppose that? It will also allow everyone who has ever had the frustration of hitting a paywall when seeking a research article

to access virtually everything for free, or so they claim.

2. What the Open-Access Movement is Really About

The open-access movement is really about anti-corporatism. OA advocates want to make collective everything and eliminate private business, except for small businesses owned by the disadvantaged. They don't like the idea of profit, even though many have a large portfolio of mutual funds in their retirement accounts that invest in for-profit companies. Salaries of

academics in the United States have increased dramatically in the past two decades, espe- cially among top professors and university administrators. OA advocates don't have a prob- lem with this, and from their high-salaried comfortable positions they demand that for-profit, scholarly journal publishers not be involved in scholarly publishing and devise ways (such as green open-access) to defeat and eliminate them.

The open-access movement is a negative movement rather than a positive one. It is more a movement against something than it is a movement for something. Some will respond that the movement is not against anything; it is just for open access. But a close analysis of the discourse of the OA advocates reveals that the real goal of the open access movement is to kill off the for-profit publishers and make scholarly publishing a cooperative and socialistic enterprise. It's a negative movement.

This kind of movement, a movement to replace a free market with an artificial and highly regulated one, rarely succeeds. In fact, the gold open-access model actually incentivizes corruption, which speed the path to failure. The traditional publishing model, where publish- ers lived or died on subscriptions, encouraged quality and innovation. Publishers

always had to keep their subscribers happy or they would cancel. Similarly, a movement that tries to force out an existing technology and replace it with a purportedly better one also never suc- ceeds. Take the Semantic Web for example. It has many zealous advocates, and they have been promoting it for many years. Some refer to the Semantic Web as Web 3.0. However, despite intense promotion, it has never taken off. In fact, it is moribund. The advocates who promoted it spent a lot of time and blog space cheerleading for it, and they spent a lot of time trashing technologies and standards it was supposed to replace. In fact, that was what they did the most, badmouthing existing technologies and those who supported and used them. One example was a library standard called the MARC format. This standard was ridiculed so much it's a wonder it still even exists, yet is still being used successfully by libraries world- wide, and the semantic web is dying a slow death. Open access publishing is the "Semantic Web" of scholarly communication.

The open access movement and scholarly open-access publishing itself are about in- creasing managerialism (Grayson 2013). Wherever there is managerialism, there is an in- creased use of onerous management tactics, including mandatory record keeping, rationing of resources, difficult approval processes for things that ought to be freely allowed, and end- less committee meetings, practices that generally lead to cronyism. The traditional publishing model had the advantage of there being no monetary transactions between scholarly authors and their publishers. Money, a source of corruption, was absent from the author-publisher relationship (except in the rare case of reasonable page charges levied on authors publishing with non-profit learned societies) in the traditional publishing model. Managerialism is the friend of those who want to restrict freedom and advancement. It is a tool for creating malev- olent bureaucracies and academic cronyism. Managerialism is the logical and malevolent extension of office politics, and it will hurt scholarly communication. Many universities subsi- dize or pay completely for their faculty members' article processing charges when they sub- mit to gold (author pays) open-access

journals. The management of the funds used to pay these charges will further corrupt higher education. The powerful will have first priority for the money; the weak may remain unfunded. Popular ideas will receive funding; new and unpopu- lar ideas, regardless of their merit, will remain unfunded. By adding a financial component to the front end of the scholarly publishing process, the open-access movement will ultimately corrupt scholarly publishing and hurt the communication and sharing of novel knowledge.

The open-access movement was born of political correctness, the dogma that unites and drives higher education. The open-access advocates have cleverly used and exploited politi- cal correctness in the academy to work towards achieving their goals and towards manipulat- ing their colleagues into becoming open-access advocates. One of the ways they've achieved this is through the enactment of open-access mandates. The strategy involves making very simple arguments to faculty senates at various universities in favour of open- access and then asking the faculties to establish the mandates. These mandates usually require that faculty use either the gold or green models of open-access publishing. OA advo- cates use specious arguments to lobby for mandates, focusing only on the supposed eco-

nomic benefits of open access and ignoring the value additions provided by professional publishers. The arguments imply that publishers are not really needed; all researchers need to do is upload their work, an action that constitutes publishing, and that this act results in a product that is somehow similar to the products that professional publishers produce.

Nothing could be further from the truth, and the existence of the predatory publishers, the focus of my research, is evidence of this. It's likely that hundreds or even thousands of hon- est researchers have fallen prey to the predatory publishers, those open-access publishers that exploit the gold

open-access model just for their own profit, pretending to be legitimate publishing operations but actually accepting any and all submissions just for the money. Insti- tutional mandates feed into and help sustain predatory publishers.

Thus there are conscientious scholars, trying to follow the freedom-denying mandates im- posed on them by their faculty representatives, who get tricked into submitting their good work to bogus journals.

There are numerous open-access advocates who promote scholarly open-access publish- ing without warning of the numerous scam publishers that operate all around the world. I find this promotion negligent. Anyone touting the benefits of open-access and encouraging its adoption ought also to warn of the numerous and increasing scams that exist in the scholarly publishing industry.

I believe many OA advocates ignore the known problems with scholarly open-access pub- lishing because they don't want to frighten people away from it. This is the moral equivalent of selling someone a used car with the knowledge the engine block is cracked, without in- forming the buyer. Most descriptions and explanations of open-access publishing are idealis- tic and unrealistic. They tout the benefits but ignore the weaknesses. Many honest scholars have been seriously victimized by predatory publishers, and as a community we must help others, especially emerging researchers, avoid becoming victims. Pushing open access without warning of the possible scams is not helpful. In fact, it can be downright damaging to a scholar's career. For example, once a researcher unwittingly submits a paper to a predato- ry publisher, it is usually quickly published. Sometimes this fast publishing is the researcher's first clue that something is amiss. But by then it's too late, as once a paper is published in a predatory journal, no legitimate journal will be interested in publishing it. When this happens to early career researchers, it can have long-term negative effects on their careers.

I have observed that the advocates promoting open access do not want to hear any criti- cisms of the movement of the open-

access publishing models, and they quickly attack any- one who questions the open-access or highlights its weaknesses. Open-access advocates are polemics; they have an "us versus them" mentality and see traditional publishers as the bad guys.

In April 2008, an article about predatory publishers appeared in the *New York Times* (Ko- lata 2013). The article described predatory publishers and predatory conferences. Immedi- ately upon publication of the article, OA advocates sprang into action, questioning the article and its reporting. Numerous blog posts appeared, many attempting to cast doubt on the arti- cle. One perhaps slightly paranoid blog post was entitled "Did Commercial Journals Use the NYT to Smear Open Access?" (Bollier 2013). The fact is the predatory publishers do cast a negative light on all of scholarly open-access publishing. The gold open-access model in particular is flawed; there are only a few publishers that employ the model ethically, and many of these are cutting corners and lowering their standards because they don't have to fear losing subscribers.

On October 4, 2013, *Science* magazine published an article by John Bohannon (2013b) that related what the author learned from a sting operation he conducted on open-access publishers. The sting operation, which used my list of predatory publishers and the Directory of Open Access Journals as sources of journals, found that many journals accepted papers without even doing a peer review, and many did a peer review and accepted the unscientific article Bohannon baited them with anyway. Here again, the open- access advocates came out swinging, breaking into their "us versus them" stance, and attacking Bohannon, some- times personally, for not including subscription journals in his study. Subscription journals were not part of his research question, however, but that didn't stop the many strident critics

of Bohannon's work, who acted almost instinctively according

to their Manichaean view of traditional and open-access publishing. He didn't need to gather data about traditional publishers; that wasn't what he was studying. If you are counting cars, you don't need to count airplanes as a control. Also, OA advocates often brag about the continually-increasing number of open-access outlets, predicting that traditional publishers will soon be eclipsed. So if the traditional publishers are nearly extinct, why bother to study them? The attack on Bohan- non was carried out with a near religious fervour. OA advocates will do anything to protect the image of open-access. They don't care that the number of predatory publishers is grow- ing at a near-relativistic speed; all they care about is that public perception of scholarly open access be kept positive.

Bohannon was interviewed by *The Scholarly Kitchen* contributor Phil Davis on November 12, 2013. Summarizing the reaction of the open-access advocate community to his sting, Bohannon said, "I learned that I have been too naive and idealistic about scientists. I as- sumed that the results [of my study] would speak for themselves. There would be disagree- ments about how best to interpret them, and what to do about them, but it would be a civil discussion and then a concerted, rational, community effort to address the problems that the results reveal. But that is far from what happened. Instead, it was 100% political and many scientists that I respected turned out to be the most cynical political operators of all" (Bohan- non 2013a). Interpreting the reaction to Bohannon's sting article publisher Kent Anderson, the president of the Society for Scholarly Publishing and former chief editor of the blog *The Scholarly Kitchen* commented, "... don’t expect rational, calm, reasoned assessments from the likes of Eisen, Solomon, or others [open access advocates]. They've demonstrated they are ideologues that are quite willing to attack anyone who they view as falling outside their particular view of OA orthodoxy. How they are able to continue to deny what is actually hap- pening is beyond me" (Anderson 2013).

When he served as the chief editor of *The Scholarly Kitchen* blog, Anderson was a fre- quent target of criticism from open-

access zealots. I think this analysis from him sums up the attitude and actions of open access advocates quite well: "The attacks we've received when we've talked about OA have been surprisingly vitriolic and immature, even when we've said some things that were intended to point out issues the OA community might want to think about, in a helpful way. Some people really have a hair-trigger about anything short of complete OA cheerleading" (Anderson 2012).

One of the arguments that OA advocates use is that a lot of research is publically funded; therefore, the public deserves access to the research for free. This argument is true more in Europe more so than in the United States because collectivism is more institutionalized there. However, there are a lot of things that are publically funded that are not free, both in Europe and North America. Public transportation is one example. If OA advocates stuck to their principles, they would also be demanding that all publically owned buses and trains are free to all users. Their argument also completely ignores all the ways that publishers add value to information. This is done by selecting the best research for publication, managing the peer review process, managing ethics, maintaining servers, digital preservation, and the like. There are plenty of government-funded things that are not free, especially things to which the private sector adds value.

Building on this idea, I do find that the open-access movement is a Euro-dominant one, a neo-colonial attempt to cast scholarly communication policy according to the aspirations of a cliquish minority of European collectivists. Early funding for the open-access movement, specifically the Budapest Open Access Initiative, came from George Soros, known for his extreme left-wing views and the financing of their enactment as laws (Poynder 2002).

Another inconsistency in the open-access movement is that the zealots have been attack- ing scholarly journal publishers but generally ignoring scholarly monograph publishers, even though they operate using basically the same model, selling proprietary content to libraries. This is evidence that the open-access movement isn't really about making content open-

access; it's really about shutting down journal publishers. Were it a truly principled move- ment, it would apply its principals consistently.

Some tenured open-access advocates are pressuring young scholars away from submit- ting their work to traditional journals, sacrificing them to the open-access movement. They are pressured to publish in OA journals despite their being able to publish in more esteemed traditional journals, which would better support their tenure cases. This pressuring helps the OA movement because it gets an increased amount of good research published in open- access journals, but it hurts the individuals because it weakens their tenure dossiers. In the open-access movement, the needs of the many outweigh the needs of the few.

OA advocates are also pressuring scientists in developing countries to publish in OA jour- nals, and this could hurt their careers. According to Contreras (2012, 60), “scientists in the developing world wish to publish in prestigious venues, with the greatest likely readership. Artificially forcing them to publish in oa journals of lesser impact could be resented and re- sisted, as it would be in the industrialized world". So, OA advocates also want to sacrifice the careers of developing-world scholars so that they can achieve their collectivist goals.

The gold OA model is merely shifting profits from one set of publishers to another, shifting the source of money from library subscriptions to those funding article processing charges, such as the provost's office, a researcher's grant itself, or even the library. That is to say, the open-access movement is dealing with the serials crisis by lowering or eliminating the sub- scription charges that libraries have to pay. But the money to support scholarly publishing has to come from somewhere. For those researchers lucky enough to have grants, they can pay the article processing charges out of grant money, but this means less money that they can spend on actual research. New funding sources are needed

for university researchers who don't have grants. Thus, universities will have to initiate new funds to pay for the article processing charges their faculty incur when they publish in gold open-access journals. The proper distribution of these funds will require new committees and more university bureau- cracy. Of course, journals charging APCs will charge more depending on the journal's status. That is to say, journals with higher impact factors will impose higher prices. The act of insti- tuting financial transactions between scholarly authors and scholarly publishers is corrupting scholarly communication. This was one of the great benefits of the traditional scholarly pub- lishing system – it had no monetary component in the relationship between publishers and their authors. Adding the monetary component has created the problem of predatory pub- lishers and the problem of financing author fees.

Financing article processing charges will be most problematic in middle-income countries. Most non-predatory OA publishers grant fee waivers to scholars from lower-income countries (as long as they don't submit too many articles), but these waivers are generally not applied to many middle-income countries. Researchers in these countries are caught in a dilemma – they aren't eligible for publisher-granted APC waivers, but their funding agencies lack the funds to subsidize the publication of their works, so they are left to fend for themselves when it comes to paying article processing charges.

And now we are seeing the emergence of mega gold-open-access publishers. I've docu- mented that Hindawi's profit margin is higher than Elsevier's and achieves this by lowering standards (Beall 2013a). Hindawi has eliminated the position of editor-in-chief from most of the firm's over 550 journals. The company exploits Egypt's high unemployment rate by pay- ing minimal salaries, employing college-educated staff desperate for jobs. It's an example of the scholarly publishing industry moving offshore. Moreover, because the journals lack edi- tors, they have become desultory collections of loosely-related articles on a broad topic. The editorless journals lack coherence and vitality and function more like sterile

repositories than scholarly publications. Open-access is killing the community function of scholarly journals, in which they served as fora for the exchange of both formal and informal communication among colleagues in a particular field or sub-field. Open access journals lack soul and are disconnected.

Open access advocates think they know better than everyone else and want to impose their policies on others. Thus, the open access movement has the serious side-effect of tak- ing away other's freedom from them. We observe this tendency in institutional mandates. Harnad (2013) goes so far as to propose a table of mandate strength, with the most restric-

tive pegged at level 12, with the designation "immediate deposit + performance evaluation (no waiver option)". This Orwellian system of mandates is documented in Table 1.

Table 1: Open access mandates. Table copied from Harnad (2013) and reproduced under the terms of the Creative Commons BY-NC license.

A social movement that needs mandates to work is doomed to fail. A social movement that uses mandates is abusive and tantamount to academic slavery. Researchers need more freedom in their decisions not less. How can we expect and demand academic freedom from our universities when we impose oppressive mandates upon ourselves?

3. Gold Open Access is Failing

In 2006, James S. E. Opolot, Ph.D., a professor at Texas Southern University in Houston, published an article entitled "The Challenges of Environmental Crimes and Terrorism in Afri- ca: Evidence from Eastern, Southern, and West African Countries" (Opolot 2006). The article was published in *The International Journal of African Studies,* one of the journals in the port- folio of the open-access (and predatory) publisher called Euro-Journals. One might assume that Euro-Journals would be based in Europe, but predatory publishers often

disguise their true locations and use the names of Western countries to make themselves appear legiti- mate. Euro-Journals is based in Mauritius.

The open-access version of Professor Opolot's paper has disappeared from the Internet. Plagued by takedown requests due the high incidence of plagiarism among its articles, Euro-Journals decided to switch the distribution model for some of its journals to the subscription model, and it removed all of their content from the open Internet. The publisher simply stopped publishing the balance of its journals, and it removed all of their content from the Internet as well. A blog post I wrote in March 2013 (Beall 2013b) showed that the publisher had 29 journals in its portfolio. Among these, 10 became toll-access journals, and nineteen disappeared from the Internet. Dr. Opolot's paper was published in one of the journals whose content was removed, apparently permanently, from the Internet. I expect this process to repeat itself many times over in the coming years with other open-access publishers.

One of the criteria I use when judging potential predatory publishers is whether they have a digital preservation strategy. Most gold open-access publishers have no idea what digital preservation is, even though digital preservation should be one of the top priorities of any scholarly publisher. Properly carried out, digital preservation ensures that content is safely stored and re-formatted as formats evolve. Legitimate scholarly publishers contract out their digital preservation to outfits like Portico and LOCKSS. Relying on one's web hosting service for digital preservation doesn't cut it. Virtually all the publishers and journals on my lists have devoted no resources to digital preservation nor do they have a business plan or strategy for it.

The open-access movement has been a blessing to anyone who has unscientific ideas and wants to get these ideas into print. Because the predatory publishers care very little about peer review and see it merely as a charade that must be performed, they don't really

Mandate strength	
12	immediate deposit + performance evaluation (no waiver option)
9	immediate deposit (no waiver option)
6	six-month delay allowed (no waiver option)
3	12-month delay allowed (no waiver option)
3	rights-retention with waiver option
2	deposit if/when publisher says it's OK
1	no requirement: just request, recommendation or encouragement
0	no policy in ROARMAP

care when pseudo-science gets published in their journals, as long as they get paid for it. In my blog, I've given examples of pseudo-science being published as if it were true science. Here are three examples:

- The Theory of Metarelativity: Beyond Albert Einstein's Relativity (Jaoude 2013)

- Prevalence of Autism is Positively Associated with the Incidence of Type 1 Diabetes, but Negatively Associated with the Incidence of Type 2 Diabetes, Implication for the Etiology of the Autism Epidemic (Classen 2013)

- Combating Climate Change with Neutrinos (Wet 2013). The last of these, "Combating Climate Change with Neutrinos", was summarily retracted (without any notice) by the publisher after I drew attention to it in a blog post (Beall 2013c). I saved a copy of the article's PDF and have made that document available on the blog post. There are many unscientific ideas that people can get published in scholarly journals thanks to predatory open-access publishing. Authors of these works find that their ideas fail peer review in legitimate journals, so they seek out predatory publishers that are more than happy to accommodate their publishing needs. Some of these ideas include issues relating to sea- level rise (or the lack of it), Sasquatch, anthropogenic global warming (or the lack of it), the aetiology of autism, and the nature of

dark matter and dark energy. Often promoted as one of the benefits of open-access is the fact that everyone, even the lay public, will have access to all the scientific literature. But in the context of pseudo-science being published bearing the imprimatur of science, this becomes a serious problem. People who are not experts in a given field generally lack both the ability to understand the most complex research in the field and the ability to distinguish between authentic and bogus research in the discipline. As more bogus research continues to be published open-access, it will be accessed more by the public, and many will accept it as valid research. This bogus research will poison discourse in many scientific fields and will create a public that is misin- formed on many scientific issues.

Megajournals are becoming like digital repositories. These journals, many of them now editorless, are losing the cohesion, soul, and community-binding roles that scholarly journals once had. My website has its main list of publishers, but in early 2012 I was compelled to create a second list, a list of what I refer to as predatory standalone journals. These are predatory journals that cover the entire breadth of human knowledge, much broader than just science. Predatory publishers discovered the megajournal model by copying "successes" like PLOS ONE. As of late November 2013, I have 285 megajournals in my standalone journal list. They have titles like Journal of International Academic Research for Multidisciplinary [sic], International Journal of Sciences, and Current Discovery. The broad titles reflect the marketing strategy of accepting as many papers as possible, in order to maximize income. How many megajournals does the world need? Most of these journals exist only for the au- thors, those who need academic credit. Many of their articles will never be read, and many are plagiarized from earlier articles. The articles then become the source of future plagiarism. Collectively, they lower the quality of science and science communication. They clutter Google and Bing search results with academic rubbish. The future of the

> Creative Commons Attribution License (CC BY) may be in doubt. Nu- merous companies are emerging that aggregate content from CC BY-licensed works, publish them in new formats, and sell them at a profit. Frequently, when scholars find out that their work has been published for profit without their knowledge, their first reaction is often anger, even though they freely assigned the free license to their work. They feel betrayed. The CC- BY license has been promoted by European open-access advocates; the North Americans' view of open-access is more restrictive. Many here prefer to promote the CC BY NC (non- commercial) license. For many in North America, the concept of open-access itself means "ocular" open-access – that is, OA means that you can access content but can't do much else with it, other than read it. The Europeans are more collectivist and appropriative; for them scholarly publishing is another opportunity for taking. They do not respect the freedom of the press when the free press doesn't adopt their collectivist values.

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We mustn't forget the strengths of the traditional or subscription model of scholarly journal publishing. When space was an issue, journals could only publish the very best of the articles they received, and any lapse in quality over time led to subscription cancellations. The result was that the traditional journals presented the cream of the crop of current research. With open-access journals, the opposite is often true.

Indeed, when many libraries began to engage in journal cancellations in response to higher subscription prices (subscription prices increased mainly due to a great increase in the amount of scholarship being published), the subscription publishers came up with a solu- tion that has greatly benefitted libraries: bundling and differential pricing. This innovation has greatly benefitted scholars by making a great amount of research affordable to academic libraries. On

top of this, many publishers grant additional discounts to library consortia licens- ing journal subscriptions in bulk. According to Odlyzko (2013, 3) “the median of the number of serials received by ARL [Association of Research Libraries] members almost quadrupled during the period under investigation, going from 21,187 in the 1989-1990 academic year to 80,292 in the 2009-2010 one. Practically the entire increase took place during the last half a dozen years, without any big changes in funding patterns, and appears to be due primarily to ‘Big Deals’”. This finding shows the power of the market; when subscribers cut subscriptions, publishers take beneficial action for consumers.

OA journals don't have any space restrictions. They can publish as many articles per is- sue as they want, so the incentive for them is to publish more. We hear less about ac- ceptance rates than we did in the past because of this.

Traditional journals didn't have the built-in conflict of interest that gold open-access jour- nals have. For gold OA, the more papers a journal accepts, the more money it makes. Mon- ey is corrupting scholarly publishing. Scholars never should have allowed a system that re- quires monetary transactions between authors and publishers. Libraries took responsibility for this financial role in the past, and they performed it well. Now the realm of scholarly com- munication is being removed from libraries, and a crisis has settled in. Money flows from au- thors to publishers rather than from libraries to publishers. We've disintermediated libraries and now find that scholarly system isn't working very well.

4. Conclusion

The open-access movement isn't really about open access. Instead, it is about collectivizing production and denying the freedom of the press from those who prefer the subscription model of scholarly publishing. It is an anti-corporatist, oppressive and negative movement, one that uses young researchers and researchers from developing countries as pawns to artificially force the make-believe gold and green open-access models to work. The move- ment relies on

unnatural mandates that take free choice away from individual researchers, mandates set and enforced by an onerous cadre of Soros-funded European autocrats.

The open-access movement is a failed social movement and a false messiah, but its pro- moters refuse to admit this. The emergence of numerous predatory publishers – a product of the open-access movement – has poisoned scholarly communication, fostering research misconduct and the publishing of pseudo-science, but OA advocates refuse to recognize the growing problem. By instituting a policy of exchanging funds between researchers and pub- lishers, the movement has fostered corruption on a grand scale. Instead of arguing for open- access, we must determine and settle on the best model for the distribution of scholarly re- search, and it's clear that neither green nor gold open-access is that model.

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Changing the Narrative

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http://www.downes.ca/cgi-bin/page.cgi?post=61491
Michael Feldstein offers his retrospective on the MRI conference, suggesting that “the connectivist/open ed crowd has been spectacularly, stunningly successful at ‘changing the narrative’.” But as Phil Hill points out in another post, the only media coverage of the most significant gathering of cMOOC people ever is of some fairly minor UPenn study of xMOOCs. But I do agree that there's no point expecting to improve things by changing the narrative. I've watched the narrative - mine and others' - be changed over and over the last 20 years. LMSs. Learning Objects. Educational Modeling. Content syndication. OpenID. E-Learning 2.0. EduPunk. Learning Networks. Connectivism. OERs. MOOCs. The result is always the same. Sometimes it's ignored. More often it is co-opted and somehow becomes the property of the very institutions it targets. You can't change the world - or the establishment - with a narrative.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61491
Direct Link: http://mfeldstein.com/changing-narrative/

As Phil mentioned, he and I were both lucky to attend the MOOC Research Initiative conference, which was a real *tour de force*. Jim Groom observed that even the famously curmudgeonly Stephen Downes appeared to be enjoying himself, and I would make a similar observation about the famously curmudgeonly Jonathan Rees. If both of those guys can be simultaneously (relatively) pleased at a MOOC conference, then something is going either spectacularly right or horribly wrong. I believe it was the former in this case. We are at one of those rare moments when there's enough confusion that real conversation happens and possibilities open up. The sense I got is that everybody is really grappling with the questions of where we can take the concept of a "MOOC" and what MOOCishness might be good for. That is fun and hope-inducing. Phil and I spent a lot of the time interviewing folks for a future *e-Literate TV* series (coming to a computing device near you in March or April of 2014), so we were lucky to hear a lot of perspectives. There is some very good exploration happening now. George Siemens and his fellow conference organizers (as well as the Bill and Melinda Gates Foundation, which sponsored the event and the research) did a real service by bringing people together to talk about these issues at this pregnant moment.
One thing happened toward the end of the conference that has me puzzled, though. Jim mentioned it in his blog post:

At the same time[,] Bon Stewart's admonitions for some kind of organized response to start filling the temporary void of direction with alternative

narrative still rings in my ears—and it is very much the lesson I took away from Audrey Watters keynote at OpenEd.

There was a lot of conversation, really throughout the conference but coming to a head at the end, that the term of MOOC is somehow damaged goods and that…something…should be done about it. Usually the word "narrative" was brought up. But this talk of "alternative narratives" or, as Bonnie put it, "changing the narrative", confuses me. As far as I'm concerned, the connectivist/open ed crowd has been spectacularly, stunningly successful at "changing the narrative," and I'm not at all clear what it would look like to somehow do it differently. I don't understand what they mean here. Unfortunately I had to rush out the door to try to catch a plane shortly after the panel discussion and didn't have an opportunity to follow up with some of the attendees. So I'm going to try to express my confusion in this blog post and hope that somebody can help me figure out what I'm missing.

Warning: This post is long and lit crit wonkish.

The Archeologies of Ed Tech Narratives

Before there was "MOOC," there was "edupunk." Jim coined this term in 2008 as a way of describing an anti-consumerist educational ethos. He was rejecting LMSs, course cartridges, PowerPoint decks, and other tools that tend to encourage (in his view) the notion of education as something that can be packaged and delivered. Journalist Anya Kamenetz picked up this term in her book *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*. Despite the fact that Anya explicitly cited Jim and some of his peers as sources of inspiration for her book, the edupunk crowd was not amused. I didn't follow this falling out closely, but my sense is that they didn't like the book because it is, in part, consumerist in its recommendations to students about how they should think about their education. (Anya's Gates-funded sequel, *The Edupunks' Guide to a DIY Credential*, is essentially a consumers' guide.) Anya's use of the term and her impressive success at promoting the book and the ideas in it eventually prompted Jim and others to stop using the term edupunk.

And yet, I think it's worthwhile for the *DIY U* critics to ask themselves what that narrative would have been like had it not been for the influence of their word on the book. Remember, Anya's primary concern is the student debt

crisis. Her goal is to show students that they don't have to feel locked into the default path of a traditional college education that will plunge them deep into debt. There are other narratives that could have served her purpose. Consider, for example, libertarian billionaire Peter Thiel's Ayn Randian exhortation that young people should drop out of college and create their own startups. Anya's book title could have been simply *DIY U: Edupreneurs and the Coming Transformation of Education*. The addition of "edupunks" destabilizes the narrative that would have been implicit in that title. It raises questions for the reader: What is an edupunk? Where did that term come from? What do punks have to do with edupreneurs, or the coming transformation of higher education? You could say that the term "edupunk" was co-opted, and there would be some truth to that statement. You could also say that "edupunk" infected or informed the narrative about the student debt crisis. There would be some truth to that statement too.

The story of "MOOC" is different but it shares some important characteristics. In this case, I believe the xMOOC proponents were largely unaware of the connectivist work when they took up the term. Sebastian Thrun and Peter Norvig cited Salman Khan as their inspiration; I don't recall them ever mentioning George Siemens, Stephen Downes, or David Cormier. I suspect that "MOOC" was a convenient term that they and others latched onto without giving it a lot of deep thought. (And for the Derrida fans in the crowd, somebody then had to create the term "SPOC" to position "private" as the absence of "open".) But imagine if they had latched onto or made up a different term, like "Internet-scale Courses (ISC)". In this post-pivot moment, what conversation would that have provoked? With "MOOC," we can ask questions like, "Really, what do we mean by 'massiveness' and 'openness', and why (and how, and where) are those useful features of an educational experience?" No such possibility would exist in "Internet-scale Courses."

Is there a world in which an original idea like "edupunk" or "MOOC' could both become dominant and remain true to its roots? One narrative we should be particularly careful of is the narrative of co-optation. The notion that some pure Idea is insidiously taken over by Forces and corrupted to their Evil Ends is both convenient enough to be almost inevitably wrong and simple enough to contradict the epistemological tenets that undergird the very idea of connectivism.

Writing and Diffidence

I have largely put away the theoretical tools that I learned as a graduate student in media studies, but one that has stayed with me is the notion of critique in the Derridian sense. Now, I will be honest: There are vast swathes of Derrida that I simply do not understand. In fact, I have always suspected that his works were partly jokes about the knowability of meaning at the expense of the reader, in somewhat the same way that Shelley's "Ozymandias" can be read as a joke about the knowability of identity. But one thing that I did take away from Derrida (and Foucault, in a different way) is that there is an inherent, inevitable, and eternal tendency in human culture to develop simple stories about what is. These stories are always wrong, in part because they are simple. You can't fix this. You can't "change the narrative" to something that is "true." We want easy answers but there are no easy answers. One can buy this much of the theory without buying the idea that meaning is radically relative, but connectivists in particular should grok this concept. Changing the narrative does not get us out of the fundamental problem that all narratives are, in some important sense, false (or, if you want to get all post-structuralist, that they can only be "true" in the sense and to the degree that they are consistent with the rest of a belief system). Nor does it solve the problem that any narrative will inevitably be warped by the powerful human tendency to make what they are hearing consistent with what they think they already know and, more importantly, with what they want to believe. The best you can do, according to this view of the world, is continually destabilize the dominant narrative—to challenge people to look, for a moment, beyond the easy and search for the true.

And this brings me back to the thing that I don't get. Given this view of the world, what does it mean to "change the narrative" or "create alternative narratives"? What would success look like? How is it different from what has already happened with "edupunk" and "MOOC"? If those stories are failure stories, then how would a success story be different?

Phil and I aren't thinking about *e-Literate TV* as a work of critique—we're just not that smart—but I suppose you could say that one of our goals with it is to change, or at least destabilize, narratives. What we see happening on campuses is something like this:

- The campus president announces, "I just met with the very nice people at [insert commercial MOOC vendor]. We are making a MOOC. This is going to transform our university! Please make the MOOC by next week."

- Somebody in the faculty senate declares, “I heard that MOOCs give you cancer and melt the polar ice caps.”
- Food fight.

We want to challenge both the president’s and the faculty member’s narratives, not because we want to replace them with a “better” or “truer” one, but because the most interesting conversations happen when people on both sides of the argument start realizing that the situation is more complicated than they thought it was. This is precisely what was so inspiring about the MOOC conference, and it’s the most that we know how to aspire to. If there is a more effective strategy or a higher goal for “changing the narrative,” I would like to understand what it is. But at the moment, I am having a failure of imagination.

The battle for open - a perspective

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http://www.downes.ca/cgi-bin/page.cgi?post=61487
Open Access (OA) and Open Educational Resources (OERs) have won the day. writes Martin Weller, but after the victory comes the battle. "After the initial success of openness as a general ethos then the question becomes not 'do you want to be open?' but rather 'what type of openness do you want?' Determining the nature of openness in a range of contexts so that it retains its key benefits as an approach is the next major focus for the open education movement."
14 page PDF. Good read. See in addition a dozen or so more articles from this special issue of JIME
http://www-jime.open.ac.uk/jime/issue/view/2013-Nottingham-OER/showToc
on openness.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61487
Direct Link: http://www-jime.open.ac.uk/article/2013-15/pdf

The battle for open - a perspective

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Abstract: In this article the author argues that openness in education has been successful in establishing itself as an approach. However, this initial victory should be viewed as part of a larger battle around the nature of openness. Drawing lessons from history and the green movement, a number of challenges for the open education movement are identified as it enters this new stage. The value of openness to education is stressed in that it relates to opportunities for development and the role of the higher education in society.

Keywords: Open Educational Resources

Is it a battle?

In this article I wish to argue that the debate around various issues in open education represents a battle for the nature of openness. Initially then the value of using the battle metaphor will be justified. Some readers will be uncomfortable with such militaristic language, but its use is deliberate and in examining why some of the significant factors about openness are highlighted.

Firstly, there is a real conflict regarding the direction openness takes in education. For many of the proponents of openness its key attribute is freedom - for individuals to access content, to reuse it in ways they see fit, to develop new methods of working and to take advantage of the opportunities the digital, networked world offers. The more commercial interpretation of openness may see it as an initial tactic to

gain users on a proprietary platform, or as a means of accessing government funding. Some see the new providers as entirely usurping existing providers in higher education, for instance when Sebastian Thrun predicts there will be only ten global providers of education in the future (The Economist 2012).

The second factor for choosing the term is that, as in real battles, things of value are being fought over. The average cumulative expenditure per student in OECD countries for tertiary studies is 57,774 USD (OECD 2013). In academic publishing Reed Elsevier reported revenue of over 6 billion GBP in 2012 of which over 2 billion was for the Science Technical and Medical publishing area (Reed Elsevier 2012) while Springer reported sales of €875 million in 2011 (Springer 2011). These are substantial markets, and the demand for education is only going to increase, so they represent highly desirable ones in times of global recession.

The third, and final, justification for using the term battle is that, as well as the very considerable spoils that may go to the victor, the axiom about the victors writing history is also pertinent. There is a battle for narrative taking place which circle around the issue of openness. An example of this is the recurrent 'education is broken' meme, and the related Silicon Valley narrative for education (Kernohan 2013, Weller 2012). These both seek to position higher education as a simple content industry, akin to the music business, and therefore can provide a simple, technological solution to this supposedly broken system. These narratives are often accepted unchallenged and deliberately ignore higher education's role in many of the changes that have occurred (positioning it as external forces fixing higher education) or simplifying the functions of higher education.

The term battle then seems appropriate to convey these three themes of conflict, value and narrative. To explore this metaphor then we might say that the initial battle has been won, but it is in the time of peace that many of the struggles continue. After what I will propose is an initial victory of openness, we are now entering the key stage in the longer term battle around openness. There are obviously many aspects of the battle metaphor that are not addressed; it is these three that form the basis for the comparison.

This is not simply about whether we use one piece of technology or another; openness can be argued to be at the very core of higher education in the 21 st century. In its most positive interpretation it is the means by which higher education becomes more relevant to society, by opening up its knowledge and access to its services. It provides the means by which higher education adapts to the changed context of the digital world. This view will be outlined below when the value of openness is examined. At its most pessimistic openness is the route by which commerce fundamentally undermines the higher education system to the point where it is weakened beyond repair.

Lessons from elsewhere

Before looking at openness in education in more detail, it is worth considering lessons from elsewhere that can provide a perspective on the current situation in open education. Two analogies can be used to provide lessons for the battle around openness in education. If we view the success of the open approach as akin to a revolution (as argued below), then the history of other revolutions should offer some insights. The first analogy then is that of nearly all revolutions and their immediate aftermath. The French Revolution of 1789 saw an undeniably positive movement to overthrow injustices imposed by a monarchy. But in the subsequent decade there were numerous struggles between factions, a dictatorship and the Reign of Terror, culminating in the rise of Napoleon. While the long term results of the revolution were positive, during the decade and more after the 1789 commencement it must have felt very different for the average French citizen, and during the rule of Robespierre and the Jacobins many must have pondered whether it was in fact better under the old regime. One hears similar observations after more recent revolutions, for instance Russians proclaiming that life was better under Stalin, or East Germans that they preferred the communist regime (Bonstein 2009). More recently we have witnessed the Arab Spring, which over two years on has left many countries facing division, worsening economic performance and violent struggle still.

Many of the participants in a post-revolutionary state would be unified by one thought: this isn't what victory should feel like. The interests of various groups can come into the uncertainty that revolution creates, the old power structures do not disappear quietly, the pressures of everyday concerns lead to infighting amongst previous allies, and so on. It is messy, complex and all very human.

One interpretation of these national revolutions is that these post-revolutionary struggles are the inevitable growing pains of a democracy, but that the general direction is towards greater freedom. Viewed from an historical perspective they can seem entirely predictable given the sudden nature of change. And this also provides a second, more general lesson - it is after the initial victory, in these periods of change that the real shape of the long-term goal is determined.

If we see the open approach as largely having been successfully adopted, as set out in the next section, then considering other fields where an approach or message has moved into the mainstream can also offer insight. The second analogy therefore is provided by the green movement. Once seen as peripheral and only of concern to hippies, the broad green message has moved into central society. Products are advertised as being green, recycling is widely practised, alternative energy sources are part of a national energy plan and all major political parties are urged to have green policies. The

environmental impact of any major planning decision is now high on the agenda (even if it isn't always the priority). From the perspective of the 1950s this looks like radical progress, a victory of the green message. And yet for many in the Green movement it doesn't feel like victory at all. As well as the ongoing global struggle to put in place meaningful agreements on carbon emissions, and the complex politics involved in getting agreement on global, long-term interests from local, short-term politicians, the green message has also been a victim of its own success. The green message has penetrated so successfully into the mainstream that it is now a marketable quality. This is necessary to have an impact at the individual level, for example in consideration of purchasing choices regarding cars, light-bulbs, food, clothing, travel, etc. But it has also been co-opted by companies who see it as a means of marketing a product. For example, many green activists in the 1970s would not have predicted that nuclear power would find renewed interest by promoting its green (non carbon dioxide producing) credentials. Regardless of what you feel about nuclear power, we can probably assume that raising its profile was not high on the list of hoped for outcomes for many green activists.

In 2010 assets in the US, where environmental performance was a major component, were valued at $30.7 trillion, compared with $639 billion in 1995 (Delmas & Burbano 2011). Being green is definitely part of big business. This leads to companies labelling products as green on a rather spurious basis. Like 'fat-free' or 'diet' in food labelling, 'eco-friendly', 'natural' or 'green' are labels that often hide other sins or are dubious in their claim. This is termed greenwashing, for example, the Airbus A380 reportedly has 17% less carbon emissions than a Boeing 747, which is to be welcomed, but adverts promoting it as an environmentally friendly option would seem to be stretching the definition somewhat. Similarly BP's series of 'green' adverts aimed at promoting a 'beyond petroleum' message provide a good example of how the green message can be adopted by companies who would seem to be fundamentally at odds with it.

Environmental marketing agency Terra Choice, identified '7 sins of greenwashing' (Terra Choice 2010), analogies of which can be seen in the open world:

1. Sin of the Hidden Trade-off, - whereby an unreasonably narrow set of attributes is used to claim greenness, without attention to other important environmental issues.
2. Sin of No Proof, - when an environmental claim that cannot be substantiated by easily accessible supporting information.
3. Sin of Vagueness - making poorly defined or broad claims so that their real meaning is likely to be misunderstood by the consumer.
4. Sin of Irrelevance - a claim that is truthful but is unimportant or unhelpful

5. Sin of Lesser of Two Evils - making claims that may be true within the product category, but that risk distracting the consumer from the greater environmental impacts of the category as a whole.
6. Sin of Fibbing - making wholly false claims
7. Sin of worshiping false labels - when a product through either words or images, gives the impression of third-party endorsement where no such endorsement actually exists;

In the IT world the similarities between greenwashing and claims to openness have led to the term 'openwashing' being used. Klint Finley explains (2011):

"The old "open vs. proprietary" debate is over and open won. As IT infrastructure moves to the cloud, openness is not just a priority for source code but for standards and APIs as well. Almost every vendor in the IT market now wants to position its products as "open." Vendors that don't have an open source product instead emphasize having a product that uses "open standards" or has an "open API."

As companies adopt open credentials in education we are seeing the term applied in that sphere too, with similar cynicism (Wiley 2011). Like 'green', there are a series of positive connotations associated with the term 'open' - after all, who would argue for being closed? The commercial co-option of 'green' then provides us with a third lesson to be applied to the open movement: the definition of the term will be turned to commercial advantage.

These two analogies provide us with three lessons then that can be seen repeatedly across the different areas of open education:

1. Victory is more complex than first envisaged
2. The future direction is shaped by the more prosaic struggles that come after initial victory
3. Once a term gains mainstream acceptance it will be used for commercial advantage

The victory of openness

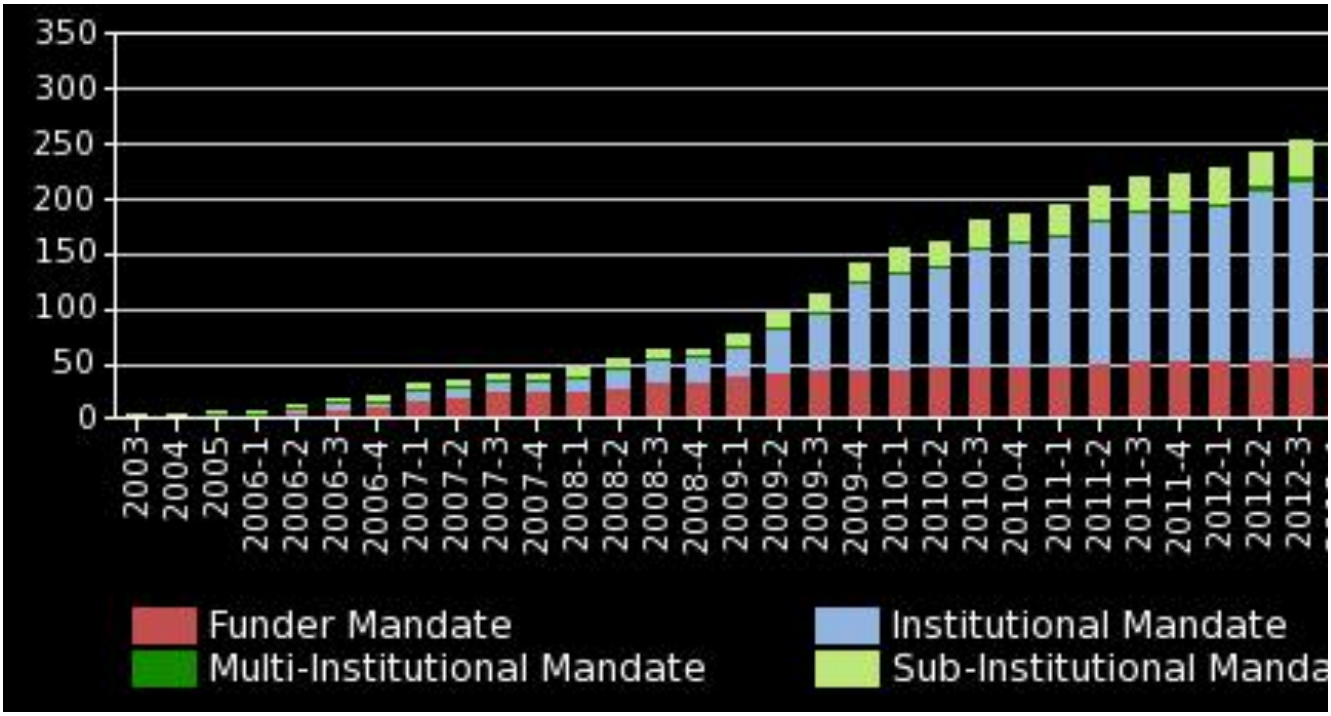
Having established the metaphor of a battle for the nature of openness and the lessons that can be drawn from elsewhere, an analysis of openness in education can now be undertaken.

In many respects the first major battle has been won, which is the recognition of openness as a valid approach. Openness is everywhere in education at the moment: at the end of 2011 a free course in Artificial Intelligence had over 160,000 learners enrolled (Leckart 2012); in 2012 in the UK the Government followed other national bodies in the US and Canada by announcing a policy mandating that all articles resulting from publicly funded research should be made freely available in open access publications (Finch Group 2012); downloads from Apple's iTunes U site which gives away free educational content passed 1 billion in 2013 (Robertson 2013); British Columbia announced

a policy in 2012 to provide open, free textbooks for the 40 most popular courses (Gilmore 2012); the G8 leaders signed a treaty on open data in June 2013, stating that all government data will be released openly by default (UK Cabinet Office 2013).

Outside of these headline figures there are fundamental shifts in practices, which can be grouped together as open scholarship (Veletsianos & Kimmons 2012) - academics are creating and releasing their own content using tools such as Slideshare and YouTube, researchers are releasing results earlier and using open, crowdsourcing approaches, every day millions of learners make use of free, open online tools and resources. Figure 1 shows the number of open access policies including institutional, funder and thesis specific ones since 2003 (from the Southampton University project ROARMap), which can be seen as representative of the growth of openness in general as an approach in education over the past decade.

Figure 1. Open Access Policies (University of Southampton http://roarmap.eprints.org/)



In fact, openness is now such a part of everyday life that it is almost not worth commenting upon. This wasn't always the case, nor was it inevitable or predictable. At the end of the 1990s, as the dot com boom was gaining pace, business models were a source of much debate (much of it justified after the collapse) and similarly with the web 2.0 bubble ten years later. And while many of the business models were fanciful, the traditional models of paying for content have also been shown not to transfer across to the new digital domain. "Giving stuff away" is no longer an approach to be mocked.

Nowhere has openness played such a central role as in education. Many of the pioneers of open movements have come from universities and the core functions of academics are all subject to radical change under an open model, including the Massive Open Online Courses (MOOCs) that are challenging teaching and pre-publication repositories that undermine the traditional publishing and review model of researchers, openness affects all aspects of higher education.

Openness has a long history in higher education. Its foundations lie in one of altruism, and the belief that education is a public good. It has undergone many interpretations and adaptations, moving from a model which had open entry to study as its primary focus, to one that emphasises openly available content and resources. This change in the definition of openness in education has largely been a result of the digital and network revolution. Changes in other sectors, most notably the open source model of software production, and values associated with the internet of free access and open approaches have influenced (and been influenced by) practitioners in higher education. The past decade or so has seen the growth of a global open education movement, with significant funding from bodies such as the William and Flora Hewlett Foundation and research councils. Active campaigners in universities have sought to establish programmes that will release content (data, teaching resources, publications) openly, while others have adopted open practices regarding their own working, through social media and blogs. This has been combined with related work on open licenses (notably Creative Commons) which allow easy reuse and adaptation of content, advocacy at policy level for nation or state-wide adoption of open content and sharing of resources, and improved technology and infrastructure that make this openness both easy and inexpensive.

One might therefore expect this to be a time of celebration for the advocates of openness. Having fought so long for their message to be heard, they are now being actively courted by senior management for their experience and views on various open strategies. Open approaches are being featured in the mainstream media. Millions of people are enhancing their learning through open resources and open courses. Put bluntly, it looks as though openness has won. And yet you would be hard pushed to find any signs of celebration amongst those original advocates. They are despondent about the reinterpretation of openness to mean 'free' or 'online' without some of the reuse liberties envisaged (e.g. Wiley 2013). Concerns are expressed about the commercial interests that are now using openness as a marketing tool (e.g. Lamb, 2013). Doubts are expressed regarding the benefits of some open models for developing nations or learners who require support. At this very moment of victory it seems that the narrative around openness is being usurped by others and the consequences of this may not be very open at all.

In 2012 Gardner Campbell gave a keynote presentation at the Open Education conference (Campbell 2012) in which he outlined these concerns and frustrations. "What we are seeing," he said "are developments in the higher education landscape that seem to meet every one of the criteria we have set forth for open education - increased access, decreased cost, things that will allow more people than ever on a planetary scale, one billion individual learners at a time… Isn't that what we meant?" But as he explored different successes of openness his refrain was that of TS Eliot - that's not what I meant at all.

Why should this be the case? Can we dismiss it as simply the backlash when something achieves popularity? Are the advocates of openness merely exhibiting chagrin that others are now claiming openness? Is it just a semantic argument over interpretation that has little interest beyond a few specialist academics? Or is it something more fundamental, regarding the direction of openness and the ways it is implemented. It is this central tension in openness - that of victory and simultaneous despair - that this article seeks to explore.

Higher education and openness

The focus of this article is on higher education. The justification for the higher education focus is that it is the area where the battle for open is perhaps most keenly contested. Unlike some sectors which have had openness rather foisted upon them as a result of the digital revolution, for example the music industry and the arrival of sharing services such as Napster, higher education has sought to develop open practices in a range of areas.

It is this scope that makes it such a vibrant area of study, encompassing publishing, teaching, technology, individual practices, broadcast and engagement. In this variety there is much that is relevant for other sectors too, where one or more of these topics will be applicable, but rarely the entire range. It is frequently stated that higher education can learn lessons from other sectors that have been impacted by the digital revolution (e.g. Shirky, 2012), such as newspapers, but the opposite may be true with regards to openness, that other sectors can learn much from what is played out in the openness debate in higher education.

The following sections will examine the key areas of interest for education with regard to openness and set out the nature of the victory of openness.

Teaching

The advent of MOOCs has garnered a lot of attention recently. Originally developed as an experimental method of exploring the possibilities of networked learning, MOOCs became the subject of media and commercial interest following the large numbers attracted

to Thrun's Artificial Intelligence MOOC. Since then the major commercial player to emerge is Coursera, with two rounds of venture capital funding and over four million learners registered on its 400 courses (Coursera.org).

The idea behind MOOCs is simple: make online courses open to anyone and remove the costly human support factor. Whether this model is financially sustainable is still open to question as it is in the early stages. But there has been no shortage of media attention and discussion, with some observers arguing that MOOCs are the internet 'happening' to higher education (e.g. The Economist 2013).

MOOCs are just one aspect of how openness is influencing the teaching function of higher education. Before MOOCs emerged, there was (and still is) the successful open education resources (OER) movement. Indeed it can be argued that MOOCs are best viewed as just one element of the OER movement and not as a separate development (Weller, 2013). From 2001 when the Hewlett foundation funded MIT to start the OpenCourseWare site which released lecture material freely, the OER movement has spread globally. There are now major OER initiatives in all continents and OER has formed part of the central strategy for many education programmes from the likes of UNESCO, the Shuttleworth Foundation, the William and Flora Hewlett foundation and the Higher Education Funding Council for England (HEFCE).

The distinction between MOOCs and OERs may be blurring somewhat - for example if a set of OER resources are packaged into a course structure, does that make them a MOOC, and similarly if a MOOC is made available after the course has finished is it then an OER? Related to OERs is the move to establish open textbooks, with the cost of textbooks, particularly in the US becoming a prohibitive factor in higher education participation (Hilton and Wiley 2010). Open textbooks seek to replace these publisher-owned versions of standard texts (for example, introductory statistics) with free, open online versions that have been created by groups or single authors. This is having significant impact, for example the open textbook initiative OpenStax aims to provide free online and low cost print textbooks to 10 million students, and currently has over 200 colleges signed up with projected savings to students of 90 million USD over the next 5 years (http://openstaxcollege.org/). As we shall see later however, cost is not the sole, or primary, benefit of openness for education.

Research

There are many ways in which openness impacts upon research, across the full cycle of activities, such as using open media to develop ideas, crowd-sourced approaches to methodology and disseminating findings openly. As with teaching, the victory of the open approach is tangible in a number of ways in the area of research.

Open access publishing has been growing steadily in acceptance as not only a valid, but, rather the best, model of disseminating research publications (e.g. Davis, 2010). Instead of academics publishing in proprietary journals access to which is then purchased by libraries or on article basis by individuals, open access makes publications freely accessible to all. There are different models for achieving this, the so-called green route, whereby the author places the article on their own site or the institutions repository, the gold route where the publisher charges a fee to make the article openly available and the platinum route, where the journal operates for free.

Open access publishing is perhaps the most recognisable aspect of how scholarly activity is adapting to the opportunities afforded by digital and networked technology. Other practices form what is termed open scholarship and include sharing individual resources such as presentations, podcasts and bibliographies, social media engagement through blogs, twitter and other routes, and generally more open practices, such as pre-publishing book chapters, open reviews and open research methods. The latter can include the use of approaches such as crowdsourcing and social media analysis which rely on openness to succeed. Open scholarship is also providing new avenues for public engagement as academics create online identities that previously would have necessitated a broadcast intermediary to establish.

One aspect of open scholarship is that of open data, making the data from research projects publicly available (where it is not sensitive). As mentioned at the start of this paper the G8 have signed an agreement that this should be the default position on governmental data, and many research funders impose similar constraints. For many subjects, such as climate change, this allows for larger data sets to be created and meta-studies to be conducted, improving the overall quality of the analysis. But in other subjects too it provides the possibility of comparisons, analysis and interpretations that are unpredictable and may be outside of the original domain.

Open policy

One last victory for the open approach has been the manner in which it has been explicitly incorporated into formal policy at all levels. Much of the work around open licensing, particularly Creative Commons, has been initiated in, or influenced by, higher education. Licensing is in the eyes of many one of the true tests of openness, as the ability to take and reuse an artefact is what differentiates open from merely free. Licenses are the main route through which broader policy based initiatives can be realised. By adopting a position on licences governments, NGOs, research funders, publishers and technology companies create a context whereby openness follows. The promotion of openness then as an approach, both practical and ethical, has been a growing strand of the open movement based in higher education.

At the time of writing, the Open Policy Network lists 82 global policies (http://wiki.creativecommons.org/OER_Policy_Registry) on open education, and the University of Southampton has 182 institutional mandates and 82 funder mandates relating to open access publishing (http://roarmap.eprints.org/). The nature and scope of these vary considerably from hard mandates, to softer intentions, but the interest and growth in policy indicates that it may be the next major development in open education.

This brief overview should attest that openness lies at the heart of much of the change in higher education, and that there is a significant amount of research and activity in this area. One aim of this article is to highlight this activity. It is an exciting time to be involved in higher education, there are opportunities for changing practice in nearly all aspects, and openness is the key to many of these. Key to succeeding in this however is to firstly engage in the changes, and secondly to take ownership of the changes, and not allow them to be dictated by external forces, either through vacillation or a short-term desire to simplify matters. As has been demonstrated by the green movement, the value of openness will not be lost on others.

Why openness matters

In the preceding sections the success of openness as an approach has been highlighted. This section will examine the significance of openness and why it matters in education by focusing on two features: opportunities and function.

There are many ways that the opportunity openness affords could be addressed, but just one representative example will be provided, in the area of pedagogy. In *The Digital Scholar* (Weller, 2011) I set out how digital resources and the internet are causing a shift from a pedagogy of scarcity to one of abundance. Many of our existing teaching models (the lecture is a good example) are based around the initial assumption of access to knowledge being scarce (hence we gather lots of people in a room to hear an expert speak). Abundant online content changes this assumption. A pedagogy of abundance focuses on content however, which is an important, but not sole element in the overall approach. Perhaps it is better to talk of a pedagogy of openness. Open pedagogy makes use of this abundant, open content (such as open educational resources, videos, podcasts), but also places an emphasis on the network and the learner's connections within this. In analysing the pedagogy of MOOCs (and open pedagogy is not confined to MOOCs), Paul Stacey (2013) makes the following recommendations:

- Be as open as possible. Not just open enrolments but use open pedagogies.
- Use tried and proven modern online learning pedagogies not campus classroom-based didactic learning pedagogies which we know are ill-suited to online learning.

- Use peer-to-peer pedagogies over self study.
- Use social learning including blogs, chat, discussion forums, wikis, and group assignments.
- Leverage massive participation - have all students contribute something that adds to or improves the course overall.

Examples of open pedagogy would include Jim Groom's DS106 (ds106.us) an open course which encourages learners to create daily artefacts, suggest assignments, establish their own space online and be part of a community that extends beyond the course both geographically and temporally. Dave Cormier starts his educational technology course (http://ed366.com/) every year by asking students to create a contract stating "that each of you decide how much work you would like to do for what grade. Individual assignments are given a 'satisfactory' or 'unsatisfactory' assessment upon completion" (Cormier 2013). Courses such as H817Open (http://bit.ly/h817open) and Octel (http://octel.alt.ac.uk/) have learners create their own blogs, and this is used for all their solutions. The course then automatically aggregates all of these contributions into one central blog. All of this is conducted in the open.

This is not to suggest that any of these examples should be the default or adopted by others. They are suited to particular contexts and topics. The point is a more general one, in that openness is a philosophical cornerstone in these courses. It is present in the technology adopted, in the resources referenced, in the activities students undertake and in the teaching approaches taken. All of this is made possible by openness in several other areas: resources need to be made openly available, technology needs to be free to use, students need to be prepared to work in the open, and universities need to accept these new models of operating. I would suggest that we are only just at the beginning of exploring models of teaching and learning that have this open mind-set. It is notable that many of these early experimenters in open pedagogy are people associated with the open education movement.

It is this opportunity to explore that is important for higher education if it is to innovate and make best use of the possibilities that openness offers. A prerequisite for this is engagement with open education, whether it is in terms of technology, resources or pedagogy. One of the dangers of outsourcing openness, for example by relying on third party vendors to provide MOOC platforms, or publishers to provide open content is that the scope for experimentation becomes limited. The pre-packaged solution becomes not just the accepted method, but the only method which is recognised.

We are already seeing some of this, for example Georgia Tech announced collaboration with MOOC company Udacity to offer an online Master's degree. As Christopher Newfield (2013) notes in his analysis of the contract, Udacity has an exclusive relationship with

Georgia Tech, so Georgia Tech cannot offer its own content elsewhere. Udacity can, however, offer that content to other learners outside of the Masters. Newfield argues that as they seek to recoup costs and make savings that "the big savings, ironically, come by squeezing innovation - payments to course creators flatten out - and by leveraging overhead"

Even if we accept a less cynical view of this arrangement, the model of companies such as Udacity, Coursera, Pearson, etc is to create a global brand by becoming one of only a handful of providers. Diversity in the market is not in their interest, and so the model of how to create MOOCs, or deliver online resources becomes restricted, whether by contractual arrangements or simply by the presence of pre-packaged solutions which negate further exploration.

This same message regarding the possibility for experimentation can be repeated for nearly all other university functions: research, public engagement or the creation of resources. In each area the possibilities of combining open elements and making use of the digital networked environment allow for new opportunities, but in order to be fully realised these require active engagement and innovation by higher education institutions and academics, rather than external provision.

This brings us onto the second reason why openness matters, namely the function, or role, of the university. Universities can be seen as a bundle of different functions: research, teaching, public engagement, policy guidance, and incubators for ideas and businesses. In times of financial downturn, every aspect of society is examined for its contribution versus its cost, and the higher education sector is no exception here. Increasingly, the narrative is one of a straightforward investment transaction - students pay a certain fee, and in return they receive an education that will allow them to earn more money later in life (e.g. Buchanan, 2013).

While this is certainly a defensible and logical perspective for many to take, it ignores, or downplays other contributions. Open approaches to the dissemination of research, sharing of teaching resources and online access to conferences and seminars helps to reinforce the broader role of the university. There is nothing particularly new in this, my own institution, The Open University, is well regarded in the UK even by those who have never studied there largely as a result of their collaboration with the BBC, and making educational programmes. These can be seen as early forms of open educational resources. The OU is in a privileged position however with its relationship with the national broadcaster. Open approaches allow all institutions to adopt some of this approach, often at relatively low cost. For example, the University of Glamorgan (now University of South Wales) set up its own iTunesU site in 2010 at relatively low cost and generated over 1 million downloads in the first 18 months (Richards 2012).

Increasingly then we can see that openness helps shape the identity not just of a particular university, but of higher education in general and its relationship to society.

After the victory comes the battle

The nature of the victory of openness and subsequent struggle can be illustrated with an example where the battle around openness is perhaps most advanced, namely open access publishing.

The conventional model of academic publishing has usually seen academics providing, reviewing and often editing papers for free, which are published by commercial publishers and access to which is sold to libraries in bundles. Much of the funding for the research that informs these articles and the time spent on producing them comes from public funds, so over the last decade there has been a demand to make them publicly accessible. This has now become the mandate for many research funders, and many governments have adopted open access policies at a national level which stipulate that the findings of publicly funded research are made publicly available. This has extended to data from research projects as well as publications. Open access publishing is now the norm for many academics, and not just those who might be deemed early adopters, for example a survey by Wiley of its authors found that 59% had published in open access journals (Warne, 2013).

In the UK the 2012 Finch report (Finch Group 2012) recommended that "a clear policy direction should be set towards support for publication in open access or hybrid journals, funded by APCs, as the main vehicle for the publication of research, especially when it is publicly funded". APCs are Article Process Charges; this is the so-called Gold route to open access whereby authors (or the research funders) pay the publishers for an article to be made open access. This is in contrast with the Green route where it is self-archived or the Platinum route, which are journals where there is no APC charge.

In this we can see the initial triumph of openness. Open access has moved from the periphery to the mainstream and become the recommended route for publishing research articles. But at the same time the conflicts around implementation are also evident as is the thwarting of the original open ambitions.

The Finch report has been criticised for seeking to protect the interests of commercial publishers, while not encouraging alternative methods such as Green or Platinum open access (Harnad 2012). In addition the pay-to-publish model has seen the rise of a number of dubious open access journals, which seek to use openwashing as a means to make profit while ignoring the quality of articles. Bohannon (2013) reports on a fake article that was accepted by 157 open access journals. This would indicate that the pay-to-publish model creates a different stress on the filter to publish.

The tensions in the open access publishing world are representative of those in all aspects of openness in education: Incumbents have a vested interest in maintaining the status quo; there are considerable sums of money involved; the open approach allows new entrants to the market; the open label becomes a marketing tool; and there are tensions in maintaining the best aspects of existing practice as we transition to new ones. Driving it all though is a conviction that the open model is the best approach, both in terms of access and innovation. The Public Library of Science (PLoS) for instance, has not only interpreted open access to mean free access to content, but also used the open approach to rethink the process of peer review and the type of articles they publish, for example with PLoS Currents which provide rapid peer-review around focused topics (http://currents.plos.org/).

Conclusion

Openness has been successful in being accepted as an approach in higher education and widely adopted as standard practice. In this sense it has been victorious, but this can be seen as only the first stage in a longer, ongoing battle around the nature that openness should take. There are now more nuanced and detailed areas to be addressed, like a number of battles on different fronts. After the initial success of openness as a general ethos then the question becomes not 'do you want to be open?' but rather 'what type of openness do you want?' Determining the nature of openness in a range of contexts so that it retains its key benefits as an approach is the next major focus for the open education movement.

Open approaches complement the ethos of higher education, and also provide the means to produce innovation in a range of its central practices. Such innovation is both necessary and desirable to maintain the role and function of universities as they adapt. It is essential therefore that institutions and practitioners within higher education have ownership of these changes and an appreciation of what openness means. To allow others to dictate what form these open practices should take will be to abdicate responsibility for the future of education itself.

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About those U Penn MOOC results reported at MRI13

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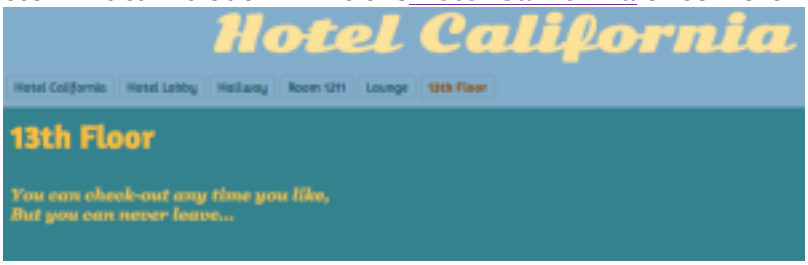
http://www.downes.ca/cgi-bin/page.cgi?post=61486
As Phil Hill points out, the main media focus from the
recent MOOC Research Initiative
http://www.moocresearch.com/ conference (MRI) is a survey
of some UPenn xMOOCs featuring large numbers of drop-outs
(see Chronicle
http://chronicle.com/blogs/wiredcampus/from-a-million-mooc-users-a-few-early-research-results/48841"
target="_blank, Inside Higher Ed
http://www.insidehighered.com/news/2013/12/06/mooc-research-conference-confirms-commonly-held-beliefs-about-medium"
target="_blank, and eCampusNews
http://www.ecampusnews.com/top-news/free-moocs-complete-006/"
target="_blank, for example). This is disappointing given
the number of cMOOC practitioners at the conference. And
the UPenn research isn't even worth writing home about.
Kevin Werbach writes, "the researchers didn’t have
any contact with the faculty teaching the courses. So some
of their statements are generalizations. E.g., I’m
not sure what it means for a course to be 'targeted at
college students.'"
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61486
Direct Link:
http://mfeldstein.com/u-penn-mooc-results-reported-mri13/

Michael and I have been at the MOOC Research Initiative conference in Arlington, TX (#mri13) for the past three days. Actually, thanks to the ice storm it turns out MRI is theHotel California of conferences.



credit: Bailey Carter assignment for Laura Gibbs' class

While I'm waiting to find out which fine Texas hotel dinner I might enjoy tonight, I thought it would be worthwhile to share more information from the University of Pennsylvania research that seems to be the focus of media reports on the conference (seeChronicle, Inside Higher Ed, and eCampusNews, for example). Penn has tracked approximately one million students through their 17 first-generation MOOCs on Coursera, which provided the foundation for this research.

Per IHE:

"Emerging data ... show that massive open online courses (MOOCs) have relatively few active users, that user 'engagement' falls off dramatically

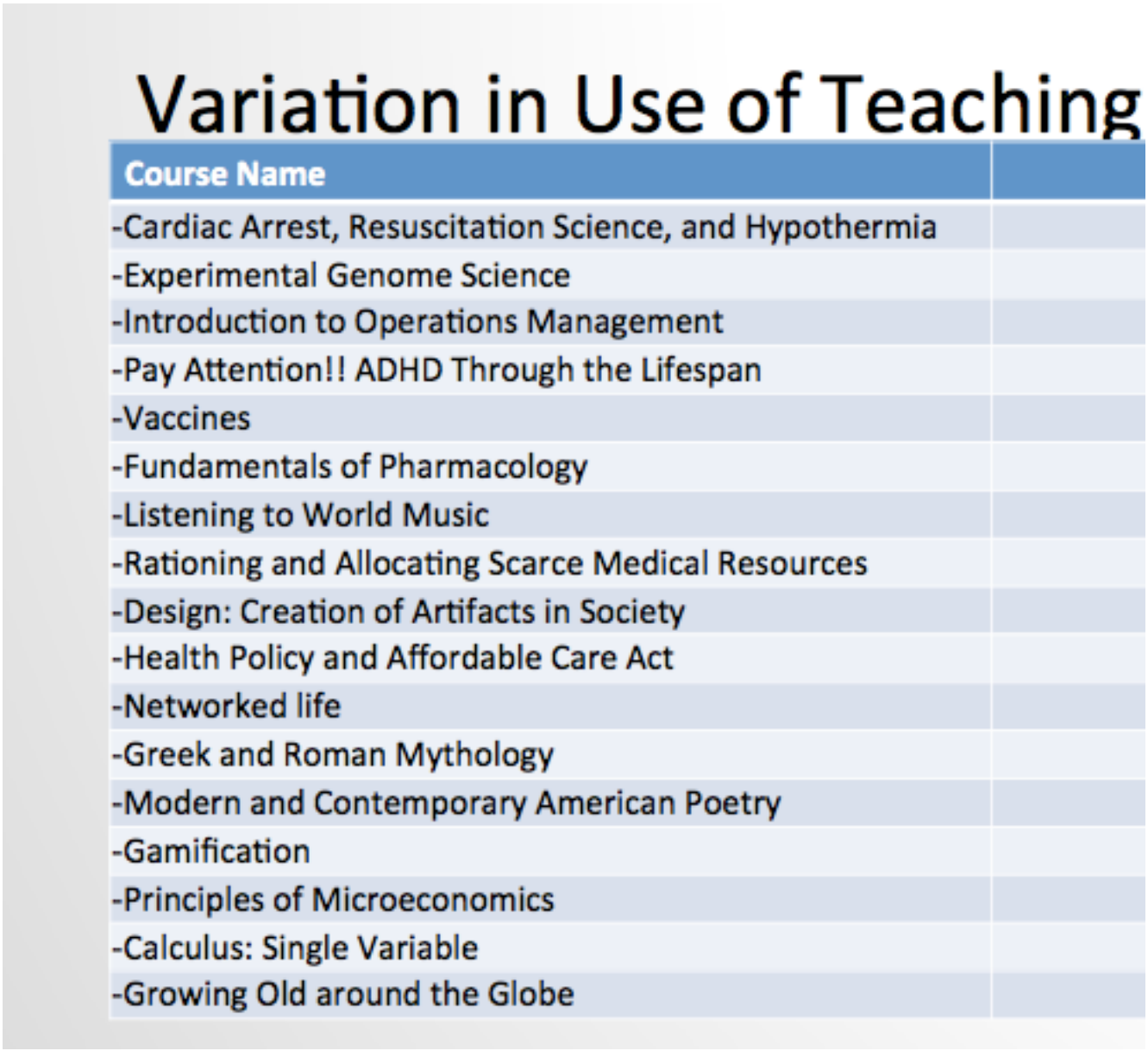
especially after the first 1-2 weeks of a course, and that few users persist to the course end," a summary of the study reads.

For anyone who has paid even the slightest bit of attention to the MOOC space over the past year, those conclusions hardly qualify as revelations. Yet some presenters said they felt the first day of the conference served as an opportunity to confirm some of those commonly held beliefs about MOOCs.

While it is accurate that these basic observations have been made in the past, there was some additional information from U Penn worth considering. The following slide images are courtesy of Laura Perna, a member of the research team.

The research team (but apparently not the faculty members) classified only two of the courses studied as targeted at college students (Single-variable Calculus and Principles of Microeconomics). There were seven courses targeted at "occupational" students (Cardiac Arrest, Gamification, Networked Life, Into to Ops Management, Fundamentals of Pharmacology, Scarce Medical Resources and Vaccines) and eight for "enrichment" (ADHD, Artifacts in Society, Health Policy and ACA, Genome Science, Modern American Poetry, Greek and Roman Mythology, Listening to World Music, and Growing Old).**Update**: I have changed the language in this paragraph based on commentary from one of the MOOC faculty; see clarification at end of article.
As the Chronicle pointed out, there was a wide variation in these courses.
The courses varied widely in topic, length, intended audience, amount of work expected, and other details. The largest, "Introduction to Operations Management," enrolled more than 110,000 students, of whom about 2 percent completed the course. The course with the highest completion rate, "Cardiac Arrest, Resuscitation Science, and Hypothermia," enrolled just over 40,000 students, of whom 13 percent stuck with it to the end.

This variation included the use of teaching assistants.

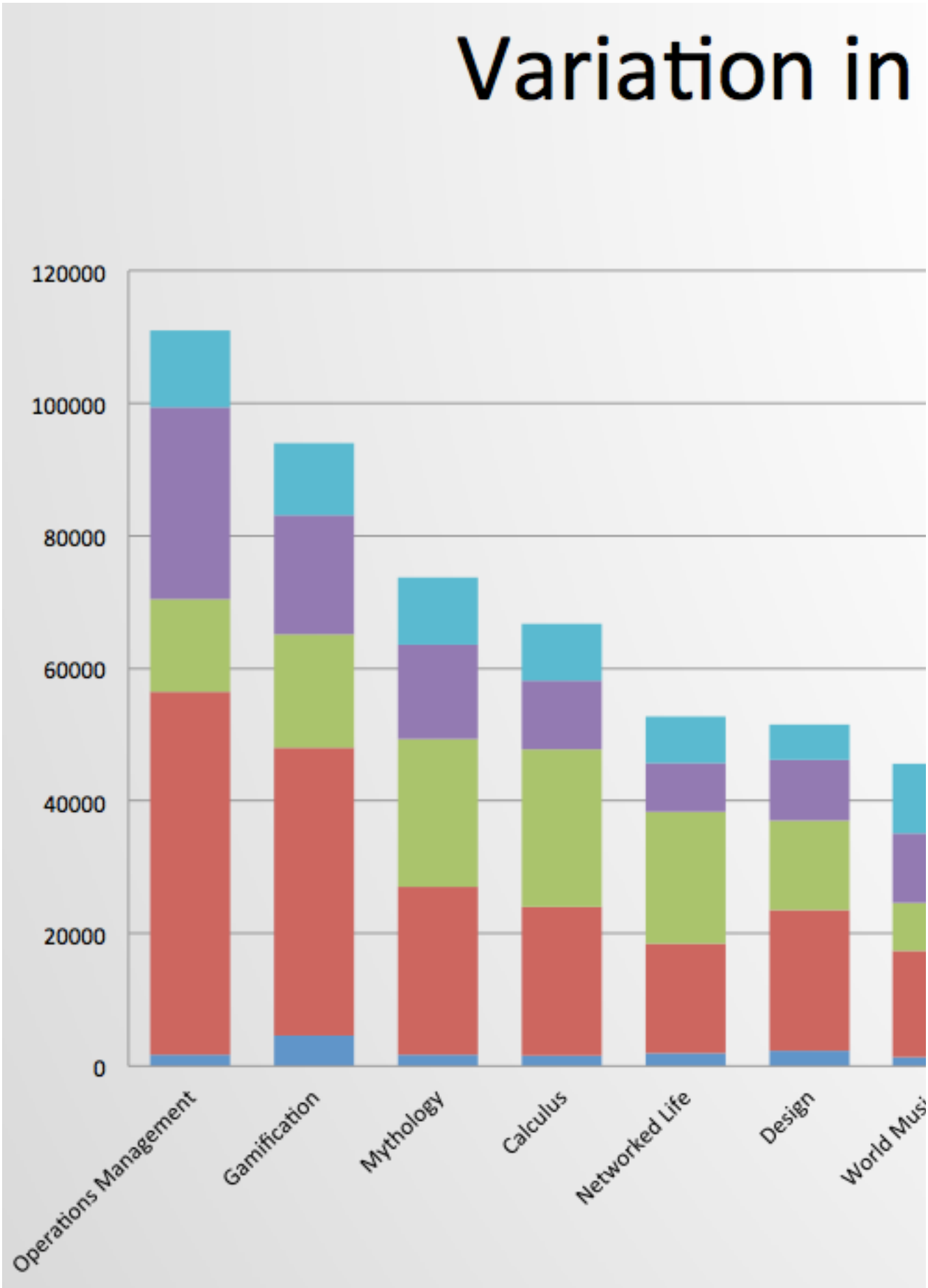


The research tracked several characteristics of the student population:

- **Users** – these are all students who registered for the course, regardless of time frame.
- **Registrants** – these are the subset of Users who registered before the course through the last week of the course. The difference is interesting, as there were quite a few Users who registered well after the course was over, essentially opting for a self-paced experience. We have seen very little analysis of this difference.
- **Starters** – these are the students who logged into the course and had some basic course activity.
- **Active User** – these are the students who watched at least one video (I'm not 100% sure if this is accurate, but it is close).

- **Persister** – these are the students who were still active within the last week of the course.

Given their categories, the Penn team showed percentages across all the courses in question. The completion rate (% of Registrants who were Persisters) varied from 13% to 2%. More useful, in my opinion, was the view of all categories across all courses.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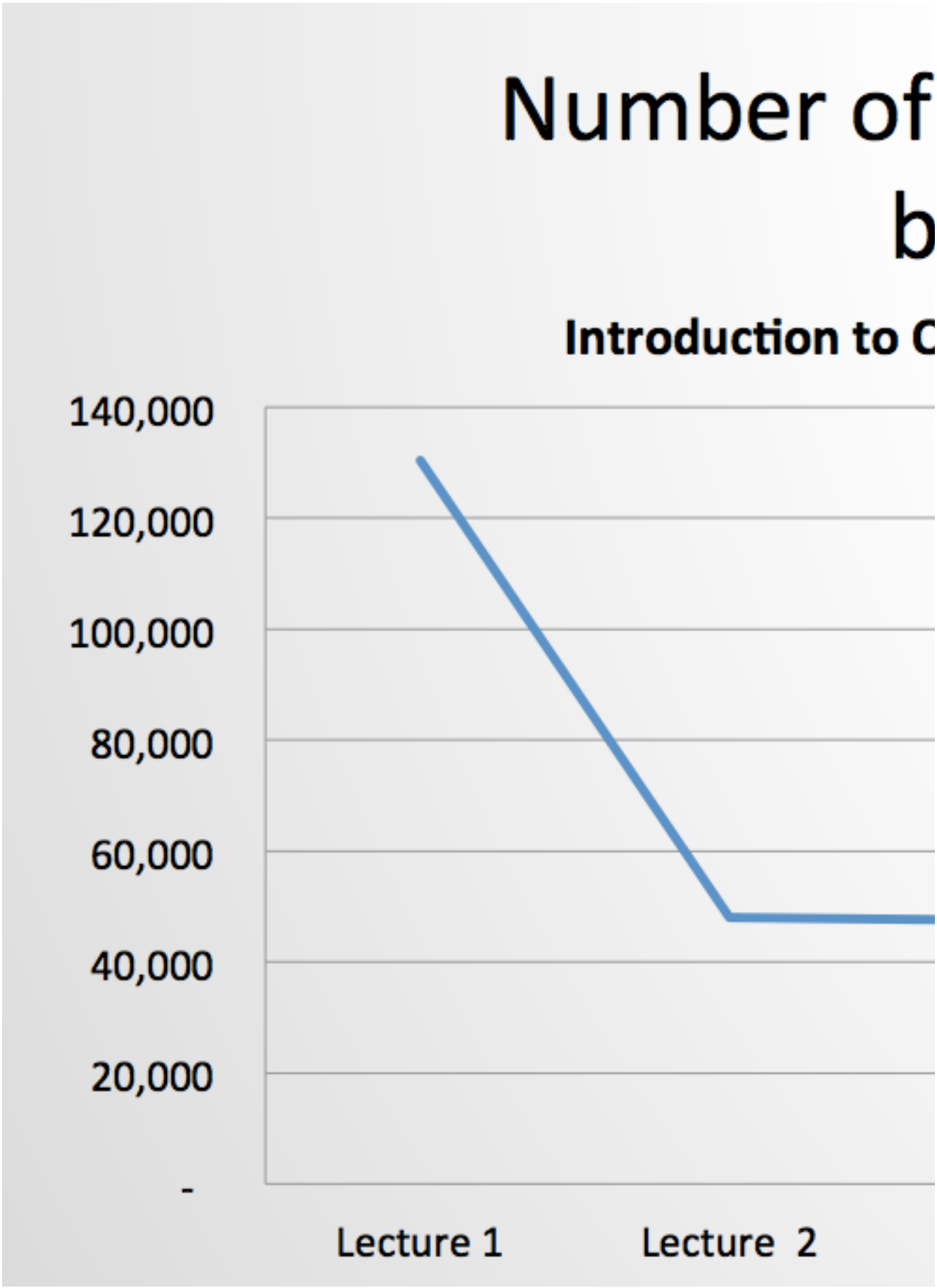
Mythology
Calculus
Networked Life
Design

And finally, they showed the pattern of MOOC activity over time, as shown by this view of quizzes in one course. This general pattern of steep drop-off in week one, followed by a slower decrease.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Lecture 1
Lecture 2

Notes

1) **Which Categories -** I think the team missed an opportunity to build on the work of the Stanford team, which identified different student patterns with more precision (see Stanford report here and my graphical mash-up here).

No-Shows
Total Enrollm

2) **Self-Paced -** As mentioned before, it is interesting the separation of students who registered during the course official time frame (Registrants) and those who registered after the course was over. This later group ranged from 2% to 23%, which is significant. Thousands and even tens of thousands of students are choosing to register and access course material when the course is not even "running". They would have access to open material, quizzes and presumably assignments on a self-paced basis, but likely have no interactions with other students or the faculty.
3) **Learner Goals -** As was discussed frequently at the conference (but not in news articles about the conference), when you open a course up in terms of enrollment, one result is that you get a variety of student types with different goals. Not everyone desires to "complete" a course, and it is a mistake to solely focus on "course completion" when referring to MOOCs. For future research, I would hope that U Penn and others would find a way to determine learner goals near the beginning of the course then measure whether students met their learning goals either when finishing or dropping out.
Update (12/7): From the comments, one of the Penn professors who taught one of the MOOCs (Kevin Werbach) has provided some clarifications that I feel are important enough to include within the article.
I'm glad to see the Penn research getting so much attention, but it seems it primarily confirms what all other studies have shown.

As far as I know, the researchers didn't have any contact with the faculty teaching the courses. So some of their statements are generalizations. E.g., I'm not sure what it means for a course to be "targeted at college students." E.g., I teach the in-person version of my course (Gamification) to college students, and I would think most of the people who study modern poetry do so in college.

Also, I wouldn't take the TA numbers too seriously. There's a big difference between an undergrad and a PhD student in the field, for example, and those numbers don't indicate how much time they worked or whether they were paid. And it looks like they confused the two sessions of my course. The first one (which seems to be what they looked at) had 1 TA. In the second session, I experimented with using two MBA students supervising 4 undergrads (hence the 6), which worked poorly.

Finally, including people who signed up after the course ended seems very odd, especially when one of the metrics is what percentage were in the course at the time it ended. Plus Coursera implemented their Watchlist feature somewhere in the middle of this process, which I think would significantly change the post-course registration behavior.

Full disclosure: Coursera has been a client of MindWires Consulting.

And I Walk Away, or How I Finally Decided to Quit Teaching
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http://www.downes.ca/cgi-bin/page.cgi?post=61484
Now that Justin Stortz has walked away from the education system, I hope he can catch up with himself, take a breath, and figure out how to be a teacher for real, not just face in front of a classroom. There's no reason teaching has to be hiogh pressure and stress-filled. It should be the most fun job in the world. I wish Justin Stortz well, and I can relate to what he's going though.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61484
Direct Link:
http://pursuingcontext.com/blog/2013/9/and-i-walk-away-or-how-i-decided-to-quit-teaching

"Teaching is a high pressure and stress filled profession, Justin. Lots of people just aren't cut out for it."

My principal's words were salt in an open wound. They cut deep. And they hurt. They hurt because I knew he was right. The after school conversation was not what I had hoped.

It all started last spring when my depression was getting worse. The stress at school and home kept mounting. I knew I wasn't feeling like myself. My medicine wasn't working like it used to. I was feeling terrible and waking up sad more and more frequently. I knew things were not going well.

Then I got the email from my principal.

You know the kind. The **Do you have a few minutes after school? I'd like to meet with you** kind. I started getting hot and itchy.

My principal is great guy, don't get me wrong. He was a pleasure to work for. But I didn't want to have the *what's going on* conversation.

He knew something was up. I was having my biggest failure as a teacher among other things. He told me it seemed I'd lost my spark. He was right. My spark was flickering like the last embers in a fire.

I told him I was getting on some new medication, and that I was committed to making it through the year even being depressed. And you know what? I did make it through the year. I started to feel better after our big state tests. I even enjoyed May. I felt like I finished the school year like a champ.

Then summer came along and ruined everything.

The Summer of My Discontent

Summer break began. I felt refreshed. I was excited to recharge and relax. After a week or so, I was already getting excited about what projects I was going to do next year.

I was toying with the idea of going to ISTE. I was giving my blog a redesign, and readying a mobile site. I was actually writing posts, and participating in #4thchat again. I even wrote my most popular post ever. It received over 800 Facebook Likes and was Tweeted over 600 times. Things were actually great.

Then I cracked.

The summer had slowly been grating on me as it tends to do. Lots of extra time at home with the four kids and the 100° Texas heat were wearing me down to a nub.

I distinctly remember the moment. I was out mowing my back yard. As I pushed my aging mower across the overgrown lawn, I started to get sad. Just sadness for no reason at all. Then I got angry. *Real* angry.

I don't think I've recovered even eight weeks later. I backed out of going to ISTE. I stopping working on my blog. I stopped writing. I stopped being patient with my family. I had a horrible time on our family vacation. All I wanted to do was sleep and get away from everyone.

It was about that time I began to think about the beginning of school.

Supply Lists of Impending Doom

My faculty had elected to come for two days during the summer to help offset the hordes of meetings and nuts-and-bolts type stuff that plague the beginning of the year for teachers.

I attended those days hoping for a much needed rekindling. I ended up with char and ashes instead.

I came home after those days more frustrated than ever. Being the only guy teacher at an elementary school sure can get lonely. I also hate to feel like the contrarian so often. Differing opinions are good, but they can get tiresome quickly.

I found my frustration growing rapidly. For the first time since, well, ever, I looked at the school supply lists at Walmart with dread. I realized I wasn't looking forward to the start of school **at all**.

That really surprised me. The start of the school year is always hard. It's always frantic. But, it's always been worth it. Now I wasn't so sure.

The Panic Attack

The first official day back in my district is a special convocation for the whole district. We all pile in to what's known as Six Flags Over Jesus. It's usually great. It's usually inspiring. *Usually*.

I froze as the doors opened into the main seating area. So, so many people. I wanted to walk out and hide in my car, but I pushed myself forward. I sat down with my school and immediately began to feel tense.

15 minutes in and I was getting hot and itchy. I kept scratching my arms and wiping my forehead. It was getting hard to breathe. *What in the world is going on with me?* I kept thinking. I felt as if I was going to crawl out of my skin. I could no longer take it.

I got up and walked straight to the nearest bathroom as quickly as my legs would go. I practically ran into the first stall, locked the door, and sat down. I felt like I wanted to cry.

Even with the Xanax I took an hour before, I was shaky and confused. I did some slow, deep breaths and tried to calm myself. My heart rate began to return to normal.

Then I tried to get up. But I wouldn't. Or rather I couldn't.

I sat in that bathroom stall for over 90 minutes. I simply could **not** get myself to go back to the convocation. I have never felt anything like that before. I knew something had to change.

The Panic Talk

The following day I was supposed to be part of a small presentation on what was new for Language Arts and Social Studies this year.

It was hard for me. It wasn't a presentation on anything exciting, like how to help challenging writers or best practices of reading conferences. It was the drab *read the inscrutably small bulleted text off a PowerPoint* kind of thing.

I could feel it again. The hot, itchy sensation building up. The heart rate increase. It was all I could do to not run full tilt out of the library. But I managed. I muddled through the bullets and got to sit down. I hated it.

I had a long talk with my wife later that afternoon. I was complaining (again) about disagreements with curriculum, pedagogy, school procedures, and who knows what else. I was irritable to say the least.

She told me flat out that she couldn't handle another year of the complaining and frustration. I knew it wasn't fair for me to take it out on her and the kids. I get so frustrated about education because it's something I'm so passionate about.

I knew I was already getting more stressed. Taking care of my wife, my four kids, and trying to be the best possible teacher I could be was continuing to twist its knife slowly into my soul. It was simply too much. I knew it, as much as I didn't want to admit it.

I have a very small plate. I can't juggle many things. Even with basically no friends, no hobbies, and no social life, I was barely hanging on to being a husband, father, and teacher.

My wife finally said the words. "Why don't you just quit?"

Why Don’t I?

That was an incredibly hard question I kept asking myself. I had tossed it around many times before. I'd even looked for other jobs as a temporary panacea for my frustration. But could I really quit?

I thought about it for an hour or so. Stewed is more like it. My family had left to go run errands. The emptiness of the house was deafening. I paced. I fretted. I cried. And I paced some more.

I knew what I needed to do.

The Last Call

I sent a quick text to my principal to see if he was available for a phone call. He was. He picked up on the first ring. I didn't even know where to start.

Most of the call was a blur. I know I started out teary eyed and ended it in a full on sob. I remember blubbering that I just couldn't do it anymore, and that I was sorry to disappoint him so close to the beginning of school.

I told him it was really the best thing for kids—something he often said when speaking about the focus of our school. I remember that striking a nerve when I said it out loud. *I* wasn't the best thing for kids. I knew it was true no matter how badly it burned.

The next day I turned in my formal letter of resignation. I was no longer a teacher.

Here I Stand, Broken

It took the next full week for it all to sink in.

I've wanted to be a teacher since I was in second grade. It's all I've ever really wanted to do, and it's the only career I've had. It's heartbreaking. The only profession I've ever known has been stolen in the black night of depression.

Teaching wasn't just what I did, but it was also part of who I am. I feel I've lost something profound. I don't *regret* the choice, but I am deeply saddened by it.

Even though it was about the only thing I was really good at, I had to quit. I had to, because the students that were going to walk in to my classroom deserve someone so much better than me.

And so, I walk away.
I walk away from a dream.
I walk away unsure.
I walk away from a significance.
I walk away broken.
I walk away.

I have no idea what's next, but I don't think I'll ever be the same.

Chaos Theory and the Sciences of Complexity: Foundations for Transforming Education

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http://www.downes.ca/cgi-bin/page.cgi?post=61483

This is from 2004

http://chaoscomplexityineducation.wdfiles.com/local--files/research%3Ameetingsindex/SIGMeeting2004.pdf

but still work reading, as it is well in advance of what most people today are still saying about learning. But it is relevant to the theories of learning networks and connectivism. Among other things, it discusses:

network health - "For a system to be healthy, it must co-evolve with its environment: it changes in response to changes in its environment, and its environment changes in response to its changes"
learning theories - "Co-evolution is fostered by disequilibrium and positive feedback" (ie., Boltzmann mechanisms and back propagation)
openness - "open systems maintain a state of non-equilibrium… They participate in an open exchange with their world"
content - "Transformation is strongly influenced by 'strange attractors'... In educational systems, they can be considered 'core ideas' and values or beliefs"
self-organization - "require two major characteristics: openness and self-reference [and] Because it partners with its environment, the system develops increasing autonomy from the environment [and] the more freedom in self-organization, the more order"

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61483
Direct Link: http://www.indiana.edu/~syschang/decatur/documents/chaos_reigeluth_s2004.pdf

Public education in the United States is an array of highly complex systems whose results have proven difficult to predict or control. Similarly, the process of transforming a school system is highly complex and difficult to predict or control. Chaos theory and the sciences of complexity (Kellert, 1993; Wheatley, 1999) were developed to help understand highly complex systems. They recognizes that beneath the apparently chaotic behavior of a complex system lie certain patterns that can help one to both understand and influence the behavior of the system. This paper begins with a summary of some of the key features of chaos theory and the sciences of complexity and then explores the ways that these theories can inform the systemic transformation of K-12 education in the United States.

What Are Chaos Theory and the Sciences of Complexity?

Some of the key features of chaos theory and the sciences of complexity include co-evolution, disequilibrium, positive feedback, perturbance, transformation, fractals, strange attractors, self-organization, and dynamic complexity. Each of these is briefly discussed next.

Co-evolution

For a system to be healthy, it must co-evolve with its environment: it changes in response to changes in its environment, and its environment changes in response to its changes. Wheatley says, “We inhabit a world that co-evolves as we interact with it. This world is impossible to pin down, constantly changing ....” (Wheatley, 1999, p. 9). A K-12 educational system exists in a community and larger society that are constantly evolving. But how are they evolving?

Toffler (1980) has identified three major waves of societal evolution. Each has been accompanied by a major changes in our educational systems, and collectively they provide us with examples of co-evolution between educational systems and their environments. During the agrarian age, the one-room schoolhouse was the predominant paradigm of education, with its focus on tutoring and apprenticeship. During the industrial age, the factory model of schools became the predominant paradigm of education, with its focus on standardization and teacher-centered learning. Now, as we evolve ever deeper into the information age, society is undergoing just as dramatic a change as during the industrial revolution, and this is putting great pressure on our educational systems to co-evolve in major ways.

As the pace of changes in our communities and society has been increasing, the need for co-evolution in

education has become ever more urgent. Banathy (1991) has pointed to a large co-evolutionary imbalance between education and society, which places our society in ill-health and peril. Schlechty (1990), Caine and Caine (1997) and others have pointed out that our educational systems are doing a better job than ever at what they were designed to do, but that our society is increasingly calling on them to do things they were not designed to do.

To identify how an educational system should co-evolve, one issue we must look at is how its environment has changed. This includes changes in the community's educational needs, in the tools it offers to educators, and in other community (and societal) conditions that impact education, such as drugs,

violence, teen pregnancy, and latch-key children. However, an educational system is not just shaped by its community; it also helps shape its community. Thus, another issue for identifying how an educational system should co-evolve is the ways the community would like its educational system to change to better shape the community. Those ways are heavily based on the values, beliefs, hopes, and visions of the community.

Disequilibrium and Positive Feedback

Co-evolution is fostered by disequilibrium and positive feedback. Equilibrium is defined as "a condition in which all acting influences are canceled by others, resulting in a stable, balanced, or unchanging system" (American Heritage Dictionary, as quoted by Wheatley, 1999, p. 76). Systems can be in a state of equilibrium, in which case minor changes or adjustments to the system are all that is necessary; or systems can be in a state of disequilibrium, in which case they approach the edge of chaos. This might lead one to believe that disequilibrium is a bad thing. However, Wheatley (1999) makes the following points:

- “I observed the search for organizational equilibrium as a sure path to institutional death.” (p. 76).

- “In venerating equilibrium, we have blinded ourselves to the processes that foster life.” (p. 77).

- “To stay viable, open systems maintain a state of non-equilibrium.... They participate in an open exchange with their world, using what is there for their own growth.” (p. 78).

- “Prigogine’s work demonstrated that disequilibrium is the necessary condition for a system’s growth.” (p. 79). Hence, disequilibrium is one important condition for co-evolution. The

other is positive feedback. Systems may receive both negative and positive feedback. Negative feedback provides information about deficiencies in attaining a system’s goals so that the system can adjust its processes to overcome those deficiencies. In contrast, positive feedback provides information about opportunities for a system to change the goals that it pursues. Thus, positive feedback is information from the environment that helps a system to co-evolve with its environment. Often it takes the form of perturbances (or disturbances) that cause disequilibrium in a system. Perturbance

A perturbance is any change in a system’s environment that causes disequilibrium in a system. For example, as our society in the United States has evolved into the information age, a new educational need that has arisen is the need for life-long learning. Rapid change in the workplace and the new reality of multiple careers during one’s life require people to be life-long learners. To help people become life-long learners, schools must cultivate both the desire to learn (a love of learning) and the skills to learn (self-directed learning). However, our typical

industrial-age school systems do the opposite on both counts, placing stress on the environment (co-evolutionary imbalance) and causing the environment to put pressure (perturbance) on the educational system to undergo fundamental change, or transformation.

Transformation

Disequilibrium creates a state in which the system is ripe for transformation, which is reorganization on a higher level of complexity. Transformation occurs through a process called “emergence,” by which new processes and structures emerge to replace old ones in a system. Transformation is in contrast to piecemeal change, which entails changing one part of a system without changing other parts or the way the parts are organized (the structure of the system). According to Duffy, Rogerson and Blick (2000), transformation of an educational system requires simultaneous changes in the core work processes (teaching and learning), the social architecture of the system (culture and communications), and the system’s relationships with its environment.

Fractals and “Strange Attractors”

Transformation is strongly influenced by “strange attractors,” which are a kind of fractal (Wheatley, 1999). Fractals are patterns that recur at all levels of a system, called self-similarity. In educational systems, they can be considered “core ideas” and values or beliefs (Banathy, 1991, 1996) that guide or characterize the design of the system. These recurring patterns can be structural and/or behavioral – that is, they can be patterns of form and/or function, and they strongly influence, and are influenced by, complex system dynamics (Senge, 1990). One example of a fractal in education is autocratic control. On the community level of an educational system, the school board typically controls the superintendent. On the district level, the superintendent controls the principals.

On the building level the principals control their teachers. And on the classroom level the teachers control their students.

Another example of a fractal in education is uniformity. On the district level all elementary schools are typically supposed to be the same (equal) in such key features as policies, curriculum, methods, and assessments. On the building level all teachers at the same grade level are supposed to teach the same content at the same time with the same textbooks, again to provide “equality”. On the classroom level all students in a classroom are typically supposed to learn the same thing at the same time in the same way. And even for professional development, all teachers typically engage in the same professional development activities at the same time. Top-down control and uniformity are but two of many fractals that characterize our factory model of schools. While we are beginning to see changes in some of these patterns, few would argue that they were not typical of our industrial-age educational systems, and they are likely still the predominant paradigm in educational systems today.

A strange attractor is a kind of fractal that has a powerful influence over the processes and structures that emerge in a system undergoing transformation. Fractals are similar to what Dawkins called “memes,” which are ideas or cultural beliefs that are “the social counterpoints to genes in the physical organism” and have the power to organize a system in a specific way (Caine & Caine, 1997, p. 33). One example of a strange attractor, or meme, in education is empowerment/ownership, which entails providing both the freedom to make decisions and support for making and acting on those decisions. On the district

level this takes the form of the school board and superintendent empowering each building principal to experiment with and adopt new approaches to better meet

students' needs and to make other important decisions (hiring, budgeting, etc.). On the building level the principal empowers each teacher to experiment with and adopt new approaches to better meet students' needs and to participate in school policymaking and decision making. On the classroom level the teacher empowers each student to make decisions about how to best meet her or his needs. This form of leadership at all levels entails providing guidance and support to cultivate the ability to make good decisions and act effectively on them.

A second example of a strange attractor is customization/differentiation (or diversity). On the district level, each school has the freedom to be different from other schools. On the building level each teacher has the freedom to be different from other teachers. And on the classroom level each student has the freedom to be different from other students (with respect to both what to learn and how to learn it). A third example is shared decision making/collaboration. On the district level the school board and superintendent involve community members, teachers, and staff in policymaking and decision making. On the school level the principal involves parents, teachers, and staff in policymaking and decision making. And on the classroom level the teacher involves the child and parents in decisions and activities to promote the child's learning and development.

To become an effective strange attractor for the transformation of a school system, the core ideas and values (or beliefs) must become fairly widespread

cultural norms among the stakeholders most involved with making the changes. Once that status is reached, very little planning needs to be done for the transformation to take place. Appropriate behaviors and structures will emerge spontaneously through a process called self-organization.

Self-Organization

Self-organizing systems are adaptive; they evolve themselves; they are agile (McCarthy, 2003). They require two major characteristics: openness and self-reference (Wheatley, 1999). To be open with its environment, a system must actively seek information from its environment and make it widely available within the system.

The intent of this new information is to keep the system off-balance, alert to how it might need to change. An open organization doesn't look for information that makes it feel good, that verifies its past and validates its present. It is deliberately looking for information that might threaten its stability, knock it off balance, and open it to growth. (Wheatley, 1999, p. 83)

But the system must go beyond seeking and circulating information from its environment; it must also partner with its environment. As Wheatley (1999) notes: "Because it partners with its environment, the system develops increasing autonomy from the environment and also develops new capacities that make it increasingly resourceful." (p. 84).

A second characteristic of self-organizing systems is the ability to self- reference on the core ideas, values, or beliefs that give the organization an

identity. In this way, "When the environment shifts and the system notices that it needs to change, it always changes in such a way that it remains consistent with itself. ... Change is never random; the system will not take off in bizarre new directions." (Wheatley, 1999, p. 85).

A third characteristic is freedom for people to make their own decisions about changes. Jantsch (1980) has noted the paradoxical but profound systems dynamic: "The more

freedom in self-organization, the more order" (p. 40, as cited by Wheatley, 1999, p. 87). As long as the freedom is guided by sufficient self- reference, it will allow changes to occur before a crisis point is reached in the system, thereby creating greater stability and order. Paradoxically, the system is "less controlling, but more orderly" by being self-organizing (Wheatley, 1999, p. 87). Typically, co-evolution occurs through self-organization, but complex system dynamics have a powerful influence on self-organization and any resulting systemic transformation. Complex System Dynamics

According to Peter Senge, social systems have detail complexity and dynamic complexity. The nature of dynamic complexity is revealed by Senge (1990):

When the same action has dramatically different effects in the short run and the long, there is dynamic complexity. When an action has one set of consequences locally and a very different set of consequences in another part of the system, there is dynamic

complexity. When obvious interventions produce nonobvious

consequences, there is dynamic complexity. (p. 71) Complex system dynamics are the web of causal relationships that influence the behavior of a system at all its various levels. They help us to understand how a change in one part of an educational system is likely to impact the other parts and the outputs of the system, and to understand how a change in one part of an educational system is likely to be impacted by the other parts of the system. Dynamic complexity is captured to some extent by Senge's "11 laws of the fifth discipline" and his "system archetypes." The laws include such general dynamics as:

- The harder you push, the harder the system pushes back.

- The easy way out usually leads back in.
- The cure can be worse than the disease.
- Faster is slower.
- Cause and effect are not closely related in time and space.
- Small changes can produce big results—but the areas of highest leverage are often the least obvious. Senge's (1990) system archetypes include:
- "Limits to growth" in which an amplifying process that is put in motion to create a certain result has a secondary effect (a balancing process) that counters the desired result.
- "Shifting the burden" in which the underlying problem is difficult to address, so people address the symptoms with easier "fixes," leaving the
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underlying problem to grow worse unnoticed until it is much more difficult, if not impossible, to fix.

"Tragedy of the commons" in which a commonly available but limited resource is used to the extent that it becomes more difficult to obtain, which causes intensification of efforts until the resource is significantly or entirely depleted.

"Growth and underinvestment" in which growth approaches a limit that can be raised with additional investment, but if the investment is not rapid nor

aggressive enough, growth will be stalled and the investment will become unnecessary.

“Fixes that fail” in which a fix that is effective in the short run has unforeseen long-term effects that reduce their effectiveness and require more of the same fix. Senge’s laws and archetypes identify high-level or general system

dynamics, but it is important to also identify the complex system dynamics at play in a particular educational system. Those dynamics are complex causal relationships that govern patterns of behavior, explain why piecemeal solutions are failing, and predict what kinds of solutions may offer higher leverage in transforming a system to better meet students’ needs.

How Can Chaos Theory and the Sciences of Complexity Inform the Transformation of Education?

The remainder of this paper explores the ways that chaos theory and the sciences of complexity can inform the systemic transformation of education.

They can do so in two fundamental ways. First, they can help us to understand the present system of education and how it is likely to respond to changes that we try to make. Second, they can help us to understand and improve the transformation process as a complex system that educational systems use to transform themselves.

Understanding the Present System

Chaos theory and the sciences of complexity can help us to understand our present systems of education, including (a) when each is ready for transformation, and (b) the system dynamics that are likely to influence individual changes we try to make and the effects of those changes.

Readiness for transformation. Chaos theory and the sciences of complexity tell us that readiness for transformation is

influenced by several factors. First, there must be sufficient impetus for transformation, which is created by perturbations from outside the system that produce a state of disequilibrium in the system. That disequilibrium may be caused by either of two kinds of changes in the environment (a school system's community): a) ones that create problems for the system (such as dysfunctional home environments and lack of discipline in the home), or (b) ones that present opportunities to the system (such as the Internet or other powerful technologies to support learning). Second, there must also be sufficient enablers of transformation, which are created by factors inside the system, such as "participatory" (Schlechty, 1990) or "transformational" leadership (Duffy et al., 2000) (as opposed to the industrial- age command-and-control form of leadership – or more appropriately,

management), and sufficient levels of trust within and among stakeholder groups, such as the teachers association, administration, school board, and parents.

System dynamics. System dynamics are complex sets of causes and effects that are largely probabilistic (a "cause" increases the chances that an "effect" will take place) and highly interactive (the extent of influence of a "cause" on an "effect" is strongly influenced by other factors, including other causes). Regarding causes, system dynamics provide us with an understanding of aspects of the current system that will likely influence the viability and durability of any given change. For example, we come to learn that high-stakes tests that focus on lower levels of learning in Bloom's taxonomy (Bloom, Krathwohl, & Masia, 1956) are likely to reduce the viability and durability of attempts by teachers to develop higher-order thinking skills, because such efforts will necessarily reduce the amount of time the teachers spend on the lower-level content, causing a decline in the high-stakes test scores. Regarding the effects of any given change, system dynamics provide us

with the ability to predict what effects the change is likely to have on the outcomes of the transformed educational system, such as levels of student learning. For example, as the Saturn School of Tomorrow found (Bennett & King, 1991), allowing students to do what they want when they want can cause a reduction in "time on task" to learn the important skills and understandings, resulting in a reduction in learning. Understanding the Transformation Process

Chaos theory and the sciences of complexity can also help us to understand and improve the transformation process in which educational

systems engage to transform themselves. The transformation process is itself a complex system comprised of many subsystems, processes, and dynamics. With research and experience we can expect to learn much about the dynamics that influence the subsystems and processes that are most likely to foster systemic transformation, but chaos theory and the sciences of complexity tell us that we cannot hope to control the transformation process (Caine & Caine, 1997; Wheatley, 1999). Caine and Caine (1997) state that "the underlying belief is that we are in charge and can control the nature of change. All the reports on how difficult it has been to change education confirm the failure of this logic." (p. 12). Chaos theory and the sciences of complexity also tell us that we can hope to influence the process through the use of such tools as strange attractors and leverage points, and that we must constantly adjust and adapt the process to the emerging, ever-changing reality of a particular educational system and its environment (Caine & Caine, 1997; Wheatley, 1999).

Strange attractors. The most powerful strange attractors are core ideas and beliefs like those described earlier: ownership and empowerment, customization and

differentiation, and shared decision making and collaboration. These core ideas stand in stark contrast to those that characterize the industrial- age mindset about "the real school" (Tyack & Cuban, 1995): centralization and bureaucracy, standardization (or uniformity), and autocratic (or command-and- control) management. However, to have a powerful influence on the features that emerge in the system undergoing transformation, the core ideas and beliefs must become integral parts of the mindsets or mental models held by a critical

mass of participants in the transformation process, and, therefore, they must collectively comprise the culture of the transformation process as a system. This means that the major focus of a systemic transformation process in a school district must be on helping all stakeholders to evolve their mindsets about education and to develop a set of shared core ideas and beliefs about the ideal kind of educational system they would like to have (Banathy, 1991; Caine & Caine, 1997; Reigeluth, 1993). This entails helping people to uncover the mental models that often unwittingly control their views of education and then deciding whether or not that is the way they really want their educational system to be.

Leverage points. Leverage points can greatly facilitate the systemic transformation of educational systems. An example of a leverage point is student assessment. Our industrial-age schools reflect the belief that the purpose of student assessment is to compare students with each other. Hence we use norm-based tests, and students become labeled as winners and losers, successes and failures. In contrast, if we want all children to succeed (no children left behind), then the purpose of assessment should be to compare students with a standard of attainment, so that they may continue to work on a standard until it has been met. The current report card, with its list of courses and comparative grades, could be

replaced by an “inventory of attainments” that are checked off as they are reached by each student. This one change could exert leverage on other parts of the system, most notably the way teaching and learning occur in the classroom, that might be more powerful than the forces that the rest of the system would place on student assessment to change back.

Furthermore, if appropriate strange attractors have been developed (e.g., enough stakeholders have evolved their mental models to encompass the belief that student assessment should be designed to inform learning rather than to compare students with each other), those strange attractors will create a powerful force in support of such a compatible leverage point and against those aspects of the current system that would otherwise be working to change the assessment system back to what it was.

Conclusion

An understanding of chaos theory and the sciences of complexity is crucial to systemic transformation of our educational systems to better meet the rapidly changing needs of our children and communities. Helpful concepts include co-evolution, disequilibrium, positive feedback, perturbance, transformation, fractals, strange attractors, self-organization, and dynamic complexity. These concepts can help us to understand (a) when a system is ready for transformation, and (b) the system dynamics that are likely to influence individual changes we try to make and the effects of those changes. Furthermore, chaos theory and the sciences of complexity can help us to understand and improve the transformation process as a complex system that educational systems use to transform themselves. Strange attractors and leverage points are particularly important to help our educational systems to correct the dangerous evolutionary imbalance that currently exists.

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MOOCs: the C***** word is the problem!

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http://www.downes.ca/cgi-bin/page.cgi?post=61481
Good post from Donald Clark (who has really been hitting the mark recently) on the way the use of the word 'course' in MOOC misleads us. The problem with the traditional course, he sais, is that it does not meet the "the needs of the real audience – lifelong learners. The data is clear – MOOCs are for all. This is to be celebrated, not disparaged." Quite right. "Don’t get trapped into thinking that ‘course completion’ is the goal – it’s not. Don’t get trapped into thinking that ‘certification’ is the goal – it is not. Don’t get trapped into thinking this is about long, and often long-winded, HE courses – it is not." Again - agreed. So you may ask, why would we call a MOOC a course? Because it has a starting point, a stopping point, and is typically focused on a topic or series of ideas. Those are the only things that make a MOOC a course.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61481
Direct Link: http://donaldclarkplanb.blogspot.ca/2013/12/moocs-c-word-is-problem.html

Educators love 'C' words. I once wrote a spoof blog about a 'C' word generator, where the software randomly generated five 'C' words. The ‘C’ word creator puts the ‘C’ into courseware. The creator selects from a considerable database of ‘c’ words including; creativity, challenge, commitment, communication, compassion, cooperation, collaboration, connections, culture, conflict, clarity, concise, context, competence, change, chemistry, contribute, critique, compelling, coordination, consultation, community etc. It takes five of these, randomly, and inserts the phrase, ‘The 5 ‘Cs of……’ and’C’reator will define your course structure in seconds. Above all, they love the word 'course'. The danger with MOOCs is to become trapped in the language of learning - homework, lecture (means patronise in ordinary language), pass or fail,

College course not the goal

The first wave of MOOCs suffer from replicating the standard 6/8/10 week semester college ‘Course’. That’s their problem. They’re too long, sometimes too ‘video’ heavy’ and don’t actually match the needs of the real audience – lifelong learners. The data is clear – MOOCs are for all. This is to be celebrated, not disparaged. Once you flip the benchmark and see MOOCs as evolving towards widespread use by everyone from school students, parents, vocational learners, students, adults, professionals, the retired, then the coin drops. This is all about flipping the model. My talk at Online Educa in Berlin argued that MOOCs are not evolutionary but revolutionary and that now the digital genie is out of the academic bottle, it will spread to other areas, where it will be far more effective and beneficial. MOOCs are NOT about HE, they’re much more important than that.

Massive Open Online CONTENT

Once you see MOOCs as “a supply response to a demand problem” you see that the demand is not actually HE, that’s a tiny portion of the demand. Real demand lies in lifelong learners of all ages, backgrounds and locations. It’s an anytime, anywhere, anybody medium. Don’t get trapped into thinking that ‘course completion’ is the goal – it’s not. Don’t get trapped into thinking that ‘certification’ is the goal – it is not. Don’t get trapped into thinking this is about long, and often long-winded, HE courses – it is not. It’s about demand, namely learners, and their choices. If you walk around with a hammer, everything starts to look like a nail, said Abraham Maslow, almost the only interesting thing he said. But this habit has plagued the MOOC debate. It’s not about courses stupid, it’s content.

A course demands completion, content, even structured content, does not. Take your time, dabble if you want, go as far as you want. The course is an institutional artefact. Keep them in institutions but don't foist them and their constructs on the web or the rest of us.

Wrong questions get wrong answers

If you ask the wrong questions you get the wrong answers. Time and time again I hear MOOC myth questions. The first set make the age-old category mistake of equating MOOCs with University courses. MOOCs are much bigger than this and are NOT to be equated with college ‘drop-out’ or the 18 year old undergraduate expectations around completion and certification. Neither are they weak pedagogically – in fact many of the more innovative things that are happening in online learning are in the MOOCosphere, in learning analytics, use of video and online assessment. Neither are they part of the LMS world, as their coding is much more agile, flexible and scalable. Finally, they can and will make money. Even if they don’t the benchmark is the ridiculously expensive college degree and that ain’t hard to beat.

MOOC Myth 1: It’s about courses

Flips inward to outward. Where closed, offline, supply-led, elitist HEscarcity with small numbers subject to the tyranny of time and location FLIPS TO open, online, demand-led abundance with massive numbers anywhere, anytime

As George Siemens says, it is *“a supply response to a demand problem*”.

MOOC Myth 2: Catastrophic drop-out

Flips drop-out to drop-in. Where the inappropriate concept of high-school and University drop-out, meaning failure FLIPS TO another concept - drop-ins, where it’s OK to leave, and stopping is rational. Drop out, when applied to MOOCs is simply a category mistake. Completion is not always desirable. It is not the goal.

MOOC Myth 3: All about 18 year old undergraduates

Flips horizontal to vertical, from the 18 year old undergraduate model and Higher Ed MOOCs TO the lifelong learner, corporate MOOCs, not-for-profit MOOCs, charity MOOCs, vocational VOOCs and high school HOOCs.

MOOC Myth 4: Just videos

Flips lectures to short video. Where the 1 hour lecture which has no basis in the psychology of learning and exists simply because the Babylonians had a 60 based number system, delivered at a fixed time,fixed location, once only FLIPS TO short videos where 'less is more', seen anytime, anywhere, available to be viewed many times.

MOOC Myth 5: Weak on assessment

Flips off- to online assessment. Where offline, compulsory certification, teaching to the test once a year using pen & paper and no innovation FLIPS TO online, where there's a minority interest in certification,learning for learning,'s sake, anytime and there's lots of innovation, such as peer assessment, ProctorU, automated essay marking and so on.

MOOC Myth 6: Just an LMS

Flips old platforms for new. Where traditional LMS/VLE vendors such as SumTotal, Blackboard and Desire2learn , with monolithic code is inflexible with few releases and a high cost per learner FLIPS TO Django, Python, Ruby on Rails, MVC framework, cloud-hosted flexible, agile platforms with a stream of innovations and releases at a cost ofcents/pence per learner

MOOC myth 7: No evaluation

Flips bad data to big data,. Where bums on seats, contact time, course completion, summative assessment and happy sheets FLIP TO performance, competences, feedback, useful and personal data that guides learners and improves design.

MOOC Myth 8: Can't be monetised

Flips grants to monetization. Where expensive, government funded institutions, load up on loan ridden students plunging them into deep debt FLIPS TO cheap learning from many sources, such as not-for–profits, for profits, payment for certification, sponsorship, more students, and huge organisational and government savings.

Conclusion

I simply ask you to flip your mind and see MOOCs not as courses but free content. In this respect, it's more like Wikipedia and YouTube, both massive learning tools, used by hundreds of millions of learners. We don't talk about drop-out in Wikipedia or YouTube. What they talk about are drop-ins – the huge amount of real use.

Elsevier Upping the Ante in its Opposition to Academics

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http://www.downes.ca/cgi-bin/page.cgi?post=61480

I haven't been impressed by the way Academia has been gathering copies of my papers from wherever and posting them on its own website; people looking for my work are now increasingly likely to find it on Academia, despite the fact that it's a commercial website. Eventually it will lock down the papers or plaster them with ads; it already requires that you log in before you can download papers (Rory McGreal says this never happens and that I can't produce any examples, but here you go). At any rate, Elsevier has started sending http://svpow.com/2013/12/06/elsevier-is-taking-down-papers-from-academia-edu/ takedown notices to them. I don't care who wins this battle. Academics should post their own work on their own site, or at the very least, in an institutional repository.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61480

Direct Link: http://copyfight.corante.com/archives/2013/12/07/elsevier_upping_the_ante_in_its_opposition_to_academics.php

I got a message earlier today that Elsevier has started sending takedown notices to academia.edu. While technically within its rights to do so, this is a dickish move by Elsevier that will hurt the professors, students, and researchers involved in producing some of the best quality academic work.

In case you've forgotten, the system works like this: Elsevier controls the publication of major journals. Academics submit (and often pay a fee for the privilege) to these journals, where other academics give Elsevier their free labor as editors and reviewers. Having gotten all this for

free, Elsevier then turns around and charges universities exorbitant sums for subscriptions to these journals, all the while prohibiting the people doing the actual research work from "publishing" their work elsewhere, which includes posting it on Web sites.

For the most part, Elsevier has turned a blind eye to private non-profit publication by the researchers. At least, up to now. But according to the letter reproduced on svpow.com, academia.edu has been served with takedown notices for papers that Elsevier now owns copyrights to.

Academia.edu is positioned as a proponent of "open access to academic literature" and does not mince words in its frustration, calling Elsevier's move "...upping the ante in its opposition to academics sharing their own papers online." It is, to say the least, petty and dickish. Elsevier has the legal right to antagonize the people who provide the fuel for its engines, but I cannot for the life of me figure out what they think they will gain by doing so.

And because it has been about 10 months let me repeat my mantra: Hey, academics! You handed Elsevier the whip that it is now using to flog you. Clean up your own tenure-track house and this problem will solve itself.

Learning and Performance Support Systems

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http://www.downes.ca/cgi-bin/page.cgi?post=61479
This post introduces our Learning and Performance Support Systems program, a new $19 million 5-year initiative at the National Research Council that I will be leading. If I had to depict LPSS in a nutshell, I would describe it as a combination of the MOOC project we've been working on over the last few year, as well as our work in Personal Learning Environments (PLEs). The objective is to build a system where individuals can access, and get credit for, learning from any education provider at all, whether from home, the workplace, or at a school. The text is a version of the case we presented to NRC senior executive in order to have this program approved. They supported our proposal, and for the last few weeks I have been engaged in developing the program implementation with a large team of NRC colleagues.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61479
Direct Link: http://halfanhour.blogspot.ca/2013/12/learning-and-performance-support-systems.html

This post is to introduce you to our Learning and Performance Support Systems program, a new $19 million 5-year initiative at the National Research Council that I will be leading.

If I had to depict LPSS in a nutshell, I would describe it as a combination of the MOOC project we've been working on over the last few year, as well as our work in Personal Learning Environments (PLEs). The objective is to build a system where individuals can access, and get credit for, learning from any education provider at all, whether from home, the workplace, or at a school.

What follows is a version of the case we presented to NRC senior executive in order to have this program approved. They supported our proposal, and for the last few weeks I have been engaged in developing the program implementation with a large team of NRC colleagues.

Program Overview

The Skills Challenge

Despite existing levels of unemployment in Canada, more than a quarter million jobs go unfilled, many because no candidates can be found. The Canadian Oil and Gas (O&G) sector alone loses an estimated $4 billion per year due to skills shortages. Canada's O&G sector will need 105,000 new recruits in this decade, including some 30,000 to fill newly created positions.

Similar skills shortages have been reported in other sectors, such as biotechnology and engineering. In Canada, there are 25 job groups that consistently show signs of skills shortages. These groups represent 21% of

employment in Canada, they experience an unemployment rate of less than 1%, and show an annual raise in wages of about 3.9%, more than double that of the overall economy.

Training current and prospective employees is time-consuming and expensive. Although advanced learning technologies are available, the bulk of training continues to be offered in the form of in-person courses. These courses are typically quite short, ranging from one day to a week, and are expensive, often costing several thousand dollars, not including transportation and time off work. Many of them are in the Professional, Scientific and Technical Services sector.

Though there are significant opportunities for growth, Canada's training and development industry is fragmented, with no clear leader, and is subject-focused, with limited competency development and management capabilities. Companies in this sector lack the research depth to advance and grow into new markets. Expansion internationally is difficult without a clear innovation advantage.

Learning and Performance Support Systems

The LPSS program will deliver software algorithms and prototypes that enable Canada's training and development sector to offer learning solutions to industry partners that will address their immediate and long term skills challenges. In the short term, LPSS will respond to the immediate needs of industry with existing tools and technologies on a research contract or fee-for-service basis. In the long term, working with strategic industry partners, LPSS will develop a learning and performance support infrastructure that will host and deliver the following key services:

- learning services and a resource marketplace, providing content and service producers with unfettered access to customers, and employees (and prospective employees) with training and development opportunities;
- automated competency development and recognition algorithms that analyze workflows and job skills and develop training programs to help employees train for specific positions;
- a personal learning management tool that will manage a person's learning and training records and credentials over a lifetime, making it easier for employers to identify qualified candidates and for prospective employees to identify skills gaps;
- and a personal learning assistant that enables a student or employee to view, update and access training and development resources whether at home or on the job, at any time.

The LPSS infrastructure includes underlying technologies to support these services, including identity and authentication services, cloud access and storage challenges, personal records and credentials, document analysis and analytics, and interfaces to third-party services such as simulation engines and other advanced training support services.

Program Design and Scope

The LPSS is designed along three technology thrusts. In the first of the two program phases the Program leverages NRC's existing technologies to execute short term projects while at the same time developing the basis for longer term agreements negotiated with strategic partners. In these short term projects, NRC helps industry provide personalized access to learning resources and services to existing and potential students and employees.

The second phase begins when NRC has signed its first agreement with a strategic partner specifying the development and transfer of underlying LPSS technology from NRC to the partner(s). At this point, development of commercial services based on the Common Platform begins, in accordance with the signed agreements.

This model is based on the understanding that small projects move quickly while larger agreements require more time to negotiate and finalize. It enables NRC to respond to industry demand immediately with funded, targeted and focused projects, while at the same time supporting a sustainable program strategy.

The figure below provides a simplified view of the various elements that are considered within the scope of the Program (denoted by elements in orange or surrounded by an orange outline).

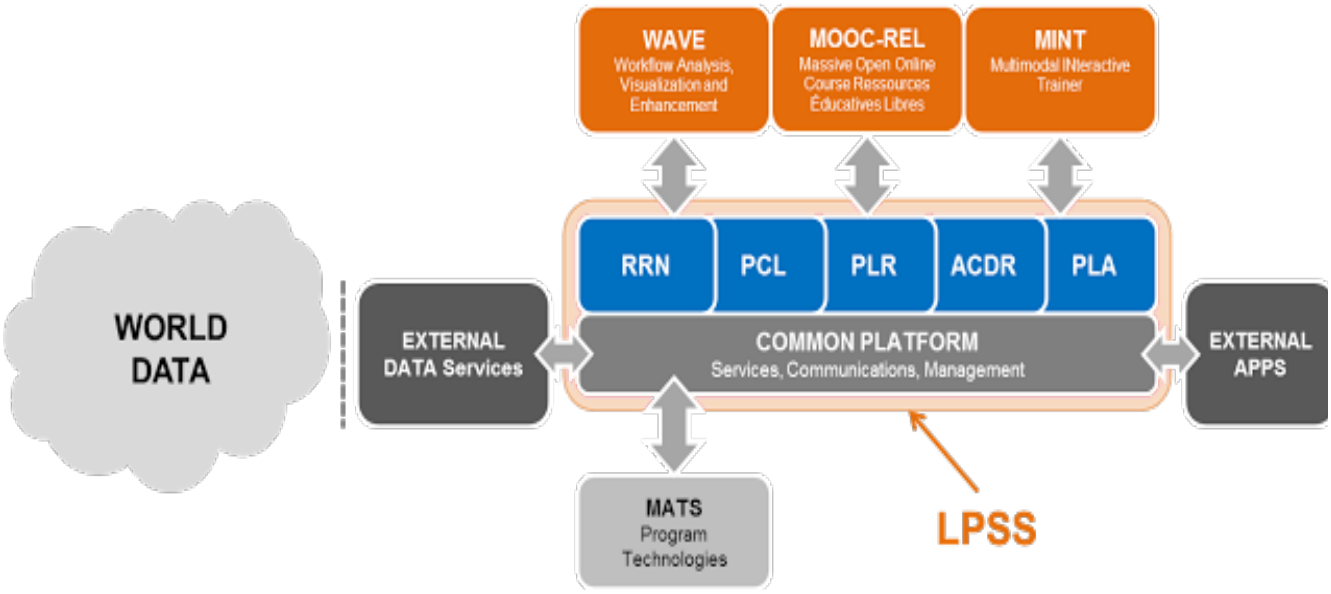

Figure 1 – LPSS Platform Overview

Core Commercial Technologies

Core commercial technologies combine to create an overall LPSS platform through which the services described above (section 1) can be offered. The purpose of the platform is to create LPSS services to interact with existing third-party services, including advanced algorithms and modules developed in other NRC programs.

Development of the LPSS platform will thus focus on three major thrusts that will be pursued during the two distinct phases of the Program.

Common Platform

LPSS will partner with technology companies and end user clients to fund and develop a Common Platform and set of basic applications to enable a first version of end-to-end LPSS functionality. The Common Platform itself will consist of: a learning application for industry staff and their customers; data and information harvesting services; data and information synchronization services across platforms; and a common industry marketplace for training resources and services.

The purpose of this thrust is twofold: first, to develop the necessary software and specifications for the overall learning resource delivery system, and second, to generate a user base including both resource providers and prospective clients accessing the platform. To this end, LPSS will support the hosting of implementation projects throughout the Program's duration.

Capability Development

This second thrust consists of five major projects identified as client priorities. Each of these projects extends the functionality of the Common Platform.

Learning as a Cloud Service – will create a distributed learning layer, which is a mechanism for working with data no matter where it is stored, through desktop, mobile and other devices.

Resource Repository Network – will create a resource graph of learning/training resources data from multiple sources and multiple formats including live and dynamic data such as workplace data, plant instrumentation, or market information.

Personal Learning Record – will define how we represent, capture, and leverage user activity, including ratings, test results, performance measures, and the like, in a distributed learning and work environment.

Automated Competence Development and Recognition – whereas existing recommender systems depend on manually defined metrics and taxonomies, this system will detect new and emerging competences and automatically assess employee performance.

Personal Learning Assistant – will develop an integrated learning appliance, a mechanism for looking up or finding references or resources inside other programs or environments.

Each of the projects within the second phase of Thrust 2 represents investments ranging from $1.5M to $2.5M.

Implementation Projects

In this thrust, the Program consolidates development, deploys training, and realizes efficiencies by the end of year five. While there is no individual project associated with this thrust, its purpose is to make clear that all projects will include a stage where technologies are delivered to partners and clients, and that this process needs to be articulated from the start of the Program.

The scope of this thrust extends to the development of IP tracking mechanisms, draft and approval of technology transfer agreements, negotiation and maintenance of licensing agreements, adaptation or installation of technology in client software are systems, and other client support as needed.

Contact us

If you would like to work with us on research and development activities or are interested in connecting with our experts, contact me.

De-Icing the MOOC Research Conference

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http://www.downes.ca/cgi-bin/page.cgi?post=61478

Commentary and such, plus slides, from Jim Groom on the MOOC Research Initiative

http://www.cvent.com/events/mooc-research-initiative-conference/event-summary-09cccb12955b4bca99e1bf953e4dd08d.aspx

conference attended by a large number of creators in Arlington, Texas. A lot happened in the short time I was there (and although I had to leave a day early I feel like I escape Texas's icy clutch just in time). George Siemens announced he is leaving Athabasca University and joining the University of Texas at Arlington (Athabasca University has basically imploded; it's really sad to see). I announced our new Learning and Performance Support Systems http://halfanhour.blogspot.ca/2013/12/learning-and-performance-support-systems.html program. I rode a steer. Here are the discussion summaries https://docs.google.com/document/d/1lVN_WaQQ3ME3AgwJFUfrz8ME2hMNJlU2TyQS_a18dY8/edit

from the groups (the workshop was a series of discussions, not a series of speeches - so much nicer). And then we had an ice storm (pictured above from my hotel window) just to remind everybody of Canada.

Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61478

Direct Link: http://bavatuesdays.com/de-icing-the-mooc-research-conference/

I am currently sitting in Dallas Fort Worth airport hoping to escape the ice storm that hit Dallas during the MOOC Research confernece. Despite the atypical elements, this is one of the best conferneces I've been to in a while, right up there with OpenEd (kudos toGeorge Siemens, Amy Collier, and Tanya Joosten for a job well done). The quality of people was amazing and the vibe, as Mike Caulfield already mentioned, was almost dreamlike. I also had the distinct pleasure of finally meeting a number of awesome folks who I've been following on the internet for a long while now, in particular Bon Stewart, Martin Weller and Martin Hawksey.

I also met a whole bunch of new folks, and attended a wide range of sessions in hopes of moving beyond some of the MOOC-hype (which I think this conference did quite well) and look at what we're really starting to learn from this phenomenon. And while I'm not convinced that large, corporate MOOCs are educating the world and feeding the children, I do have a better sense just how variegated coporate MOOCs can be in their approach thanks to Weller's research. It was also apparent just how much this moment has served to reinforce the fact that online learning has arrived in the hearts and minds of administrators everywhere.

It still befuddles me just how quickly big brand, research 1 universities have been to give away the farm to third-party, for-profit platforms. Especially as the MOOC hype has been somewhat tempered by Saint Sebastian's recent pivot (which I think was very good for the tenor of the conference more generally). At the same time Bon Stewart's admonitions for some kind of organized response to start filling the temporary void of direction with alternative narrative still rings in my ears—and it is very much the lesson I took away from Audrey Watters keynote at OpenEd.

Finally, it was cool to see the O.G. triumvirate George Siemens, Stephen Downes, andDave Cormier representing their frankenstein-like brainchild  I have to take a moment to hand it to all three of them, they've weathered a pretty intense hi-jacking of their ideas from back in 2008 with a tremendous amount of class (lesser folks, like me, would have crumbled). What's more, they're stewarding the conversation in ways I think do the entire field a great service. What's more, Stephen Downes was really happy. I mean really happy! I guess that's a result of him getting the well-deserved and long overdue credit and resources to really start making his orginal vision of the technological aggregation of these disparate networks a reality. Congratualtions!

As for me, well, *I slayed them!*

More seriously, for my last few talks (since my University of North Florida presentation in September) I've been trying to narrate the progression of the work I've been part of more broadly at UMW. In particular, I focus on the development of projects in UMW's Division of Teaching and Learning Technology from the BlueHost Experiment to UMW Blogs to ds106 to Domain of One's Own and beyond. The narrative is a compelling one, and it is an honor to represent the work we're doing at UMW to folks from around the world. It's also cool to situate ds106 as a creative alternative within the MOOC discourse. At the same time, I'm becoming more comfortable with my role at UMW as an ambassador for the work DTLT, our faculty, and students are doing. It always feels a bit awkward, but at the same time people are beginning to recognize and understand UMW as a hub for the "Digital Liberal Arts" in part because of these presentations—and that's not necessarily bad thing. Any, below is the abstract for the talk as well as the slides for the presentation. If and when there is a video I will share it here as well. [Update: there is a video recording and here's the link.] Now if I could only make it home.

This presentation will examine a decade worth of experimentation and development at the University of Mary Washington that has resulted in a series of innovative projects such as UMW Blogs, ds106, and Domain of One's Own—not to mention its recent spin-off Reclaim Hosting. What all these projects have in common is they operate from a shared ethos of supporting an open environment for teaching and learning online by helping faculty and students alike exert control over the digital spaces they learn, teach, and ultimately live in.

Open Source Options For Education

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http://www.downes.ca/cgi-bin/page.cgi?post=61477
This is a great list of open source alternatives to common educational software tools. It begind with the usual suspects - Moodle for an LMS, Audacity for audio, Big Blue Button for synchronous conferencing, Kaltura for video streaming. But then it gets into some very niche applications: OpenSankoré for whiteboards, Molly for mobile, Q-Light for theatre and drama. Even if you are familiar with open source alternatievs for education, you might find something new here. Schoolforge https://schoolforge.net/wiki/index.php?title=Open_Source_Alternatives has a similar but much briefer list, with some additional tools.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61477
Direct Link: http://oss-watch.ac.uk/resources/ossoptionseducation

This document presents options for open source software for use in the education sector. Some of these may have uses outside of education, but they are presented here in the context of their specific benefits to educational establishments, or their use in the course of teaching and learning.

The document is intended to complement the UK Cabinet Office's Open Source Options document, which is presented as part of its Open Source Procurement Toolkit in recognition that open source software is underused across the public sector. As such, the aims and context of this document are the same as those stated in the original document.

OSS watch maintains a briefing on Making Use of the Cabinet Office's Guidance on Open Source Software. The guidance in the briefing can also be applied to this document.

The document in its current form is the product of an ongoing collaboration between OSS Watch, the UK education community, and open source software communities. If you have examples of open source software that is specifically useful in an educational context, or an example of one of the pieces of software being used in education, please get in touch with us or add your contributions to the publicly editable version of the document.

E-Learning

Solution	Software	Consider as Alternative to	Comments	Real World Use
Virtual Learning Environment (VLE)	• Moodle • Sakai CLE • Apereo OAE • Canvas	• Blackboard • Echo 360 • Desire2Learn • Study Wiz • Frog	• Moodle is used internationally by hundreds of institutions. • There is a highly active Moodle user community providing support. • Moodle can be extended an integrated with other systems using the large library of available plug-ins. • The Sakai project was founded	• Manchester Metropolitan University selected Moodle as its VLE after an extensive review. Referencehttp://oss.ly/3o • The Open University uses Moodle to deliver distance learning courses with one of the world's largest Moodle instances. Referencehttp://oss.ly/3r • Over 4000 schools, colleges, universities and companies have an active Moodle site in the UK alone. Referencehttp://oss.ly/3q • The University of Oxford uses

			from a collaboration between Indiana University, MIT, Stanford and University of Michigan. It currently maintains two systems - the Collaborative Learning Environment (CLE) and the Open Academic Environment (OAE).	Sakai as the basis of their WebLearn platform for teaching, research and collaboration. Referenceshttp://oss.ly/3s • In August 2013, Sakai OAE was relaunched as Apereo OAE.http://oss.ly/58 • The Utah Education Network replaced Blackboard with Canvas in 9 state-owned colleges and universities. Refhttp://oss.ly/4c
Lecture Capture/Podcasting	• OpenCast Matterhorn	• Media Site • Panopto	• Matterhorn provides an end-to-end solution from automated lecture capture through	• Oxford Brookes University are piloting Matterhorn, including integration with their Moodle VLE. Referencehttp://oss.ly/3u • Loughborough

			processing and distribution. • Videos can also be published to existing public platforms such as YouTube or iTunes. • Captioning, keyboard navigation and screen readers are well supported. • Media can be encoded using standard formats, ensuring your media isn't locked in to a particular system or playback	University use Matterhorn, using it to capture around 90% of lectures in 2011. Referencehttp://oss.ly/3v

			software.	
	• CamStudio	• Camtasia • Adobe Captivate • iSpring Presenter • Jing • SMART Notebook page recording feature	• CamStudio allows you to make a video of what's happening on your screen. It will also capture audio from a microphone. • As well as capturing a lecture or presentation, it can be used to record a tutorial or walk through of a system. • Videos can be recorded to AVI, or to SWF for streamin	

			g via Flash.	
	• Audacity	• Windows Sound Recorder • Gold Wave • Mobile phone	• Audacity is a fully-featured audio recorder and editor for Windows, Linux and Mac. • Multiple tracks can be recorded separately and edited together. • Additional audio tracks can be imported. • Files can be saved to a number of formats.	• University of Oxford recommends Audacity for recording an editing podcasts. Referencehttp://oss.ly/3w
Online Lectures/Webinars/Remote Participation	• Open Meetings • BigBlueButton	• Adobe Connect • Blackboard Collaborat	• These systems allow multiple participants to participate in a	• University of the West of Scotland rolled out BigBlueButton in September 2012 following a successful

		• e • Mega Meeting	session via the web. • Users can collaborate on a shared “whiteboard”. • Video, audio and text chat are supported. • Users can share presentations and applications from their screen with other users.	pilot. Referencehttp://oss.ly/3y • Goldsmiths University of London provide BigBlueButton for use through its Moodle VLE. Referencehttp://oss.ly/3z(Log in as Guest)
Video Streaming	• Media Goblin • Plumi • Kaltura	• PlanetEStream • Click View • Media Core • vShare • PHP Motion	• These products provide a locally-hosted “YouTube” style system. • Users can upload videos which are	• Bonn University uses Plumi for its podcast portal. Referencehttp://oss.ly/3x • University of Mary Washington moved away from Kaltura after finding the open

			converted into a streamable format and shared. • Videos can be embedded into a web page or VLE. • Users can rate and comment on videos.	source version limiting.http://oss.ly/4t
Interactive Content Creation	• Xerte	• Adobe Authorware • Articulate + Articulate storyline • HotPotatoes • Qwizdom	• Xerte allows you to create interactive learning materials, including multimedia content and interactive exercises. • Content can be created locally, or online	• Xerte was developed by the University of Nottingham. Referencehttp://oss.ly/40 • University of Derby support Xerte as part of its Technology Enhanced Learning resources. Referencehttp://oss.ly/41

			using Xerte Online Toolkits. • Once created, Xerte packages materials in a standard format that can be imported into most VLEs, and viewed using Flash. • The XENITH project allows materials authored with Xerte to be viewed using HTML5, providing support for more devices. • Materials created using	

			Xerte allow users to change fonts and colour schemes, as well as supporting text-to-speech, ensuring that materials are accessible to all users.	
Ebook Authoring	• Apache Open Office • LibreOffice • NeoOffice	• Microsoft Office • Adobe Acrobat	• OpenOffice and LibreOffice provide word processing and drawing programs that can be used for simple desktop publishing. • Documents can be saved to PDF	

			format.	
	• Sigil	• iBooks Author • Adobe InDesign	• Sigil is a cross-platform suite for authoring ebooks in the standard and widely-supported ePub format. • Provides aWYSIWYGinterface, as well as allowing direct source editing.	
	• TeX and variants		• TeX is a powerful typesetting mark-up language designed to allow users to easily create high-quality electronic or printed	• Many academic publishers use TeX. Refhttp://oss.ly/4s • The Moodle VLE includes a filter for rendering TeX. Refhttp://oss.ly/48

			books which display consistently across devices and platforms. • TeX is particularly useful for displaying mathematical and scientific formulae in a consistent manner. • Documents written in the TeX mark-up language can be rendered to files in the DVI file format, or converted to other formats.	

E-book management	• Calibre	• iBooks • Google Play Books • Kindle apps	• Calibre is a cross-platform tool for managing a personal ebook library. • Converts between formats including PDF, ePUB and MOBI (Kindle). • Supports a wide range of e-readers, tablets and phones for syncing. • Provides a desktop e-book reader. • Links to online libraries to allow the download and purchase of e-	

			books.	
E-book Text-to-Speech	• Daisy Player • eBook Speaker		• Hardware DAISY readers • IVONA Reader	• Daisy Player and eBook Speaker allow blind or visually impared students to read eBooks through Text-To-Speech • Daisy Player supports DAISY talking books • Ebook Speaker supports most common ebook formats including ePub, PDF, MOBI and more • Daisy Reader includes features aimed at educational users, such as bookmarks and a numerical keyboard
Collaborative Authoring	• Etherpad • Gobby	• Google Docs	• Etherpad provides an interface for multiple users to collabor	

			ate on a document in real-time over the web. • Basic formatting is supported, and users' contributions can be identified by colour. • Documents can be imported and exported using various formats, including HTML and MS Word. • The entire history of a document can be viewed using a time slider. • Gobby provides	

			similar functionality to etherpad, but uses a client-server infrastructure. • Gobby clients are available for Windows/Mac/Linux	

Assessment

Solution	Software	Consider as Alternative to	Comments	Real World Use
High-stakes assessment	• Rogō(formerly TouchStone)	• Question Mark	• Rogō aims to provide an online assessment system with a focus on consistent quality, usability and security.	• University of Nottingham provides Rogō for online assessment. Referencehttp://oss.ly/43 • 5 UK institutions including University of Oxford and University of the West of Scotland engaged in a pilot project to assess Rogō against the needs of HE institutions.

			• The system supports informal progress tests and surveys, self assessment, as well as formal exam papers. • A range of common question types are supported. • Features for managing the assessment life-cycle are included, such as standards setting and peer review	Referencehttp://oss.ly/42.

			• of papers. • Rogō supports Learning Tools Interoperability (LTI) allowing it to be connected to VLEs implementing the LTI standard.	
E-Portfolio	• Mahara	• PebblePad • Elgg	• Mahara allows easy integration with Moodle. Students can save work created or submitted in Moodle to their Mahara portfolio. Single Sign-On is also	• Southampton Solent University uses Mahara for it's myPortfolio system. Reference http://oss.ly/44. • Sparsholt College, Hampshire uses Mahara to support it's ICT Key Skills programme.

			supported. • Students can present selections from their portfolio through customised pages, which they control access to. • Students can network with one another and share artefacts through groups. • The LEAP2A standard is supported for interoperability with other e-portfolio system	

			s.	

Classroom Tools

Solution	Software	Consider as Alternative to	Comments	Real World Use
Interactive Whiteboard Software	• OpenSankoré	• SMART Notebook • Promethean ActivInspire/ActivOffice	• OpenSankoré provides an interactive cross-platform interface for whiteboards, touch tables, or any type of computer. • Whiteboard-style drawing is supported, as well as inserting documents and media. • The environment's functionality can be extended by the addition of Widgets.	• OpenSankoré was originally developed and used by the University of Lausanne. Refhttp://oss.ly/49
Classroo	• iTALC	• SMART Sync • LANschool	• iTALC provides	

m Manage ment		• InterCLASS	tools for managing the PCs in a classroom . • A teacher can view students' screens in overview mode. • Computer s can be remote controlled to provide assistance . • Workstatio ns can be locked to reduce distraction s. • Demonstr ations can be broadcast to all workstatio ns.	

Library Systems

Solution	Software	Consider as Alternativ e to	Comments	Real World Use
Integrat ed	• Koha • LibLime	• Herita	• Koha includes modules for	• Staffordshire University use

Library System (ILS)	• Koha OpenBiblio	ge	circulation, cataloguing, acquisitions, serials, reserves, patron management, branch relationships, and more. • Koha supports standard formats and protocols to ensure interoperability with other library systems. • An online demo of Koha is available on the project's website. http://oss.ly/4q • The open source Koha project from koha-community.org is not to be confused with LibLime Koha or LibLime Academic Koha. LibLime Koha is a fork of the original project managed by LibLime, while LibLime Academic Koha is a separate product developed for a	Koha hosted by PTFS Europehttp://oss.ly/53 • The British Library for Development Studies at the Institute for Development Studies uses Kohahttp://oss.ly/54

			consortium of institutions. • OpenBiblio is an automated library system containing OPAC, circulation, cataloging, and staff administration functionality.	
Reading Lists	• LORLS	• Talis Aspire • Refworks	• A demonstration of LORLS and its features is available on the project's website.http://oss.ly/4p	• LORLS is developed by the University of Loughborough and is used by several universities around the UK. Refhttp://oss.ly/4o

Mobile Solutions

Solution	Software	Consider as Alternative to	Comments	Real World Use
Mobile Apps for Students	• Molly	• CampusM	• Molly provides a framework for building information portals for mobile devices. • A range of	• Molly powers Mobile Oxford, used by University of Oxford and Oxford Brookes. Refhttp://oss.ly/4r

			mobile devices are supported from low- to high-end through a single web interface using feature detection • Data can be pulled from a range of sources • Molly can be run in-house, allowing all institutional data to be kept secure within the institution's network.	

Enterprise Architecture And Service Management

Solution	Software	Considered as Alternative to	Comments	Real World Use
Enterprise Architecture	• Archi	• BizzDesign Archit	• Archi and Bizz	• Archi has been used to introduce Enterprise Architecture modelling to

cture		ect	Design Architectare both enterprise architecture modelling applications that use the Archimate standard.	several universities around the UK, including Staffordshire University, University of Bolton, and Coventry University. Refs http://oss.ly/4x,http://oss.ly/4y, http://oss.ly/4z

Management Information Systems

Solution	Software	Consider as Alternative to	Comments	Real World Use
Management Information System (MIS)/Student Records	• A1 Academia	• Ellucian Banner • PeopleSoft Campus	• A1 Academia Has many core modules for Mid-Large campus managem	

			ent e.g Student Records, Students Finance, Admissions, Registration, Curriculum Management, Course Mgmt, Exams, Hostels etc	
	• SchoolTool • OpenStudent	• SIMS	• SchoolTool is a web-based student information system with features including student record management, attendance logging, gradebooks, and timetabling. • SchoolTool integrates with systems	• CanDo is a competancy tracking application built on SchoolTool by teachers and students in Virginia. Ref http://oss.ly/56

			including the Moodle VLE via CAS authentication.	

Subject-Specific Tools

Subject	Software	Consider as Alternative to	Comments	Real World Use
Music	• Audacity • Ardour	• ProTools • Cubase • Sibelius	• Audacity enables recording, editing and mixing of audio tracks. It provides a comprehensive suite of editing tools, as well as supporting a range of effects through	

			LADSPA plug-ins. • Ardour also provides a suite for recording and editing audio, but unlike Audacity, also supports multi-track recording. • Unlike Audacity, Ardour is a “non destructive” editor, allowing effects to be adjusted repeatedly.	
	• Rosegarden • Hydrogen	• FL Studio • Sibeliu	• Rosegarden provides a	• MuseScore is used internationally by schools, universities and

	• MuseScore	s	multi-track MIDI sequencer and composition environment. • Hydrogen is a cross-platform drum machine. • MuseScore allows you to create, play and print sheet music.	private music teachers at all levels, including by Redbridge College and De Montfort University in the UK. Refshttp://oss.ly/4b,http://oss.ly/4a • Hydrogen is used at Glen View High School in Beaumont, California for teaching loop-based audio production. Refhttp://oss.ly/4u
	• Gregorio	• Grégoire	• Gregorio provides tools for the typesetting of Gregorian chant notation. • Gregorio can be used via a comma	

			nd line, through the TeXWorks GUI, or integrated with the Scribus DTP package.	
	• Ubuntu Studio • 64 Studio • Musix	• Reason	• Ubuntu Studio is a specialised Linux distribution focused on media creation. • While there is no single open source application that provides all features of a comprehensive package like Reason	

			, there are distributions of Linux designed for studio workstations, combining several applications to provide comparable features. • Featured software includes multi-track recorders, MIDI sequencers, virtual amplifiers and effects processors. • Ubuntu Studio also features JACK, an	

			advanced audio system allowing the audio inputs and outputs of separate applications to be connected together. • As with many Linux distributions, studio-focused distributions can often be run from CD for testing without installing anything to the computer's hard	

			drive.	
Film/Media Production	• KDEnlive • PiTiVi • Blender • Avidemux • OpenShot • Cinerella-cv	• Windows Movie Maker • Final Cut Pro • Adobe Premiere	• KDEnlive and PiTiVi are fully featured multi-track non-linear video editors. • Based on open source media libraries, a wide range of video and audio formats are supported from a large number of devices. • Output to standard formats including H.264 is supported, as well as	• The 2010 Undergraduate and Postgraduate fine art exhibition at the University of Reading featured a piece of digital sculpture created with Blender. Ref http://oss.ly/4d • University of Plymouth use Blender as part of its Media Production degree, and for data visualisation in their planetarium. Refhttp://oss.ly/4e, http://oss.ly/4f • Lancaster University provides Avidemux in its computer labs. Refhttp://oss.ly/4g

			lossless formats. • Blender is an industry-quality tool for 3D animation.	
Theatre/Drama	• Q Light Controller	• WYSIWYG	• Q Light Controller is a cross-platform application for controlling DMX or analogue lighting systems like moving heads, dimmers, scanners etc.	
	• Soundboard	• QLab • SFX	• Soundboard is a cross-platform tool for building and	

			executing sound cues.	
	• Celtx • Fountain	• Final Draft	• Celtx is a fully-featured cross-platform screen-writing application. • Celtx can sync with cloud services and mobile apps, although these are not open source. • Fountain is a plain-text format which can be used for screen writing and rendered to a	

			formatted screenplay.	
Art/Photography	• The GIMP	• Adobe Photoshop • Z Brush	• The GIMP (GNU Image Manipulation Program) provides a complete set of tools for editing bitmaps, including layering, effects, and colour tools. • Plug-ins and scripts are supported to provide extensibility. • Images can be imported from a range	• The engineering department at the University of Cambridge uses GIMP for image manipulation. Refhttp://oss.ly/4h • London Metropolitan University provides GIMP as an alternative to Photoshop. Ref http://oss.ly/4i

			of formats, including from scanners and Photoshop files. • Images can be saved to a range of standard formats. • A large community of users have produced extensive documentation and tutorials on The GIMP's features.	
	• Darktable • UFRaw	• Adobe Lightroom • Apple Aperture	• Photography workflow and RAW process	

		• Adobe Bridge	ing tools	
	• Inkscape	• Adobe Illustrator	• Inkscape is a cross-platform program for creating vector graphics, based on the standard SVG format. • Importing and exporting of bitmap graphics formats is supported, as is import of Adobe Illustrator files.	• The Oxford Internet Institute uses Inkscape to produce data visualisations. Refhttp://oss.ly/4k
Design and Technology	• Scribus	• Adobe InDesign • QuarkXPress	• Scribus is a cross-platform Deskto	• University of Oxford IT Services run a termly course on Desktop Publishing with Scribus.

			p Publishing application. • As well as typesetting, a range of standard image formats are supported, as are Adobe Photoshop and Illustrator files.	Ref http://oss.ly/4l
	• Blender	• 3ds Max	• As well as animation, Blender can be used for 3D modelling. • Models created in Blender can be used for 3D printing	• The Blender community has a forum for discussing blender usage in Academic and Research contexts. Refhttp://oss.ly/4j

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	• QCAD • LibreCAD	• AutoCAD	• QCAD and LibreCAD are a cross-platform 2D CAD packages. • LibreCAD is based on QCAD but provides a more modern interface	
	• FreeCAD	• AutoCAD • SolidWorks	• FreeCAD is a 3D CAD package.	
Computing	• Eclipse • NetBeans • MonoDevelop	• Microsoft Visual Studio	• Eclipse and NetBeans are both popular general purpose Integrat	

			ed Development Environments (IDEs). • Eclipse is used as the basis for many platforms' Software Development Kits (SDKs), including Android. • Eclipse and NetBeans support a variety of languages through plug-ins and extensions. • MonoDevelop is an IDE specific	

			ally designed for building cross-platform software using an open source implementation of the .NET framework (Mono).	
	• Scratch • Ruby • Python • PHP • Lazarus	• Pascal • Delphi • Visual Basic • VB.NET	• Scratch is a language designed for teaching programming concepts, allowing students to create programs by dragging blocks onto a canvas	• A recent survey of the UK Computing At School (CAS) and Computers of Education Society in Ireland (CESI) communities showed Scratch to be the most widely taught language for 11-14 year olds, Python and Scratch to be the 2 most widely taught languages for 14-16 year olds, and Python to be the second most widely taught for 16-18 year olds. Ref http://oss.ly/4n

			rather than typing commands. • Ruby, Python and PHP are all widely-used interpreted programming languages. • Lazarus is an alternative to Delphi, can run on both Windows and Linux platforms and uses an almost identical interface. • PHP is designed for building dynamic web applications.	

			• Many common web applications such as Wordpress, Media Wiki, Drupal and Moodle are written in PHP. • Ruby and Python are powerful multi-purpose languages which can be used to build both desktop and web applications. • Ruby and Python feature consistent intuitive	

			syntax which makes them ideal for teaching. • Each language is supported by a vibrant community of users and developers, which comprehensive documentation.	
Psychology	• PsyScope • PEBL	• Presentation	• Applications that help in running experiments in psychology, for example presenting stimuli to subjects and measuri	• PsyScope is used by many university Psychology departments in the UK, including University of Bangor. http://oss.ly/4m

			ng responses • PEBL comes with a library of common tests • Allow users to develop their own experiments using scripting or programming	
Geography Related Subjects	• gvSIG Educa • GRASS GIS • JUMP GIS	• Bentley Map • MapInfo • Geospatial	• gvSIG Educa is a customization of the gvSIG Desktop Open Source GIS, adapted as a tool for the education of issues that have a geogra	• gvSIG Educa arose out of the gvSIG Batoví distribution, which is available to all children of Common Education (grades 1 to 6) and their respective teachers in public schools across Uruguay, thanks to the Ceibal project. Refshttp://oss.ly/4v,http://oss.ly/4w

			phic compo nent. • The aim is to provide educat ors with a tool that helps student s to analyse and underst and space, and which can be adapte d to differen t levels or educati on system s. • gvSIG Educa is not only useful for the teachin g of geogra phic material , but can also be	

			used for learning any subject that contains a spatial component such as history, economics, natural science, sociology… • Facilitates learning by letting students interact with the information, by adding a spatial component to the study of the material, and by facilitating the	

			assimilation of concepts through visual tools such as thematic maps. • gvSIG Educa provides analysis tools that help to understand and spatial relationships. • Other open source GIS packages provide similar feature sets.	
Engineering	• Open Circuit Design	• NI MultiSIM	• Open Circuit Design is a collection of tools providing feature	

			s such as PCB layout design and component simulation.	
Religious Studies	• The SWORD Project	• Logos • E-Sword	• The SWORD project provides free cross-platform tools for bible study.	
	• Zekr Qur'an	• Al-Misbah	• Zekr Qur'an is a cross-platform tool for Qur'an study	

Further Reading

- Open Source Options, Cabinet Office UK
- Open Source Procurement Toolkit, Cabinet Office UK

How Freshmen Conduct Course Research Once They Enter College

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http://www.downes.ca/cgi-bin/page.cgi?post=61476
I guess what surprises me most about this study is that they're still using the term 'freshmen' in 2013. What doesn't surprise me is that new college students (sometimes called 'first year students' or, if you must, 'frosh') found that they needed more than 'look it up on Google' as research skill. But it's not because it's so much more deep and complicated reserach than they've seen before. It's not because "they were unprepared to deal with the enormous amount of information they were expected to find and process for college research assignments." It's because so much of it is blocked from the open web, either buried in proprietary archives or - worse - available on paper only.
Comment: http://www.downes.ca/cgi-bin/page.cgi?post=61476
Direct Link:
http://projectinfolit.org/pdfs/PIL_2013_FreshmenStudy_FullReport.pdf

[DIDN'T INCLUDE – 45 PAGE REPORT]