

Plato's Massive Open Online Cave?

Mark McIntire

Santa Barbara City College

Philosophy Department

Gaede Institute 11th Annual Conference:

MOOCing the Liberal Arts ?

a concurrent presentation

February 14, 2014

Abstract:.....	2
Definitions: .....	3
The Echoes and Shadows: .....	3
Numbers: 200+ universities. 1200+ courses. 1300+ instructors. 10 million students. ....	6
The Providers:.....	6
Course Subjects and Languages: Diversity .....	8
Attrition and Completion Rates:.....	9
MOOCs and the Liberal Arts.....	11
Promising Liberal Arts MOOCs: Edinburgh University Report #1 .....	14
Reasons for Edinburgh MOOCs success: Design, Team Structure, Courses, Curriculum .....	19
Findings and Recommendations for Discussion .....	19
Bibliography.....	22
Appendix I: Let's Go MOOCing @ The University of Edinburgh .....	24
Learning objectives: .....	24
The course at a glance: .....	25
Course structure: .....	25
Global Challenges Themes: .....	26
Passing the Course: .....	27
Course Completion Recognition: .....	28
References: .....	32

## **Abstract:**

Despite stampeding popularity over the last few years since its creation, serious doubts persist about the fundamental MOOC conceptual model of Massive Open Online Courses as verifiable learning environments especially for liberal arts courses. This paper will defend the valid argument that: All MOOCs, except perhaps those at The University of Edinburgh, as currently construed and deployed, are MOOCs that fail to provide verifiable learning outcomes. No MOOCs that fail to provide verifiable learning outcomes are acceptable liberal arts courses. Therefore, no MOOCs, except perhaps those at The University of Edinburgh, as currently construed and deployed are MOOCs that are acceptable liberal arts courses. This paper will focus only on the complaint that MOOCs, generally, fail to engage and educate liberal arts students with positive, measurable learning outcomes through dialogue. It will be demonstrated that the current underlying conceptual model of MOOCs is inadequate as a global replacement to the traditional liberal arts courses based on dialogue pedagogic modeled in Plato's Allegory of the Cave. A few highly debatable recommendations will be offered for discussion.

**Definitions:**

Culled from the existing body of MOOC literature here are some working definitions.

**M**assive: anywhere from one more than the largest traditional liberal arts course enrollment to as many active learners as there are globally with internet access.

**O**pen: asynchronous free and accessible to any active learner with internet connectivity without any prerequisites or barriers to enrollment.

**O**nline: 100% delivered and accessible via any and all competent internet providers with no synchronous student/teacher contact.

**C**ourse: a learning environment educating students in a formal discipline of study through valid and sound reasoning with inductive proof on debatable topics with positive learning outcomes.

**The Echoes and Shadows:**

That education is a field that spawns novelty, innovation, experiments and fads from the plausible to the absurd seems beyond reasonable doubt. Any learning proposal that is tagged “peer-reviewed”, “research-based,” “best-practices,” or “standards-based” is taken as received wisdom by school administrators and many faculties. The only certainty derived from such adventures is the depressing realization that most of these efforts elude reliable scientific verification. Until educational neuroscience pinpoints more exactly where the wheel touches the road in a learning mind a huge deficit persists in our ‘knowledge of other minds’ and how that shapes the teaching and learning process. As a result, the field of education often resembles a ‘tower of Babel’ with

everyone using their own nomenclature in the build the proverbial ‘committee of blind’ describing an elephant merely by touching different parts of one. Enter stage left, the dreamers, prophets, visionaries, evangelists, soothsayers, shills, hucksters, promoters, entrepreneurs and pretenders right alongside the serious minded educators. The situation resembles, to a startling degree, the plight of the unchained prisoner in Plato’s Cave. The latest razzle-dazzle in the education cave is a thing called a MOOC, Massive Open Online Course. For the unchained cave prisoner, the question arises, “Is this just another echo and shadow or is it the real thing?” This paper will proceed as did the unchained prisoner in Plato’s Cave, climbing out into the sunlight of Truth.

Like most novel education adventures, the MOOC movement from its inception, has been fueled by a laudable altruism. The goal was to bring the highest quality teaching, once reserved only for the wealthy few, to a global student population with internet access at no cost to the student and with no barriers to enrollment. In their early excitement about the probability of ‘changing education as we know it’ and ‘shutting down all but 10 universities in the world’ MOOCers got a bit ahead of themselves, with predictable results. Sure, the technology exists to fulfill the dream of every student wired into a MOOC with no need to trudge off to a brick and mortar classroom or even get out of bed for that matter. Certainly, superstar professors would eagerly welcome performing for the cameras in an auditorium full of adoring fans all paid for by Mobil Oil and produced by PBS. Naturally, students excluded from access to the best schools lacking wealth and/or contacts will eagerly embrace the chance to mingle with the ‘best and brightest’ if only at a distance and only in a virtual world. Why wouldn’t they? No one would falsely suppose that, given the chance to avoid the time and money necessary

to gain an academic union card called a ‘degree’, anyone would fail to do so. MOOCers promised that classrooms, lecture halls, stone libraries, incompetent teachers, irksome teaching assistants, bullying professors, bean counting administrators, loan officers and even academic degrees themselves were all obsolete and ready for the educational trash heap. The ‘have not’s’ could finally pull even with the ‘haves’, at least in the field of education. Like most things that sound too good to be true, this one isn’t, as this recent Huffington Post article reports:

“There’s only one hitch: No one really knows if students learn anything in a MOOC. Scant existing research suggests that the success rate of online education, in general, is poor. And even the people behind MOOCs are becoming concerned about sky-high expectations, which they say represent a misunderstanding of their purpose.

“At this point, there’s just no way to really know whether they’re effective or not,” said Shanna Jaggar, assistant director of the Community College Research Center at Columbia University’s Teachers College, which has produced some of the most recent scholarship about online education.”<sup>1</sup>

From one respected researcher's point of view Time Magazine reports;

“Everyone in the research field agrees that, for the particular purpose of replacing on-campus education, the evidence [for MOOCs] is ambiguous at best,” said Andrew Ho, a professor at the Harvard Graduate School of Education and research director for HarvardX. “Far more research is needed. And we’re conducting some of it. But we’re way out over our skis when it comes to that particular purpose of MOOCs.”<sup>2</sup>

Even more disturbing is when one grand-daddy of all MOOCs, Sabastian Thurn, lapses into lamentations as he tells fastcompany.com interviewer, Max Chafkin;

---

<sup>1</sup> Kingcade, Tyler. [www.huffingtonpost.com/2012/11/26/moocs-skepticism\\_n\\_2191314.html](http://www.huffingtonpost.com/2012/11/26/moocs-skepticism_n_2191314.html).

<sup>2</sup> Marcus, John. "All Hail MOOCs! Just Don't Ask if They Actually Work." TIME.com. Accessed January 24, 2014. <http://nation.time.com/2013/09/12/all-hail-moocs-just-dont-ask-if-they-actually-work/#ixzz2qgRpYs5>.

"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," Thrun tells me. "It was a painful moment." Turns out he doesn't even like the term MOOC." <sup>3</sup>

What crashed Thrun's expectations into despair? It's the drop-off rate at which less than 10% of those who signed up for one of Udacity's MOOCs actually finished and not all of them actually passed the course. More to the point, there was no way to actually measure if anyone 'learned' anything or were just exposed to 'information'. The article reports;

As Thrun was being praised by Friedman, and pretty much everyone else, for having attracted a stunning number of students--1.6 million to date--he was obsessing over a data point that was rarely mentioned in the breathless accounts about the power of new forms of free online education: the shockingly low number of students who actually finish the classes, which is fewer than 10%. Not all of those people received a passing grade, either, meaning that for every 100 pupils who enrolled in a free course, something like five actually learned the topic. If this was an education revolution, it was a disturbingly uneven one.<sup>4</sup>

**Numbers: 200+ universities. 1200+ courses. 1300+ instructors. 10 million students.**

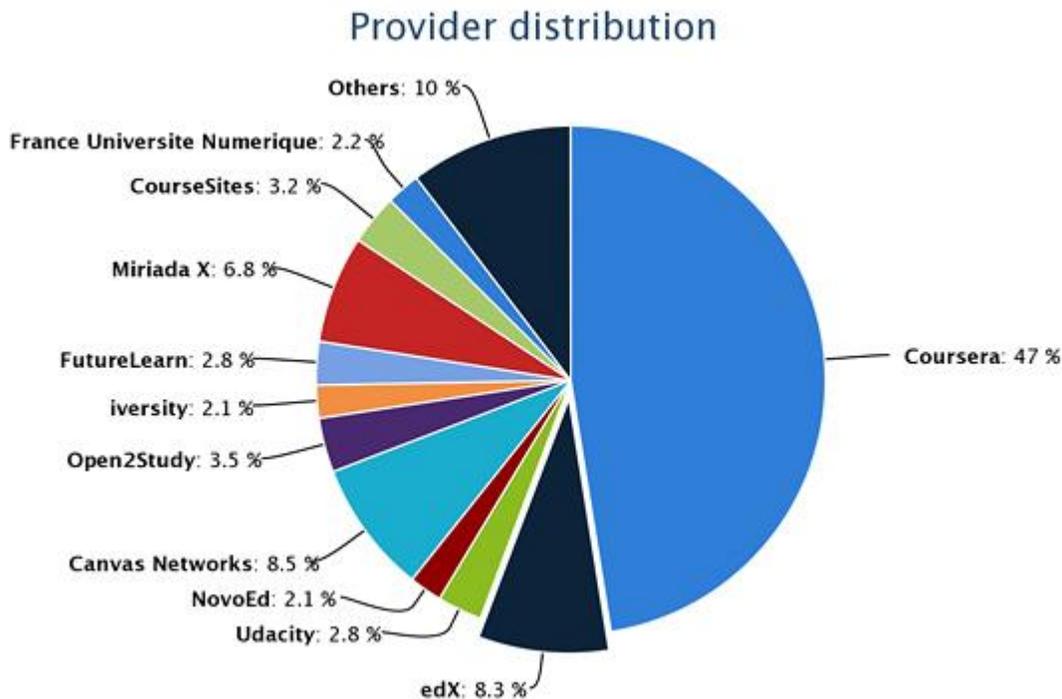
According to [Dhawal Shah](#), founder of Class Central, a MOOC discovery platform on his webpage <https://www.edsurge.com/n/2013-12-22-moocs-in-2013-breaking-down-the-numbers> there are over 10 million global MOOC students enrolled in over 1200 MOOCs offered by over 200 Colleges and Universities. The number of new MOOCs launched each day is about 2. This trending covers the period from 2012 when MOOCs achieved critical mass to January 2014.

### **The Providers:**

---

- 3- Chafkin, Max. "Udacity's Sebastian Thrun, Godfather Of Free Online Education, Changes Course | Business + Innovation." Fast Company. Accessed January 24, 2014. <http://www.fastcompany.com/3021473/udacity-sebastian-thrun-uphill-climb>
- 4- Ibid.

As this edsurge.com pie chart indicates COURSERA dominates the growing list of MOOC providers. Considered “The Big Three” are **Coursera**, **edX**, and **Udacity**.



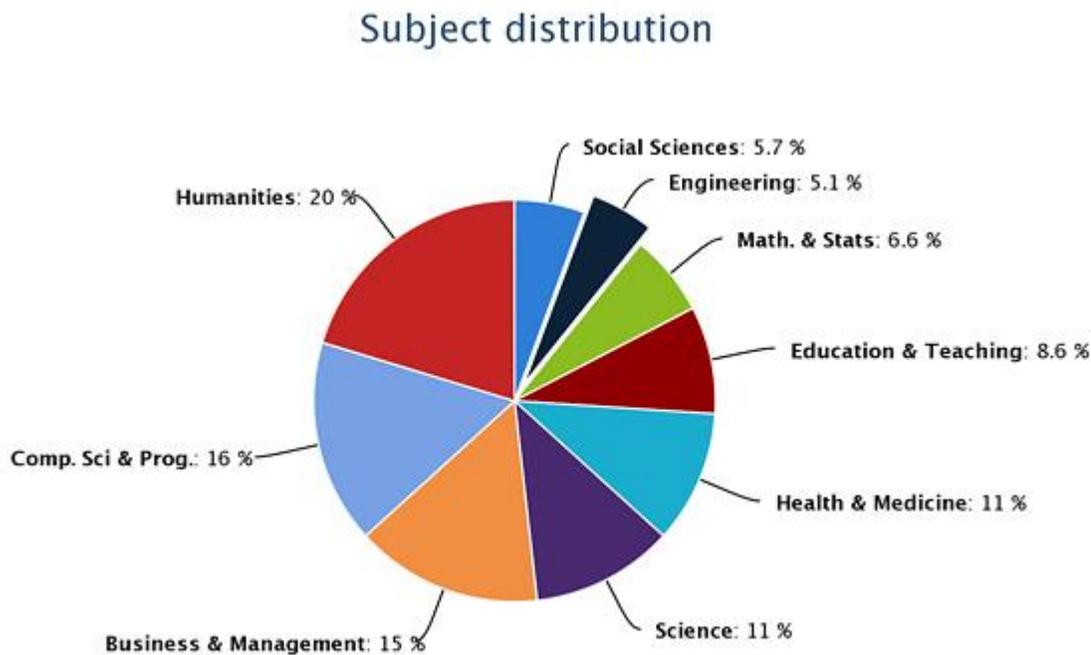
5.

A provider is a third party company that connects students, faculty and institutions in the design and delivery of a MOOC. When we get to The University of Edinburgh Report #1 about the success of their MOOC we can see why COURSRA dominates the provider category. “Intelligent design” turns out to be one of the principle reasons Coursera is the biggest of the big three.

- 
5. Shaah, Dhawal. "MOOCs in 2013: Breaking Down the Numbers News." EdSurge. Accessed January 24, 2014. <https://www.edsurge.com/n/2013-12-22-moocs-in-2013-breaking-down-the-numbers>.

## Course Subjects and Languages: Diversity

Artificial Intelligence and cognate computer science subjects once dominated MOOCs but this chart show a surprising deployment of Humanities courses on the increase that will have significant impact on liberal arts students and colleges. Education and Pedagogy are also ‘trending’.



Significant also are the diverse languages now MOOCed. Here’s a roundup from edsurge.com including the providers links.

- Spanish: **Miriada X**, a consortium of nearly 30 universities in Spain and Latin America, offers a large number of courses in diverse subjects in business management, education/teaching, science, and humanities.
- French: Coursera offers a dozen or so French-based MOOCs, and **France Universite Numerique (FUN)**, a major initiative from the French National

Ministry using the open-source edX platform, recently started to put courses online from a number of French universities.

- Mandarin Chinese: Coursera offers some Mandarin-based courses through partner universities, including Peking University, Shanghai Jiao Tong University, and National Taiwan University. A new provider, **XuetangX**, using the open-source edX platform, has just started a handful of courses, with more to come.
- German: **Iversity**, a European MOOC provider based in Germany, has about 10 German-language MOOCs, and will likely plan more.
- Arabic: **رواق (rwaq.org)** recently started offering a limited number of MOOCs in Arabic. Additionally, a new initiative sponsored by the Queen Rania Foundation, **Edraak**, was **just announced** that will provide an Arabic MOOC portal using the open-source edX platform.<sup>6</sup>

### **Attrition and Completion Rates:**

There is evidence that attrition/completion rates are related to the aspirations of MOOC participants. As this chart shows from The University of Edinburgh Report #1 survey of the 307,000 participants in their six MOOCs during 2012-13 there is a wide range of reasons (click all that apply) for signing up to a MOOC.<sup>7</sup>

---

6. Ibid.

7. Accessed January 24, 2014.  
<https://www.era.lib.ed.ac.uk/bitstream/1842/6683/1/Edinburgh%20MOOCs%20Report%202013%20%231.pdf>.

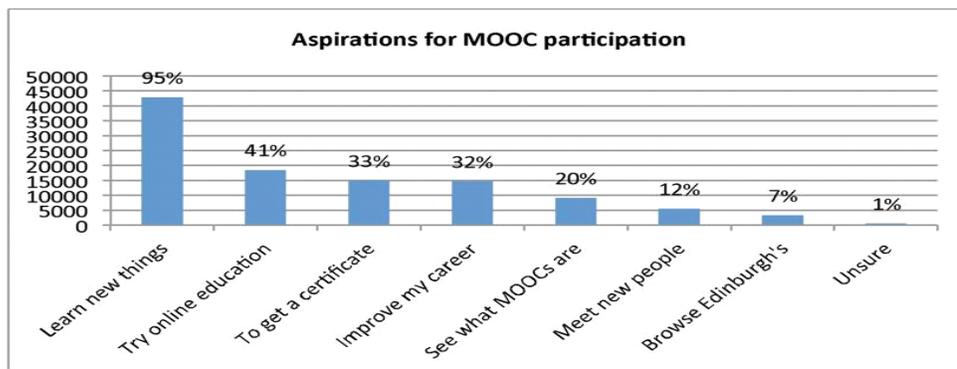


Figure 6 – The distribution of responses to Q5 ‘What do you hope to get out of the MOOCs you are enrolled on? (tick all that apply)’, shown as a percentage of the total number of entry survey responses received

Of course there are probably many more aspiration reasons than indicated on this chart. For example, some participants may be students enrolled in traditional classes taking a MOOC to augment that class, or they may be simply advanced placement high school students bored with Facebook. Faculty, such as those writing papers on the success of MOOCs or just curious about something trendy are also known reasons for MOOCing. It has become received wisdom that the attrition rates of MOOCs across the spectrum regardless of filter is between 90% and 97% of students not completing a final exam in the MOOC. This was the result of a Duke University for Instructional Technology report on 12,725 students that registered for a Bioelectricity MOOC in 2012;<sup>8</sup>.

7,761	Watched at least one instructional video
3,658	Took a quiz during the course
561	Scored greater than 0 after Week 8 quiz
346	Attempted the final exam
313	Passed the final and earned a certificate

8. Inside Higher Ed | Higher Education News, Career Advice and Jobs. "Researchers explore who is taking MOOCs and why so many drop out | Inside Higher Ed." Accessed January 24, 2014. <http://www.insidehighered.com/news/2013/03/08/researchers-explore-who-taking-moocs-and-why-so-many-drop-out>.

## MOOCs and the Liberal Arts

For nearly two thousand years Plato's Allegory of the Cave has served as the conceptual model for both the ideal essence of education itself as well as the inspiration for the Liberal Arts curriculum as it has evolved through the Middle Ages into the contemporary period. Some suppose that it is the 'unchained prisoner', freed from epistemic bondage and dragged kicking and screaming into the sunlight of Truth, who constitutes the hero of the Allegory. Not so. By means of careful, artful and sometimes even devious psychology, Socrates brings Glaucon to a point where he can learn Reality, Truth, Goodness and Beauty on his own without the aid of his teacher. Glaucon is the hero of the Allegory not the unchained, reluctant prisoner who still needs a master to show him the way. It is actually the 'dialectic' between Socrates and Glaucon that forms the epicenter of liberal arts evolution in the Western Hellenistic tradition.

*Artes Liberales*, the arts that make for a free person, is the focus of this conference in relation to the emerging pedagogy of MOOCs. Inherited from the ancient Greeks who were keen that their education produce knowledgeable, good citizens, Roman educators into medieval times codified these arts into the Trivium, Grammar, Rhetoric and Logic, and the Quadrivium, arithmetic, geometry, music, and astronomy. Most Liberal Arts colleges and universities predicate their entire curriculum on these pillars of pedagogy. But it is on the learning power of the Trivium that scholars rest the weight of a Liberal Arts education. The reason is deceptively simple as Dorothy Sayers set forth in her 1947 lecture at Oxford University; *The Lost Tools of Learning*.

The whole of the Trivium was, in fact, intended to teach the pupil the proper use of the tools of learning, before he began to apply them to "subjects" at all. First, he learned a language; not just how to order a meal in a foreign language, but the structure of a language, and hence of language itself--what it was, how it was put together, and how it worked. Secondly, he learned how to use language; how to define his terms and make accurate statements; how to construct an argument and how to detect fallacies in argument. Dialectic, that is to say, embraced Logic and Disputation. Thirdly, he learned to express himself in language-- how to say what he had to say elegantly and persuasively. <sup>9</sup>

‘Learning-how –to-learn is generally regarded as the great advantage of a liberal arts education. The facility with which eminent liberal arts graduates transformed every area of public life they entered is a matter for another day’s discussion on the power of a liberal arts education. Here, our concern is the crucial challenge that MOOCs face: are they teaching their students to learn how to learn? If not, then they are not liberal arts courses however massive their enrollment, their lack of cost or the ease of internet access.

The goal of the classical liberal arts education has not been a mystery these many centuries. Traditionally, the goal of liberal arts professors has been to put themselves out of business as quickly as possible in the nurturing of their students. Ending dependence, not perpetuating it, by grooming the tools of learning has heretofore been the very pedagogic predicate leading to the PhD degree.

---

<sup>9</sup> Sayers, Dorothy. "The Lost Tools of Learning." Escondido Tutorial Service classical christian homeschool tutorials. Accessed January 24, 2014. <http://www.gbt.org/text/sayers.html>.

Making a philosophical contribution to an academic discipline that is new and unique can only be achieved by those who have mastered the tools of learning; facility with language, precision of definitions, formulation and analysis of arguments, keen insight for refutation of ideas and arguments. It is now possible, even probable, to be awarded the PhD without acquiring any of these learning tools. MOOCs, as presently construed and deployed, only serve to inflate that deficiency. Sayers concludes her essay;

For the tools of learning are the same, in any and every subject; and the person who knows how to use them will, at any age, get the mastery of a new subject in half the time and with a quarter of the effort expended by the person who has not the tools at his command. To learn six subjects without remembering how they were learnt does nothing to ease the approach to a seventh; to have learnt and remembered the art of learning makes the approach to every subject an open door.<sup>10</sup>

Research of this paper failed to turn up the inductive evidence that MOOCs provide verifiable evidence that they teach students how to learn on their own. All the evidence points to the missing 'human presence' element for this failure, generally. However, all is not lost. There are emerging MOOC models that promise to restore the vibrancy of self-learning tools as the core of all curricula. There are at least a few examples of intelligent design, incisive pre-launch surveys, course progress monitoring exams and comprehensive exit interviews that promise a future for MOOCs with verifiable learning outcomes even in the liberal arts. The next few pages contain some evidence that learning outcomes for at least two liberal arts content MOOC show promise for the next generation of MOOC whatever they will be called in their next iteration.

---

<sup>10</sup>. Ibid.

## Promising Liberal Arts MOOCs: Edinburgh University Report #1:

On May 10, 2013 Edinburgh University issued a report summarizing the experience of their first 6 MOOCs in partnership with Coursera. The full PDF report can be linked @: <https://www.era.lib.ed.ac.uk/bitstream/1842/6683/1/Edinburgh%20MOOCs%20Report%202013%20%231.pdf>. Here are some highlights of their summary findings.

### Summary

In January 2013, the University of Edinburgh launched six MOOCs on the Coursera virtual learning environment (VLE) platform [www.coursera.org]. These were short fully---online courses, each lasting either 5 or 7 weeks, and they had a total initial enrolment of just over 309,000 learners.

Six different subject areas were chosen, reflecting the University's diverse spread of disciplines, with two MOOCs offered by each of the three academic Colleges in the University: Humanities and Social Sciences (*Introduction to Philosophy; E---learning and Digital Cultures*); Science and Engineering (*Artificial Intelligence Planning; Astrobiology and the Search for Life on Other Planets*); Medicine and Veterinary Medicine (*Equine Nutrition; Critical Thinking in Global Challenges*). *AI Planning* was developed at Master level, the rest were at undergraduate (Bachelor) level.

Each MOOC team chose a course structure best suited for the delivery of their subject matter; as a result, six different course structures were produced, with several teams experimenting with content delivery and collaboration methods out with the Coursera VLE.

Of the 309,628 people who registered on the Edinburgh MOOCs, 123,816 learners

accessed the course sites ('active learners') during the first week of launch – an average of 40% of those enrolled -- of whom 90,120 engaged with content in Week One. In total 165,158 individuals actively engaged with course content during the life span of the courses, and 36,266 learners engaged with week 5 assessments (29% average of initial active learners, with a range of 7--59% across the six courses). The MOOCs had no barriers to entry and exit, and the option existed to study without active engagement with quizzes or social media; this permits behavior (sic) patterns distinct from those of on--campus degree courses.

A pre--launch (Entry) survey was sent to 217,512 unique email accounts one week before the courses began [22.01.13]; 45,182 individuals replied, giving a 21% response rate. (Note that enrolment continued after this survey was sent out.) 15,351 responses were gathered in the end--of--course evaluation (Exit) surveys.

Of those who responded to the Entry survey, 75% indicated this was their first experience of a MOOC, and 53% were enrolled on only one MOOC offering. 203 countries were represented, with the highest proportion of respondents living in the USA (28%) and UK (11%). 33% were between 25--34 years of age, with 'Teaching and education' (17%) and 'Student (college/university)' (15%) as the highest represented areas of current employment. Over 70% of respondents indicated completion of degree--level academic achievement; a total of 40% respondents had achieved a postgraduate degree. These demographics were very similar to those of respondents in the combined Exit survey.

98% of Exit survey respondents indicated that "they felt they got out of the course(s) what they wanted", with the great majority reporting that the length, pacing and level had been about right. The most common time spent on study per week on the MOOCs was in the range 2--4hrs.

Both Entry and Exit surveys asked respondents for their reasons for enrolling, of which the main options chosen were to learn new subject matter and find out about MOOCs/online learning. Gaining a certificate or career enhancement were less significant but more localized (sic) to specific MOOCs.

34,850 Statements of Accomplishment (SoAs) have been distributed to learners across the six courses – 21% of active learners or 12% of total enrolment, with ranges of 4---44% and 2--- 36%, respectively, across the individual courses.

The whole process from initial partnership discussions with Coursera to completion of all six courses and distribution of SoAs took approximately 10 months. This document provides a summary of the 10---month process, including some comparisons between the six courses and our initial reflections on the data and our experiences in offering the MOOCs. We are currently in our second phase of data analysis and shall issue a second “MOOCs @ Edinburgh 2013 Report” in due course.

The six Edinburgh MOOCs and their School location:

- Artificial Intelligence Planning (School of Informatics)
- Astrobiology and the Search for Extraterrestrial Life (School of Physics & Astronomy)
- Critical Thinking in Global Challenges (School of Biomedical Sciences)
- E---Learning and Digital Cultures (School of Education)
- Equine Nutrition (School of Veterinary Medicine)
- Introduction to Philosophy (School of Philosophy, Psychology and Language Sciences)

Several important factors emerge from this data. First the distinction between the 309,628 enrollees and the 123,816 ‘active learners’ is significant since it clearly separates the ‘window shoppers’ from the serious learners with the accent on ‘active’, i.e. participating

partially or completely. Second, by the end of the last week 5 nearly half of the initial active learners engaged in some level of course activity and nearly a quarter of those engaged in the final week 5 assessment. Additionally, an impressive 15,351 end of course (Exit) surveys were gathered from the active learners. By far the most startling stat was; “Over 70% of respondents indicated completion of degree---level academic achievement; a total of 40% respondents had achieved a postgraduate degree. These demographics were very similar to those of respondents in the combined Exit survey.”<sup>11</sup>

This would seem to indicate that once the ‘lookie-loos’ and the merely curious are factored out of the percentage of active learners for these 6 Edinburgh MOOCs is relatively high compared other MOOCs offered. If we drill down and isolate the active participation numbers for just the two liberal arts course content, *Introduction to Philosophy* and *Critical Thinking in Global Challenges* we gain some perspective of well presented MOOCs for the liberal arts.

First, the two highest enrollment courses were those with liberal arts content and orientation and this chart demonstrates;

<b>Course</b>	Enrolments
<i>Introduction to Philosophy</i>	98,128
<i>Critical Thinking</i>	75,884
<i>E---Learning &amp; Digital Cultures</i>	42,844
<i>Astrobiology</i>	39,556
<i>AI Planning</i>	29,894
<i>Equine Nutrition</i>	23,322
<b>Total</b>	<b>309,628</b>

---

<sup>11</sup>. Ibid.

Second, the report indicates these two courses have high level participation in course activities, watching videos, posting comments, peer graded essays, quizzes and final assessment as reflected in the final Statements of Achievements (SoAs) at course end among ‘active-learners’. Notice these numbers would still outpace other VLP providers even if the calculation were made on the original number of raw enrollees including the ‘window-shoppers’ and the merely curious. Even in this Edinburgh report there is no calculation for students who learned from the course but never took part in any of the participation activities that produced the metrics. It is difficult to imagine how there could be given the present configuration and deployment of existing MOOCS especially in the liberal arts disciplines.

**Table 13 -- Total number of SoAs distributed by each course and as a percentage of active learners**

Course	Total SoAs	% of active learners
<i>Introduction to Philosophy</i>	9,445	18%
<i>Critical Thinking</i>	6,909	20%
<i>E--Learning &amp; Digital</i>	1,719	8%
<i>Astrobiology</i>	7,707	38%
<i>AI Planning</i>	654	4%
<i>Equine Nutrition</i>	8,416	44%
<b>Total</b>	<b>34,85</b>	<b>21%</b>

More interesting still is the ‘conversion rate’ (percentage of those who enrolled as compared to those who ‘participated’ up to and including receiving a Statement of Achievement at course end as this chart shows:

**Table 9 -- Conversion trends between enrolment and course participant activity**

Course	Enrolments (04.02.13)	Active in first week	Conversion	Enrolment at peak (08.02.13)	Total active participant	Conversion
<i>Intro Philosophy</i>	96,717	41,528	43%	98,128	53,255	54%
<i>Critical Thinking</i>	74,006	26,320	36%	75,884	35,084	46%
<i>E--Learning &amp; Digital Cultures</i>	42,091	16,250	39%	42,844	21,862	51%
<i>Astrobiology</i>	40,048	18,323	46%	39,556	20,413	52%
<i>AI Planning</i>	29,586	10,181	34%	29,894	15,546	52%
<i>Equine Nutrition</i>	22,605	15,100	65%	23,322	18,998	81%
<b>Total</b>	<b>305,053</b>	<b>127,2</b>	<b>42</b>	<b>309,628</b>	<b>165,158</b>	<b>53%</b>

## **Reasons for Edinburgh MOOCs success: Design, Team Structure, Courses, Curriculum**

When we look under the hood of Edinburgh MOOCs to explain why their completion numbers outpace other MOOCs we find some explanation for their impressive success compared to their competitors. The overall MOOC project was not done in house but resulted from a collaborated team build that included:

- Partnership with a flagship VLR provider/designer
- Faculty freedom to build their own development teams and use adaptive formats relative to their discipline structure
- Courses across the major divisions of the University
- Curriculum that offered the most probable market of active learners
- Exit interviews indicating 98% of students learned what they wanted to learn from the Edinburgh MOOC

Since Edinburgh has invested large resources both human and financial to the risk of MOOC success they are certainly the ones to watch as MOOCs evolve into their third and fourth iterations. Liberal arts colleges and universities eager to MOOC their curriculum will profit by a detailed team study of The Edinburgh Report #1.

### **Findings and Recommendations for Discussion:**

1. Research for this paper failed to find any MOOCs currently available that provided either metrics for or analytics of, learning-how-to -learn student- outcomes. So, liberal arts course providers, faculty and tech teams need to design and implement 'human presence' elements to produce these metrics and analytics. Face Time/Skype

‘exit interviews’ with individual students are recommended to provide this crucial missing MOOC analytic. It can be done.

2. MOOCs will not disappear due to lower completion rates than traditional learning environments generally. Evidence shows that this is the ‘shake-out’ period of MOOC evolution. So, liberal arts educators must prepare for the next iteration that will necessitate more human presence in MOOC design. Something like the ‘blended’ MOOCs envisioned by the head of edX, Anant Agarwal in a recent TED Talk.<sup>12</sup>

3. Future MOOCs especially in the Liberal Arts will be less didactic and more ‘active learner’ driven. Two reasons suggest this is likely. First, it’s generally recognized that human presence experts in curriculum design for online courseware are needed to reverse the attrition rates of first and second generation MOOCs. Second, consensus is that raw enrollment numbers are not as probative in developing analytics as are metrics for active learner participation. So, ‘exit interviews’ via Face Time/Skype technologies will enable MOOC providers to embed learning outcome metrics in their analytics

4. Liberal Arts MOOC development teams, those who already know how to learn and teach it daily, are best suited to design active, life-long learning environments online.

---

<sup>12</sup>. TED: Ideas worth spreading. "Anant Agarwal: Why massive open online courses (still) matter | Video on TED.com." Accessed February 2, 2014.

[http://www.ted.com/talks/anant\\_agarwal\\_why\\_massively\\_open\\_online\\_courses\\_still\\_matter.html?utm\\_source=newsletter\\_weekly\\_2014-02-01&utm\\_campaign=newsletter\\_weekly&utm\\_medium=email&utm\\_content=talk\\_of\\_the\\_week\\_button](http://www.ted.com/talks/anant_agarwal_why_massively_open_online_courses_still_matter.html?utm_source=newsletter_weekly_2014-02-01&utm_campaign=newsletter_weekly&utm_medium=email&utm_content=talk_of_the_week_button)

They need the techies to show them 'how' to design and deploy. So, a synergy between faculty and techies needs to emerge at the design level especially where 'human presence elements' are embedded.

5. Innovations in online participation technologies will gradually provide more 'dialogism' currently missing in most MOOCs. Video-chat with personal 'coaches' will enable a 'human presence' to emerge in MOOC design. It will also mean liberal arts teaching jobs growth once MOOC providers figure out a way to plug in all the unemployed and underemployed liberal arts PhD's. So, MOOC providers and Universities need to hire graduate level evaluators to set a ratio of one evaluator to every 20 active users in the MOOC.

6. "Guide yourself !" will likely emerge as the underlying predicate of the next generation of MOOCs. More will be expected of the active user in future MOOCs. Not only will modest 'fees' begin to appear, but also pre-requisites for entry. This will redefine OPEN, which in turn will redefine MASSIVE.

7. What if you could customize your own MOOC with a personal coach to guide you? It's not the unchained prisoner in Plato's Cave, dragged kicking and screaming into the sunlight of truth, that MOOCs will market. The real future liberal arts target market are the Glaucons of the globe, carefully groomed by Socratic POOCs and verified that they "learn-how to learn"--- Plato's Open Online Cave! One graduate student Socrates per 50 MOOCers? It's feasible.

8. Non-English speaking students globally are ripe markets for Socratic POOCs since little or no attention is given to the liberal arts in their naturalistic scientism learning environments. So, this silly notion that everyone can have their own meanings

of terms, like 'valid' and 'sound' will be replaced by a common global acceptance of these terms as traditionally defined.

9. The 'success' of the Edinburgh MOOCs seems due to the fact that most of their student population already have at least a B.A. with many graduate level students as well. So, MOOC providers might target that population more than the undergraduate population that has not yet 'learned-how-to-learn' on their own and, without human presence interfaces, probably won't learn it from a MOOC

---

## Bibliography

Chafkin, Max. "Udacity's Sebastian Thrun, Godfather Of Free Online Education, Changes Course | Business + Innovation." Fast Company. Accessed January 24, 2014. <http://www.fastcompany.com/3021473/udacity-sebastian-thrun-uphill-climb>.

Coursera. "Coursera.org." Accessed January 25, 2014. <https://class.coursera.org/criticalthinking-002/wiki/CourseLogistics>

Kingcade, Tyler. 1. [www.huffingtonpost.com/2012/11/26/moocs-skepticism\\_n\\_2191314.html](http://www.huffingtonpost.com/2012/11/26/moocs-skepticism_n_2191314.html)

Marcus, John. "All Hail MOOCs! Just Don't Ask if They Actually Work." TIME.com. Accessed January 24, 2014. <http://nation.time.com/2013/09/12/all-hail-moocs-just-dont-ask-if-they-actually-work/#ixzz2qgRpYYs5>

Inside Higher Ed | Higher Education News, Career Advice and Jobs. "Researchers explore who is taking MOOCs and why so many drop out | Inside Higher Ed." Accessed January 24, 2014. <http://www.insidehighered.com/news/2013/03/08/researchers-explore-who-taking-moocs-and-why-so-many-drop-out>

Sayers, Dorothy. "The Lost Tools of Learning." Escondido Tutorial Service classical christian homeschool tutorials. Accessed January 24, 2014. <http://www.gbt.org/text/sayers.html>

Shaah, Dhawal. "MOOCs in 2013: Breaking Down the Numbers News." EdSurge. Accessed January 24, 2014. <https://www.edsurge.com/n/2013-12-22-moocs-in-2013-breaking-down-the-numbers>.

The University of Edinburgh. Accessed January 24, 2014. <https://www.era.lib.ed.ac.uk/bitstream/1842/6683/1/Edinburgh%20MOOCs%20Report%202013%20%231.pdf>

TED: Ideas worth spreading. "Anant Agarwal: Why massive open online courses (still) matter | Video on TED.com." Accessed February 2, 2014. [http://www.ted.com/talks/anant\\_agarwal\\_why\\_massively\\_open\\_online\\_courses\\_still\\_matter.html?utm\\_source=newsletter\\_weekly\\_2014-02-01&utm\\_campaign=newsletter\\_weekly&utm\\_medium=email&utm\\_content=talk\\_of\\_the\\_week\\_button](http://www.ted.com/talks/anant_agarwal_why_massively_open_online_courses_still_matter.html?utm_source=newsletter_weekly_2014-02-01&utm_campaign=newsletter_weekly&utm_medium=email&utm_content=talk_of_the_week_button)

## Appendix I: Let's Go MOOCing @ The University of Edinburgh

There are those who claim that no doctor who has never had a broken leg cannot really assess or properly cure someone who actually has a broken leg. Although I find this reasoning suspect I decided that existential research on this topic required that I actually take a MOOC and report the results to you even though my findings would be purely anecdotal. Since The University of Edinburgh report impressed me with their tentative positive results for liberal arts students I enrolled in one of their six MOOCs entitled; *Critical Thinking for Global Challenges*. This seemed a reasonable choice; after all, I've been teaching Critical Thinking and writing for the Philosophy Department at Santa Barbara City College for these past twelve years online and eighteen years in real time. I may have learned a thing or two about critical thinking and the global challenges subject attracted my interest. Here's what happened.

With no barriers to enrollment I quickly signed up for the course with a few clicks and giving only minimal profile of who, what and why I am taking this course. I made a point to not disclose my teaching position in the hope of keeping a low profile literally and staying under the radar since I wanted to study an actual MOOC from the inside. The course extended over five weeks. On the course home page The "Learning Objectives" were advertized as;

### **Learning objectives:**

By the end of the course you will be able to better understand:

- What critical thinking is, and why it is important.

- Where reliable information comes from.
- How to evaluate the credibility and the relevance of the evidence given to support arguments.
- The key steps in assessing arguments.
- The key things to consider when developing your own arguments. <sup>12</sup>.

Course content was specified as;

### The course at a glance:

Week	Starting date	Topic covered
1	20th January 2014	<u>Essential concepts in critical thinking</u>
2	27th January 2014	<u>Assessing evidence: credibility and relevance</u>
3	3rd February 2014	<u>Assessing arguments (part 1)</u>
4	10th February 2014	<u>Assessing arguments (part 2)</u>
5	17th February 2014	<u>Developing your own arguments</u> + Final assignment (due by 24th February 2014)
	28th February 2014	<i>Course closes</i>

The actual course workings and structure were listed as;

### Course structure:

This course has a simple structure.

Each week, you will be presented with one short [video](#) on a specific topic. To check your understanding of the key messages presented in each video, you should attempt the [review quiz](#) directly after watching the video. To help you to know how you are doing, you will receive feedback on why each answer is correct or incorrect directly after

submitting your answers. You can attempt each review quiz **as many times** as you want. These review quizzes are graded to help you monitor your performance; passing all these quizzes is **not** required to pass the course (although you must have attempted them **all by the end of the course** (24.02.2014)).

Once you're confident with the concepts presented in the video, you should work on the series of [Homework exercises](#) provided. These exercises have been designed to test your ability to put into practice what you have learnt that week. Make sure to read the instructions given at the start of each exercise. After submitting your answers, you'll receive feedback on each question to help you identify what you did well and what needs further attention. These exercises are graded to help you monitor your performance but passing all these exercises is **not** required to pass the course (although we expect that you will have attempted them **all by the end of the course** (24.02.2014)). These exercises can be attempted **as many times** as you want.

The global challenges where critical thinking was to be applied were described as;

### **Global Challenges Themes:**

Global challenges are great contexts to practice critical thinking. They affect us all, and have no clear "correct" solutions: for example, the risk of epidemics of serious infectious diseases in modern societies, the implications of increasing human population on global resources, energy, environment and climate, and the challenges of human health and well-being in the modern world. Possible solutions to the problems that these global

issues cause are hotly debated, and give the perfect setting to practice recognizing and evaluating facts, ideas, opinions and arguments.

In weeks 3 & 4, you will choose a global challenge to work on. [Experts](#) in these themes have designed exercises that will both fulfill your interest in the issue chosen and test your ability to use your critical thinking skills. Each exercise is accompanied by an introduction video on the chosen topic. The relevant background information for each global challenge is also provided to ensure that you can complete the exercises.

We recommend that you choose **one theme per week** and that you choose the **same theme** the following week. But you can choose to work on **as many topics** as you want, as long as you watch the introduction video before attempting to do the related exercise.

*For more info on the global challenges provided, see the [Global challenges](#) page.*

Finally, metrics for passing the course and receiving a Statement of Achievement (SoA) at course end were presented as;

### **Passing the Course:**

To pass the course you should:

- Have submitted all review quizzes before the end of the course (24.02.2014)
- Have submitted all the Homework exercises in Week 1 and 2, and at least one global challenges exercise in Week 3 and one in Week 4 before the end of the course (24.02.2014).
- Obtain a grade of **at least 60% in the final exam**. The assignment will be released on the 17th of February 2014 via the [Final Exam](#) page. You should submit your assignment before

the deadline of **Monday the 24th; of February (12:00 GMT)**. Assignments submitted after the deadline will not be considered.

### **Course Completion Recognition:**

Students who successfully complete the class will be offered a Statement of Accomplishment (SoA) signed by the instructors.<sup>13</sup>

---

All of this is provided free of any charge. However, if you wanted the world to rest assured that indeed you, and only you, actually took this course and actually passed it then you are offered the opportunity to procure a Verified Certificate of Accomplishment for the low, low price of just \$ 46.95 American. You had to procure this by the end of the second week of the course for reasons that were never explained. The method of 'verification' entailed;

1. Taking a brief typing sample (assumption being that all typing patterns are as unique as fingerprints)
2. Take a 'selfie'
3. Take a picture of your photo ID (Drivers License, Passport etc.) and upload to Coursera the MOOC provider.

Things seemed to go well for the first week. I watched the first instructional video featuring the two principal professors for the course; Dr. Celine Caquineau is a biomedical scientist and teaching fellow at the School of Biomedical Sciences at the University of Edinburgh, and Professor Mayank Dutia is a biomedical scientist at the Centre for Integrative Physiology, School of Biomedical Sciences, and University of Edinburgh.

---

<sup>13</sup>. Coursera. "Coursera.org." Accessed January 25, 2014.  
<https://class.coursera.org/criticalthinking-002/wiki/CourseLogistics>

Both seemed properly credentialed to conduct this course in Critical Thinking in Global Challenges until they got to one point during the video where they were explaining to the class what constitutes ‘validity’ for a deductive argument. Professor Dutia proclaimed that, “*If the premises of an argument are false, then the argument is invalid.*” Since this is obviously not the case and since anyone holding a PhD in any academic discipline should certainly know that it is not the case I went to the ‘discussion forum’ page and posted my mild observation;



Mark · 5 days ago

In his presentation about what an argument is, Dr Dutia claimed that if the premises of an argument are not correct then the argument cannot be valid. Here is an argument that proves his claim false.

All humans are light bulbs  
All Bostonians are humans  
Therefore all Bostonians are light bulbs  
In this example the first premise is factually false the second premise is factually true the conclusion is factually false nevertheless the argument is valid. More attention is necessary to formal logic in this course it would seem.

14 votes received.<sup>14</sup>

The reaction of most class commentators was swift and brutal. One would have thought that I had written some unspeakable heresy or advocated the overthrow of all legitimate government on the planet. Here’s just a sample of the ire stirred up with a simple traditional distinction about logical validity;

---

<sup>14</sup>Coursera. "Coursera.org." Accessed January 26, 2014.

[https://class.coursera.org/criticalthinking-002/forum/thread?thread\\_id=10#post-117](https://class.coursera.org/criticalthinking-002/forum/thread?thread_id=10#post-117)



**Grover Travis White** Signature Track · 5 days ago

I think Professors Dutia and Caqueneau have made it clear that we are studying critical thinking, not formal logic. So, you can make statements about the hermetically sealed world of formal logic but I don't see how they are relevant to this course. I prefer to think of critical thinking as a way of apprehending the world and my fellow humans that will actually help me engage more fully with it and them. Saying the "all humans are light bulbs" doesn't help you much outside the musty halls of academia.<sup>15</sup>

And that was just a mild rebuke for upholding the universally accepted notion that a deductive argument can be valid even though it has factually false, even absurd premises. Consider the indictment embedded in this comment that consigns the traditional study of logic to outdated, pre-occupations of the reactionary aged.

**Anonymous** · 4 hours ago

As Week I ends it is timely to reflect on this thread which has been the most dominant in the Discussion Forum. Following this thread has been like walking back in time; it is reflective of twentieth century modernist thinking as yet untouched by Chaos Theory and Postmodern consciousness which are shaping the twenty-first century. The upcoming generation who will deal with global challenges over the next half century will have been influenced by Chaos Theory and Postmodern consciousness. This generation would just shrug their shoulders at the obsessive pedantry of the old world thinkers in this thread. It is a pity that the upcoming generation (sic) who will shape the world are not represented in this thread. Are MOOCs to be the domain of the aged? JMH<sup>16</sup>

To his credit, Dr. Dutia did own up to his error and did recant...sort of;

**Mayank B. Dutia** INSTRUCTOR · 5 days ago

Hello Mark, thanks for your lead in this thread and for engendering this valuable discussion. You are of course quite right to take me up on the distinction between the logical validity and the soundness of an argument, which I have not clarified in the lecture. In attempting to be very pragmatic (and trying to use language accessible to students from all over the world) I guess I have simplified it too far. I do hope you will agree though with essential point I was trying to make: should any of the premises be proven to be false, the conclusion cannot be accepted as correct; although the conclusion could still happen to be true, it cannot be supported by evidence, if the evidence demonstrates the premise(s) to be false. In this course, I hope we will be able to get across the primary importance of evidence in assessing arguments about the real-world issues in global challenges.<sup>17</sup>

---

<sup>15</sup> Coursera. "Coursera.org." Accessed January 26, 2014.

[https://class.coursera.org/criticalthinking-002/forum/thread?thread\\_id=10#post-117](https://class.coursera.org/criticalthinking-002/forum/thread?thread_id=10#post-117)

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

“In attempting to be very pragmatic” why would any Doctor of Philosophy “oversimplify it too far”, ‘it’ being the very definition of logical validity itself?

In fairness it must be said that about a quarter of the 100 + comments posted in response to my objection were supportive of the grounds for that objection. Another 25% expressed confusion and/or ambivalence about the role of logic in critical thinking. The remaining 50% comprised objections from a ‘post modernism’ paradigm. As the course is not complete until February 24<sup>th</sup> I can not report any further than this. The main take-away seems to be; don’t offer a course in critical thinking unless you have a professional philosopher to check your logic.

As we say in broadcasting; “Film at 11...”

## References:

Anders, G. (2013, July 10). Coursera hits 4 million students – and triples its funding. *Forbes*. Retrieved from [http://www.forbes.com/sites/georgeanders/2013/07/10/coursera-hits-4-million-students-](http://www.forbes.com/sites/georgeanders/2013/07/10/coursera-hits-4-million-students-andtriples-its-funding)

[andtriples-its-funding](http://www.forbes.com/sites/georgeanders/2013/07/10/coursera-hits-4-million-students-andtriples-its-funding)

Bass, R. (2012). Disrupting ourselves: The problem of learning in higher education. *EDUCAUSE Review*, 47(2), 23-33. Retrieved from [http://www.educause.edu/ero/article/disrupting-ourselvesproblem-](http://www.educause.edu/ero/article/disrupting-ourselvesproblem-learning-higher-education)

[learning-higher-education](http://www.educause.edu/ero/article/disrupting-ourselvesproblem-learning-higher-education)

Breslow, L., Pritchard, D. E., DeBoer, J., Stump, G. S., Ho, A. D., & Seaton, D. T. (2013). Studying learning in the worldwide classroom: Research into edX's first MOOC. *Research & Practice in Assessment*, 8, 13-25. Retrieved from [http://www.rpajournal.com/dev/wp-](http://www.rpajournal.com/dev/wp-content/uploads/2013/05/SF2.pdf)

[content/uploads/2013/05/SF2.pdf](http://www.rpajournal.com/dev/wp-content/uploads/2013/05/SF2.pdf)

Brooks, D. (2012, May 4). The campus tsunami. *The New York Times*, A29. Retrieved from

<http://www.nytimes.com/2012/05/04/opinion/brooks-the-campus-tsunami.html>

Brown, J. S., Corcoran B., Davidson, C. N., Dierkes-Thrun, P., Edebohls, T., Gierl, M. J., ... Watters, A.

(2013). *A bill of rights and principles for learning in the digital age*. Retrieved from

<http://www.hastac.org/forums/forum-bill-rights-and-principles-learning-digital-age>

Cost, J., Miller, J., McLeod, J., St. George, M., Haro, P., & Mahler, J. (2013). Essay says faculty involved in MOOCs may be making rope for professional hangings. *Inside Higher Ed*. Retrieved from

<http://www.insidehighered.com/views/2013/01/14/essay-says-faculty-involved-moocs-may-bemaking-rope-professional-hangings>

Coursera. (2013, May 29). 10 US state university systems and public institutions join Coursera to explore mooc-based learning and collaboration on campus [Web log post]. Retrieved from

<http://blog.coursera.org/post/51696469860/10-us-state-university-systems-and-public-institutions>

Daly, J. (2013, January 11). Blended learning is a comfortable alternative to MOOCs and online learning. *EdTech Magazine*. Retrieved from <http://www.edtechmagazine.com/higher/article/2013/01/blended-learning-comfortable-alternative-moocs-and-online-learning-infographic>

Davidson, C. N. (2012b, October 1). What can MOOCs teach us about learning? [Web log post]. Retrieved from <http://www.hastac.org/blogs/cathy-davidson/2012/10/01/what-can-moocs-teach-usabout-Learning>

Davidson, C. N. (2013, January 23). Bill of rights and principles for learning in a digital age: Full document plus back story [Web log post]. Retrieved from <http://www.hastac.org/blogs/cathydavidson/2013/01/23/bill-rights-and-principles-learning-digital-age-full-document-plus-b>

Downes, S. (2011, January 5). "Connectivism" and connective knowledge [Web log post]. Retrieved from [http://www.huffingtonpost.com/stephen-downes/connectivism-and-connecti\\_b\\_804653.html](http://www.huffingtonpost.com/stephen-downes/connectivism-and-connecti_b_804653.html)

Dunn, J. (2010, September 24). Google awards \$2 million prize to Khan Academy. *Edudemic*. Retrieved from <http://www.edudemic.com/2010/09/google-awards-2-million-prize-to-khan-academy/>

Edmundson, M. (2012, July 20). The trouble with online education. *The New York Times*, A23. Retrieved from <http://www.nytimes.com/2012/07/20/opinion/the-trouble-with-online-education.html>

EDUCAUSE. (2012). *What campus leaders need to know about MOOCs*. Retrieved from <http://net.educause.edu/ir/library/pdf/PUB4005.pdf>

EdX. (2013). EdX builds community of developers for its online and blended learning platform [Press release]. Retrieved from <https://www.edx.org/alert/edx-builds-community-developers/944>

Falk, A. (2012, August 28). In defense of the living, breathing professor. *The Wall Street Journal*.

Retrieved from <http://online.wsj.com/article/SB10000872396390444327204577615592746799900.html>

Guzdial, M. (2013, June 11). MOOCs today are about less data for the teacher [Web log post].

Retrieved from <http://computinged.wordpress.com/2013/06/11/moocs-today-are-about-less-data-forthe-teacher/>

Harden, N. (2013). The end of the university as we know it. *The American Interest*, 8(3), 54-62.

Retrieved from <http://www.the-american-interest.com/article.cfm?piece=1352>

Horn, M., & Christensen, C. (2013, February 20). Beyond the buzz, where are MOOCs really going?

[Web log post]. Retrieved from <http://www.wired.com/opinion/2013/02/beyond-the-mooc-buzzwhere-are-they-going-really/>

Jaschik, S. (2012, October 11). Study finds that liberal arts colleges are disappearing. *Inside Higher Ed*.

Retrieved from

<http://www.insidehighered.com/news/2012/10/11/study-finds-liberal-arts-collegesare-Disappearing>

Jordan, K. (2013, February 13). *MOOC completion rates: The data*. Retrieved from

<http://www.katyjordan.com/MOOCproject.html>

Kamenetz, A. (2010). *DIY U: Edupunks, edupreneurs, and the coming transformation of higher education*. White River Junction, VT: Chelsea Green.

Kamenetz, A. (2012, August 8). *How Coursera, a free online education service, will school us all*.

Retrieved from

<http://www.fastcompany.com/3000042/how-coursera-free-online-education-service-will-school-us-all>

Kiley, K. (2012, November 19). Liberal arts colleges rethink their messaging in the face of criticism. *Inside Higher Ed*. Retrieved from <http://www.insidehighered.com/news/2012/11/19/liberal-artscolleges-rethink-their-messaging-face-criticism>

King, W. J., & Nanfito, M. (2012, November 29). Essay on the challenges posed by MOOCs to liberal arts colleges. *Inside Higher Ed*. Retrieved from <http://www.insidehighered.com/views/2012/11/29/essay-challenges-posed-moocs-liberal-arts-colleges>

Kolowich, S. (2012a, October 29). Coursera strikes MOOC licensing deal with Antioch University. *Inside Higher Ed*. Retrieved from <http://www.insidehighered.com/news/2012/10/29/coursera-strikes-ooclicensing-deal-antioch-university>

Kolowich, S. (2013a, January 23). "Bill of rights" seeks to protect students' interests as online learning expands. *The Chronicle of Higher Education*. Retrieved from <http://www.chronicle.com/article/Bill-of-Rights-Seeks-to/136783/>

Kolowich, S. (2013c, June 7). MOOC students who got offline help scored higher, study finds [Web log post]. Retrieved from <http://www.chronicle.com/blogs/wiredcampus/mooc-students-who-got-offlinehelp-scored-higher-study-finds>

Lukes, D. (2012, September 15). The great MOOC slander? Realities and narratives of education and learning [Web log post]. Retrieved from <http://www.researchcity.net/2012/09/15/the-great-moocslander-realities-and-narratives-of-education-and-learning/>

Mackay, R. F. (2013, April 11). Learning analytics at Stanford takes huge leap forward with MOOCs. *Stanford Report*. Retrieved from <http://news.stanford.edu/news/2013/april/online-learning-analytics-041113.html>

Manjoo, F. (2013, June 6). How people read online: Why you won't finish this article. *Slate*. Retrieved

From; [http://www.slate.com/articles/technology/technology/2013/06/how\\_people\\_read\\_online\\_why\\_you\\_won\\_t\\_finish\\_this\\_article.single.html](http://www.slate.com/articles/technology/technology/2013/06/how_people_read_online_why_you_won_t_finish_this_article.single.html)

Marks, J. (2012, October 5). Why MOOCs won't replace traditional instruction. *Inside Higher Ed*.

Retrieved from <http://www.insidehighered.com/views/2012/10/05/why-moocs-wont-replacetraditional-instruction-essay>

Mazel. (2012, October 27). Re: The onus of education [Web log comment]. Retrieved from

<http://moreorlessbunk.wordpress.com/2012/10/24/the-onus-of-education/>

Michels, S. (2013, January 8). *How free online courses are changing the traditional liberal arts*

*education*. Retrieved from [http://www.pbs.org/newshour/bb/education/jan-june13/online\\_01-08.html](http://www.pbs.org/newshour/bb/education/jan-june13/online_01-08.html)

Miller, J. (2011). Open access and liberal arts colleges: Looking beyond research institutions. *College &*

*Research Libraries News*, 72(1), 16-30. Retrieved from <http://crln.acrl.org/content/72/1/16.full>

Oremus, W. (2012, July 18). Coursera, Udacity, edX: Will free online Ivy League courses end the era of

expensive higher ed?. *Slate*. Retrieved from [http://www.slate.com/articles/technology/future\\_tense/2012/07/coursera\\_udacity\\_edx\\_will\\_free\\_online\\_ivy\\_league\\_courses\\_end\\_the\\_era\\_of\\_expensive\\_higher\\_ed\\_.html](http://www.slate.com/articles/technology/future_tense/2012/07/coursera_udacity_edx_will_free_online_ivy_league_courses_end_the_era_of_expensive_higher_ed_.html)

Robbins, J. (2013, March 25). The ethics of MOOCs. [Web log post]. Retrieved from

<http://www.insidehighered.com/blogs/sounding-board/ethics-moocs>

Schmidt, P. (2013, June 12). AAUP sees MOOCs as spawning new threats to professors' intellectual property. *The Chronicle of Higher Education*. Retrieved from

<http://www.chronicle.com/article/AAUPSees-MOOCs-as-Spawning/139743/>

Severance, C. (2012, September 30). Visualizing the geographic distribution of my Coursera course

[Web log post]. Retrieved from <http://www.dr-chuck.com/csev-blog/2012/09/geographic-distributionof-my-coursera-course/>

Shirky, C. (2012, November 12). Napster, Udacity, and the academy [Web log post]. Retrieved from <http://www.shirky.com/weblog/2012/11/napster-udacity-and-the-academy/>

Siemens, G. (2011, September 15). Duplication theory of educational value [Web log post]. Retrieved from <http://www.elearnspace.org/blog/2011/09/15/duplication-theory-of-educational-value/>

Stallman, R. (2013a). *What is free software?* Retrieved from <http://www.gnu.org/philosophy/free-sw.html>

Stallman, R. (2013b). *Why open source misses the point of free software.* Retrieved from <http://www.gnu.org/philosophy/open-source-misses-the-point.html>

Tauber, T. (2013, March 21). The dirty little secret of online learning: Students are bored and dropping out. *Quartz*. Retrieved from <http://www.qz.com/65408/the-dirty-little-secret-of-online-learningstudents-are-bored-and-dropping-out/>

Udas, K. (2012, November 15). Never mind Antioch, what is Coursera up to? [Web log post]. Retrieved from <http://www.kenudas.com/2012/11/never-mind-antioch-what-is-coursera-up.html>

Watters, A. (2012a, August 27). The problems with peer grading in Coursera [Web log post]. Retrieved from <http://www.insidehighered.com/blogs/hack-higher-education/problems-peer-grading-coursera>