

Surviving the Avalanche: Improving Retention in MOOCs

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Abstract

MOOCs (Massive Open Online Course) bring together, for the first time, high quality "ivy league" providers, online education and a low-cost model. The evidence to date, however, strongly suggests that any reasonable measure of learner engagement in MOOCs is underwhelming. This paper describes a model of online content development and delivery, known as COACT, which aims to ensuring that higher-order learning and reflection is embedded within the learning process and that, as a result, learner engagement is enhanced. The paper reports on the development and delivery of Ireland's first MOOC, "Exploring Irish Identity" using the COACT framework and will explore whether MOOC content developed in this format can improve learner engagement and retention.

A recent paper written by Sir Michael Barber, Katelyn Donnelly and Saad Rizvi and published by Pearson Education declared, "An Avalanche is Coming". The paper addresses the challenge faced by higher education globally to address the needs of 21st Century learners and to deal with the threat of new technologies and new ways of engaging with higher education. Perhaps foremost amongst these threats to traditional campus-based provision is the threat of high quality higher education delivered online and for free.

The MOOC (Massive Open Online Course) is the new darling of distance education, bringing together, for the first time, high quality "ivy league" providers, online education and a low-cost (for participants although not necessarily for the institution) model. Three MOOC platforms are leading the race, Coursera, Udacity and EdX. All three are associated with the highest ranking U.S. Universities and Coursera has gained most attention so far. Coursera now offers over 200 courses from 30 different Universities, including two in the United Kingdom (University of London and Edinburgh) and has over 1 million registered users. EdX represents a collaboration between Harvard and MIT and Udacity, like Coursera, started at Stanford. In the U.K. in February, the Open University announced a UK-centric MOOC platform in a collaboration with a number of other UK Universities.

MOOCs align with the approaches to teaching and learning advocated by the Kronberg Declaration (UNESCO, 2007), whereby learners 'play an ever more active role in knowledge acquisition and sharing' with 'the role of teachers and instructors decreasing'. While on the one hand the basic design of individual MOOCs so far may not have moved too far beyond traditional pedagogical approaches, being largely lecture-based in format at the moment, the

concept itself is learner-centred, liberating students to access and engage with education as it is needed, on subjects identified by the individual as useful in their own particular context. Also, by their very scale, MOOCs shift the focus from teacher to learner. In such a way, by moving towards more self-driven learning, arguably we move away from ‘banking’ approaches to education whereby knowledge is deposited in passive students, towards more ‘problem-posing’ education, and the resulting ‘emancipation’ that can bring (Freire, 1970). Furthermore, Bauman’s (2003) vision of a fluid, ever-changing world in which education needs to become a ‘process’ as opposed to a ‘product’ carries particular resonance in the context of MOOCs, where MOOCs can potentially provide rapid access to knowledge on an ‘as-needs’ basis, regardless of previous qualifications or status.

However, to date, it would appear that MOOCs are failing to live up to these lofty ambitions for a radical shift in the way that undergraduate education is delivered. The evidence to date strongly suggests that any reasonable measure of learner engagement in MOOCs is underwhelming when compared to the massive number of enrolments that many have secured. For example, a paper from Duke University describing the development and delivery of a Bioelectricity MOOC reveals that only 4.41%% of enrolled learners were still engaged after four weeks, as measured by scoring greater than zero in a online quiz. Similarly at Edinburgh University, large enrolments quickly whittled down to admittedly large, but certainly not massive, classes of engaged learners after only three weeks.

There are many explanations for this massive attrition rate and high on the list for sure is the pop status that MOOCs are currently enjoying. But another reason may well be the rather traditional behaviourist approach to online learning that many MOOCs have so far deployed. A typical MOOC session on Coursera, for example, consists of a pre-recorded talking head, usually in 15-30 mins bite size chunks, a self assessment quiz and a discussion forum, moderated with a light touch if at all. Thus far MOOCs have not, on the whole, been an advertisement for highly engaging, task driven learning which encourages learners to seek meaning through interpretation and abstraction. This paper describes an attempt to develop and deliver a MOOC that does offer learners the opportunity to deeply engage with the learning materials with the hypothesis that this engagement will affect attrition rates.

Hibernia College employs an online content development framework known as COACT for the development of the learning materials for its initial teacher education (ITE) programmes. The COACT model is a theoretical framework that forms the basis of lesson design and structure, with a view to ensuring that higher-order learning and reflection is embedded within the learning process. The framework builds on Säljö’s hierarchy of learning and subsequent work by The Goteburg Group (Gibbs et al.,1982) and the ETL Project at the University of Edinburgh (Enwistle, 2004). COACT also draws upon and extends instructional methodologies typically used in the the K-12 classroom such as the 7-Es method as described by Bentley et al (2007), adapting some of these techniques both to the online environment and for post compulsory education.

The definition of the word ‘CO-ACT’ is at the heart of the student learning experience: COACT = ‘CO’: ‘together’ + ‘ACT’: ‘to take action, do something’. This definition, upon which the framework is based, represents a mutually constructed, active approach to learning. The model breaks the learning experience down into a five-stage process, as shown in Figure 1. These five stages reflect a progression from lower-order towards higher-order learning, towards ‘seeking meaning’ through interpretation, critical analysis and the application of knowledge.



Figure 1 Stages of the COACT framework

The COACT model adopts a social constructivist approach to the development of online courses. Within such approaches, the focus for the teacher is on facilitation of the *process* of knowledge acquisition by learners, rather than the more didactic approaches that emanate from the cognitive or behaviourist methodologies. This facilitation occurs through a process of what Wood, Bruner and Ross (1976) refer to as scaffolding, providing just enough support for learners to construct knowledge for themselves. Within the COACT approach to online course development, the goal is to carefully structure the lesson design to provide the necessary scaffolds to enable learners to progress through each stage.

Central to social constructivism is the notion of the learning community. As Garrison and Arbaugh (2007) note, learning communities are ‘essential to support collaborative learning and discourse associated with higher levels of learning’. Moreover, Garrison and Anderson (2003, p52) contend that e-learning has the ‘unique potential’ to create such communities. As we will see below it is only within the context of the learning community that the Active Discovery, Critique and Think phases of the COACT model can fully be realised.

The COACT lesson design process aims to create a series of detailed plans that identify the main learning outcomes that a learner should achieve and the tasks they must work through in order to help them cement their knowledge and achieve those outcomes. Tasks can be anything from watching a video, writing a blog post, researching a topic or discussing a question that has been posed on the forum. For the Concept and Overview phases, learners are given all the learning materials they need and guided through them by their teacher – the author of the lesson. In the Active Discovery phase, they may be required, with guidance, to seek out information for themselves and share it with their classmates, through use of the class forum. The goal is to support learners to become more self-directed, able to find and evaluate information for themselves. The Critique and Think phases move the learning into the realm of higher-order thinking. Critique centres around tasks that require learners to assess, evaluate and analyse aspects of the knowledge gained in the previous phases. Think requires them to reflect on how what they have learned may apply to their classroom practice.

The COACT framework was first employed in 2011 and early results are extremely encouraging. We compared student feedback and grades across two cohorts of graduate students enrolled on the same ITE programme for primary school graduate students teachers. The Feb 11 cohort studied 'Psychology of Education' developed and delivered in a pre-COACT format, consisting of material presented in a format very similar to that described above as being the predominant format for MOOC delivery today. The Sep 11 cohort studied the very same core content, facilitated by the very same tutor team, but with the content re-designed within the COACT framework.

Using the Net Promoter Score (NPS) which asks "Would you recommend this course to a friend" as an overall satisfaction measure, the Feb 11 group scored -14, whereas the Sep 11 group scored 27. Time on task was higher for the Sep 11 group, with 81% of the Sep 11

cohort spending 6 hours or more time on task per week, compared with 54% in the Feb 11 group. Sep 11 were somewhat more satisfied overall with the course (95% rating the course as good or excellent, versus 92% of the Feb11 cohort), but more interestingly, the Sep 11 cohort rated the tutors' performance significantly better than the Feb11 cohort did with 96% rating tutors as good or excellent compared to only 83% in the Feb11 cohort. This increased satisfaction with tutor performance held across each of the sub-category questions including: performance as an effective facilitator, level of subject knowledge, accessibility during the course, overall academic and professional performance, tutor responsiveness to postings and emails and level of tutor and learner interaction during online tutorials.

This increased satisfaction with tutor performance is the more surprising given that the tutor team (12 individuals each facilitating one or more groups of c.25 students) were exactly the same for the Feb11 and Sep11 cohorts.

This finding strongly suggests that a model of online content development and delivery that is specifically designed to encourage interaction, or COACTion, between learner and facilitator and between learner and learner, can significantly enhance students' impressions of tutor interaction and tutors' teaching quality. For instance, it is highly unlikely that the tutors enhanced their levels of subject knowledge in between the delivery of this module to the two cohorts, yet 97% of the Sep11 cohort rated tutor subject knowledge as good or excellent compared to 91% of the Feb11 cohort.

A feeling of isolation, lack of opportunities for meaningful interaction and lack of peer pressure are often quoted as reasons that may explain lack of progression for online learners. This failure to engage may also, at least partially, explain the massive attrition rates in MOOCs which begs the question of whether or not a more engaging method of content development and delivery, such as the COACT framework, can improve progression and completion rates in MOOCs and thereby help deliver on the potential that massive open online education offers the global higher education market.

On March 20th, Hibernia College announced Ireland's first MOOC, "Exploring Irish Identity" (see <http://mooc.hiberniacollege.net>). It has been developed in partnership with "The Gathering", a Tourism Ireland initiative to drive tourism to Ireland in 2013 with a particular focus on the Irish Diaspora. Scheduled to begin in late May, this MOOC will be developed within the COACT framework. It will be an eight-week programme considering the notion of Irish Identity through an exploration of:

- 1. Irish History**
- 2. Irish Literature and Theatre**
- 3. The Irish Language**
- 4. Irish Film**
- 5. Irish Art**
- 6. Music and Dance**
- 7. Sport**
- 8. Landscape**

It is our expectation that the vast majority of learners in the MOOC environment, who are not motivated by the desire to obtain a professional qualification as are our ITE student, will not naturally be inclined to participate at a deeper level than that offered in the Concept and Overview phases. We are hopeful, however, that through the careful construction of learning tasks that are designed to foster engagement, we can encourage students to participate in the

Active Discovery, Critique and Think phases, thus helping them derive maximum educational benefit from the experience and encouraging them to remain active participants in the course. A progress report on the success of this MOOC will be provided at the conference with a focus on the key attrition metric of engaged learners at the end of week three of the MOOC.

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